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Re-thinking Pandemics: State, Society, and Disease in British History, 1830-1960

**by
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HIS 490 History Honors Thesis**

**Department of History and Classics
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Spring 2021**

This thesis is dedicated to the 3 million people who lost their lives to COVID-19 and to all the frontline workers and essential employees, without whom nothing would be possible.

“Epidemics all follow this similar arc where people deny or dismiss the threat until it becomes impossible to ignore any more,” - Mark Honigsbaum, medical historian at City, University of London

CONTENTS

ACKNOWLEDGEMENTS.....	vi
INTRODUCTION	1
CHAPTER 1: THE STORY OF CHOLERA	8
CHAPTER 2: IGNORING INFLUENZA.....	23
CHAPTER 3: TREATING POLIO	36
CONCLUSION: HOW THINGS HAVE CHANGED.....	54
BIBLIOGRAPHY.....	59

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INTRODUCTION

Why study the social history of pandemics? Why attempt to make sense of the larger effects of a disease that has become so deadly, and so widely spread that it has earned the title of a pandemic? It may not be clear at first, but pandemics can help us understand the relationship between people, the government, and the role medicine plays in society. This thesis seeks to understand the reactions of British society to pandemics since 1830. Written during the COVID-19 pandemic, this paper began in an attempt to understand why, after 100 years since the most devastating pandemic in modern history, the world was faced with yet another, but more importantly how people responded to this new normal. In order to understand better how society today responded to the COVID-19 pandemic, we need to know the past and see what has emerged with each new pandemic. For the purpose of this thesis, I examine the cholera epidemics of 1831-1866, the 1918 influenza pandemic, and the polio epidemics of the mid-twentieth century in British history. The thesis argues that the responses to each of these three pandemics were characterized by public mistrust of both government and medical authority as well as reluctance from officials to respond to each disease. In addition, I demonstrate that each pandemic contributed to the development or alteration of Britain's public health system, either through the passage of new legislation such as the Public Health Act of 1848, or the formation of new institutions such as the Ministry of Health in 1918. In some ways this is a story of continuity because, certain trends

persisted across all three pandemics. For instance, the social response to all three pandemics was characterized initially by disbelief, which gradually turned into distrust and frustration with government and medical authorities. But, at the same time, this is also a story of change, as each disease brought with it new reactions and the formation of new institutions and methods that then helped shaped the response to the next epidemic. For example, the expansion of public health following the cholera epidemics of the nineteenth century enabled the development of local boards that played a role in tackling the Spanish Flu epidemic in the early twentieth century. In this way, each pandemic brought about changes that influenced the subsequent pandemics.

Each of these three pandemics had significant impacts on British society, and while they are by no means the only pandemics to have occurred in British history in modern times, I chose these diseases for a number of reasons. First, the diseases themselves did not discriminate in who they attacked. While certain demographics felt the physical effects of these pandemics more heavily than others in the time period I have focused on, no social class or age group was spared (though social class remained a vital factor in how government responded, as I will show). Second, the societal outcomes of each of these pandemics built on one another. When cholera first arrived in Britain in 1831, no significant governmental authority existed that was charged with the public's health, and yet by 1948, in the midst of the polio epidemics, the National Health Service (NHS) was established. Thus, it is through these three pandemics that I believe we can best trace the shifting relationship between society, the state, and the medical authorities.

The town of Sunderland first reported cases of cholera in 1831, as British sailors returned home from travels overseas. With imperialism on the rise, travel to new lands increased, and British sailors exposed themselves to a wide array of diseases like cholera, and some returned

home with them.¹ People contracted the disease as a result of being exposed to the *Vibrio cholerae* bacteria, which can cause serious gastrointestinal issues and often led to death in the mid-nineteenth century.² When the disease first arrived on the shores of Britain, the medical community struggled to find an explanation for how it spread. At the time two competing theories existed: the miasma theory and the contagion theory. According to the miasma theory, cholera spread through the air, and the poor quality air that surrounded inner-city slums allowed the disease to spread. On the other hand, the contagion theory held the belief that cholera spread through physical contact. While the miasma theory had a greater following at the time, nobody thought it possible for cholera to spread through infected water, until physician John Snow proved it did, which as I will demonstrate had significant consequences on British life at the time.

In *The Ghost Map: The Story of London's Most Terrifying Epidemic and How it Changed Science, Cities, and the Modern World* (2006), Steven Johnson examines the Broad Street Outbreak of 1854 and the work of John Snow, whose efforts would eventually determine the correct method of transmission. Johnson focuses on the 1854 outbreak as a way to explain the impact of both the outbreak and Snow's discovery. How exactly Snow came to determine the waterborne transmission of cholera is explained later in this thesis, but as Johnson argues, Snow's work greatly impacted the medical community. However, because Johnson focuses solely on a single outbreak of cholera, the full monumental effects cholera had on British society, medicine and government policy, are not part of his work.

¹ Steven Johnson, *The Ghost Map: The Story of London's Most Terrifying Epidemic and How it Changed Science, Cities, and the Modern World* (New York, Penguin Group, 2006) 33.

² "Cholera," World Health Organization, accessed August 8, 2020, <https://www.who.int/news-room/fact-sheets/detail/cholera>.

Similarly, the work of historians such as Sean Burrell and Geoffrey Gill, who study the Liverpool Riots of 1832, capture the feeling of public distrust in the early years of cholera. But, like Johnson, this work does not explain how Great Britain went from cholera arriving in 1831 to riots occurring in cities in the early 1830s over the disease, to John Snow's eventual discovery of how cholera spread. Building on the work of previous historians, the thesis applies a wider lens by examining how, as a nation, Britain went from violent riots to publicly led shutdowns, and how the lessons learned for both officials and civilians impacted the reactions to subsequent pandemics, such as the Spanish Flu pandemic of 1918.

Exactly where Spanish Flu originated remains unclear to this day, but both historians and medical researchers have agreed that World War I made it easier for the disease to spread. The heavy use of censorship during the war made it difficult for news to be reported, and so when a newspaper in neutral Spain, the *ABC Madrid*, included a mention that an influenza-like disease had been reported, the nickname of "Spanish Flu" was born. The 1918 influenza pandemic is recorded as the worst in modern history with an estimated 500 million cases, and a worldwide death total of approximately 50 million. However, despite these staggering numbers, the pandemic is, in the words of Josie Mabel Brown, a United States Navy nurse who served during the war, "Hardly more than a footnote in the written accounts of World War I."³ Why that is remains difficult to answer exactly, but it is possible that with the war finally coming to a close just as influenza cases began to rise, people had perhaps become desensitized to death surrounding them. This sentiment is expressed in a *New York Times* article from November 1918, which said "war

³ Carla Morrissey, "The Influenza Epidemic of 1918," Naval History and Heritage Command, April 6, 2015, <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/i/influenza/the-influenza-epidemic-of-1918-by-carla-r-morrissey-rn-bsn.html>

had taught the people to think in terms other than the individual interest and safety, and death itself had become so familiar as to lose its grimness.”⁴

Historian Fred R. van Hartesveldt has gone in depth to study the relationship between the doctors who remained in Great Britain during the war and the patients they meant to serve. In his work, van Hartesveldt argues that the lack of sufficient resources or training for medical personnel which Parliament was reluctant to expand on during the war, led to the deaths of many more individuals. In expanding on van Hartesveldt’s argument, in combination with studying primary source materials from the time, the chapter on influenza details how the missteps made by the British government, while greatly upsetting to the public, eventually led to the establishment of the Ministry of Health. Building on van Hartesveldt’s work, as well as that of other historians, this chapter focuses on how Parliament much repeated some of the same mistakes made during the cholera epidemics of the previous century, as they elected to ignore the disease until it became a major issue, at which point it was too late.

The third pandemic this thesis examines is the polio pandemic of the mid-twentieth century. While polio largely impacts children under the age of five, the manner in which it is transmitted is similar to how the aforementioned pandemics spread.⁵ According to the World Health Organization, “The virus is transmitted by person-to-person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and cause paralysis.”⁶

⁴ A Price, “After-war public health problems,” *The New York Times* November 5, 1918: 22.

⁵ “Poliomyelitis (polio),” World Health Organization, accessed August 10, 2020, https://www.who.int/health-topics/poliomyelitis#tab=tab_1.

⁶ “Poliomyelitis (polio),” World Health Organization, accessed August 10, 2020, https://www.who.int/health-topics/poliomyelitis#tab=tab_1.

Limited historical research is available on the early years of the British polio epidemics that occurred from 1947-1959; however, there is considerably more material on the impact of the polio vaccine. Created by Jonas Salk and authorized for use in the United States in 1955, the polio vaccine was meant to bring about the end of the polio epidemics that were occurring each summer. However, as historians Gareth Millward, and Ulrike Lindner, and anthropologist Stuart S. Blume argue, the British government blocked the importation of Salk's vaccine into Britain under the guise of protecting the public from a foreign made vaccine. The controversy over the vaccine contributed to the sense of public distrust of government and medical authorities that was also evident in the instances of cholera and influenza.

While previous historical research has focused individually on each of these pandemics, there is no work in which these three pandemics are studied from beginning to end and in comparison with one another. This comparative methodology offers a unique perspective that allows for patterns and trends to emerge as each pandemic is studied in relation with each other. The choice of Britain is another addition to the historical literature, as much of the secondary research that exists focuses on pandemics in the United States. However, focusing on the United Kingdom, not only narrows the topic geographically, but also provides a distinct element to this work due to the creation of the NHS, a universal health system not present in the United States. Britain's centralized system of public health and government intervention in healthcare allows us to study the dynamic interactions between state, society, and medicine with more clarity than in other places.

Chosen not only because of the impacts that they had on the British public health system, but because of the impact they had on each other, the aforementioned pandemics allow us to see how the reactions to these diseases have stayed consistent over the years, while also impacting the

governmental sphere. In the last two hundred years, with three major pandemics having occurred, the British society has not significantly altered its response to widespread epidemics. Despite massive technological, medical, and social change, the reactions by medical establishments, government, and the public have remained much the same. In each case, there was misinformation about the disease, poor communication by high ranking officials, and mishandling of the diseases themselves, all of which led to public mistrust of physicians and government. Yet, despite these reactions remaining the same, cholera, influenza, and polio all resulted in significant changes to how Britain saw public health and changed the responses from officials in the face of a public health crisis.

CHAPTER 1: THE STORY OF CHOLERA

With imperialism and industrialization on the rise in the early 1800s, British sailors exploring the world came in contact with new peoples, new ideas, and a multitude of new diseases previously unknown.¹ Cholera, a disease that can cause serious gastrointestinal issues and often leads to death, was one of these diseases that British sailors brought home with them from their travels.² In 1831, the first cholera case occurred in the United Kingdom, after having spread from a ship returning from India. Reportedly, the first cholera patient was one William Sproat, a sixty year old deckhand living near the Sunderland harbor. As news spread of the arrival of this new disease, the government initially responded rapidly. The Privy Council, King William IV's formal advisors, placed ships under quarantine in the harbor at Sunderland in an attempt to minimize the spread of the disease.³ This response was modeled on the tactics employed during the bubonic plague outbreak in the seventeenth century, when "quarantines and cordon sanitaires" were effective in containing diseases. However, the quarantines of the seventeenth century also spelled

¹ Steven Johnson, *The Ghost Map: The Story of London's Most Terrifying Epidemic and How it Changed Science, Cities, and the Modern World* (New York, Penguin Group, 2006) 33.

² "Cholera," World Health Organization, accessed August 8, 2020, <https://www.who.int/news-room/fact-sheets/detail/cholera>.

³ UK Parliament *Cholera in Sunderland*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/introduction/cholera-in-sunderland/>.

disaster for Britain's economy, as "Britain's prosperity had depended on its mercantile fleet and world-wide freedom of trade."⁴ The quarantines of the seventeenth century proved successful in containing the bubonic plague; however, the economic ramifications of past quarantines sparked fear among Sunderland businessmen during the cholera outbreak. Feeling the effects caused by the lack of trade, the business community pushed back on the government-imposed quarantine. This public resistance led to the Privy Council lifting the ban, and local Sunderland doctors became subject to the whims of the wealthy, private citizens of Sunderland.⁵

In order to justify the ending of the quarantine, the local Board of Health announced cholera was "non-contagious" and that the lockdown could be lifted.⁶ The medical community claimed that cholera was not a new disease but rather "was a standard English fever" that was not contagious.⁷ The general public, taking their cue from the medical community, "much doubted whether the fatal cases...were really cases of Cholera, doubting whether they were not typhus."⁸ As English fever and typhus had already existed in the country for several years, communities had nothing to fear from cholera and thus, "no administrative response that would cut off trade and shipping" was required.⁹ This political decision to see cholera as a non-contagious disease had serious ramifications for the medical community and for Sunderland. These decisions were made in the effort to protect the British economy; however, when the scandal broke of doctors covering

⁴ Sheldon Watts, *Epidemics and History: Disease, Power and Imperialism* (Wiltshire, Redwood Books, 1997) 192.

⁵ UK Parliament *Cholera in Sunderland*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/introduction/cholera-in-sunderland/>.

⁶ Watts, 192.

⁷ Watts, 193.

⁸ "Arrival of the Cholera in England," *The Sunday Times* November 6, 1831: 3.

⁹ Watts, 193.

up cases of cholera, it triggered a boycott of Sunderland by trading partners and tourists, hurting the economy and destroying trust in the medical community.¹⁰ This ineffective quarantine would allow for cases to spread throughout Sunderland and beyond, leading to the deaths of 32,000 by 1832.¹¹ The decisions made in Sunderland would also have disastrous effects in the whole of Britain, as cholera would continue to resurface in various communities for the next 30 years, and with no viable treatment yet discovered, death followed in its wake. The decisions in Sunderland were a conscious choice by the British government to ignore the presence of the deadly disease, and at a time when the medical community had no response in place, would ultimately lead to even greater public distrust of those in power, which would impact not only the remaining years of the cholera epidemics, but future pandemics as well.

Significant mistrust of the medical community already existed in England, and the presence of cholera, coupled with how the medical community responded to the disease, only added to this fear and mistrust.¹² In 1831, prior to the arrival of cholera, Parliament had passed the Anatomy Act which gave physicians the legal authority to take the unclaimed bodies of poor people and study them for science.¹³ This led to the public fear of “being turned into anatomy soup”¹⁴ and “body snatching.”¹⁵ The passage of the Anatomy Act caused immense public fear of people being

¹⁰ UK Parliament *Cholera in Sunderland*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/introduction/cholera-in-sunderland/>.

¹¹ UK Parliament *Cholera in Sunderland*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/introduction/cholera-in-sunderland/>.

¹² Sean Burrell and Geoffrey Gill, “The Liverpool Cholera Epidemic of 1832 and Anatomical Dissection – Medical Mistrust and Civil Unrest,” *Journal of the History of Medicine and Allied Sciences* 60, no. 4 (2005): 479.

¹³ Watts, 191.

¹⁴ Watts, 191.

¹⁵ Geoffrey Gill, Sean Burrell, and Jody Brown, “Fear and Frustration – the Liverpool cholera riots of 1932,” *The Lancet* 358, no. 9277, (2001): 235.

left to die in hospitals so that their bodies could be used for science.¹⁶ As hospitals handed over unclaimed bodies in accordance with the Anatomy Act, they found that “the reputation of the hospital is injured by it, and hence the number of patients and subscribers is considerably lessened” even in the years after the end of the cholera epidemics.¹⁷

The public’s fear, combined with the mishandling of the cholera outbreak by both the medical community and the government, ultimately led people to violence. In several cities, such as Liverpool and Manchester, “Cholera Riots” broke out in the early years of the disease’s arrival in the United Kingdom, with attacks being specifically targeted at doctors.¹⁸ One such instance occurred following the death of the grandson of one John Hayes. In late August 1832, Hayes’ grandson, John Brogan was admitted to the hospital, succumbing to cholera before the day was over. Hayes did not bear witness to his grandson being placed in the coffin and did not open the coffin until at the cemetery. According to the report of the Manchester Special Board of Health, Hayes “felt a suspicion that the child was not within” as “the name of the child [was not] written on its coffin as on the coffins of others.”¹⁹ Upon opening the coffin, Hayes discovered that his grandson’s head had been cut off and replaced with a brick. With the support of his pastor, who had been with Hayes at the coffin’s opening, Hayes went to the Manchester Special Board of Health demanding an answer for his grandson’s mutilation. Following the investigation it was determined that after Brogan had died from cholera, Robert Oldham, the Dispenser of Medicines

¹⁶ Watts, 192.

¹⁷ “The Anatomy Act,” *The Times* November 2, 1869: 7.

¹⁸ Gill, Burrell, and Brown, 235.

¹⁹ Manchester Special Board of Health 1831-1832, 215.

had removed Brogan's head "for the purpose of examining it."²⁰ The outrage that followed sparked one of the most famous cholera riots in Manchester in September 1832, and led to the "liberation" of cholera patients whom Hayes and his friends thought to be in danger. Hayes believed the doctors planned to murder these patients, as the medical community appeared desperate for bodies to use for research.²¹ Storming the Swan Street Hospital, rioters destroyed hospital property, including windows, beds, and one of the hospital's trucks.²² These riots demonstrate how deep the distrust of the medical establishment ran in the United Kingdom – that the public would go so far as to riot against the very people meant to help in the midst of a health crisis.

The medical community's limited ability to treat cholera only added to this public distrust. Ironically, while doctors were quick to blame the spread on drinking alcohol and other behaviors associated with the working class, alcohol was also a prescribed remedy. Early into the first outbreak, doctors argued that "any drinking at all by rough working people was an act of immorality which necessarily predisposed them to sicken and die from cholera."²³ This argument directly targeted the poorer members of the community who already feared going to hospitals and becoming "anatomy soup."²⁴ The argument also proved hypocritical as doctors treated William Sproat, the first cholera patient in Britain with a combination of brandy and opium. In reality, this treatment did nothing more than ease his pain until he ultimately died.²⁵

²⁰ Manchester Special Board of Health 1831-1832, 216.

²¹ Manchester Special Board of Health 1831-1832, 215-217.

²² R.J. Morris, *Cholera 1832: The Social Response to an Epidemic* (New York, Holmes & Meier, 1976) 110-111.

²³ Watts, 194.

²⁴ Watts, 191.

²⁵ Gill, Burrell, and Brown, 233.

Alcohol was just one of many ineffective and unproven treatment suggestions that flooded local newspapers for several years after the initial outbreak. However, that did not stop the publication of these treatments in local newspapers. As treatment methods were fought over in local newspapers, the levels of mistrust only grew as members of both the medical community and the general public viewed these advertisements.²⁶ For example, in August 1854, the *London Times* published a column claiming “Saunder’s Anti-Mephitic Fluid” as a cure for cholera. At the same time, a pharmacist published his own, very different cure, and for less money.²⁷ The disagreements between doctors became so great in public forum that a newspaper published an editorial titled “Who Shall Decide When Doctors Disagree?” These differences in medical opinion further contributed to the public’s lack of trust towards doctors. As the editorial put it, “If the doctors who write to the papers would agree in their prescriptions for cholera, the public might feel grateful for the trouble taken.”²⁸ The reliance on anecdotal evidence rather than proven scientific fact undermined the ability of the medical establishment to understand how cholera spread or to develop an effective treatment, and was only made more obvious as the press called attention to it and the public expressed their frustration and anger over the disagreements.

With doctors arguing over ill-fated treatment methods, the press of the time did nothing to ease public panic. In fact, in some cities the press even added to this fear. *The Lancaster Gazette* had a column dedicated to tracking the cases and weekly death tolls for cholera from several cities such as Liverpool, Chester, and Flint.²⁹ These tables included how many new cases appeared each

²⁶ Johnson, 49-50.

²⁷ “Saunder’s Anti-Mephitic Fluid,” *The London Times* August, 1854

²⁸ Johnson, 50.

²⁹ “The Cholera,” *The Lancaster Gazette* May 29, 1832.

day, how many patients recovered, and how many died, along with the total death count printed clearly for all viewers to see. Such visual representations of the death tolls forced cholera to be an ever-present thought in readers' minds, even as the British government moved slowly to action, and the medical community struggled to comprehend this new disease. With phrases such as "it has been alarmingly on the increase," as the *Lancaster Gazette* put it, the presence of cholera in these cities elicited fear among the readers.³⁰ The constant terror of the rapidly growing disease only added stress, as quarantines failed and the medical community publicly debated the spread of cholera and the best treatment for it.

In May of 1832, when cholera struck in Liverpool, the government made a "fairly ineffective, but nevertheless animated" attempt to minimize the ramifications of cholera, but once again proved unsuccessful.³¹ Having learned from the mistakes made with the first cholera quarantine in Sunderland, the British government made an effort not to succumb to the whims of businessmen. In February 1832, Parliament passed a Cholera Bill designed to prevent the spread of cholera, which created various local boards of health as well as established hospitals designed to handle an influx of cholera cases.³² Despite the more active response, these measures did not address the waterborne spread of cholera, which the medical community still did not understand. The quarantine again failed as almost 5,000 Liverpool residents contracted cholera during this outbreak.³³ However, the government and the medical community did make some effort. Even as rioters appeared in the streets trying to prevent physicians from adding any more patients to the

³⁰ "The Cholera," *The Lancaster Gazette* May 29, 1832.

³¹ Gill, Burrell, and Brown, 234.

³² Gill, Burrell, and Brown, 234.

³³ Gill, Burrell, and Brown, 234.

“anatomy soup,” the cholera hospitals remained open, and the public resistance did not overturn governmental decisions.³⁴

The British medical community was not alone in failing the people as the state also made decisions that abandoned the public and left them to figure out how to manage an epidemic all on their own. In August 1833, the British government issued an order that washed away any responsibility on the part of Parliament and the Crown when it came to the handling of the cholera crisis. They determined that the management of any future cholera outbreaks “must be left to the prudence and good feeling of those communities where it may occasionally show itself.”³⁵ This decision to have individual communities respond to cholera rather than mounting a centralized response placed the responsibility on the shoulders of localities, who had much more limited resources at their disposal. This was particularly problematic for poorer areas which were most susceptible to cholera but had the least access to resources. But since both the public and medical establishment believed that the poor were being punished with cholera for actions deemed immoral by the rest of society, this response may have seemed appropriate to them.

It was only in the late 1840s that both the government and the medical community began to shift their reactions to the disease. Cholera, unlike many other diseases at this time, spread through water, allowing it to cross not only neighborhoods but also climb the class ladder. As the disease spread to wealthier members of society, governmental intervention occurred. Despite the decision in 1833 to leave the management of cholera up to individual communities, when wealthier individuals began to fall ill from the same disease, the government reversed this decision in order to minimize those affected in wealthier areas. The danger that cholera now posed to the influential

³⁴ Watts, 191.

³⁵ Central Board of Health Letter Book, 15 August 1833, P.R.O., P.C.1/93.

members of society, and not just the working class who held no sway in political decisions, “became a strong stimulus for change.”³⁶

This change had already been advocate for by noted social reformer Edwin Chadwick, as he witnessed the inequities members of the working class faced. In 1842, Chadwick conducted a largescale examination of the sanitary conditions of the water supply, publishing a report titled “The Sanitary Condition of the Labouring Population of Great Britain.” Although neither the government nor the medical community knew yet that cholera spread through the water supply, Chadwick argued in this report that the most necessary conditions to improving public health were “improved drainage and provision of sewers, the removal of all refuse from houses, streets and roads, the provision of clean drinking water, the appointment of a medical officer for each town.”³⁷ While the report itself had no immediate action, its existence would lead to future legislation that attempted to accomplish what Chadwick deemed as necessary to fixing public health in Britain.

In response both to Chadwick’s report and to the continued cholera outbreaks, the government passed major public health legislation in 1848. The 1848 Public Health Act became the first of many steps in improving public health. While the bill did not provide any financial resources from the British government and did not require action of local agencies, it moved communities in a direction that reformers like Chadwick had been advocating. Almost immediately communities feeling the drastic effects of cholera outbreaks put the act to work.³⁸

³⁶ Gill, Burrell, and Brown, 234.

³⁷ UK Parliament *The 1848 Public Health Act*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/about-the-group/public-administration/the-1848-public-health-act/>.

³⁸ UK Parliament *The 1848 Public Health Act*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/about-the-group/public-administration/the-1848-public-health-act/>.

With the establishment of a Central Board of Health and various committees that local agencies could take advantage of, if they chose to, the British government recognized a need for a more uniform, coordinated response, even if it took years for action to occur. Sunderland, where the original cholera outbreak had occurred in 1831, was one of the first communities to put the law into action. Using the newly appointed powers, the city solicited Robert Rawlinson, to make recommendations. Rawlinson, a licensed Sanitary Inspector, arrived in Sunderland in February 1850.³⁹ Included in his findings were that “There is a most filthy place between two walls from 4 to 5 feet wide, behind John Street...called the Stinking Ditch, and it is literally so” and “the water falling from a large building completely soaks through the walls,” truly indicating how unsanitary the living conditions of the lower class were.⁴⁰ Perhaps most central from Rawlinson’s report was his observation that:

There are very few private drains communicating with the sewers. The ordure and offensive matters from the houses are generally brought out and thrown into the streets, and perhaps principally near the gratings or gully-holes, where it remains giving forth unhealthy effluvia, until removed by the scavenger or a shower of rain. Indeed it is difficult to say where the refuse water from some of even the better class of houses finds an outlet.⁴¹

To address these problems, Rawlinson made a number of recommendations, including renovated sewers and waste removal methods to prevent future outbreaks. While Rawlinson’s findings strengthened the case for a repaired sanitation system, it would be several years before the

³⁹ UK Parliament *Sunderland and the Public Health Act*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/about-the-group/public-administration/sunderland-and-the-public-health-act/>.

⁴⁰ UK Parliament *Sunderland and the Public Health Act*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/about-the-group/public-administration/sunderland-and-the-public-health-act/>.

⁴¹ UK Parliament *Sunderland and the Public Health Act*, <https://www.parliament.uk/about/living-heritage/transformingsociety/towncountry/towns/tyne-and-wear-case-study/about-the-group/public-administration/sunderland-and-the-public-health-act/>.

government made the repairs, causing even greater levels of distrust and animosity by the public. Ultimately, then, the 1848 Public Health Act is indicative that the British government recognized the need for a response, but still put many burdens on the shoulders of local authorities, even as it became obvious that cholera infected all social classes and not just the working class.

With each cholera outbreak, the public placed less and less confidence in the British Parliament and the medical community, and instead worked to protect themselves – albeit with limited knowledge. In 1854, another outbreak of cholera occurred, this time in the Golden Square neighborhood of London. This outbreak proved to be much deadlier than previous strains, as “sufferers were going from complete health to death in twelve hours.”⁴² Typically, cholera took months or years to spread through a population and, for those infected, death did not occur quite so rapidly. This outbreak would kill 600 civilians in just a matter of days.⁴³ The speed at which this outbreak occurred terrified London and the neighborhood went silent with doors locked and windows shut. Unlike previous government-mandated quarantines, the quarantine on Broad Street was self-imposed and uncoordinated by residents who had been living in the presence of cholera for over two decades by the time it struck Broad Street. As Steven Johnson describes the situation, “Half the neighborhood, it seemed, had shuttered themselves inside, either to suffer in isolation or to ward off whatever foul effusion had brought the plague to the neighborhood.”⁴⁴ The people made the decision to quarantine themselves on their own, feeling the need to act on their own as it was clear from past decisions that the government could not be trusted to act accordingly.

⁴² Johnson, 53.

⁴³ Johnson, 36.

⁴⁴ Johnson, 55.

The Broad Street epidemic allowed physician John Snow to uncover the method in which cholera spread, and thus created a template for future responses. During the initial cholera outbreaks in the early 1830s, John Snow worked to treat sick miners and began to form a theory that cholera outbreaks were “rooted in the social conditions of these impoverished workers,” which was consistent with what other physicians said at the time.⁴⁵ However, while many others in the medical establishment placed blame on the behaviors of the poorer classes, Snow’s focus was on the physical living conditions of these workers. Snow’s argument was largely ignored in favor of the easier conclusion: that working people were making themselves sick by acting in ways considered immoral. With the popular conclusion dominating medical and social thought, Snow kept his own theory quiet, where it remained in the back of his mind for the next several years.

The theory Snow had first developed in 1831 whilst treating the miners reemerged in his mind as he witnessed the Broad Street outbreak. Presented to the medical community in 1849 in a pamphlet titled *On the Mode of Communication of Cholera* and then to a wider audience in the *London Medical Gazette*, Snow argued that “a most important way in which the cholera may be widely disseminated ...[was], by the emptying of sewers into the drinking water of the community,”⁴⁶ something that was evident in the sewage systems of London around Broad Street at the time of the outbreak.⁴⁷ The medical community remained skeptical of Snow’s argument. Reviewers in the *London Medical Gazette* felt that Snow’s argument and examples did not provide enough convincing evidence that the spread occurred through bacteria living in poor sewage systems, and therefore the medical community would refuse to confirm Snow’s theory until he

⁴⁵ Johnson, 59.

⁴⁶ John Snow, *On the Mode of Communication of Cholera* (London, John Churchill, 1849) 11.

⁴⁷ Johnson, 71, 76.

established a concrete cause and not just a correlation between cholera and the water supply.⁴⁸ While this discussion occurred between Snow and others in the medical establishment, its presence in the *London Medical Gazette* meant that the public could easily view another medical debate in response to cholera. In doing so, the public bore witness to the medical community continuing to fail at providing a concrete response to the public health crisis.

Through the outbreak at Broad Street John Snow finally identified the concrete cause that the medical establishment wanted. In late August 1854, the pump at Broad Street had been contaminated when a soiled diaper was thrown into a cesspool that fed directly into the pump's water supply.⁴⁹ When it became clear that cholera had once again returned to London, John Snow went investigating in order to prove his waterborne theory of spread. Snow took water samples not only from the Broad Street pump, but several surrounding pumps as well. In doing so, Snow expected to find clear evidence of deadly bacteria existing in the water in the physical appearance of the water itself. However, initial discovery proved this to be false as the water from the Broad Street pump appeared clean – much cleaner than the other pumps from which Snow took samples.⁵⁰ Through his home laboratory research and analysis of the daily lives of the residents of the Golden Square neighborhood, Snow was able to determine that the Broad Street pump was the culprit behind the spread of cholera.⁵¹ From this, Snow had enough evidence to force the authorities to take action and remove the pump, thus stopping the disease in its tracks.

⁴⁸ Johnson, 75.

⁴⁹ Johnson, 22.

⁵⁰ Johnson, 71, 76.

⁵¹ Johnson, 80.

At the same time that Snow was working to find a cause for cholera, Reverend Henry Whitehead was visiting his sick and dying parishioners in the Golden Square area. Reverend Whitehead believed that cholera spread through air particles, but despite being a believer of the miasma theory, he frequently entered homes and spoke with parishioners known to be infected with cholera. With this constant exposure, and failure to fall ill, Reverend Whitehead began to question the medical community's voice on the matter. How could he still be healthy despite spending hours surrounded by what physicians deemed as "bad air?" As such, Reverend Whitehead's distrust in the medical establishment grew and he worked with Snow to uncover the true catalyst behind the Broad Street outbreak, which led to the pump and bacteria ridden cesspool. Snow's partnership with Reverend Whitehead, who held a position of a trusted and reliable member of society, may in part be why the public accepted Snow's theory and demands to remove the pump. At a time when much of the public was reluctant to trust what physicians claimed, having a member of the clergy on his side benefitted Snow both in his research and in the presentation of his findings. The public looked to the respected members of their communities in times of crisis, and for the Broad Street neighborhood this was Reverend Whitehead. It was not a member of government, whom they had elected, or a member of the medical community who had training and qualifications. Instead, the public chose the clergy, and so when Reverend Whitehead publicly put his trust in John Snow and Snow's work, the neighborhood followed suit.

The story of cholera in the United Kingdom is one filled with distrust, unknowns, and panic. From the time cholera first appeared on Britain's shores in 1831, nobody knew how to react. Originally, instead of acting, the British government and medical community opted to ignore the problem – hoping it would disappear on its own. Blaming the working class, and scarcely diverting resources towards local communities in need, cholera ran wild throughout England for years. In

1848, as public mistrust of both the government and the medical establishment grew, reformers such as Edwin Chadwick urged the government to act in more preventive ways. With the creation of the Central Board of Health, and the ability of local municipalities to have sewage systems inspected, the 1848 Public Health Act pointed the British government in the right direction, at a time when the medical community still struggled to come to a consensus. The Anatomy Act made it difficult for patients to trust doctors and feel safe going to the hospital, especially as doctors publicly disagreed over how cholera spread and any cures for the disease in newspapers and pamphlets. Only once John Snow discovered the true method of how cholera spread – through water – during the Broad Street Epidemic in 1854 was action taken. Grounding his findings in scientific fact, rather than rhetoric like many other physicians at the time, and working with Reverend Whitehead, a trusted member of society, Snow was able to gain public trust. It would have been easy for Snow to follow the behavior of his peers, but because he trusted his instincts, instead of believing what he had been told, his “solution to the cholera crisis broke the medical conventions of his era, slowed the progress of a virulent intercontinental disease, and forever changed the way society confronts public health problems.”⁵² However, despite Snow’s advancements in medicine, public distrust of the government and the medical community still ran deep, and would continue for the next several decades, and would be a factor when the next big pandemic hit Britain in the early twentieth century, the Spanish Flu.

⁵² Laura Ball, “Cholera and the Pump on Broad Street: The Life and Legacy of John Snow” *The History Teacher* 43, no. 1 (2009): 105.

CHAPTER 2: IGNORING INFLUENZA

“Los médicos han comprobado en Madrid la existencia de una epidemica de indole gripal muy propaganda.” [“Doctors have verified in Madrid the existence of a highly spread influenza epidemic.”]¹

“Resumen de Noticias,”
ABC Madrid, May 22, 1918

This is what readers of the *ABC Madrid* saw when they opened their papers on May 22, 1918. A new influenza epidemic had begun, but at the time of this publication, nobody knew what this would come to mean. Engaged in World War I, Europe had become a battlefield. But, as one of the only neutral countries at the time, Spain had the ability to report on cases and the epidemic became a significant headline in the country. In contrast, many other European nations, including Britain, strictly enforced press censorship with the intention of keeping morale high. With war being fought overseas, the focus of the British government was on military efforts rather than responding to a possible epidemic. However, this censorship prevented the global public from becoming adequately aware of the influenza, thus allowing it to spread unchallenged. While this decision would later come to be recognized as dangerous and one which resulted in a significant increase in casualties, to the British government, the war effort took precedence, especially as the conflict continued to drag on from 1914. By censoring reports of influenza cases, the government

¹ “Resumen de Noticias,” *ABC Madrid* May 22, 1918: 24.

hoped to support the troops, and keep those serving overseas focused on the monumental task in front of them. This decision led to the loss of thousands of lives and continued levels of distrust felt by the public towards political and medical authorities, which had been forged in the mistakes made by an earlier British government in responding to cholera in the century prior.

The 1918 influenza pandemic remains the most severe pandemic in modern history, with an estimated death toll of close to 50 million.² In the United Kingdom alone, a quarter of the population came down with the disease (approximately 12 million) and 228,000 deaths were reported.³ Caused by the H1N1 virus, the exact origins of the pandemic are not known for certain; however, World War I and trench warfare made it easier for the disease to spread. As an airborne disease, influenza was able to transmit easily from person to person owing to the close quarters of the trenches in Europe and the frequent travel between the battlefield and the home front. Research traced that the flu spread “along routes of communication and diffusion out into more sparsely populated districts.”⁴ The censorship newspapers engaged in during the war downplayed the seriousness of the disease, which had a high mortality rate in healthy people between the ages of 20-40.⁵ Members of this age group as well as the British military who were living and fighting in the trenches, were particularly vulnerable to infection, which differed greatly from past influenza epidemics. Prior to 1918, influenza was considered a “democratic disease” meaning that the

² “History of 1918 Flu Pandemic,” Center for Disease Control, accessed August 8, 2020 <https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/1918-pandemic-history.htm>.

³ Ben Johnson, “The Spanish Flu Pandemic of 1918,” Historic UK, accessed August 8, 2020 <https://www.historic-uk.com/HistoryUK/HistoryofBritain/The-Spanish-Flu-pandemic-of-1918/>.

⁴ Alice Reid, “The Effect of the 1918-1919 Influenza Pandemic on Infant and Child Health in Derbyshire,” *Medical History* 49, (2005): 35

⁵ “History of 1918 Flu Pandemic,” Center for Disease Control, accessed August 8, 2020 <https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/1918-pandemic-history.htm>.

disease infected individuals from all social classes, age groups, and races.⁶ However, in 1918, due to the war, the new strain of influenza heavily attacked the younger generation, in a way it had not done previously.

With three waves of the epidemic, the entire population struggled to respond, despite more patients between the ages of 20-40 falling ill. As influenza first hit the shores of the United Kingdom in June 1918, nobody predicted that the pandemic would last almost a year, with peaks in July and November of 1918, as well as in March 1919.⁷ The third peak in November 1918, proved to be the deadliest as the war came to a close and troops began to return home. With death tolls and panic rising, an urgent need for a plan emerged. As the pandemic spread across the United Kingdom it seemed that the more relaxed attitude of “‘take two aspirins and call me in the morning’ would no longer work.”⁸ This attitude was one held by doctors and others in the medical community during earlier influenza epidemics of the late-nineteenth century, but with the devastating effects of the 1918 pandemic, the public demanded, and the medical community recognized, a desperate need for change and answers.⁹ Thus began a movement led by Sir Arthur Newsholme who was Chief Medical Officer of the Local Government board - an organization that oversaw local public health authorities and local government officials - to conduct research into possible treatment methods for influenza.¹⁰

⁶ Laura Spinney, “Spanish Flu the Virus that Changed the World,” HistoryExtra, March 2, 2021, <https://www.historyextra.com/period/20th-century/spanish-flu-the-virus-that-changed-the-world/>.

⁷ Lori Loeb, “Beating the Flu: Orthodox and Commercial Responses to Influenza in Britain, 1889-1919,” *Social History of Medicine* 18, no. 2 (2005): 206.

⁸ Fred R. van Hartesveldt, “The Doctors and the ‘Flu’: the British Medical Profession’s Response to the Influenza Pandemic of 1918-19,” *International Social Science Review* 85, no. 1/2 (2010): 30.

⁹ Loeb, 223.

¹⁰ van Hartesveldt, 30.

In the spring of 1918 when the initial cases in the United Kingdom were reported, the medical community struggled to find a solution. Throughout the course of World War I, doctors and nurses on the frontlines had responded to traumas and treated a variety of diseases and infections, which had produced a wealth of knowledge that would eventually assist other medical workers as the war went on, and the physicians still at home. Additionally, as part of an attempt to protect the men overseas, the Royal Army Medical Corps had begun conducting research into the traumas and diseases reported from the warfront. In doing so, the hope was that the research would provide assistance in treating future infections.¹¹ However, while the Royal Army Medical Corps had learned much regarding treatment methods and patient care, the war still posed a barrier to research, testing and treatment. Sir Arthur Newsholme asserted that “war conditions prevented civilian bacteriological work on the disease on a considerable scale” thereby, leaving the medical community unable to treat influenza effectively.¹² There was, thus, the same lack of awareness and preparation that characterized the cholera epidemics of the previous century, only adding to a generational distrust felt by the public towards members of the medical authority.

In addition to limited knowledge and lack of information, a shortage of doctors within Britain also proved to be a challenge as millions of Britons came down with the virus. With war raging on, government and the medical community came into conflict, as Parliament refused to send doctors home from France to respond to the infections. As one scholar describes it “the needs of the army in France transcended the needs of civilians at home.”¹³ Since many with medical

¹¹ van Hartesveldt, 30.

¹² Arthur Newsholme, “Discussion on Influenza,” *Journal of the Royal Society of Medicine* 12, (1919): 2.

¹³ van Hartesveldt, 32.

training had been deployed to care for wounded soldiers, it left a limited number available for the public still at home in Britain.

In addition, the doctors who were at home were unable to agree on a treatment method. Similar to the case of cholera, doctors attempted several different ways to treat influenza, despite having no scientific information on the disease that would indicate an effective treatment. Scholars have reported that, “Most doctors believed in rest and good nutrition” with some often prescribing disinfectants or alcohol as easy home remedies, though “doctors offered mixed advice regarding...treatment.”¹⁴ Previous solutions often included the use of ice or the application of heat, in addition to various drug therapies such as heroin and cinnamon.¹⁵ While some doctors were better informed than others, there was still a great deal of confusion and ill-preparedness towards treating the disease, and reluctance to change methods when the existing solutions proved to be unsuccessful.

Using the resources they did have, doctors and nurses turned to alcohol as a potential treatment for influenza. Similar to treatment methods during the cholera epidemics, alcohol provided an easy way for doctors to respond to dying patients. In 1918, as understaffed hospitals attempted to respond in the best way they could to the rising cases with the limited resources they had at their disposal, many recommended whiskey as a treatment method. However, as a nation at war, rationing was in place, and Parliament refused to expand rations of whiskey, despite urging from the medical community. Parliament’s refusal led to candidates being “heckled” by an enraged public, and conversations between Members of Parliament before the whiskey rations were

¹⁴ Loeb, 222.

¹⁵ Loeb, 222.

expanded.¹⁶ While significantly less violent than the cholera riots of the early 1830s, the heckling accomplished a similar necessity: governmental awareness of the public health crisis plaguing the nation.

When influenza cases rose rapidly in July 1918, Sir Arthur Newsholme, Chief Medical Officer of the Local Government Board issued a memo that encouraged people to stay home in an attempt to minimize the spread of the disease, which scientists suspected was airborne. However, the Parliament of the time was concerned that if people stayed home out of fear of the disease, then nobody would be in the factories working on supplies needed for the troops, and so Sir Newsholme's memo was ignored by Parliament.¹⁷ A few months after the suppression of his memo, in November 1918, Sir Newsholme opened a discussion on influenza with the Royal Society of Medicine. In this discussion, Sir Newsholme did not hold back his frustrations with officials who, in his mind, had failed to act decisively. Sir Newsholme outrightly accused officials saying "that public health authorities, central and local, did not take all possible steps in anticipating and mitigating the present major epidemic of influenza."¹⁸ While Sir Newsholme did admit that being at war in the midst of a global pandemic made preventive measures harder, he argued that there were measures that could have been taken to prevent the loss of life.¹⁹ Sir Newsholme then went on to detail those measures:

Lives might have been saved, spread of influenza diminished, great suffering avoided, if the known sick could have been isolated from the healthy; if the rigid exclusion of known sick and drastic increase of floor-space for each person could

¹⁶ van Hartesveldt, 34.

¹⁷ "Coronavirus: How they tried to curb Spanish flu pandemic in 1918," *BBC News*, 10 May 2020 <<https://www.bbc.com/news/in-pictures-52564371>>

¹⁸ Newsholme, "Discussion on Influenza," 13.

¹⁹ Newsholme, "Discussion on Influenza," 12-13.

have been enforced in factories, workplaces, barracks, and ships; if overcrowding could have been regardlessly [*sic*] prohibited²⁰

Sir Newsholme's speech indicated that information existed on the prevention of a widescale epidemic and yet the British government still risked the lives of their citizens for the sake of soldiers stuck in a war that continued to drain both physical and mental resources from the British people. As Sir Newsholme put it, by Parliament suppressing his memo in July 1918, the government had the public "carry on" as though there was nothing to fear, when in fact the epidemic posed a great danger.²¹

In addition to Parliament suppressing information available to the public in an attempt to ease fears, the British press made matters worse. Much like the cholera epidemics that began in 1831 and continued until 1866, the influenza pandemic of 1918 tried the public's patience. It took medical professionals over twenty years to uncover how cholera spread in the nineteenth century, and prior to this, the public largely distrusted the doctors who not only struggled to find a cure for cholera, but also publicly disagreed on anything relating to cholera. This sense of distrust appeared once again with the flu as "the failure to meet the pandemic with a cure or even offer its victims dependably helpful treatment led to criticism of medical practice."²² As the public had limited access to medical information and knowledge, some citizens took it upon themselves to report on their own treatments for influenza. For example, one man by the name of Harry Furniss wrote about a cure he had been using. As he described it, this was "a preventive of which I was informed by a very clever analytical chemist when the dread fiend first invaded this country...It is to take

²⁰ Newsholme, "Discussion on Influenza," 13.

²¹ Newsholme, "Discussion on Influenza," 13.

²² van Hartesveldt, 31.

snuff, which arrests and slays the insidious bacillus with great effect.”²³ Published in *The Times* as a letter to the editor in July 1918, Harry Furniss’s so-called “cure for influenza” had no basis in science, and yet the paper released it anyway, because Furniss’s message communicated more to the public than did the government or the medical community. Information regarding Spanish Flu was so limited that private citizens were left with no other choice than to turn to one another, rather than to trained medical professionals, for assistance.

As newspapers faced harsh scrutiny from the government and had to obey strict censorship regulations, many newspapers became a tool for officials to use in controlling the public. In June 1918, when cases began to increase rapidly, the *Daily Mail* in London published an article saying that for those infected with the Spanish Flu it would be no worse than a common cold.²⁴ Even as doctors in military camps reported new cases of the disease as having “influenza like” symptoms, those tasked with protecting the public failed to recognize the pandemic as what it was: an aggressive strain of influenza that would ultimately have a significant impact on the population.²⁵ As doctors bore witness to the press publishing rumors and hearsay, they recognized “that the popular press had cast the medical profession as relatively helpless during the epidemics and that the public had become impatient.”²⁶ Given such perceptions, the public once again turned to one another for support, rather than to authorities. Like the Broad Street outbreak of 1854, Britons living during the influenza pandemic of 1918 relied on one another for assistance, choosing to place trust in peers over elected officials or trained medical personnel.

²³ Harry Furniss, “Influenza,” *The Times*, July 15, 1918: 9.

²⁴ “Is Influenza Coming?” *Daily Mail*, June 6, 1918: 2.

²⁵ van Hartesveldt, 31.

²⁶ Loeb, 223.

With Parliament working to keep focus on war efforts and maintain public morale, communication regarding the flu remained in the hands of local areas. This meant that local government boards were responsible for communication on anything about the disease, but often issued late warnings. As one scholar has explained, these warnings often contradicted what was necessary for the prevention of disease and what was possible during war. For instance, “Crowds were to be avoided if possible, but in wartime conditions, reduced public transportation leading to jammed buses and trains and the need for maintaining wartime production meant that some sacrifice of health was expected.”²⁷ The lack of information being shared during the influenza pandemic hurt only the public who largely carried on with their wartime lives, until damage had already been done. The British public quickly noticed that the government kept news on influenza under wraps. As an anonymous author wrote in *The Times* in October 1918, only a few months after the article from the *Daily Mail* assuring the public that they had nothing to fear, “This epidemic is by no means the simple matter we have been led to suppose.”²⁸ Just a few weeks before the third wave of the pandemic, the public already sensed that their chosen officials hid the true, deadly nature of the disease from them. Parliament made efforts to keep information related to the pandemic quiet in order to “keep morale high” and support the war effort; however, their actions backfired as the public only became more concerned and less trusting in their elected officials.²⁹

Despite the demands the war effort required on the home front, many members of the public still questioned how and why the government was taking so long to respond to the disease. For instance, *The Times* published an anonymous letter in which an individual wrote, “There need be

²⁷ van Hartesveldt, 32.

²⁸ “A Serious Epidemic,” *The Times*, October 26, 1918: 7.

²⁹ “Coronavirus: How they tried to curb Spanish flu pandemic in 1918,” *BBC News*, 10 May 2020
<<https://www.bbc.com/news/in-pictures-52564371>>

no fear of causing inconvenience in this respect; inconvenience will be borne gladly enough if by that means the scourge can be stamped out, or at least brought under a greater measure of control.”³⁰ The use of the word inconvenience is striking. The public, who had been kept in the dark about Sir Newsholme’s July 1918 memo, and Parliament’s reaction to it, genuinely believed that the reasoning behind why the British government had not yet responded to the influenza crisis owed to the idea that they did not want to “inconvenience” Britain’s citizens. By writing this letter, the writer hoped to assure government officials that whatever orders put into place in an effort to curb the influenza would be followed and not at all be an inconvenience. At the time, the public remained unaware of the governmental decision to forgo a quarantine back in July 1918, in an effort to support the war and keep the public at work.

The lack of communication from those in authority led the public to weigh in with their own comments and suggestions on the disease and on what government should be doing to stop it. In the same anonymous note as mentioned above from *The Times*, the writer stated that “a most fatal type of septic pneumonia is sweeping away numbers of victims, both here, and we understand, in America, is penetrating to all sections of the community and to all places.”³¹ At a time when the British government stayed silent, the people spoke. The same individual wrote on “the insistent need for drastic...action” in responding to the pandemic – action that had yet to be taken by those deemed to be in charge.³² The decisions of Parliament to put an emphasis on the war effort over the health and safety of the general public, left British subjects enraged and frustrated over the lack of information and apparent concern.

³⁰ “A Serious Epidemic,” *The Times*, October 26, 1918: 7.

³¹ “A Serious Epidemic,” *The Times*, October 26, 1918: 7.

³² “A Serious Epidemic,” *The Times*, October 26, 1918: 7.

Part of the difficulty in responding to past pandemics, such as cholera, had resided in the fact that when cholera arrived on the shores of Great Britain in the 1830s the idea of a centralized health department had yet to come about. There existed no agency within the government at the time equipped to handle the influx of cases and coordinate a uniform treatment method, a trend that continued through the influenza epidemics in 1918. Although the 1848 Public Health Act, had granted some powers to local municipalities, it provided no funding and local governments remained limited in what they were able to do in their area to address disease concerns. As such, with the arrival of the influenza epidemic in 1918, the lack of a central board of health, with authority and powers far beyond what the 1848 Public Health Act granted, had become a subject of great anger in local newspapers. As one person wrote to the editor of *The Times*, “we have no Department charged with foreseeing and preventing epidemics...What the reasons are which delay the formation of a united public health service I do not know, but it is impossible to conceive a stronger argument for it than the present catastrophe.”³³ This feeling of catastrophe in the midst of a war, indicated to Parliament that something needed to be done so the public would trust government again. Finally, in response to the influenza pandemic, Parliament authorized the establishment of the Ministry of Health which became another step in the direction of a public health system that could adequately address concerns of potential and occurring epidemics.³⁴

The formation of the Ministry of Health at the end of the 1918 influenza pandemic signaled a change in British public health, as officials began to take on a greater role and sense of responsibility for British subjects. These new responsibilities included taking over “full responsibility for maternity and child welfare” as well as “the general surveillance of all matters

³³ “To the Editor of the Times,” *The Times*, October 26, 1918: 7.

³⁴ van Hartesveldt, 35.

relating to health.’’³⁵ However, despite its creation the Ministry of Health continued to lack knowledge about the disease and how to respond to a pandemic as even after the pandemic had run its course, the Ministry continued to preach the standard methods of care associated with any common cold: sleep, plenty of fluids, and aspirin.³⁶ The Ministry of Health would continue to exist for the next several decades and would eventually lead to the Department of Health and Social Care, as well as in 1948 to the formation of the National Health Service (NHS). The efforts made by the Ministry of Health and eventually the NHS would have a significant impact on future epidemics, especially the polio epidemics of the mid-twentieth century, as this new organization learned from their past mistakes and attempted to take stances that would protect the public in a more timely manner in the face of new outbreaks, as the next chapter will demonstrate.

Although the scale of the Spanish Flu epidemic was much larger than the cholera epidemics, there were some similarities between how the state and the medical establishment responded to both outbreaks. Similar to what had happened during the cholera epidemic, the government chose to minimize the seriousness of the disease and its presence, instead of addressing it head on, which not only increased fatalities, but also caused long-term effects. The public suffered because the British government once again failed to disseminate preventive information fast enough to contain the spread, and doctors were too ill-equipped to help. Working against one another, instead of with each other, the British government and medical community put the public at risk, as the needs of the home and battle front came into conflict. A quote from *The New York Times* published in November 1918, best summarized the overall attitude towards

³⁵ Paul R. Wildling, “The Genesis of the Ministry of Health,” *Public Administration* 45, no. 2 (1967): 164.

³⁶ *British Medical Journal* 2, (1918) 546.

World War I and the Spanish Flu: “war had taught the people to think in terms other than the individuals interest and safety, and death itself had become so familiar as to lose its grimness.”³⁷

Perhaps this is why, even after the mistakes made in managing cholera, the British government repeated their actions – death itself had lost its shocking touch.

³⁷ A Price, “After-war public health problems,” *The New York Times* November 5, 1918: 22.

CHAPTER 3: TREATING POLIO

Influenza primarily attacked a much younger demographic than previous pandemics, targeting the 20-40 age group, and yet that was not the youngest patient in this story of pandemics. A parent's worst nightmare is their child getting sick, and it becomes even more horrific when the parent is the one responsible for their child's pain. This nightmare became a reality for the Cockburn family in the midst of the polio epidemic. In the summer of 1956, having recently moved from Hempstead, England to Cork, Ireland with his family, Patrick Cockburn had his life forever changed by polio. In a memoir published in *The Independent* first in 1999, and then subsequently again in 2011, Patrick Cockburn reflected on the summer he contracted polio, and how it shaped his life in the decades following. Six at the time, Cockburn's parents "knew that we [Patrick and his nine-year-old brother Andrew] were vulnerable because polio...primarily affected children."¹ Despite this knowledge, and that there were "an abnormal number of polio cases in Cork in the summer of 1956" Cockburn's parents still brought their boys to Ireland, assuming that the isolation their home provided would be enough protection from polio.² Cockburn described how over the course of the summer, his father traveled to and from London several times for business, and on

¹ Patrick Cockburn, "Polio: The Deadly Summer of 1956," *The Independent*, October 23, 2011, <https://www.independent.co.uk/life-style/health-and-families/features/polio-deadly-summer-1956-2117253.html>.

² Cockburn, "Polio: The Deadly Summer of 1956."

one of those trips, contracted polio. However, as medical research has determined and as Cockburn explained, “For every person who gets polio in its crippling form, hundreds get the virus without serious effect. This immunizes [*sic*] them, but while they have the disease they can carry it to others” which is exactly what happened to Patrick, and then a few days later, to his brother Andrew.³ Patrick Cockburn spent three weeks at a fever hospital called St Finbarr’s, and then another six months at an orthopedic hospital called Gurranebraher, before returning home. Patrick would be ten before he could walk again.⁴ Patrick Cockburn’s story is just one of many of children who were inflicted with the disease, and then spent much of their life recovering from it – both mentally and physically. Due to mistakes made by medical and governmental officials, not only in responding to the disease, but also in their refusal to import the vaccine when it was launched in 1955 in the United States, British children continued to suffer. It was only in 1957 that the British government reluctantly agreed to the use of American vaccines.

Poliomyelitis did not behave like other diseases, which struck fear into the hearts of many people. A disease that targets the central nervous system, and often leaves patients with muscular difficulties polio “struck at children and maimed rather than killed” causing a sense of terror to exist in communities and parents across the country.⁵ Despite the low number of casualties from the disease, parents remained terrified of their child contracting the disease. Part of the reason for the fear was the lack of information about the effects of the disease. In fact, by the time the first major polio epidemic in Britain occurred in 1947, many only knew of the disease’s crippling effects from President Roosevelt and images of him in his wheelchair. Between 1940 to 1959

³ Cockburn, “Polio: The Deadly Summer of 1956.”

⁴ Cockburn, “Polio: The Deadly Summer of 1956.”

⁵ Cockburn, “Polio: The Deadly Summer of 1956.”

almost 60,000 cases of Acute Poliomyelitis were recorded in the United Kingdom.⁶ While this number is significantly less than cases reported during the cholera and influenza pandemics, 1947 saw a 7,000 case increase from the previous year. Prior to 1947 reported cases of polio had never gone above 1,000, and it would not be until 1959 when the number of cases reported in a single year would drop below 1,000 again. This sharp and sudden increase in cases explains the fear felt by many Britons. When 1947 saw the spike in reported cases, fear spiked as well, over the unknown and uncertainty of what was to come.

Unlike cholera, polio wormed its way into the homes of the middle class, rather than that of the poor.⁷ Crowded and unsanitary living conditions of the mid-nineteenth century had made it easy for cholera to spread, wiping out entire families and neighborhoods in the process. However, in the time since cholera, sanitary conditions improved, but poorer individuals still lived in crowded housing in close proximity to one another. Paradoxically, it was the lack of close proximity which doctors believed was the reason why polio struck more of the population with greater financial resources. For those living in close proximity to one another, herd immunity developed easily, but for middle and upper class families who could afford to leave cities for an escape in the country, herd immunity did not have a chance to develop. As a result, those escaping to the country faced a greater danger than that posed in cities – a lack of protection from the disease infecting thousands of children a year. The idea of sending children to the countryside for safety had a longer history, as throughout the Second World War, parents had sent their children away

⁶ “Notifiable Diseases: annual totals from 1912 to 1981,”
<https://www.gov.uk/government/publications/notifiable-diseases-historic-annual-totals>

⁷ Christopher J. Rutt, “The Middle-class Plague: Epidemic Polio and the Canadian State, 1936-37,”
Canadian Bulletin of Medical History 13, no.2 (1996): 278.

from cities to protect them from bombings.⁸ Seeing the countryside as a place of safety, and not realizing the danger in a lack of herd immunity, parents continued to send their children to the countryside during the polio epidemic as well. The end of the summer months each year following the original epidemic in 1947 brought a new wave of fear even as doctors, and government officials assured parents that their children would be safe in schools as polio cases typically spiked during the summer, and that closure of schools remained an unnecessary measure. As explained by Cockburn, “The local medical establishment believed, rightly, that the epidemic would ebb as the pool of potential victims, who had no immunity to the disease, dried up.”⁹

Following polio epidemics of the early twentieth century, researchers expanded efforts to discover possible treatments and cure for the disease. The lack of an effective treatment method led to the use of methods such as hydrotherapy and electrotherapy. Many of these treatment methods, like the use of radium water are considered dangerous by modern standards, as they could have more harmful effects on the body. However, following innovations made by John Haven Emerson, an American biomedical inventor, treatment methods improved.¹⁰ Emerson would eventually make significant improvements to the iron lung, which would be used frequently on children during the polio epidemics of the 1940s and 1950s. The iron lung was first used in

⁸ Carlton Jackson, *Who Will Take Our Children?: The British Evacuation Program of World War II*, Rev. ed. (London: McFarland & Company, 2008), 16-18.

⁹ Cockburn, “Polio: The Deadly Summer of 1956.”

¹⁰ John Haven Emerson, *A Monograph on the Epidemic of Poliomyelitis (Infantile Paralysis) in New York City in 1916* (New York City: The Direction of the Department of Health of New York City, 1917), 244-264.

Boston's Children Hospital in 1928, and acted as a type of ventilator helping the patient to breathe by mimicking breathing movements.¹¹



Figure 1: Image of patients in the Iron Lung breathing machine and medical personnel assisting the patients, as only the head remains outside of the machine. Source: Martin Hutchinson, "My life with an iron lung," BBC News, October 14, 2003, <http://news.bbc.co.uk/2/hi/health/3182096.stm>.

Published in newspapers and medical journals, images of children on these iron lungs, such as the one seen above in Figure 1, spurred a desperate need for a polio vaccine to be developed. As polio cases surged following World War II, medical researchers ramped up their efforts to develop a polio vaccine.

Early in the 1947 epidemic, there was also a desperate need for qualified medical help. Joseph Ellison, who worked at Grove Hospital during the summer of 1947 wrote to the editor of *The Times* urging for "persons able and willing" to serve as nurses. Recognizing the key role nurses played in hospitals Ellison wrote, "Without nurses what can the doctors do? What can the helpless patients do?"¹² This shortage of trained medical professionals provided a sense of déjà vu, as during the Spanish Flu epidemic, there had also been a shortage of doctors and nurses. With polio,

¹¹ J Gorham, "A medical triumph: the iron lung," *Respiratory Therapy* 9, no. 1 (1979): 71.

¹² Joseph Ellison, "Infantile Paralysis," *The Times* August 9, 1947: 5.

the lack of medical staff exacerbated matters as these health care professionals had a duty not only to their young patients, but to the worried parents as well. In having to take the time to respond to parents' frantic questions, it left the already short staff in hospitals with even less time to treat patients.¹³

A major reason why parents remained so worried was because there was little knowledge about how the disease spread, or where danger lay. Even as Parliament and the Ministry of Health made efforts to educate the nation such as by publishing reports detailing potential dangers and hotspots for infantile paralysis, they were undermined by members of the public publishing their own thoughts and feelings about the disease in local papers (much like they had done during the Spanish Flu pandemic). In March 1951, *The Times* published an article detailing a report released by the Ministry of Health, mentioning the need for the public to take precaution while visiting public swimming pools. As quoted in the paper:

At times of unusual incidence of infantile paralysis it may be said, generally speaking, that the balance of evidence is in favour of keeping open properly controlled public baths and swimming-pools. While no precautions can entirely remove all the opportunities for infection by the virus of this disease, special attention should be given to the prevention of overcrowding both in and out of the water.¹⁴

In 1951, even as polio cases surged, Parliament and the Ministry of Health remained reluctant to issue any strict orders that would go against the wave of upper to middle class public opinion, who, as indicated by the above quotation, believed their children would remain safe away from cities. There existed a need to appease the public, despite the cost it would continue to have on children as they continued to contract the disease.

¹³ Cockburn, "Polio: The Deadly Summer of 1956."

¹⁴ Ministry of Health report on purification of the water of swimming-baths. Quoted in "Purity of Water in Swimming-Baths," *The Times* March 9, 1951: 3.

Even as *The Times* shared this government report, the paper also published in the same issue an anonymous letter titled “Dangers of the Swimming Bath,” which disregarded statements made by officials earlier. The letter opened with, “Dangers directly attributable to the water in well managed swimming baths have probably been exaggerated.”¹⁵ The letter continued on to express that “recurrent anxiety felt each summer” did not need to exist, as the reports of polio spreading through contaminated water did not occur in “well managed swimming baths.”¹⁶ Once again, the class separation between those who could afford nicer pools and those who could not, was evident. This author subtly expressed the misconception that polio is less likely to appear in wealthier areas, as the children in these areas are apparently “cleaner.” However, despite this author’s desire to calm any nerves parents might have had over public pools, anxiety still very much remained present, as parents sent their children to the countryside for the summer, in the hopes that cleaner air would keep them safe.

In 1955, a symbol of hope emerged for the thousands of Britons affected by the disease when American medical researcher and virologist Jonas Salk released his newly developed polio vaccine. Salk received his medical degree from the New York University School of Medicine, before beginning a fellowship at the University of Michigan, with the intention of developing an influenza vaccine. In 1947, Salk “began to develop the techniques that would lead to a vaccine to wipe out the most frightening scourge of the time: paralytic poliomyelitis.”¹⁷ Like John Snow and cholera, the major breakthrough in combatting polio came from Salk going against the grain. At the time, scientific opinion believed that any vaccine containing a “killed” or deactivated virus,

¹⁵ “Dangers of the Swimming Bath,” *The Times* March 9, 1951: 7.

¹⁶ “Dangers of the Swimming Bath,” *The Times* March 9, 1951: 7.

¹⁷ Salk Institute for Biological Studies, “History of Salk: About Jonas Salk,” Accessed March 25, 2021, <https://www.salk.edu/about/history-of-salk/jonas-salk/>.

could not immunize the patient without infecting them. Salk believed the opposite, and after testing the vaccine on a group of volunteers who never contracted polio, and in which no negative reactions occurred but antibodies still developed, Salk recognized the success of his vaccine.¹⁸ This success meant the average number of polio cases in the United States, and eventually the United Kingdom could significantly drop, and as “Salk never patented the vaccine...it [could] be distributed as widely as possible.”¹⁹ Contrary to Salk’s efforts, those working on the development of a vaccine in Britain moved much slower, as according to scholars, “Virological research on polio and polio vaccines had been slow and weak during the 1940s and the beginning of the 1950s.”²⁰

When the Salk vaccine became available in 1955, the United Kingdom began plans to increase production of the vaccine rapidly. However, this met with some resistance on part of the British companies, Glaxo and Burroughs Wellcome, who were also working to create a vaccine. The British government had licensed only these two companies to produce a polio vaccine, and these companies did not want the use of an American made vaccine to eliminate potential profits that could be had from the patent of either of their vaccines.²¹ Both companies experienced significant delays in production, as “manufacturers found it difficult to establish a reliable supply chain,” and “it became clear that Britain and British pharmaceutical companies could not produce

¹⁸ Salk Institute for Biological Studies, “History of Salk: About Jonas Salk,” Accessed March 25, 2021, <https://www.salk.edu/about/history-of-salk/jonas-salk/>.

¹⁹ Salk Institute for Biological Studies, “History of Salk: About Jonas Salk,” Accessed March 25, 2021, <https://www.salk.edu/about/history-of-salk/jonas-salk/>.

²⁰ Ulrike Lindner and Stuart S. Blume, “Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965,” *Medical History* 50, (2006): 435.

²¹ Lindner and Blume, 435.

the vaccine quickly enough.”²² In addition to this delay, a number of Parliament members, who thought the science behind Salk’s vaccine was not concrete enough, held up the importation of the vaccine.²³ As the science of the Salk vaccine varied greatly from previous vaccines, such as that of smallpox, hesitation existed not only over how the vaccine would respond to importation, but also over the alleged superiority of Britain’s more extensive testing procedures. Despite this hesitation, Parliament eventually recognized the greater public health risk of not vaccinating against polio, and started plans for vaccinations very soon after reports of the success of the Salk vaccine in the United States.

However, these plans were soon halted after the infamous Cutter Laboratories incident in April 1955.²⁴ Shortly, after the authorization of Salk’s vaccine in the United States, a technical issue in Cutter Labs caused a batch of vaccines to carry the active polio virus. As a result, 120,000 doses containing live polio were distributed, and over 40,000 children contracted the disease.²⁵ The disaster brought production to a rearing halt. Resulting in the deaths of five children, the vaccine which was supposed to signal the end to the polio epidemics now only raised more questions and concerns over whether the vaccine was in, fact, safe. Following an investigation, it was determined that the error was not a result of the vaccine itself, but rather a mistake made on the part of Cutter Laboratories in their manufacturing process. The incident was enough to confirm

²² Gareth Millward, “‘A Matter of Commonsense’: the Coventry poliomyelitis epidemic 1957 and the British public,” *Contemporary British History* 31, no. 3 (2017): 389.

²³ “Medical Notes in Parliament,” *The British Medical Journal* 1, no.4967 (1956): 637.

²⁴ “Medical Notes in Parliament,” *The British Medical Journal* 1, no.4967 (1956): 637.

²⁵ Michael E. Ruane, “The tainted polio vaccine that sickened and fatally paralyzed children in 1955,” *The Washington Post*, April 14, 2020, <https://www.washingtonpost.com/history/2020/04/14/cutter-polio-vaccine-paralyzed-children-coronavirus/>.

the fears of those in Parliament who had been hesitant about the Salk vaccine to begin with.²⁶ Acting on these fears, in May 1955, Parliament almost immediately blocked the importation of Salk's vaccine to Britain.

Controversy over the importation of the vaccine played out in British newspapers, much like how disagreements over cholera treatments had animated newspapers a century earlier. Opinions sections of newspapers such as *The Times* were filled with articles from various medical professionals arguing over "supposed" facts concerning the vaccine. One such doctor, Michael Stoker, wrote to *The Times* criticizing the British government for refusing to import Salk's vaccine. Stoker argued that the government was refusing to import the vaccine out of a sense of "national pride." In using the phrase, "national pride," Stoker attempted to coerce the government into action by publicly shaming them in a national newspaper.²⁷ In August 1957, Wilson Smith, a doctor at the University College Hospital Medical School in London also wrote a letter to *The Times*, refuting statements made by Michael Stoker. Smith simultaneously shamed both the paper as well as his peer for publishing false statements about the vaccine. Smith wrote, "In the present state of public anxiety from the shortage of British poliomyelitis vaccine, it is important that expressions of opinion by experts should contain no errors on matters of fact."²⁸ Smith recognized that as a professional in the medical community, he and his peers had a duty to ease the anxiety of patients and report what they knew to be fact. Unlike the doctors of the cholera epidemics who had very little information about the disease or how it spread, the British medical community during the

²⁶ Millward, 388.; Lindner and Blume, 429.

²⁷ Michael Stoker, "Poliomyelitis Vaccine," *The Times* August 20, 1957: 9.

²⁸ Wilson Smith, "Facts About The Salk Vaccine," *The Times* August 28, 1957: 9.

polio epidemic had the research and facts to support their arguments, which as Smith expressed in his letter should not be falsified – especially in public arena. Taking it one step further to shame Stoker and *The Times* for publishing Stoker's letter, Smith finished his letter with:

There are cogent arguments both for and against the importation of foreign vaccine, and the present dilemma imposes a heavy burden on those responsible for making decisions. The burden is not likely to be made easier either by misleading statements or by innuendoes that factors of national pride or shortage of dollars may have had an influence.²⁹

The intention of Smith's letter seemed to be to protect the public and provide them with as many facts as possible. In doing so, the medical community would place the power to make decisions in the hands of a now educated public. By sharing their knowledge, Smith and his peers in the medical field were attempting to give the public a reason to trust them; they aimed to spread information and answer questions so that parents could make the best possible decision for their child, at a time when the British government remained quiet on the subject.

In a similar manner to the members of the medical community, the public also took to the newspapers to respond to the government's and the medical community's handling of the vaccine issue. Anger specifically targeting the medical community came from the public in December 1957, as Max Beloff an academic at All Souls College at Oxford, speculated that, "The doctors have lost the confidence of the parents."³⁰ Once again, the medical community lost the trust of those they intended to serve. Limited public knowledge on the science of the vaccine and the hesitation by the medical community as well as Parliament led to frustration as parents stayed in the dark. Knowing a vaccine existed and proved successful in the United States, but had not been fully distributed in Britain led parents to publicly criticize the government. As Beloff wrote, "Is it

²⁹ Wilson Smith, "Facts About The Salk Vaccine," *The Times* August 28, 1957: 9.

³⁰ Max Beloff, "Poliomyelitis Vaccine," *The Times* December 17, 1957: 9.

too late for Parliament to pull itself out of its preoccupation with trivialities, and to force the Government, even at this late hour, to begin an importation of the vaccine in large enough quantities to inoculate everyone in this country under the age of 21?”³¹ Beloff’s comment echoed a popular British sentiment of the time: that Parliament appeared to be ignoring the polio crisis, despite the diseases devastating effects.

As the British government and Medical Research Council blocked all importations of any foreign-made vaccine, including vaccines from Denmark and France as well as the American-made Salk vaccine, the public took to the press to share their frustrations. Multiple times towns with ongoing epidemics, such as Coventry in the summer of 1957, were offered the chance to use foreign vaccines instead of waiting for the British one, but the Ministry of Health denied this chance. Quoted in *The Times*, one parent, a B.C. Gadney attacked the Minister of Health, saying “Cannot the Minister tells us how long we must wait for protection by British vaccine, and why meanwhile he prefers no protection to protection by imported vaccine?”³² While the British government made the decision to block foreign vaccinations in an effort to protect the public, especially after the Cutter incident, their choice to keep Britain’s youth unvaccinated, left parents enraged. Meanwhile, other individuals responded in favor of the actions taken by the government. Another parent responded in *The Times* to Gadney’s Letter to the Editor, and wrote “I feel that it would be more desirable to try to dispel the present unnecessary horror and fear about poliomyelitis by propaganda rather than by importing a vaccine against medical advice.”³³ These two quotes from both perspectives help explain the feelings in Britain as poliomyelitis appeared all over the

³¹ Max Beloff, “Poliomyelitis Vaccine,” *The Times* December 17, 1957: 9.

³² B. C. Gadney, “Importing Vaccine,” *The Times* July 20, 1957: 7.

³³ Bryan Askew, “Importing Vaccine,” *The Times* August 1, 1957: 9.

country. Some vented their frustrations with the lack of protection against the disease in a public method, while others chose to see the government's hesitation as the right move.

Members of the public, and even individuals in the medical community, also criticized the healthcare system for its failure in responding to the polio epidemic and sufficiently producing the vaccine. In 1948, the Labour government had created the National Health Service (NHS) designed to be a publicly-funded healthcare system that would grant all British citizens free healthcare when necessary. Funded largely by general taxation, the NHS has become the second largest single-payer healthcare system in the world. Following critiques of the existing British health system just before the outbreak of World War II, made in A. J. Cronin's *The Citadel*, the newly elected Labour Party started the formation of the NHS. Prior to the NHS, healthcare in Britain was a patchwork of private care, local authorities, and charity efforts. Responding to this, Labour's Minister of Health Aneurin Bevan recognized the need for a healthcare system where responsibility was on national authorities, rather than the centuries old practice of local officials addressing public health. Bevan's idea would eventually lead to the National Health Service Act 1946, going into effect in July 1948.

In the midst of the polio epidemics, the NHS was still very much a new organization and struggled to respond to the demands on the system. Seeing the NHS as a "privilege," the public expressed great frustration over how despite the existence of the NHS, polio still ran rampage over the country. J. Trueta, an employee at the Nuffield Orthopaedic Center in Oxford, called attention to the failings of the NHS, writing in *The Times*:

When in countries like the United States large hospitals for paralytic poliomyelitis are becoming empty, ours are still fully occupied with the treatment of the ravages of the disease; surely this is a high price to pay for the privilege of having one of

the most comprehensive national health services in the world? ³⁴

Even in December 1957, more than a decade after the founding of the NHS, the organization still struggled to address fully the strains polio put on British hospitals. Coupled with the anger over Parliament's reluctance to import the Salk vaccine, Trueta expressed the sentiment that perhaps the formulation of the NHS might have been unnecessary, if nations such as the United States who did not have a public healthcare system, addressed the polio epidemic more successfully.

In 1957, Coventry experienced an epidemic that would ultimately reshape the British government's perspective on vaccinations and importation of foreign-made vaccines. At the time of this epidemic many children had still not been vaccinated, and as the outbreak began the Ministry of Health and the Medical Research Council remained firm on the stance of no vaccine importation. However, with British companies Glaxo and Burroughs Wellcome experiencing significant supply chain delays, many children in Coventry who were supposed to be vaccinated at the time of the epidemic, still had not been. However, as the government watched the anger of Coventry parents grow, and more children fall sick, the Medical Research Council finally revised its stance on vaccine importation and recommended that vaccines be imported in 1958, on the condition that they would be subject to extra trials in Britain.³⁵ This decision had monumental impacts, as it allowed for the Salk vaccine to be imported into Britain. While the government did conduct extra safety trials (beyond what had been done in the United States already), this decision would allow for the vaccination of even more children in the coming years.

³⁴ J. Trueta, "Poliomyelitis Vaccine," *The Times* December 24, 1957: 7.

³⁵ Lindner and Blume, 436.

The Ministry of Health, having been founded following the inadequate responses to the influenza pandemic of 1918, depicted vaccination as a “right and a duty” for parents to protect their children and communities, as they recognized the public’s frustrations with the government’s failure to act.³⁶ The transformation of schools, church areas, and other public places made vaccines readily available, and coupled with the efforts made by the Ministry of Health, the vaccination campaigns of the late 1950s proved successful.³⁷ In order to encourage the public to get vaccinated, the government also launched an extensive public awareness campaign. Released in 1959, these advertisements, seen in Figure 2 urged anyone under the age of forty to be vaccinated against polio.

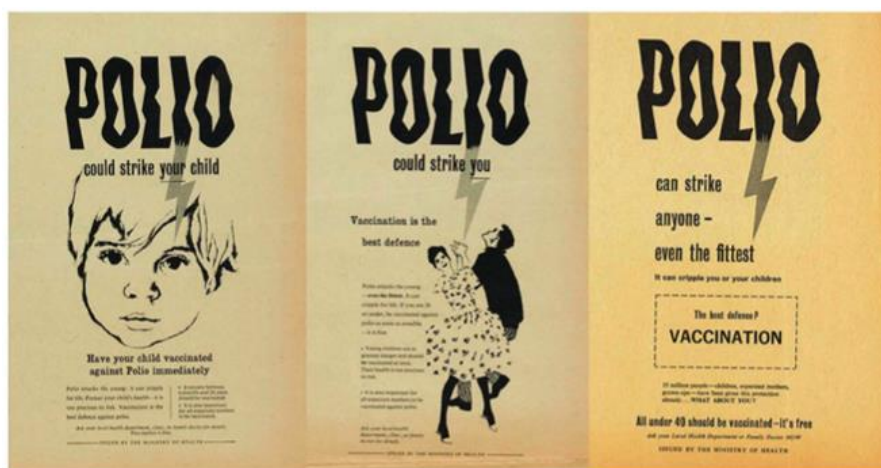


Figure 2: Three "Polio could strike" advertisements aimed at different population groups that encouraged the vaccine effort. Dated left to right: 1959, 1959, 1960. Source: Hannah J. Elizabeth, Gareth Millward, and Alex Mold, ““Injections-While-You-Dance’: Press Advertisement and Poster Promotion of the Polio Vaccine to British Publics, 1956-1962,” *Cultural and Social History* 16, no. 3 (2019): 316.

While the British government had originally been reluctant to authorize the use of the polio vaccine, not only due to not fully trusting the science behind it, but also because they worried it would damage the reputation of other successful vaccines, such as smallpox, should Salk’s vaccine

³⁶ Hannah J. Elizabeth, Gareth Millward, and Alex Mold, ““Injections-While-You-Dance’: Press Advertisement and Poster Promotion of the Polio Vaccine to British Publics, 1956-1962,” *Cultural and Social History* 16, no. 3 (2019): 323, 331.

³⁷ Elizabeth, Millward, and Mold, 331.

fail. However, by 1959, when these campaigns began, Salk's vaccine had been in use in the United States for four years with extreme success, and so in recognizing that, the British government used these advertisements as a propaganda of sorts. Seen in Figure 2, they not only urged people to get vaccinated, but also allowed the British government to communicate a message of reassurance to the public: that the vaccine could be trusted to keep themselves and their children safe. With polio epidemics rising rapidly in the years prior to the Salk vaccine, and parents sending their children to the countryside in an attempt to shield them, the vaccine should have been a welcome sigh of relief. However, years of distrust in the government, built up from responses to previous pandemics, as well as in the medical community, left the British public hesitant to easily accept anything the authorities told them, especially when it came to disease.

The public sentiment of distrust and reluctance became a motivating factor in advertisements such as those depicted in Figure 2. In order to ensure successful vaccination of the British population, the Ministry of Health began vaccination campaigns. At a time when many still fled to the country, thinking it would be safer, despite the stories proved polio transmitted across the British Isles, the vaccination campaigns had to be successful in order to stop the spread. In an effort to protect the population, the British government used these advertisements, found in newspapers across the country, to change the minds of skeptical readers. Appearing in British newspapers, these three advertisements served as encouragement for the polio vaccination effort in the United Kingdom.³⁸ The phrase "could strike" seen in all three, sparked fear in the hearts of parents of young children across the country. Even with the unknowns and worries surrounding polio and the vaccine, by both the public and officials in places of power like Parliament and the

³⁸ Elizabeth, Millward, and Mold, 316.

Ministry of Health, vaccination turnout grew quickly over time as a sense of confidence in the science grew – a feat never thought possible during the times of cholera, or influenza.

These vaccination campaigns proved to be extremely successful as over 15 million people had been vaccinated by 1960. While many British children were vaccinated using Jonas Salk's vaccine, a few years after Salk's success, Albert Sabin developed an oral vaccination for polio. After his trials were conducted in Russia and parts of Europe, the British government allowed for the use of Sabin's vaccine in the country, with the caveat that the "Sabin vaccine should be used only in case of epidemics."³⁹ This decision would later be revised to give parents the choice of either Salk's vaccine or Sabin's.

When cholera first occurred in the United Kingdom, no authority was prepared to respond. Yet, by 1960, not only had the National Health Service been created, but mass vaccination campaigns had been rolled out in a coordinated effort to address the polio epidemics. Affecting primarily children, polio remains a shocking epidemic not for its casualties, but what it does to survivors. A disease that targets the central nervous system, and often leaves patients with muscular difficulties, polio lefts parents in the 1940s and 1950s struggling to make sense of how best to protect their children. In these desperate circumstances, they turned to doctors and elected officials for help. However, despite the pleas for the British government to respond, authorities hesitated to import the Salk vaccine when it was released in 1955, on the basis that the science was not strong enough. It would take a series of epidemics in the summer of 1957, for the Medical Research Council to admit their mistake in not importing the vaccine sooner, and recommending that the British government import Salk's vaccine in 1958. It is worth noting that the NHS existed throughout the polio epidemics, and while it was early years, its mere presence originally added to

³⁹ Lindner and Blume, 442.

public anger when the government remained firm on the stance of no foreign vaccine importation. Yet, its creation also demonstrates how far British society had come since the first cholera outbreaks in 1831.

HOW THINGS HAVE CHANGED

Throughout this thesis, certain themes have re-appeared in each chapter, suggesting that while a disease may be unique and produce individual reactions particular to that pandemic, there is still a sense of continuity between pandemics. During all three, there existed a sense of distrust in both the governments and the medical authorities. In cholera, this distrust was caused by the Anatomy Act and a lack of interest by Parliament, until wealthy members of society fell ill. While John Snow would ultimately work to rebuild this trust through the use of scientific research and publication of his findings from the Broad Street outbreak on how cholera spread, his efforts would ultimately prove insufficient to win back public trust. When the deadly influenza pandemic occurred in 1918, the distrust from cholera and the previous century still existed. This distrust was made worse by the British government's decision to keep information on the disease under wraps. This secrecy, combined with limited medical resources, left the public confused as to why no efforts had been taken by the government. The theme of distrust and reluctance on the government's end to respond to a pandemic continued through the polio epidemic. Polio existed before the first major epidemic in Britain in 1947; however, when epidemics occurred throughout the country each summer until the early 1960s, conflicting information about the disease left parents afraid and confused. The government made things worse when plans to import the foreign-made Jonas Salk vaccine were halted, and despite the Medical Research Council providing an

explanation as to why importing the American vaccine was worse than waiting for a British made one, the public remained resentful and frustrated at the lack of communication from the government as well as at the government's mishandling of the vaccine.

In addition to the distrust in authority, each pandemic revealed an attitude of "ignorance is bliss." In the nineteenth century, the British medical society and government refused to recognize cholera as the deadly disease it still is today. Instead, they chose to go with an easy answer: since the working class remained the only segment of society who fell ill, cholera must have spread as a result of the immoral behaviors and close, unsanitary conditions they lived in. During the cholera epidemic, this attitude of ignoring the problem was only abandoned once more wealthy citizens started to die from the disease, and the belief that the immoral behaviors of the working class no longer held up. With Spanish Flu, information was available, but out of fear that exposing it would be detrimental to the war effort, Parliament brushed any news of the influenza pandemic under the rug until it was too late. Sir Arthur Newsholme's July 1918 memorandum that detailed the existence of the pandemic in Britain, as well as preventive measures that could have been taken, were ignored by Parliament and the public remained unaware of them. Like influenza, polio existed prior to the time period I have focused on, yet knowledge of the disease remained fairly limited, and as even more information came out, specifically regarding the effectiveness of the vaccine, the British government elected to ignore the easy solution of importing Jonas Salk's vaccine. Instead they chose to wait, intending to vaccinate British children using one of the vaccines made from the two British companies working on its production, until it became too late and epidemics struck again in the summer of 1956 and 1957 – which as members of the public pointed out, could have been avoided had the Salk vaccine been imported.

Yet despite all that remained unchanged in the human response to these three pandemics, all of them resulted in significant changes in how British society viewed public health, as well as how people saw their responsibility towards one another in the face of a public health crisis. During the cholera epidemics of 1831-1866, social reformer Edwin Chadwick succeeded in passing legislation in the form of the 1848 Public Health Act that worked to improve the sanitary conditions of inner cities and lower income areas that were typically hit hardest by cholera. By 1918, however, the British government realized that a central agency was needed to respond to matters of public health in any future crisis, leading to the establishment of the Ministry of Health. Then, following another world war, the National Health Service was created in 1948. Though in its early years during the polio epidemics, the creation of the NHS, coupled with the work of the Ministry of Health rolled out vaccination campaigns that portrayed vaccination as a duty that citizens had to one another.

This sense of continuity still exists in the COVID-19 pandemic with experiences from previous pandemics holding striking similarities to today. For example, a quotation describing the 1918 influenza crisis reads as though from today: “Hospitals were overwhelmed and even medical students were drafted in to help. Doctors and nurses worked to breaking point, although there was little they could do as there were no treatments for the flu and no antibiotics to treat the pneumonia.”¹ Much like with the early days of the coronavirus pandemic, when medical students graduated early in order to aide in the treatment of patients, the medical community of the three pandemics included in this work were at a significant disadvantage when it came to battling

¹ “The Spanish Flu Pandemic of 1918,” Historic UK <https://www.historic-uk.com/HistoryUK/HistoryofBritain/The-Spanish-Flu-pandemic-of-1918/#:~:text=During%20the%20pandemic%20of%201918,of%20those%20who%20were%20infected>

disease. Moreover, the uncertainty that surrounded the polio vaccinations in the late 1950s and early 1960s certainly has echoes to today's climate and the uncertainty that is surrounding the COVID-19 vaccines.

This thesis began with the following quote from Mark Honigsbaum a medical historian at City, University of London, "Epidemics all follow this similar arc where people deny or dismiss the threat until it becomes impossible to ignore any more."² In studying the three pandemics covered in this thesis, Honigsbaum's quotation holds true. Responses to a disease only occurs when it impacts us as individuals. Singled out not only for the disease itself, but how it interacted with the major players (doctors and nurses, government officials, those simply trying to go about their daily lives), the three pandemics included in this work had lasting effects on British life. In each case, reactions to the epidemic remained very much the same: hesitation and reluctance to admit what was happening which led to distrust in those meant to be in charge. However, despite those reactions, each of the three pandemics studied here has had monumental impacts on public health in the United Kingdom. These impacts would not have been brought about without the presence of these disease. If cholera, influenza, and polio all resulted in the changes to the British public healthcare system, then perhaps COVID-19 will have a similar impact as those that came before it.

This work originated in March 2020, a time when coronavirus had only just begun to spread like wildfire, with little known about the disease, and fear ran rampant across nations, with governments struggling to respond. To the modern citizen, the COVID-19 pandemic certainly seemed to change forever the definition of "normal." This work began in a personal effort to

² Hannah Devlin, "Four lessons the Spanish flu can teach us about coronavirus," The Guardian, March 3, 2020, <https://www.theguardian.com/world/2020/mar/03/four-lessons-the-spanish-flu-can-teach-us-about-coronavirus>

understand the human reaction to the coronavirus pandemic. The presence of social media and the twenty four hour news cycle made it impossible to pretend that the COVID-19 pandemic was not happening, especially as schools closed, and hospitals were overwhelmed. In living in this “new normal” the choice to study pandemics was one out of necessity, as I not only attempted to understand why individuals initially responded to the pandemic in the way they did, but it also provided a sense of escape, because in looking at these three pandemics, there is a sense of hope that things will eventually get better and that this pandemic will not last forever.

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