

Fall 2021

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Major U.S. Pandemics a Century Apart:

Preparedness and the Socioeconomic Impact of 1918 Influenza and 2020 COVID-19

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BIS 437: Senior Project

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December 03, 2021

Abstract

Examining the U.S. public health response during the 1918 Influenza and 2020 COVID-19 pandemics is instructive to charting a better course of action for future outbreaks. To know where we are going, it often helps to look at where we have been and then take strategic and corrective action. This is especially true when considering structural remedies for poor and minority populations who have been disproportionately affected by health crises, both historically and in the present era, due to a variety of social and economic health determinants. Preventable deaths in nursing homes, unilateral closures of schools, businesses, and churches, and determinants that predict poor health as well as the advancements of telemedicine, experimental drug therapies, and new mRNA vaccines are major themes that are significant in highlighting the socioeconomic impact of major pandemics in the United States. A thorough examination will aid in proposing possible policy prescriptions for future pandemic preparedness.

The response of United States health officials to pandemics and the resulting outcomes may now be viewed from the lens of both the 1918 Influenza Pandemic and the 2020 COVID-19 Pandemic—each a century apart—and notable for their far-reaching catastrophic consequences in comparison to other severe incidents of disease in U.S. history. In examining the two pandemics from a public health standpoint, a path emerges to understand and mitigate the negative social and economic impact of public health measures, address the disparate impact on impoverished and minority populations, and craft solutions to better prepare for the next health crisis. The benefits of hindsight as well as current trends in healthcare technology and innovation can lead us to a better place when it comes to not only lessening the prevalence of infectious disease and corresponding mortality rates, but also in crafting policy in a way that swiftly and effectively responds to the next pandemic without putting the most vulnerable amongst us at a drastic social and economic disadvantage. A look at the “bureaucratic realities of influenza” that preceded COVID-19 and “the excessive confidence of the Government medical bureaucracy” during both pandemics will provide a detailed picture regarding how far American society has come in the fight against rampant disease and how far it still must go in terms of socioeconomic concerns and in correcting past failures (Brown, 2018, p. 74; 147). Much can be learned from examining the two major pandemics, if only to chart a better course for the American way of life.

Although Americans have suffered through many epidemics over the course of decades, including smallpox, yellow fever, cholera, typhoid fever, polio, HIV/AIDS, and various strains of influenza, 1918 Influenza (also known in the past as ‘Spanish influenza’ or “purple death”) and 2020 COVID-19 now stand unequaled in their devastating effects as the two major pandemics in United States history (Crosby, 2003, p264; Forbes, 2021). The late Alfred Crosby (2003), an author

and historian who also served as a professor at the University of Texas at Austin, Harvard University, and the University of Helsinki, theorized that the ‘Spanish flu’ was named as such, “not because it originated there,” but because censorship during a time of war did not exist as it did in other countries, so the perception was that the mass affliction was occurring there to a much larger extent as reports filtered through news agencies worldwide (p.31). Newspapers in the U.S. were prohibited from publishing information on the mass casualties from influenza, while Spain reported the truth as a neutral party, thus the moniker ‘Spanish flu’ was erroneously attributed (Nickol & Kindrachuk, 2019). Similarly in the 1889-1891 outbreak in Europe, influenza was referred to as the ‘Russian flu’ or ‘Asiatic flu.’ Taking into consideration the continued research into the mysteries of origin, pandemics are more commonly referred to by year instead of geographic location in today’s vernacular (*i.e.*, ‘1918 Influenza’ or ‘2020 COVID-19’). Viruses have “no respect for borders” and the global reach of both major pandemics is now better understood (Brown, 2018, p. 182).

1918 Influenza and 2020 COVID-19 are unrivaled by lesser pandemics experienced in the U.S. such as the 1880-1890, 1957-1958, 1968-1969, 2005-2006, and 2009-2010 influenza pandemics as well as the 2002-2003 and 2012 coronavirus pandemics. There is controversy surrounding how epidemics and pandemics are defined, which is seen in historical accounts of the 1968 and 2009 avian and swine flu outbreaks which do not fit the “apocalyptic definition” as neither matched in severity, but were exaggerated by media outlets nonetheless (Brown, 2018, p. 79). According to Dr. Jeremy Brown (2018), author of *Influenza: The Hundred-Year Hunt to Cure the 1918 Spanish Flu Pandemic*, “the most useful definition we have is that an *epidemic* is a severe local outbreak, while a *pandemic* is a global outbreak that makes people very sick, and spreads

rapidly from a point of origin” (p. 32). The spread of 1918 Influenza was so rapid, in fact, that “average life expectancy fell from fifty-one to thirty-nine years” (Brown, 2018, p. 60). This contrasts with data from the National Vital Statistics System (NVCSS) produced by the National Center for Health Statistics in 2020 which indicates that during the COVID-19 pandemic “life expectancy at birth for the total U.S. population was 77.3 years, declining by 1.5 years from 78.8 in 2019” (Arias et al., 2021, p.2). The difference of 10.5 years in decreasing life expectancy between the two eras is one data point that illuminates the greater severity of 1918 Influenza in comparison to 2020 COVID-19.

Both the 1918 and 2020 pandemics rival each other in their rapid expansion throughout the world and share the distinguishing features of respiratory contagions, though with notable differences in affected populations. Examining the two gives public health officials insight on historical and current methods of responding to a public health disaster, which will provide a starting point when considering ways to correct the inequities of the past. This is important work which must occur to prevent poor health outcomes and resulting sequela during future pandemics or other severe recrudescence of disease. Now that two major pandemics have afflicted American society in two distinctly different eras and with enormous social and economic costs, citizens from a variety of backgrounds have a unique opportunity to address pandemic preparedness, especially when it comes to “collaboration, partnerships, outsourcing, and ultimately cooperation among actors and agencies in the public, private, and non-profit sectors” (Rauhaus, 2020, p. 669).

There are, however, competing interests as well as conflicts of interest when “health care and business are fused together” and where “profit is as much of an incentive as is the public good” (Brown, 2018, p. 166-170). One possible path forward may be found in fusing principles of market

justice and social justice in a way (sans bureaucratic means) that will address pandemic preparedness and stamp out perverse incentives, “so that we can focus on the bugs and not on the budget” (Brown, 2018, p. 172). A caveat to this suggestion is that Americans must also consider how public health has been politicized at home and around the world as “leaders have used the public health emergency as an opportunity to double down on their own power” (Applebaum, 2020; Wang, 2020, para. 10). Because the “adoption of preventive measures were implemented too late,” the state of panic which ensued served as a backdrop for further expansion of state power (Pak et al, 2020, p. 2).

It is important to note that the 1918 Influenza Pandemic is still considered the worst in American history. The death toll is estimated to be 675,000 American lives lost when compared to a population size of 105 million, whereas the U.S. population in 2020-2021 was roughly triple that number at nearly 330 million, with a death toll from COVID-19 just over the same number of citizens that were lost in 1918 (Bristow, 2012, p. 3; Brown, 2018, p. 5; CDC, n.d.; Crosby, 2003, p. 188; Ewing, 2021, para. 4). Total deaths worldwide from 1918 Influenza are cited as “at least 50 million,” yet could be as high as 100 million (CDC, n.d.; Parmet & Rothstein, 2018). Additionally, the U.S. statistics involved are not exact because the number of deaths in 1918 are only extracted from states which recorded the data and represent “less than four-fifth of the total population” with the added complication that influenza “often contributes to deaths attributed to other primary causes” (Ewing, 2021, paras. 6-8). As of late November 2021, nearly two years on, data from the Johns Hopkins Coronavirus Resource Center reflected that total U.S. deaths from COVID-19 were around 770,000 out of almost 48 million cases reported and the total deaths worldwide stood at 5.1 million (Dong et al., 2020; JHU, 2021). RNA viruses are known to spread

rapidly, but the 1918 Influenza virus replicated at a rate far greater and was more lethal to those in peak health, which is an atypical pattern.

As Morens et al. (2021) note regarding 1918 Influenza, “the explosivity of the pandemic was staggering” (p. 1086). The magnitude was such that it “killed nearly as many American servicemen as died in battle”—“bodies the color of slate were stacked like cordwood”—it was a common feature throughout the country that “visiting nurses often walked into scenes resembling those of the plague years of the fourteenth century” (Crosby, 2003, pp.16-20;75). The impact is seen in stories of soldiers crowded into barracks, ships, and train cars, where masking orders were no defense against the virus which visited and indiscriminately took them to their graves all the same. It is said that the pandemic of 1918 “killed more people than World Wars I and II as well as the Korean and Vietnam Wars combined” (Robinson, 2020, p. 351). Leaders were helpless and without the distinct advantage of modern tools which Americans living today have in their arsenal. To put it into perspective regarding U.S. demographics, “adjusted for the population growth of over 200 million people and holding the death rates constant, the 1918 Flu would have killed over 2 million people if it occurred today” which is several magnitudes more lethal than Covid-19 (Yang, 2021, para. 1). Of course, this measurement only illustrates the size and scope of mortality, but research and development (R&D), technology, and innovation are the true game changers between pandemic comparisons.

Still, it is fair to question why American society was not better prepared for the pandemic in 2020, just over a hundred years after the last major global viral contagion threatened the entire country as well as the globe. It can be argued that the advantages of technology, innovation, and the race to create vaccines are what ultimately prevented the novel coronavirus, also commonly

referred to as COVID-19 or SARS-CoV-2, from becoming an equally catastrophic outbreak. If it were not for those advances in addition to a century of medical breakthroughs, COVID-19 could have been just as severe or even more so when considering population size and projected mortality rates. After all, there were years of warnings from various sources in the Corporate Era stating that “another pandemic could occur at any time and at a staggering cost to human health and the world economy” (Osterholm, 2007, p. 47). Historical readings indicate that there is a fatigue that sets in as a pandemic abates and that “the allocation of federal resources toward preparedness is cyclical” in that it typically only occurs in a state of panic over fatal possibilities (Brown, 2018, p 171). Preparedness funding is inconsistent and differs from one administration to the next, varying widely with respect to each budget cycle. Even with the advantage of a hundred years of technological advancement, the lack of pandemic preparedness led to the same social and economic consequences in 2020 as arose in 1918 regarding populations with the greatest amount of suffering as well as stories of political opportunism.

One answer to this question on preparedness may lie in a fact referenced by many scholars—that 1918 Influenza, though documented in mortality data and remembered in individual accounts, was erased from collective memory for a variety of reasons centering on social, economic, and political interests. There are scholars who point to “an enormous body of medical, scientific, public health, and societal information” on the 1918 Influenza Pandemic, yet when historians speak of the pandemic being ‘forgotten’, it references more of a general feeling in the public sphere that the worst of the pandemic was over and an “unadulterated confidence” in the future of medical research despite “medicine’s inability to control the disease” (Bristow, 2012, pp. 158-161). Nancy K. Bristow, author of *American Pandemic: The Lost Worlds of the 1918 Influenza*

Pandemic states, “Americans simply forgot the medical disaster of 1918, excluding it almost entirely from both popular periodicals and academic textbooks in the decades to come” (Bristow, 2012, p. 6). In short, public health officials in concert with a supportive public had a “positive vision of their future, emerging from the pandemic with a renewed sense of their importance and of their power,” which inevitably prevented catalysts for cultural or commercial change post-pandemic (Morens et al., 2021, p. 1086). Even though groundbreaking work has been done in determining how deadly viruses emerge as well as in deciphering their genomic sequences, considerable action is still needed in the way of preparation. Continued advances in infectious-disease research, the invention of improved antiviral and antibiotic drugs, and a response that is proactive rather than reactive are much-needed keys to respond when conditions align in a way that could potentially lead to exponential mortality.

The negative health outcomes of the 1918 Influenza Pandemic were remembered in personal stories and within community gatherings, but little was done on a public health policy level in the following decades regarding pandemic preparedness measures. The work needed to help greatly affected populations beyond the scope of an individual’s responsibility to guard against threats to their own health as well as the health of the community was absent. This foretells why weaknesses have been identified throughout the COVID-19 health crisis. Bristow (2012) explains this public amnesia after influenza gripped the nation:

Some have argued that the rapid onset and sudden departure of Spanish flu caused its fleeting presence in American memory. A further epidemiological explanation maintains that it was the pandemic’s particular virulence among young adults, and the corresponding

limits of its impact on the nation's leadership class, which allowed it to be so easily forgotten. (p. 8)

This is a prime reason why officials find it instructive to compare the 2020 COVID-19 Pandemic to the 1918 Influenza Pandemic in that it “most closely approximates it in scope and effect” (Krishnan et al., 2020, p. 474). What happens in subsequent years after COVID-19 subsides is critical to laying the groundwork for overcoming the next severe pandemic, which will surely come, even if luck strikes again and another hundred years pass.

There is no crystal ball when it comes to whether a perfect storm of aligning factors will occur to create another 1918. However, Americans may choose this time around to remember COVID-19 and use the memory to better prepare themselves. After the 1918 Influenza Pandemic, public memory of the health disaster was discarded as it was the “wrong narrative for its time and place” and there was a willingness to whitewash narratives that were politically inconvenient in favor of promoting those stories “that best fit a culture's beliefs about itself and about its past, present, and future” (Bristow, 2012, p. 8-10). Experiences with 1918 Influenza flew in the face of American optimism when it came to the ability of health care professionals to conquer disease and so they “clung to established norms amidst chaos,” further ingraining the “indignities and inequalities of the American caste system” (Bristow, 2012, p. 8). In 2020-2021, a strong sense of optimism surrounding the capabilities of science was a repeated factor, but the federal government's enhanced role did not transcend past mistakes.

Healthcare in the United States as a profession and an industry was in its infancy when the pestilence that is 1918 Influenza advanced upon American settlements. Bacteriology and virology were new branches of study at the nation's leading universities. Increasing medical knowledge as

well as expectations informed by the 1889-1890 Influenza Pandemic gave leaders a sense that the influenza outbreak that started in the winter of 1918 would not be much of a challenge. Against the backdrop of the Progressive Era, it becomes clear why healthcare professionals were unwilling to focus on their limitations. A similar optimism was echoed amongst many Americans in the early months of 2020—COVID-19 was thought by some to be ‘just another flu.’ These explanations as well as the well-documented tendency of Americans to “reinforce the status quo” now serve as a warning for those involved in health care and public health policy that changes must occur in best practices for pandemic preparedness and that forgetting the tragedies and injustices of COVID-19 is simply not an option (Bristow, 2012, p. 8). The U.S. has now twice experienced a major global contagion and a suboptimal response which has reverberating societal consequences. Public health leaders must now grapple with and seek suitable, yet innovative standards for the future.

In 1918, World War I was raging, so stories of the pandemic “only made the front pages of the New York newspapers while it was killing five and six hundred a day in New York City,” but otherwise absent from printed news media in favor of the war effort (Crosby, 2003, p. 279). A round-the-clock news cycle did not exist in 1918 and there was a “tension between reporting the facts and maintaining morale,” contrasting the constant publication of electronic media in 2020-2021 where some news outlets were known for “exaggerating the story and stoking public worry” as they have done for recent smaller outbreaks (Brown, 2018, p. 79). In 1918, there was also the Sedition Act which had a chilling effect on free speech, “more than in the McCarthy period” (Barry, 2005). The act was later repealed, but at the time imprisoned any person who was critical of the administration in wartime; “one could go to jail for cursing the government, or criticizing it, even if what one said was true” (Barry, 2005, p.124).

There is a sense that this time may be different in both remembering and acting to correct missteps since COVID-19 updates were publicly displayed on the internet and political figures held daily briefings that were streamed live for public consumption. In this respect, 1918 and 2020 are worlds apart. Americans in the former era were reluctant to even discuss the social and economic devastation in public. Essentially, the traumatic episode that spanned four waves over the timespan of two years was collectively brushed aside. In 2020-2021, however, the social and political climate was more welcoming to the discussion of economic inequality and health disparities. With the differences between eras, there is perhaps hope after COVID-19 wanes, that the aftermath will not echo the past and lend to another ‘forgotten pandemic.’

1918 Influenza vs. 2020 COVID-19: Echoes of the Past

As with the 1918 Influenza virus, the exact origin or etiology of COVID-19 remains a mystery. In the beginning, it was difficult to ascertain its magnitude as very little information was known about the viral threat. It was known that the first outbreak of SARS-CoV-2 was recognized in Wuhan City, Hubei Province, China in the latter part of 2019, but little else was known in the early days of the COVID-19 pandemic, which led to confusion and skepticism regarding its severity. It is in this context which explains the delay; officials simply did not act swiftly enough when the outbreak was first recognized. The emergence of COVID-19 caught the U.S. “unprepared, overconfident, and inept in pandemic control” (Daszak et al., 2021, p. 204). There were contradictory directives and inadequate messaging from leaders on the efficacy of mask-wearing and social distancing from the onset— “many health officials believed that the masks provided a false sense of security” while others saw “a value in providing *any* kind of security” (Brown, 2020, para. 11). The contradictory messaging echoes the past: Officials in 1918 “debated

their use by the general public” as they were often not properly made or worn and gave “a false sense of security as a result” (Bristow, 2012, p.93). Supply chain issues leading to a “sharp reduction in PPE [personal protective equipment] exported to the US,” which are required for front-line healthcare workers, added to this scene of chaos as leaders throughout various organizations scrambled to react appropriately (Forbes, 2021, p. 15).

According to Crosby (2003), those areas which had strict enforcement of facial coverings in 1918 “almost always had health records the same as those of adjacent communities without masking,” because a virus is so infinitesimally small it can infiltrate even a cloth with a heavy thread count, though there is demonstrable value in blocking dust and large water droplets which may contain viral loads (p. 96). Despite so much medical and technological progress, 2020 was a replay of an antiquated time, featuring similar complaints from the American public:

The general run of people claimed no special qualification for passing judgment on recondite medical controversies, but knew from experience that masks were inconvenient and unpleasant, and common sense told them that a policy that forced people to wear masks in the open air and allowed them to take them off in crowded restaurants to eat was absurd. (Crosby, 2003, p. 103)

A century later in the fight against COVID-19, the country’s political divide and the unenforceable nature of mandates as well as instances of legislators moving to strip governors of their emergency powers, reflected that a unified effort to rally Americans around the cause of public health was exceedingly difficult (Quinton, 2021). Since there was not a better strategic push in preparation for a pandemic—an event that many in the halls of science and healthcare knew would come—it

is hard to say what the outcome would have been with more advanced protocols aimed at protecting Americans in a variety of ways, not just from the virus, but from social and economic upheaval.

In the beginning of the 2020 COVID-19 Pandemic, there was also a subsequent nationwide effort to shift to working from home for those who could with arguments surrounding who is deemed an ‘essential employee.’ The lockdowns that followed in some states were even more stringent than in 1918, including in New York State which “emerged as an epicenter in the early phase of the epidemic with over 10,000 daily new confirmed cases in early April” (Lee et al., 2021, p. 2). Bristow (2012) describes some of the public health measures implemented in 1918, which are nearly identical to events that occurred in the COVID-19 era:

From prohibitions on drinking cups to mandated school closures and public masking, public health officials asked Americans to accept new intrusions in their public lives, while educational materials urged changes in private behaviors as well. Narrating their efforts to tame the influenza outbreak as a classically Progressive reform program, public health officials reminded Americans of their responsibilities as citizens of a nation at war. Americans were initially receptive, hoping to protect themselves from the worst of the crisis by relying on professional guidance. As the scourge proved immune to the measures employed by health officials, citizens resisted restriction and offered new challenges to the authority of the public health leadership. (p. 12)

The identical response reflects that past pandemics inform how individuals and whole communities respond to the next. For those dealing with the influenza virus in 1918, it was the smaller influenza pandemic of 1889-1890 coupled with “experiences fighting tuberculosis at the beginning of the century” which prompted their efforts (Aimone, 2010, p. 74). Looking to past

experiences was an obvious course of action as “the most important sources of knowledge about epidemic influenza were studies conducted during and immediately following the previous pandemic” (Eyler, 2010, p. 28).

Likewise in 2020, public health officials looked to 1918 as an example of how to respond to a pandemic of similar enormity. However, “little has changed in the character of conflict about public health and individual liberty; inevitably, pandemics divide social interests and the economy, while often devastating both” (Brandt, 2021, p. 409). The American public in 2020 accepted some limitations before a better understanding of the COVID-19 virus was in view, but as the pandemic wore on and economic woes took their toll, Americans began to question the rationale for policies that were applied in a sweeping manner and without consideration for the needs of different communities. Writings about 1918 could be mistaken for those in 2020 as the pandemic response was so nearly matched, though measures in the latter era were far broader and more centrally applied than the former:

The case and death rates of communities which had “strict” closing orders were no better and often worse than elsewhere. However, public health officials had to do *something*, and closing up theatres, schools, pool halls, and even churches was the style in fall 1918. (Crosby, 2003, p.73)

Americans who experienced the housing and financial crisis of 2008, many whom were at that time in their young-adult years, bristled under the economic distress caused by mandated policies which were issued by both elected and unelected officials alike. From ‘The Great Recession’ over a decade ago to ‘The Great Resignation’ in 2021, many Americans were at odds with a whole host

of orders which meant loss of livelihood and an increasing number of them joining the ranks of the poverty stricken (Cook, 2021; Moreira & Hick, 2021).

Although the 1918 Influenza and 2020 COVID-19 pandemics feature different RNA viruses, they share a similarity in that both were preceded by other strains of influenza or coronaviruses. The coronaviruses SARS-CoV (2002-2003) and MERS-CoV (2012) also informed public health response efforts in 2020, especially in the pursuit to fast-track vaccines. Though the origin of either virus is unknown, what is known is that “pandemic strains arise through antigenic shift” when two or more strains combine or when an existing strain mutates via adaptation (Bristow, 2012, p. 22). Renowned doctors indicate that “1918 influenza and SARS-CoV-2 share the same origin mysteries of direct versus indirect emergence from a natural animal host, and of extent of postemergence genetic adaptation to humans” (Morens et al., 2021, p. 1090). A drastic change to one or both antigenic glycoproteins hemagglutinin (HA) and neuraminidase (NA) existing on the surface of a virus sets a pandemic in motion (Barry, 2005). What differentiates these strains from the yearly flu season is that they are harbored by animal reservoirs and “develop to which humans have no preexisting immunity and undergo critical genetic changes that allow it to be readily transmitted from person to person” (Osterholm, 2007, p. 47). This explains how and why influenza and coronaviruses continue to afflict different communities around the world from one year to the next.

According to Taubenberger and Morens (2006), “all cases of influenza A worldwide (excepting human infections from avian viruses such as H5N1 and H7N7), have been caused by descendants of the 1918 virus, including “drifted” H1N1 viruses and reassorted H2N2 and H3N2 viruses”—making it “indeed the “mother” of all pandemics” (p. 15). With this information on

pandemic strains, some believe there is a real yet unconfirmed possibility that COVID-19 may be “domesticated with us” just as influenza was in the late 19th-early 20th century (“Mortality from Influenza,” 1901). Even if COVID-19 does not transition into “a pattern of less fatal annual seasonality,” there will be many subsequent studies for years to come on how the COVID-19 virus affected people so differently, including why some were asymptomatic and whether developed immunity is long-lasting (Morens et al., 2021, p. 1086). Other developments up for review include the fact that “most (~60%) hospitalized patients are male” (Ripoll et al., 2021, p. 24). Identifying populations likely to be affected by an emerging pandemic is critical to crafting a more effective pandemic response in the future, rather than relying too heavily on historical measures which have garnered mixed results. Viruses have yet to be completely eradicated, but history has shown that humans have adapted with stronger immune responses that render future iterations weaker. This will buy time to contemplate better protocols that move beyond extrapolating to the rest of society what are generally good practices for hospital emergency and operating rooms (Crosby, 2003).

Unfortunately, knowledge of past pandemics did not translate to better outcomes for the most vulnerable in society, and with a heavy onslaught of business closings and loss of income, the rates of domestic violence and suicide saw a 21 to 35 percent rise in reported incidents across American communities ‘sheltering in place’ (David et al., 2021). The CDC reported “the highest number of overdose deaths ever recorded in a 12-month period,” accounting for 81,000 drug overdoses by May 2020 (CDC, 2020). The gap between the most affluent Americans and those struggling to make ends meet widened considerably during a time when the gulf between the two was already glaring pre-pandemic—this is due in part to the rapid “proliferation of low-wage work” in an age of globalization despite productivity increases spanning decades—“hourly

compensation for the bottom 90% of all workers has risen so slowly in spite of overall income growth” (Mishel & Bivens, 2021, p. 2; Pascale, 2021, p. ix). At the same time, nursing homes in the U.S. “were particularly hard-hit by the first year of the pandemic,” comprising 31% of all deaths from COVID-19 by June 30, 2021, and were then hit again with a surge as the Delta variant spread (Chidambaram & Garfield, 2021). Public health measures over a hundred years later still bring “social and economic life to a near stop” and “disproportionately affect disadvantaged groups, including people in poverty, migrants, internally displaced people and refugees, who often live in overcrowded and under resourced settings, and depend on daily labor for subsistence” (WHO, 2020). Americans have yet to find innovative ways to respond effectively during a pandemic when it comes to protecting the vulnerable and underserved.

It is under these conditions that Americans also began to question and resist further restriction just as they did a hundred years ago. 1918 saw the United States Public Health Service (USPHS) “called upon to do a job for which it had been created in theory, but for which it had never been prepared in reality” (Crosby, 2003, p. 50). This is a correlating predicament in 2020 for its successor, the Centers for Disease Control and Prevention (CDC), a government agency founded in 1946. As the novel coronavirus took hold across the country, the CDC faced criticism “for developing a diagnostic test for the virus that sometimes produced inconclusive results” while also narrowing testing criteria (Felter, 2020, p.7). Clashes with the federal administration, controversy surrounding data collection, the three-week delay before states could effectively test for COVID-19, and “its reversal on whether to wear face masks” are examples of how chaotic the pandemic response was from the beginning (Felter, 2020, p. 7). Perhaps most egregious is the political posturing and partisan rhetoric of elected officials, political appointees, and public health

agency officials charged with protecting public health which led to a botched response during what was a contentious election year (Noar & Austin, 2020). In this highly charged political environment, public support waned in many places for lack of effective organization even though presented with a unified effort of publicity. “Americans did not always take influenza seriously” in 1918 and the same can be said for COVID-19 in 2020—if history is any indication, the social and economic costs of delayed action and the lack of preparedness will reverberate for many years to come. (Bristow, 2012, p. 38).

Lockdowns and restrictions took place in some states nearly three months after the 2020 COVID-19 Pandemic reached the U.S., “with 42 states issuing a statewide order by the first week of April” (Clifford & Mattingly, 2020). The delay indicates that leaders did not fully understand the severity of the outbreak until it was too late, something that also happened in 1918 as the flu was already known to most Americans. Also, like the 1918 Influenza Pandemic, the mortality rates during the 2020 COVID-19 Pandemic were linked to secondary complications such as bacterial infections. Pneumonia was “frequently the actual cause of death” in both catastrophes which means that instead of individuals succumbing to either virus directly, they perished under the conditions the viruses created (Bristow, 2012, p 126; Cruz-Teran, 2021). As Morens et al. (2008) state, “deaths were virtually never caused by the unidentified etiologic agent itself” but from bacterial ‘pneumopathogens’ like pneumococci, streptococci, and staphylococci which staged an invasion in the upper respiratory tract of its victims, which caused severe pneumonia (p. 963). The feeling of drowning that some patients reported is due to “fluid-filled alveoli” experienced during a bout with bronchopneumonia or acute respiratory distress syndrome (ARDS) (Morens & Fauci, 2007, p. 1020).

Secondary infections also explain why the elderly and those with comorbidities are at greater risk. An especially growing concern surrounding bacterial lung infections like pneumonia centers around increasing antimicrobial resistance (AMR) in an age where superbugs like Methicillin-resistant *Staphylococcus aureus* (MRSA) are prevalent (Knight et al., 2021). AMR was a top priority for global public health experts before the COVID-19 pandemic began and it remains so as it is “likely to have caused a third as many deaths as COVID-19 in 2020” (Knight et al., 2021, para. 1). Morens et al. (2008) advise that along with measures in pandemic planning and the creation of improved vaccines and antivirals, the “prevention, diagnosis, prophylaxis, and treatment of bacterial pneumonia, as well as the stockpiling of antibiotics and bacterial vaccines” should be prioritized (p. 968). Better and more determinable actions are of particular importance as public health measures enacted to combat the novel coronavirus echo those enacted in 1918 as the bulk of “control efforts worldwide were limited to non-pharmaceutical interventions such as isolation, quarantine, good personal hygiene, use of disinfectants, and limitations of public gatherings, which were applied unevenly” (CDC, n.d.). In both eras, leaders in the U.S. healthcare system found more power in taking preventive action, though they were at a loss in the way of curative measures. Living up to the full capabilities brought about by the medical and technological revolutions should take precedence in future discussions about pandemic preparedness protocols.

One difference that may upset the status quo and put a major spotlight on pandemic response measures, as well as assist in the mitigation of social and economic destruction in the future, lies in the difference between 1918 Influenza and 2020 COVID-19 mortality chart patterns. The 1918 Influenza Pandemic’s mortality chart features a W-shape as opposed to the typical U-shape; the pattern reflects “high death rates for adults between 20 and 40” but “lowest after age

50” and “highest among the elderly” (Bristow, 2012, p. 4; Eyler, 2010, p. 29). Influenza outbreaks are usually more typical in “exhibiting mortality peaks in the very young and the very old, with a comparatively low frequency of deaths at all ages in between” (Taubenberger & Morens, 2006, p. 19). The distinct pattern in 1918 made it possible for some older Americans who were well-established in their careers to be spared the social and economic turmoil experienced by younger Americans, especially those who were less well off. Though younger Americans were not as affected by excessive mortality rates in the major pandemic of 2020, they were the most affected by economic repercussions, much like those living in the United Kingdom and other G20 countries (Blundell et al., 2020).

Some theorize that it was immunity acquired during the 1889 influenza outbreak which sheltered some older citizens from the 1918 scourge. Whatever the cause of 1918 Influenza’s particular virulence may have been, the unusual mortality chart pattern “has not been documented before or since” (Taubenberger & Morens, 2006, p. 19). It is one of the mysterious unknowns that elude researchers to this day about the 1918 Influenza Pandemic:

Despite the careful and meticulous work done, no clear evidence indicates that the 1918 virus per se was especially virulent or had highly unusual or unique gene features. By contrast, the death rate in 1918 from influenza was no doubt ten to 50 times higher than during any other year in history. Thus, other explanations must come into play, perhaps a combination of factors such as a cytokine storm or previous immune encounters with other influenza viruses. (Oxford & Gill, 2018, p. e350)

In 2020-2021, deaths followed a more typical pattern for viral outbreaks, though now with a novel coronavirus as opposed to influenza, predominantly affecting the elderly and those with

comorbidities. That COVID-19 had a greater effect on older Americans in positions of power and wealth may be the catalyst for strategic changes to the way U.S. authorities respond to pandemics in the future. A prevailing concern, however, is that leaders may respond in ways that significantly increase authoritarianism at the expense of minority populations who have suffered the brunt of the pandemic's impact.

Even though COVID-19 affected older Americans to a far greater degree, the negative effects of public health measures were felt exceedingly amongst those in the lower-income strata. Americans working in the hospitality and retail sectors, which are typically low-wage occupations, either lost jobs or were deemed 'essential workers' and had to work facing the public, which came with a significantly increased risk of contracting the virus. Meanwhile, technology allowed higher-earning professionals, many with a bachelor's degree or higher, to work from home, safely isolated from potential infection. The U.S. stock market dipped dramatically as the pandemic reached American shores—"U.S. and European stock market indices (the S&P 500, FTSE 100, CAC 40, and DAX) (...) lost a quarter of their value, with oil prices declining by more than 65%" by the end of April 2020 (Pak et al., 2020, p. 3). It then soared to new heights during 2020 against the backdrop of thousands succumbing to a pandemic which allowed some to profit exponentially while other Americans lost everything.

During the fourth wave of the COVID-19 pandemic in late 2021, a Federal Reserve scandal was reported in which two of 12 heads responsible for their respective districts and tasked with the response to the economic fallout made substantial profits in 2020 via financial trades, prompting an ethics review (Smialek, 2021). This is just one of many stories that reflect how Americans were affected in distinctly different ways, as was the case in 1918, depending on their socioeconomic

circumstances. In many instances throughout the COVID-19 pandemic, greed was featured far more often than noblesse oblige amongst the most privileged in society. This familiar problem is intrinsically linked to healthcare outcomes, though cannot be combated by healthcare professionals alone as the scope encompasses a wide degree of other disciplines.

While technology most certainly allowed some to profit greatly while others perished, it also had a more egalitarian effect when it came to medical breakthroughs that blunted the trajectory of the COVID-19 pandemic. However, the different variants that emerged in various countries and locales suggests that those involved with the creation and dissemination of vaccines were in a race against time. Vaccine rollouts were heavily criticized for latency issues at the start and a push to have vaccines fully approved by the U.S. Food and Drug Administration (FDA) and not just for emergency use authorization (EUA) occurred to quell public anxiety. Some Americans were concerned about the liability immunity given to pharmaceutical companies under the Public Readiness and Emergency Preparedness Act (Prep Act) and whether compensation was available should adverse reactions occur (Hickey, 2021; Stein, 2021). Without full FDA approval, it was unclear whether there was assistance available for the rare instances where an individual's health took a dramatic turn for the worse in response to a vaccination. Future vaccine programs should feature robust protections so that Americans have full faith and confidence that public health measures have their best interests; rare injuries do occur and therefore should be covered under the Vaccine Injury Compensation Program (VICP) or Countermeasures Injury Compensation Program (CICP) and advertised as such. Inspiring trust entails officials backing the implementation of certain protocols with transparency, accountability, and remuneration where applicable.

On August 23, 2021, as the Delta variant started afflicting unvaccinated communities to a far greater degree than their vaccinated counterparts, it was reported that the Pfizer-BioNTech COVID-19 Vaccine (branded as Comirnaty) was given full FDA approval for use in those aged 16 or older (FDA, 2021). This did away with one criticism from holdouts who were hesitant to get vaccinated, however, there remained individuals who were reticent due to their perception regarding the speed with which the Johnson & Johnson, Moderna, and Pfizer vaccines were greenlighted as “information is not yet available about potential long-term health outcomes” (FDA, 2021, para. 12). With deference to medical ethics, it is a salient point that some exhibiting hesitations were not particularly against vaccines and should not be grouped with those making unfounded claims. Healthcare professionals should keep in mind that “while we might hold fast to our beliefs, we might be prompt to dismiss those of others, even if they are no more irrational than our own idiosyncrasies” (Pruski, 2021, p. 278). A more effective course of action in persuading the public is to reach out to communities with the intent to inform individuals about benefits and risks, so that concerns are addressed, and members feel more comfortable to ‘get the jab’. One persuasive technique is to highlight promising data with respect to COVID-19 vaccine efficacy. Reports on Pfizer and Moderna pandemic vaccines reflected that they were “highly efficacious at preventing symptomatic disease” (Bernal et al., 2021, p. 586). Hospitalizations due to COVID-19 infection were significantly unlikely after two doses, which included protection against the Delta variant. For those with breakthrough cases, the vaccine minimized the severity of the disease (CDC, 2021).

Along with hesitancy regarding unknown long-term effects, the increased risk of myocarditis or pericarditis in “males under 40 years of age compared to females and older males”

was of great concern (FDA, 2021, para. 12). The CDC (Centers for Disease Control and Prevention) indicated on its website that reports of severe adverse reactions or death were rare in those whom the vaccine had been administered. The CDC also reported that “a review of clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines,” though “recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths” (CDC, 2021b). Despite evidence of such rarities being reported to VAERS (Vaccine Adverse Event Reporting System), there remained those who refused vaccination, especially Americans living in rural areas and the urban poor. Looking at historical information on 1918 vaccine programs, one finds it is not a new phenomenon as there has always been a minority of individuals who shun vaccines or choose alternatives to modern medicine. It should also be noted that “selective conscientious objection” is not the same as having objections to vaccines in general (Cowley, 2019; Pruski, 2021, p. 271). Part of informed consent is the right of individuals to assess their level of risk in relation to potential side effects.

Leaders in healthcare should champion vaccines as one of the great marvels of medicine in the modern era but also project a “cautious humility,” because even “in a good year, we might expect the [influenza] vaccine to be 50 to 60 percent effective” (Bristow, 2012, p.190; Brown, 2018, p.155). During a bad year the influenza vaccine may be as low as 19% effective (Cruz-Teran, 2021). With that in mind, the takeaway is that scientific hubris allows individuals to exhibit too much confidence in past progress while neglecting preparedness for the next epidemic. Nevertheless, those primarily affected to a critical degree by the fourth wave of the COVID-19 pandemic comprised the unvaccinated, though some with breakthrough cases experienced less

severe symptoms. Distrust of government and conspiracy theories fueled wariness surrounding pandemic vaccines with officials on record, especially in the way of social media posts, reassuring the public that the ‘mRNA’ vaccines are not a vehicle to inject nanobots or microchips. The U.S. Food & Drug Administration (FDA) explained in a press release that the messenger RNA, also known as ‘mRNA’, “is only present in the body for a short time and is not incorporated into - nor does it alter - an individual’s genetic material” (FDA, 2021, para. 5).

While it is effective to advise the public of how the new vaccines work, the FDA’s focus on fringe microchip conspiracies was problematic, as far as messaging is concerned, as it does not address the greater crux of public apprehension. The FDA also participated in another instance of problematic messaging, what resembles a situational motte and bailey tactic, via a *Twitter* post on August 21, 2021, which stated, “You are not a horse. You are not a cow. Seriously, y’all. Stop it” in response to a small minority of individuals taking the drug Ivermectin, whether prescribed by a doctor for valid therapeutic use or purchased from an equine supply store without doctor approval (FDA, 2021). Putting aside the fact that antiviral medications, approved or otherwise, “are at best controversial, and at worst nonexistent,” an unfortunate outcome of this ineffective type of publicity is that a fringe activity or concern supplants valid apprehensions by most hesitant individuals. Obstacles such as transportation, leave of absence, childcare, underlying medical conditions, and concerns by those who have naturally acquired immunity go unaddressed (Brown, 2018, p. 180).

A report previously published in September 2021 but continually updated by the Kaiser Family Foundation entitled *Latest Data on COVID-19 Vaccinations by Race/Ethnicity* stated, as of November 17, 2021, “68.4% of the adult population in the United States have received at least

one dose of a COVID-19 vaccine,” though “Black and Hispanic people have been less likely than their White counterparts to have received a vaccine,” further stating that the disparity has narrowed over time for Hispanic individuals (Ndugga et al., 2021, para. 1). The demographics notated at the time a general fear by some in the public. It also revealed the unique social and economic challenges that poor and minority communities continue to face, including vaccine equity. A link to the CDC ‘COVID Data Tracker’ in the report also highlighted that the majority most at risk of COVID-19 complications (Population \geq 65 Years of Age) had already been fully vaccinated at 86.1% (CDC, 2021a). There was no vaccine approved yet for children (identified as the least at risk) when media narratives focused ire on the vaccine hesitant. Soon after, *NPR* reported the recommendation by the FDA of “emergency use authorization for the Pfizer-BioNTech vaccine in children ages 5 to 11 years old” (Neel, 2021, para. 1). The chosen narratives highlighted a real messaging disconnect for public health officials in persuading the public’s full cooperation. Finding ways to bolster reliability and trustworthiness when it comes to the official narrative, especially when lives are at stake, must be part of pandemic preparedness strategies in the future. Viable solutions must also be created to eliminate obstacles for those who are trying to make conscientious decisions regarding community health.

As it stands, superstitions combined with historical knowledge of real-life examples of medical breaches of ethics are at the heart of rumor and confusion that leads to public distrust and preventable deaths. This in combination with economic concerns ensured events during the 2020 COVID-19 Pandemic would simulate 1918 in that public health directives “were met with widespread noncompliance and outright defiance” in many states and counties (Navarro & Markel, 2021, p. 417). The 1918 Influenza Pandemic was not without its messaging problems and did

feature leaders who failed to follow their own directives. In a similar fashion, throughout the COVID-19 pandemic, numerous cases were reported where officials flouted their own mandates as they frequented expensive restaurants or events without masks and failed to socially distance themselves. Governors, members of Congress, and even judges “pushed for mask mandates” with a handful of leaders “issuing some of the most stringent lockdown orders of any state” while later being exposed for attending weddings, dining out, and gathering without wearing masks, seemingly with no concern for citizens suffering under the crushing weight of social and economic disruption (Thierer, 2020, para. 3-4).

Public health measures are bound to fail if there is no unified message and leaders refuse to adhere to their own rules. It adds to the general distrust of government that has been a feature in the U.S. since the country’s inception. If one considers a confluence of factors including historical instances of unethical practices in the healthcare space by government entities including surgical experimentation on prisoners or biological warfare studies, it is not difficult to see why that tradition of government distrust carries forward today in American culture. One example includes the now “infamous Tuskegee syphilis study” conducted by the USPHS and subsequently the CDC “where 399 uneducated, black, Alabama sharecroppers were used in a four decade-long experiment” without informed consent (Felter, 2020, p. 8; Hornblum, 2000, p.415). During both the 1918 Influenza and 2020 COVID-19 health crises, there was a continued “deep political and cultural tradition of suspicion of state authority, as well as strong cultural commitments to individualism and personal liberty” (Brandt, 2021, p. 409). Vaccines being one of the best keys to end pandemics alongside new pharmaceuticals, public leaders and health officials must collaborate

and incentivize populations to do their part, without politicization or alienation. This was in effect what seemed an insurmountable task in a deeply polarized society.

The universal rollout of pandemic vaccines is relatively new territory for the healthcare sector of the U.S. economy, though there was a “massive CDC effort in 1976 to vaccinate against a flu strain” where hundreds developed Guillain-Barre syndrome as a result, which further eroded public trust (Felter, 2020, p.8). This vaccination campaign occurred after “a fatal H1N1 “swine flu” outbreak raised considerable alarm without causing a predicted pandemic” (Morens & Fauci, 2007, p. 1024). In 1918, Americans would “produce with blinding speed absolutely useless vaccines,” which were highly experimental, with various novel vaccines being tested within smaller subsets of the U.S. population, and without the existence of the FDA (Crosby, 2003, p. 279). The primary suspect was Pfeiffer’s bacillus taken from the lungs of both the living and the dead, which prompted the creation of bacterial vaccines, “their composition reflected both the changing assessment of influenza’s etiology and the phase of the pandemic in which they were developed” (Eyler, 2009, p. 403). Eyler (2010) states that “the successful use of some vaccines, especially those against rabies, typhoid fever, and diphtheria, as well as the use of diphtheria anti-toxin, had raised high expectations for a vaccine against influenza” (Eyler, 2010, p.30). However, there was much controversy surrounding the early vaccines because they were of “undisclosed composition” with “no immunologic value,” the subject of questionable trials, and featured ethics complaints surrounding “price gouging and kickbacks” (Crosby, 2003, p. 95; Eyler, 2010, p. 30). A redeeming development coming out of that period is that it prompted healthcare professionals to later develop more stringent vaccine trial standards and reporting guidelines, which had the effect of making vaccine studies more rigorous in the future.

Incidentally, it was not until well over a decade later in 1933 when the influenza virus, otherwise known as an “invisible needle in the haystack,” was isolated (Bristow, 2012, p. 21; Crosby, 2003, p. 258). Another seven years later in 1940 is when “the newly invented electron microscope took a picture of the influenza virus, and for the first time in history we could not only name, but see, the culprit” (Brown, 2018, p. 66; Brown, 2020, para. 2). Americans living in the COVID-19 era are the beneficiaries of such findings, which have led to a greater understanding of viruses and how the human body reacts, and in turn better and more effective vaccines against them. Prior to the identification of the influenza virus, healthcare professionals in 1918 tended to the symptoms of influenza but were helpless in identifying or combating viral diseases which tormented the public. In 2020, before the rollout of COVID-19 vaccines, healthcare professionals were in a similar situation to those in 1918 when it came to non-pharmaceutical methods to treat patients. However, “modern hospitals, intensive-care units, and medical specialists” as well as experimental drugs like Remdesivir (branded as Veklury) gave Americans a fighting chance. Also, new vaccine development technology and modern ventilators or ECMO (extracorporeal membrane oxygenation) machines—“the medical equivalent of a Hail Mary pass”—greatly improved a patient’s chance of survival. Americans often take for granted the advancements in medicine that have occurred over the past century, which have contributed to mortality rates between the two major pandemics being notably dissimilar (Brown, 2020, para. 7-8).

The breadth of gains in research and technology are what has given modern healthcare professionals an edge against the COVID-19 virus, despite the social and economic devastation wrought by centralized initiatives in combination with the politicization of public health. Yet, there are instances in the past where the pharmaceutical industry, for example, “stood to profit from an

outbreak, or at least from the fear of one” and that still remains true today, which presents a steeper challenge for policymakers to curb “the corruption of the study pool” and perverse incentives (Brown, 2018, p. 145). The profit motive spurs on progress, yet it also has the potential for corruption and ethics violations which is demonstrable from a historical context. Keeping previous instances of violations of ethics in mind, caution, compassion, and empathy should be exhibited when seeking to administer beneficial medical procedures to a population whose distrust is well-founded when considering past malfeasance. This will help in preventing further skepticism and encourage voluntary action amongst members of the public. For future pandemic planning, a continued examination of ethics and compliance in healthcare settings is necessary to create initiatives that guard against corruption and protect human values which form the basis of public health. Leaders should acknowledge that there are historical events which give Americans pause. Doing so will reflect sincerity in changing direction from the gross miscarriages of justice in recent memory.

The similar themes of social and economic devastation experienced during the COVID-19 health crisis was in part a byproduct of sweeping public health directives rather than solely from complications of the virus. Some Americans not living in locations deemed hotspots barely knew a pandemic was occurring aside from lockdowns, business closings, job losses, mask mandates, limited store hours, and turning on the television for news updates about COVID-19 cases and death statistics. There were rarely any equivalent plague-like scenes mirroring a bygone era. The “simple containment policies” which reduced the death toll greatly in locations where case and death rates were high, did not have the same net benefit in places where rates were low and where the economic recession had a more damaging effect (Eichenbaum et al., 2021, p. 5150). In 1918,

nearly every American was affected as remaining relatives of decedents would hang white, black, or grey crepe on doors all over to signal whether a young, middle-aged, or elderly person had died, while a shortage of caskets necessitated the placement of guards to prevent them from being stolen (Barry, 2005). Many young professionals isolating at home in 2020 did not have the remotest similar experience, especially as electronic orders and delivery services helped some to not have to leave their homes at all.

Even so, Americans across the country avoided going to hospitals for fear of catching the COVID-19 virus early on, delaying needed healthcare services unrelated to the pandemic. This in turn caused massive revenue loss for hospitals and other healthcare organizations. Many hospitals across the United States experienced a 32-60% decrease in patient visits unrelated to the pandemic beginning in March 2020 (Wiik, 2020). During the second year of the COVID-19 pandemic, many Americans avoided hospitals not only for fear of COVID-19 exposure, but because they lost their jobs and did not have income or health insurance to pay for needed services. As insurance policies are often attached to an individual's place of employment, losing one's job often means incurring the risk that something may happen before another job is secured. For these reasons, physicians and other healthcare providers were concerned with "unmet needs for care, particularly for people with chronic health conditions, whose health can deteriorate rapidly without careful monitoring and treatment" (Gonzalez et al., 2021, p. 1).

This is in sharp contrast to 1918, where a greater percentage of the population was afflicted as influenza moved through cities at a rapid pace and made orphans of children almost overnight. The deaths involved with any pandemic are tragic enough, but certainly compounded by sweeping edicts and an increasing centralization of authority. There is a great need for a more targeted and

nuanced approach when it comes to pandemic preparedness in the future which will no doubt entail collaborative and strategic efforts between various agencies and organizations in years to come. The cost-effectiveness of future policy endeavors will also be a top priority in pandemic preparedness considerations to avoid waste and to maximize benefit, promote prosperity, and encourage resilience. Now that remote meetings with various professionals including those in the healthcare sector have taken center stage, there is justification for its further development, especially as it has now fundamentally altered the economic landscape and increased the tools available to be prepared for recurrences of viral threats.

In the direct wake of the 1918 Influenza Pandemic, public health officials focused on proposals involving “further research, organization, education and mobilization,” which are all noble goals for continued future planning (Bristow, 2012, p. 163). In the same spirit, when COVID-19 becomes a distant memory, the addition of proposals aimed at restoring public trust is a dire necessity as “trusted political leadership stands at the heart of good public health” (Forbes, 2021, p. 15). A lot of work is needed in this area as highlighted by a Gallup poll on governance for September 2021 which reflected that “Americans’ trust in the government’s handling of domestic problems has not strayed far from the record low of 35% in 2019” (Brennan, 2021, para. 4). The palpable divisiveness in the public sphere stood in the way of a unified public health response. Echo chambers added to the problem and called attention to opposing partisan messages which further divided Americans on ideological lines, and often elevated distorted information.

2020 featured a “sharply polarized nation grappling with weighty issues” which centered not only on how officials reacted to COVID-19, but also on how the U.S. exited the Afghanistan war, how the southern border crisis was handled, how judges did or did not respond to controversial

Supreme Court cases, and the factors which involved leaders in yet another potential government shutdown (Brennan, 2021, para. 15). The initial pandemic response and resulting policies wrought havoc throughout the economy, which then caused Americans to reassess their lives and to determine what truly matters to them. Over the course of two years, Americans had time to decide which vocations enhance their life goals and those which detract from living a meaningful life. During what was coined ‘The Great Resignation,’ Americans left their jobs at a rate that is higher than usual, with health care and tech having the highest quit rates (Cook, 2021). This can be attributed to burnout, but the role of politics in health care is also a factor. A challenge for public health authorities and government officials in preparation for future pandemics centers on the question of how to prevent the politicization of the next health crisis. The question of how to better protect public health while at the same time mitigating extreme social and economic misery is also pertinent to curing negative health determinants which are historically disparate in impact.

Disparate Impact: Negative Health Determinants Give Rise to Tragedy

The COVID-19 Pandemic has put an attentional spotlight on health disparities and the social and economic determinants that create inequality in health outcomes. To understand why African Americans and other minorities have had an excessive share of burden prior to and during the COVID-19 health crisis, one must consider how social and economic determinants of health such as race, class, gender, food and housing insecurity, and unemployment all play a substantial role. Physical, emotional, and cognitive development during childhood is also critical to determining positive or negative health realities. Adding to these factors, “education, neighborhood conditions, political power, and social standing exert a powerful impact on one’s health status and life expectancy” (Easterling & McDuffee, 2018, p. 94). The policies which allow

for underfunded schools, disparate pay and benefit structures, the levers which negate healthcare access as well as systemic racial segregation in housing complicate matters further.

The numerous determinant factors in health exist in relation to public policies which have vastly concentrated wealth and diminished opportunity. Historically, those working in the field of medicine have viewed healthcare from a singular lens, which frequently addresses the symptoms of ailments or conditions which have become emergent but not the underlying causes. This presents a problem when attempting to eliminate health disparities, as far as public health policy is concerned, because poor health outcomes are preceded by social and economic determinants that exist outside of the medical establishment. To tackle these complex factors head-on, cultivating awareness is the first step, but then a network of collaborative organizations throughout the various sectors of the U.S. economy is needed to follow through on equitable solutions.

Political opportunism, special interests, and racial discrimination have all formed the underpinnings by which health disparities have been exacerbated. As Reid (2020) states regarding COVID-19, “It has unveiled unpleasant truths about the condition of American labor, about American race relations, about the yawning disparities between rich and poor in America” as well as “much information about the state of housing inequality in the United States” (p. 27). In 1918, “African American health suffered under the socioeconomic disadvantages of the Jim Crow system” in which social stratification based on race persisted, and that legacy has carried into the modern era when considering the systemic forces which separate individuals by race, gender, and class (Bristow, 2012, p.71-73). The plight of a disproportionate number of minorities during the 1918 Influenza and 2020 COVID-19 pandemics is a microcosm of the devastating impact one-size-fits-all policies have had on Americans categorized as having low socioeconomic status.

Yet, even if health outcomes were proportional amongst all identity groups, the result is still unacceptable in terms of lost talent, declining social mobility, and limited societal potential. Both the 1918 and 2020 pandemics only exacerbated the determinants of health that predict poor health outcomes which were already present to an alarming degree—the roughly two-year span of each pandemic magnified pre-existing conditions which then led to avoidable deaths. The precariousness that results for many poor and minority communities starts as early as birth and continues throughout childhood development and involves deeply ingrained societal problems which existed well beforehand. In either pandemic setting, “socioeconomic class was a strong predictor of health and survival” (Brown, 2018, p. 167).

The variety of conditions which marginalized groups face, from inadequate housing to a lack of access to quality education and healthcare services, create a cycle that is increasingly difficult to overcome the longer it persists. According to Martin-Howard & Farmbry (2020), such disparities can be attributed to “upstream, midstream, and downstream factors” (p. 840). For example, upstream factors are those that are overarching in society (such as gender or socioeconomic status) and encompass a significant portion of disparate health outcomes. Midstream factors are seen at the individual level—transportation and housing are critical in determining overall health. Downstream factors are those affected by upstream and midstream factors, which includes the treatment for chronic and infectious diseases. In considering the multivariable factors that lead to poor health outcomes, it is recommended that policymakers take a more integrated approach when it comes to social and economic determinants that predict health disparities. It must be noted that poor health outcomes amongst the U.S. population, which include minority groups to a considerable degree, are not solely linked to behavior or heredity as “we now

understand that social circumstances and environmental factors place minority groups at a distinct disadvantage in health and disease” (Martin-Howard & Farmbry, 2020, p. 840).

In the wake of the 2020 COVID-19 Pandemic, evidence of disparate outcomes in African American and other minority communities were stark in the healthcare landscape. The COVID-19 pandemic magnified existing racial health disparities—African American deaths in some states were disproportionate in relation to demographics as a whole—with deaths due to or complicated by the novel coronavirus being “more than twice as high” when comparing affected populations (Chowkwanyun & Reed, 2020, p. 201). Martin-Howard & Farmbry (2020) state correspondingly:

In early April, for example, it was reported that while African American residents made up 29 percent of Chicago’s population, 72 percent of the city’s residents who had died from COVID-19 were African American (Moore, 2020). In New York, by mid-April, the *New York Times* (2020) indicated that Hispanics, at 34 percent of the COVID-19 deaths in the city, made up the population with the highest death rate. (p. 841)

Kim et al. (2020) confirm this data as they indicate Americans residing in Chicago “comprise 30% of the city’s population but 70% of COVID-19 deaths” (p. 2441). Additional racial minority groups were also overrepresented in many states among those who lost their lives to the deadly virus. Like the 2020 COVID-19 Pandemic, 1918 mortality rates were higher for the working poor and those living in urban areas, which also included an excess number of minority individuals. For example, “in the USA, they were highest among the unemployed and the urban poor in Chicago” (Bambra et al., 2020, p. 964). During both pandemics, there is a synergistic epidemic or twin pandemic occurring when considering exacerbated health inequities alongside the effects of viral contamination.

Chowkwanyun & Reed (2020) indicate that minority groups are “likely to have the most undesirable health outcomes” but it is critical to dispel harmful racialized characterizations and stereotypes by focusing the problem on economic inequality and other imbalances that preceded the COVID-19 public health crisis (p. 203). Focusing the matters of pandemic preparedness and health disparities on socioeconomic issues is essential to correcting course, because in the Influenza Pandemic of 1918, poor and minority populations were derided as “especially ignorant of modern medical care” which is a prejudicial attitude that is not forward-thinking when it comes to crafting equitable policy solutions (Bristow, 2012, p. 67). A better course of action rather than disparaging entire communities for perceived shortcomings or depicting “African Americans as diseased and dangerous,” which was done repeatedly while 1918 Influenza overwhelmed whole cities, is to educate all Americans from an early age on why certain behaviors surrounding hygiene and prevention are crucial to warding off disease (Bristow, 2012, p. 72). For that matter, appropriate resources are a necessary part of the equation. Members of the administration as well as public health leaders will want to engage with the public for future outbreaks and explain with nonpartisan credibility “not only *what* to do but also *why*” so that the public is well informed and has the knowledge and resources to take proper action (Noar & Austin, 2020, p. 1737). They will also want to have a unified message, considering the weight of trust placed in them, and not waver on certain protocols without clear explanation.

Education is an important determinant to consider regarding health equity, while also ensuring that necessary resources exist for public health practices to be possible. Educational initiatives are one piece of the puzzle, yet policies must also address factors which make preventive activities difficult (*e.g.*, overcrowding in homes where social distancing is an impossibility).

Furthermore, racism should be firmly eradicated from the medical field—it was pervasive in all industries in 1918, but those involved in healthcare at the time were inclined to “dismiss the low life expectancy and high death rates among African Americans as symptomatic of their innate weakness rather than their social and economic circumstance” (Bristow, 2012, p. 71). It is existing structures that deepen disparities by eliminating opportunity and social mobility, which is why education is so important because it has a track record of lifting individuals from poverty. The effect education has on pandemic mortality has been “found to increase on average by 32% for every 10% increase in illiteracy rates,” controlling for sociodemographic variables with lesser effects (Chowell & Viboud, 2016, p. 13557).

The attainment of education itself, though, has come at all-time-high prices while employment incomes have stagnated for decades. Unsustainable costs keep the prospect of stable employment and accompanying career advancements out of reach for a significant portion of the working population. An infrastructure that promotes resilience, where education is accessible along with proper healthcare for all Americans, is an instrumental combination of tools required for closing equity gaps. In one aspect, these trends are observable in that “over the past two decades, around 50% of high school graduates from low-income households have consistently enrolled in college, compared to 80% from high-income households” (Daly, M. C., et al., 2020, p. 4). A 30% difference in educational attainment based on socioeconomic status lays bare the heavier burden of low-income groups. Adding to disparate outcomes in education is the fact that tuition rates for university-level courses have risen much higher than incomes year over year.

In discussing possible measures to combat inequities in the U.S. healthcare system, it is appropriate to take note of the socioeconomic factors present in American society prior to and

enumerated throughout the COVID-19 pandemic that allow for their persistence. According to Alberti et al. (2020), “key contributors to disparities include occupational factors, crowding in households, nutritional status, access to healthcare, primary language, and availability of antivirals,” which reveals a tall order for those who are deeply invested in improving the future of U.S. healthcare (p. 924). To begin, it is imperative to conduct an appropriate analysis of causes while safeguarding against “future cynical—and dangerous—political attempts to frame Covid-19 as largely a problem of minorities”—this is critical to preventing further exacerbation of health disparities (Chowkwanyun & Reed, 2020, p. 203). One historical example of discrimination against ethnic minorities and unscientific attempts to place blame for disease (nearly 20 years before 1918 Influenza hit the islands) occurred in Hawaii with a bubonic plague outbreak in 1899:

The president of the Honolulu Board of Health ordered a systematic burning of buildings within the cordon to vanquish the plague, all of Honolulu’s Chinatown caught fire and burned for 17 days, destroying 28 acres and leaving 4500 people homeless. (Forbes, 2021, p. 12)

Similar events during the COVID-19 pandemic, which echoed 1918 and preceding decades, surrounded overt discrimination and racism against African Americans and Asians. Civil unrest arose in 2020 in response to police brutality which galvanized nationwide protests following the homicides of George Floyd and Breonna Taylor at the hands of law enforcement officers (Galea et al., 2020; Krishnan et al., 2020). Alarming instances of racial injustices during the COVID-19 era brought forth movements for social change and gave birth to the social media hashtags #BlackLivesMatter and #StopAsianHate.

Scenes of peaceful protests and pockets of violence during the 2020 COVID-19 Pandemic loosely resemble the race riots during the 1918 Influenza Pandemic, though the perpetrators in the former health crisis were often brazen government actors executing state-sanctioned violence (Bristow, 2012). Prejudice and racism along with segregation and stigmatizing attitudes in 1918 led to similar violent uprisings following “draconian public health ordinances and restrictive housing covenants” (Krishnan et al., 2020, p. 3). None of these troubling events frame an appropriate public health response or facilitate an answer as to why outcomes during the COVID-19 era were so different. It is a curiosity for some that many Americans were asymptomatic with some having not so much as the sniffles while others ended up on ventilators. In any event, a proper analysis and epidemiological answer to the urban impact reveals that it is not only the crowding in households that is a prominent feature for individuals and their increased susceptibility due to living in closer proximity. On a macro level, it is also a feature of “populations living in high density areas” like urban centers which are more vulnerable to the spread of COVID-19 (Lee et al., 2021, p. 9). Overcrowding in areas with high population density combined with lower socioeconomic status is an overriding factor, but also includes the lack of green spaces which “provide more opportunities for outdoor activities, which carry lower transmission risks compared to indoor activities with limited ventilation” (Lee et al., 2021, pp. 7-8).

Healthcare professionals should be mindful of harmful stereotypes to break with past errors that were committed in 1918 where those responsible for life-saving medicine targeted minorities and poor citizens with harsh opinions and condemnation. Attitudes of nursing professionals “reported on the particular shortcomings of the foreign poor” and at times judged those they were charged with assisting on whether they were “worthy of aid” or deserving of care (Bristow, 2012,

p. 64-67). Analyses reveal that African American minorities are affected by “comorbidities such as diabetes, heart disease, and asthma” out of proportion to the rest of the population and that is the root cause behind the unexpected number of deaths attributed to COVID-19 (Kim et al., 2020, p. 2441). The factors which make minorities more vulnerable to pandemic strains align with the features of a respiratory virus, which has proven more fatal to those with underlying health conditions. Immutable characteristics are not a factor for specific comorbidities which are known to affect all Americans. An individual’s interaction with their surrounding environment, however, has stood out as a significant factor in terms of health and wellbeing.

Of particular concern during the COVID-19 pandemic, which echoes similar sentiments by those who deemed certain populations unworthy of receiving special care in 1918, were physicians who openly claimed they would not treat any patients who were not fully vaccinated after the Pfizer vaccine received full approval by the FDA. Knowing that a sizeable number in minority-majority areas were more likely to be unvaccinated for a variety of reasons including concerns over existing medical conditions, it is ethically problematic for prejudicial attitudes amongst healthcare professionals to be expressed through news articles, especially during a pandemic of modern times (Francis, 2021, para. 7). Frustration, judgment, or political opinion (especially those expressed explicitly via biased media channels) is an ineffective method of encouraging vaccination, especially by those sworn to uphold the Hippocratic Oath and act in accordance with ethics to do no harm. Effective persuasion regarding benefits is a far superior method with the added benefit of upholding both legal standards and ethical values. Earning public trust is not only necessary for government officials during times of crisis but is of immense importance for medical professionals as well.

The bare minimum required to effectively adhere to public health directives with the hope of surviving a pandemic includes the following three: “a home in which to shelter, running water, affordable and trusted healthcare when needed” (Alberti et al., 2020, p. 926). Massive stimulus packages and other emergency interventions are reactionary and after-the-fact methods of pandemic response. A far more effective preparatory plan of action surrounds creating housing affordability and improving access to primary care services well beforehand, which are measures that have proven especially difficult when considering the current political climate and the difficulty in achieving health equity thus far. After these factors have been dealt with, then policymakers may move on to other more immediate solutions for the next pandemic such as reliable data reporting, disease surveillance, and contact tracing which are important at the onset of an outbreak. However, the minimum three population needs mentioned previously are the most critical for pandemic preparedness as it involves the factors preceding an outbreak which are most predictive of survival. Housing is a tool for creating sustainable wealth and escaping precariousness but has been elusive to minority populations and those with limited income. Although redlining and steering were practices made illegal in the U.S. real estate market with the passage of the 1968 Fair Housing Act, there are still many factors that allow for segregation and in turn poor quality housing— “minority residential environments bear substantial barriers to health optimization, such as curtailed green space access, disproportionate tobacco and alcohol marketing, low perceived neighborhood safety, and food deserts” (Krishnan et al., 2020, p. 5).

An affordable housing crisis was well underway prior to the pandemic in 2020-2021 in which “10.9 million renters—or one in four—spent more than half their incomes on housing in 2018” alone (JCHS, 2020, p. 4). At that level of housing expenditure, little is left for other

necessities of life. This coupled with increased artificial scarcity where zoning laws and other legal barriers have decreased the number of available affordable housing units has led to inflated rent prices, rampant housing insecurity, and a sharp increase in homelessness. Minority populations make up a sizable number of poor households suffering from the effects of housing and job insecurity with the pandemic having increased their hardship between increased infection and mortality rates in urban centers. Lack of a means to pay rent predicts that the homeless or individuals faced with eviction will typically increase occupancy in apartments and shelters or sleep in vehicles while using public bathroom facilities. Relatedly, a difference between 45 and 78 square feet for soldiers at an army camp during the 1918 Influenza Pandemic is all that was needed for a rate of illness ten times as great; “crowding stood out as having a strong correlation with disease incidence and severity” (Aligne, 2016, p. 642). This correlates with city apartment-living during the 2020 COVID-19 Pandemic in that crowding in close quarters was strongly predictive of COVID-19 case rates and mortality data.

The compounded effects COVID-19 had on an already stressed population will outlast the disease as uncertainty gives way to both newly developed and preexisting mental health conditions, added housing and job insecurity concurrent with rising inflation, and chronic instability. For minorities who coexisted with family in crowded living spaces and worked facing the public as essential workers, there was heightened risk, especially for those with comorbid conditions, creating a situation of double jeopardy where COVID-19 exposure was concerned. Poor and minority individuals have dealt with decades of wage stagnation by living in multi-generational households, yet COVID-19 caused this long-term trend to become a liability as “social distancing - having a space in which to isolate from others, especially when ill with the

coronavirus - is critical to halting its spread” (Reid, 2020, p. 29). To deal with the affordable housing crisis and alleviate this issue for the next pandemic, there is a need for the “reform of zoning and land use regulations to allow higher-density construction” (JCHS, 2020, p. 6). Another remedy involves removing hurdles to homeownership as this is the greatest opportunity regarding stability for those of modest means. However, “the long-term stagnation of real incomes” has made homeownership out of reach for millions of Americans including minority populations where income inequality is more pronounced (JCHS, 2020 p. 11). Improving this one factor is an immense undertaking, but proper pre-planning to be prepared for another global outbreak necessitates it and promises to greatly reduce incidences of premature death due to complications of a virus or other contagion.

The greater instance of comorbidities in minority groups have long been “pervasive in the USA,” but with inequities reaching a fever pitch during the COVID-19 pandemic, the underlying causes which are the “result of social inequalities produced by social systems reinforced through public policy” require greater attention (Alberti, 2020, p. 923; Kim et al., 2020, p. 2441). With COVID-19 as the backdrop for needed changes in the healthcare arena, the racial health disparities minorities face has become a primary focus for resolving inequities that remain a striking feature of the U.S. healthcare system. It is in this context a critical assessment of social and economic determinants will inform the future of healthcare legislation. Effective policy approaches to mitigate health disparities that are prevalent in minority communities must involve cross-cultural and cross-sector collaboration. The difficulty of past efforts is demonstrably seen in the piecemeal way that social problems are dealt with at the policy level. One policy prescription requiring prioritization surrounds vaccine equity as, historically, “racial and ethnic groups have had

suboptimal influenza vaccination rates” (Mein, 2020, p. 2440). Strategies to increase vaccination among minority groups include vaccination clinics that are free of charge to the patient, as well as campaigns to inform at-risk groups of how benefits outweigh risks.

In addition, “we must consider the historical and current effects of structural racism, which include a complex interplay of intergenerational poverty, lack of economic opportunity, income disparities, cultural isolation, and chronic stress” (Martin-Howard & Farmbry, 2020, p. 840). Health disparities are a product of structural inequalities leading to symptoms such as “chronic stress and weathering, which can be understood in the context of urban poverty and racism” as well as “rural poverty and class prejudice” (Kindig, 2020, p. 20). Greater attention was focused on tracking health disparities as the COVID-19 pandemic progressed, but this is only a start to a broader framework of actions that must occur to improve health equity and pandemic outcomes. A greater focus on disparate outcomes post-pandemic should center around increasing access to care, encouraging innovation and competition, removing regulatory barriers, enhancing the tracking of health disparities, improving local health services, and strengthening the infrastructure surrounding community health. Healthcare leaders will also want to include equitable pandemic preparedness protocols into their strategic planning efforts that will be targeted and effective without compounding social and economic injustices.

Well known contributors to health disparities for racial minorities identified long before the 2020 COVID-19 Pandemic began also include “uneven geographic distribution of preventive care services” and “the concentration of respiratory hazards and toxic sites in low-SES [low-socioeconomic status], minority-heavy areas” (Chowkwanyun & Reed, 2020, p. 203). Additionally, “racial/ethnic minorities are less likely to have access to a primary care provider”

due to factors such as discriminatory housing and employment practices despite The Fair Housing Act and Title VII of the Civil Rights Act (Kim et al., 2020, p.2441). The inability to secure proper housing or employment makes acquiring the health insurance needed to secure provider services far more difficult. Williams & Cooper (2020) refer to the lack of insurance or being underinsured for reasons that African Americans experience limitations to healthcare access (p. 2478). These combining set of factors directly contribute to an individual's vulnerability to poor health outcomes and must be dealt with at the policy level and move beyond merely stating the obvious issues after the pandemic subsides. Other factors which enhance the virality of a disease align with overcrowded environments where there is difficulty in social distancing, which describes the living conditions for a great number of African Americans living in urban areas. There is also the fact that African Americans "are seven times more likely" to have low Vitamin D levels as "the melanin in their skin reduces the ability of sunlight to convert 7-dehydrocholesterol" (Brown, 2018, p. 124). This matters because individuals with low Vitamin-D levels have been cited as being particularly vulnerable to the effects of COVID-19 (Whittemore, 2020).

With the greater focus on urban populations by researchers, media outlets, and public officials, there is also a need to highlight that rural communities "reported broader impacts from the pandemic and its associated economic and social effects," and far more significantly with factors such as unemployment and unmet housing needs than solely from the virus (Mueller et al., 2021, p. 2). Making matters more complicated, women in both urban and rural locations bore the lion's share of responsibilities in childcare and in ensuring their children stayed on top of schoolwork using video conferencing software. In rural areas the access to technological resources represented a significant obstacle to overcome. Poor and minority individuals living in rural areas

are also often less resilient than their urban counterparts due to urban-centric studies and public policies which do not translate to their specific socioeconomic needs. Researchers indicate that “many of the dramatic impacts documented in urban locales and on the national stage are just as prominent as, and in some cases even more pronounced, in the most geographically sparse region of the United States” due to material hardship, job insecurity, and unaddressed healthcare needs (Mueller et al., 2021, p.5). Future studies on the social and economic impact of COVID-19 on a diverse population in different locales is needed not only for a better understanding of the recovery process, but also in effort to aid broad swaths of affected groups within the American population to cultivate resilience.

It is hard to imagine for Americans who live quite comfortably those individuals who have trouble securing a place to live because they do not make enough income from full-time work to satisfy the unwritten ‘3 times the rent’ rule. It is unfathomable for some that there are Americans who do not have the right insurance policy to receive help from a great majority of primary care doctors. They live in a different socioeconomic reality from those Americans who lack opportunities for want of a good enough credit score or those who struggle daily with food insecurity and not knowing how they will pay bills that are due the following month. The disadvantaged in these common scenarios number in the millions, and though some policies do not seem problematic or racist on their face, many policies have led to segregated cities and a sizeable number of people in the workforce who have no college degree as costs of social and economic pathways to mobility have become increasingly prohibitive year after year. Economically, those without a college education were the most severely impacted by labor market disruptions during the COVID-19 pandemic (Daly, M. C., et al., p. 1).

Those who are affected by seemingly innocuous policies which produce unjust outcomes include minorities who work in low-wage occupations and depend on government programs for subsistence. When analyzing events during the past century from a policy lens, the inquiry of why inequality and the wealth gap has grown to a great extent despite policy interventions is pertinent to the search for long-term solutions. According to Marmot & Allen (2014), six determinants which influence health equity include “quality of experiences in the early years, education and building personal and community resilience, good quality employment and working conditions, having sufficient income to lead a healthy life, healthy environments, and priority public health conditions” (p. S517-S518). Education and wages are primary drivers that serve as barriers to healthcare access. Inadequate funding for schools in poor communities (due to structural problems in local tax codes) leads to subpar educational attainment which then leads to poor graduation rates and limited opportunities in higher education.

This set of circumstances then leads to unfulfilling work environments where longer hours, lower wages, and constant anxiety due to social stratification in the corporate sphere mirror the very social inequities featured in public life. Over the last quarter of a century, despite enacted policies, many Americans have still been denied the opportunity to secure fulfilling work or the income necessary for a comfortable existence. These developments are what is meant when structural issues are cited. Furthermore, it is not enough to recognize the problem or to exhibit empathy, but real solutions must follow. Americans cannot afford to allow structural issues to persist much longer while special interests further divide the country and erode social cohesion. The result is a country that is a shell of the principles on which it is proclaimed to stand.

An oft-stated fact is that medical determinants combine with social determinants to explain how circumstances and environment impact minorities in a variety of ways including poor continuum of care. Currently, the U.S. is ranked “175th in the world for health access” out of 195 countries listed in the Global Health Security (GHS) index prepared by the Johns Hopkins Center for Health Security, the Nuclear Threat Initiative, and the Economist Intelligence Unit formed in 2019 (Daszak et al., 2021; GHS Index, 2020). Although the U.S. leads the world in overall scoring in the GHS index, implementing a more holistic approach to health care is needed to improve health care as the nation struggles with low rankings in terms of quality and access. Improvement of social and economic determinants with a greater focus on preventive care may be what ultimately reduces health disparities in minority populations, but the impetus must be there for leaders to move beyond stating the problem and act decidedly and resolutely to ensure healthcare access for all Americans. In conjunction, social justice interventions in a cooperative, collaborative, and volitional capacity during and prior to a pandemic “may have positive impact on disadvantaged groups, particularly interventions in housing and the work environment” (Engelgau et al., 2019, p.107). With that said, public health officials and policymakers must also consider any unintended consequences of the actions they take or the legislation they enact, to ensure they do not further hinder groups whom they aim to assist.

Snowden & Graaf (2021) indicate in like manner that structural inequities have exposed African Americans to greater risk and adverse outcomes. In addition to reviewing the cause and effect of systemic inequality present prior to and during the COVID-19 outbreak, those involved in public health research, administration, and leadership must consider how public health policy may address the major causes of health disparities and keep exponential harm from continuing a

recurring cycle. From a historical lens, minority populations subject to poverty and inequality suffer the ill effects of viral contagion not commensurate with society overall due to diminished economic opportunity and a lack of meaningful healthcare. It must be noted that susceptibility to viruses is not inherent to any race; the reason for the disparate impact on African Americans stems from causes that are more prevalent due to social and economic determinants that “can perpetuate and increase the very social inequality that renders African Americans more vulnerable to COVID-19 and its effects” (Snowden & Graaf, 2020, pp. 13-16). Social and economic determinants are multivariate in nature with determinants such as poverty creating a “feedback loop by which, even as African Americans’ poverty causes poor health, African Americans’ poor health will cause more African American poverty” (Snowden & Graaf, 2020, p. 16).

Several policy prescriptions to avoid poor health outcomes that follow negative health determinants prior to and during a pandemic include increased testing in African American neighborhoods, preferably in “churches, public housing sites, community health centers, and other familiar sites” (Snowden & Graaf, 2020, p. 13). Prevention and detection are two of the most important tools to ward off disparate outcomes and proactively and efficiently channel resources. Therefore, emergency funding to Community Health Centers (CHCs) should not be overlooked but be a first line of defense. The Coronavirus Aid, Relief, and Economic Security (CARES) Act was cited as a positive policy prescription in that it “helped to cushion African Americans greater economic suffering,” though it “neglected to include rental assistance for non-homeowners, among whom African Americans are disproportionately represented” (Snowden & Graaf, 2020, p. 16). Social safety nets are necessary in stemming the tide of homelessness and the greater implications

of pandemic disease, yet the U.S. tax code which provides funding from American taxpayers for initiatives to combat disparities complicates matters with its own systemic issues (Parrot, 2021).

The policies enacted during the COVID-19 pandemic came up woefully short as the social devastation from the health crisis was compounded by economic shocks, leaving some to fall through the cracks. Some policies were ineffective because “exemptions greatly restricted the scope of new coverage” (*e.g.*, the Family First Coronavirus Response Act (FFCRA) addressing paid sick leave) (Snowden & Graaf, 2020, p 14). In citing workplace safety, it is noted that “critics have charged that OSHA has been insufficiently vigilant in pursuing compliance” which adds to the greater risk taken by African American essential workers (Snowden & Graaf, 2020, p. 14). This is especially concerning where some in the public health policy arena have involved OSHA to turn COVID-19 vaccination into a workplace safety issue even though they have been cited as insufficiently performing in their main capacity. On November 6, 2021, the Fifth Circuit Court of Appeals halted the federal administration’s vaccination mandate (which singled out businesses with over 100 employees) citing “grave statutory and constitutional issues” which presages that there will be lawsuits for some time to come even as COVID-19 takes its leave (Hirsch & Grullón Paz, 2021, para. 9). A week later the ruling was affirmed by the court as a “one-size-fits-all sledgehammer” because it does not maintain constitutional boundaries and interferes with an individual’s personal medical decisions (Whitcomb, 2021). The public battle involves a mandate that, if allowed to take place, will have broader implications for minority populations who have already been deeply impacted by policies which fall harder on the working poor. There are many ways to view public health policy, but the most effective in reducing health disparities involves

humane policies which are well-thought, reasonable, and are not accompanied by the stain of political partisanship and its disparate effects.

The demographic primarily affected by either major pandemic differed in age as a greater number of younger Americans, including soldiers in their “peak years of physical prowess,” were impacted in 1918-1919 whereas the elderly population was more likely to succumb to the novel coronavirus in 2020-2021 (Barry, 2005; Crosby, 2003, p. 15). However, when it comes to the subject of negative social and economic health determinants and health inequity, minority populations bore an excessive burden. They were negatively impacted by both pandemics, particularly African Americans residing in skilled nursing facilities during the COVID-19 pandemic. Various factors surrounding the social and economic determinants of health including the already aforementioned are described by Bambra et al. (2020) in terms of complexity:

Minority ethnic groups, people living in areas of higher socioeconomic deprivation, those in poverty and other marginalized groups (such as homeless people, prisoners and street-based sex workers) generally have a greater number of coexisting NCDs [non-communicable diseases], which are more severe and experienced at a younger age. (p. 965)

In view of the complexities surrounding racial health disparities experienced during both major pandemics, Krishnan et al. (2020) suggest a resilience approach rather than one centered on deficit. They outline five strategies which include contextualizing disparities within a ‘historical arc’, using empowerment and a community’s inherent strength in the problem-solving process alongside existing power structures, acknowledging the efforts of frontline workers and other first responders within minority communities, using pandemic preparedness as a framework to enhance civic participation in minority areas, and to both acknowledge and correct current systems which

have contributed to structural inequities (p. 5). Empowerment of minority communities in conjunction with protocols that are both preventive and restorative are preferable to reactive approaches which do not address underlying socioeconomic conditions. With pandemic preparedness as a canvas on which new precedence may be set, Americans should take the COVID-19 pandemic as an opportunity to move forward in an equitable direction and fuse the frameworks of social and economic justice.

Leaders in healthcare and other industries may disagree on methods of revamping infrastructure in a variety of key areas that would improve social and economic health determinants. In any case, a basic framework of bolstering public health for future pandemic preparedness is a start by ensuring adequate emergency supplies and personal protective equipment (PPE), having a sound contact tracing protocol in place, and prioritizing vaccine distribution to those most at risk for viral complications. Other measures that address determinants and needs at the community level such as affordable housing, access to healthcare, social mobility, education, and opportunities in employment should be long-term policy goals, since these issues have proven most difficult in solving and which entail collaborative efforts between economic sectors. Structural remedies will go a long way in improving socioeconomic conditions for minority populations. A collaborative fusion between social justice and market justice principles can lead to a variety of creative solutions which close health equity gaps. This can serve as a viable way forward while also ensuring, for all intents and purposes, that the aphorism “a rising tide lifts all boats” is true for disadvantaged communities (EPI, 2021).

Socioeconomic Impact: Social Justice, Market Justice, and Pandemic as Disruptor

While mortality rates were significantly worse in 1918 as influenza tore through U.S. cities, especially considering a much smaller population, the economic ramifications were brutal to a greater extent with the emergence of COVID-19 in 2020 because “the orders have been generally more sweeping and have most severely affected the service sector, now the dominant segment of the economy” (Navarro & Markel, 2021, p. 420). Sweeping policies failed to respond in a more nuanced and effective manner to the pandemic outbreak, not only due to public backlash or noncompliance, but because different communities are not all affected in the same way, with some being labeled as ‘hotspots’ while others had far fewer cases and deaths. Business closures en masse throughout every city, town, and municipality caused the unemployment rate to skyrocket to unprecedented levels in 2020. Employment “fell by more than 20 million jobs and the unemployment rate rose to its highest level since 1938” with the safety net of unemployment insurance income stunted by backlogs and strains to city budgets (Clifford & Mattingly, 2020; Daly, M. C., et al., 2020, p. 1). Delays in processing meant that many living paycheck to paycheck were without money for rent or food for extended periods of time and in turn sought charitable organizations for survival. In exploring different epidemiology models, Eichenbaum et al. (2021) state, “there is an inevitable trade-off between the severity of the recession and the health consequences of the epidemic,” but from a pandemic preparedness lens, it is worthwhile to explore ways of gaining advantage over a virus which do not entail an either/or scenario (p. 5151). There will always be trade-offs to any action or event, yet with better strategic planning, both disease and economic turmoil can be forestalled.

According to the United States Government Accountability Office (GAO), the COVID-19 pandemic “threatened to reverse recent gains in low-income households' access to food, and has

increased demand for federal nutrition assistance programs” (GAO, 2020, p.181). The report is significant in highlighting food insecurity for one in ten American households not accounting for populations that were soon to join those ranks. For some newly unemployed Americans, an eviction moratorium, the ceasing of student loan payments and interest, and stimulus checks in amounts which barely covered more than one or two rent payments for the entire fiscal year were their only reprieve. Accompanying the sharp rise in unemployment was a demand for services from private food banks and government SNAP (Supplemental Nutrition Assistance Program) benefits. Many individuals who lost their jobs typically worked in low-wage occupations and were already among the predominant groups affected by food insecurity even prior to the pandemic, a factor which also made them more vulnerable to COVID-19 due to immunologic decline (Nagata et al., 2021). Policy recommendations for future pandemics include ways of expanding access and ensuring food security during a time where offices are likely to be closed and where applications may not be immediately processed.

With the consolidation of businesses and the decline of manufacturing jobs over the span of decades, a predominant focus during the COVID-19 pandemic centered around health determinants and whether the healthcare industry is one that should be left to market forces. Common arguments for and against social justice and market justice have emerged, typically diametrically opposed. Yet, healthcare leaders may want to examine how both may complement each other in an unabashedly capitalist society. While healthcare organizations are bound to navigate the burgeoning legal framework, solutions do not always have to be policy-led, though are increasingly so in a markedly litigious society. Principles of market justice and social justice may be extracted and harmonized to legal constructs. For example, Americans may blend social

justice principles such as human rights, access, equity, and participation with market justice principles such as liberty, individual autonomy, voluntary exchange, and personal achievement. The fusion of these principles would entail a more creative and dynamic approach for pandemic preparedness, but political opportunism remains a continual threat to their development.

As far as pandemic response measures are concerned, the 2020 COVID-19 pandemic featured the implementation of orders which sent shockwaves through the economy. The virulence of 1918 Influenza was far too swift and the population more spread out geographically than in 2020 for any economic impact to have been as wide-reaching. This is why “extrapolating from 1918 to the present day requires great caution,” because the former era is a much different time and although Americans of that era met their experiences with influenza with the best non-pharmaceutical means they could muster, the virus was more devastating than any other affliction in modern history (Bootsma & Ferguson, 2007, p. 7592). In many ways, Americans living through the COVID-19 pandemic are more vulnerable due to global dependence and ubiquitous airline travel. The standard American diet is also a driver of comorbid conditions. It is modern medicine which has made a considerable difference between the two pandemic eras. The economic effects were far greater in 2020 with sweeping measures responsible for the reduction of aggregate demand and consumption while lockdown and stay-at-home orders were in place and the subsequent rise in inflation, supply-chain issues, and worker shortages as the economy reopened. The mandated closures and one-size-fits-all policies enacted across the country ensured that “the economic crisis is likely to outlast the health crisis” (Moreira & Hick, 2021, p. 263). Related economic concerns for the future include “bankruptcy costs, unemployment hysteresis effects, and the destruction of supply chains” (Eichenbaum et al., 2021, p. 5183).

Issues surrounding market justice and social justice were exceedingly pronounced during the COVID-19 pandemic, especially when it came to pre-existing racial health disparities in reference to the U.S. healthcare system and the subsequent economic aftereffects. 1918 Influenza swept through the U.S. at a much faster clip “before it had any ephemeral effects on the economy,” which is one of the unique characteristics that allowed for its memory to be cast aside and for preparedness to fall by the wayside in subsequent decades (Crosby, 2003, p. 285). In an ideal world and in the long-held tradition of voluntarism, Americans would be able to come up with solutions to health disparities that were exacerbated prior to and during the 1918 and 2020 pandemic crises, both individually and as members of whole communities. The countless instances of racial and class prejudice in world history, though, should give pause to anybody when considering the centralization or nationalization of any industry. To that end, market justice, in theory, allows individuals the freedom to prioritize their own healthcare needs as they see fit, favoring a more decentralized model as it has been noted that bureaucrats living miles away are at times unlikely, unable, or unwilling to keep abreast of the needs of specific communities, nor likely to spring to action when necessary. Social justice, in contrast, increasingly gives power to a centralized authority to act on behalf of the entire population for the greater good. Given how power has often been corrupted, leaders may want to take the best of both worlds, and create checks and balances, to guard against the centralized abuse of power, a feature most often seen in authoritarian or dictator-led societies.

A real problem for the U.S. healthcare system, however, centers around arguments regarding whether market forces function as they should, with some scholars arguing their nonexistence. It is true that healthcare disparities have only worsened with increased government

intervention at the federal level, yet “market forces operate in health care with surprising consistency and impact” (Chandra et al., 2016, para. 3). Chandra et al. (2016) studied five different health services in the Medicare system and their research indicates that “higher-performing hospitals, as measured by outcome-based measures and process-of-care measures (but excluding patient-reported satisfaction), do, in fact, have greater market share and their market shares also tend to grow” (para. 4). Providers of healthcare in America operate in an imperfect market, as perfect markets do not exist, but the law of supply and demand is still applicable. Where the market is stifled has more to do with bureaucracy and lack of competition. Patients are often unable to shop for the best prices on a wide range of health services due the lack of transparency in pricing, which includes poor and minority populations who are unable to organize in response to hidden market signals. Although government officials and healthcare authorities have sought to track disparities in minority health, they have paid “little attention to the economic dimension of health inequities” (Engelgau et al., 2019, p. 103). This is indicative of a situation where the problem is known and well-documented but where there is little drive to enact sustainable solutions.

In examining the healthcare marketplace, it is pertinent to ask why health disparities are still so widespread even with the government exercising more control over the healthcare industry than at any other time in U.S. history. Any policy discussion must include the fact that a “disproportionate amount of revenue coming from government (10 times more than employers) means that the carriers are cognizant that the government is their main customer when designing business models” (Troy, 2015, p. 2). Above all, recognizing the human element is essential. Human beings are not machines, and as such, they should not be coerced or shuffled around by the powerful and well-heeled under the notion that ‘might makes right.’ Because the U.S.

population is aging, leading to more Americans being enrolled in public programs like Medicare and Medicaid, and because companies are responding to the government's increased share of the market by engaging in mergers and acquisitions, the resulting outcome will be an oligopolistic market with corporations that are oligarchical in structure. Based on this fact and what has already transpired, it is not clear that giving the national government monopsony power over the healthcare market will improve healthcare outcomes and lower costs.

Predictable as it is, these developments have created an underclass, comprising many Americans with no power to institute needed changes that will improve their own welfare. As this shift in the healthcare sector continues to develop, market forces are stifled to an inexorable degree. It was cited in 2015 that insurance industry mergers proposed at the time “would have the effect of reducing competition in 154 metropolitan areas in 23 states” (Troy, 2015, p. 3). At the same time, the consolidation of hospitals has led to prices increasing 6.2% on average in relatively the same five-year span (Schwartz et al., 2020). With the rapid pace of business mergers and acquisitions in various economic sectors including the healthcare industry pre-pandemic, it is little wonder how and why the pandemic response measures in 2020 pushed thousands more American citizens into poverty, with the loss of employment and health benefits by extension. The overarching effect is higher costs and limited choices for much of the American public. As far as pandemics go, this is a repeat of history because in 1918 it was also the case that “for families living with material deprivation before the pandemic hit, the disruption of wage-earning through illness, even for a short time, might mean hunger, cold, and even homelessness” (Bristow, 2012, p. 61). Though the healthcare industry has changed dramatically over the course of a century, little has changed for the economically disadvantaged from one pandemic to the next.

It is not that the principles of market justice and social justice cannot be complementary in the abstract; the issue lies in the very nature of the U.S. healthcare system as it currently stands, being one that has (along with many industries) increased monopolistic tendencies. Victor R. Fuchs, Professor of Economics and of Health Research and Policy at Stanford University, states, “As Machiavelli observed, proposals for a new order face strong opposition from those who benefit the old order” (Fuchs, 2020, p. 234). He goes on to state regarding U.S health policy:

The pre-pandemic system allowed direct visits to specialists and subspecialists. It provided quick access to expensive diagnostic technology, surgical interventions, and high-priced new drugs that offered only minor improvement in length or quality of life. It featured hospitals that had patient rooms that were larger and more private than in other countries and that had relatively more intensive care units. The cost of this system, more than \$11000 per person per year, is tolerable for those with high incomes, but oppressive to most individuals in the US and ruinous for many, leading to missed medicines and bankruptcy. (Fuchs, 2020, p. 234)

The costs of healthcare services in the U.S. are indeed economically damaging for many, primarily burdening those on the low-income spectrum of the socioeconomic scale, which includes an inordinate number of minority groups. In examining health disparities, especially from a post-pandemic standpoint, it becomes apparent why many Americans agree that replacing “the current byzantine system of premiums, taxes, tax exemptions, deductions, subsidies, and out-of-pocket payment with a much simpler system of financing healthcare” is essential (Fuchs, 2020, p. 233). The economic aspect of determinant causes of health disparities centers around income as it is “referred to as a “cause of causes” or “fundamental cause” of health outcomes, income shapes the

resources at our disposal, the disease risks we are exposed to, and our ability to mitigate these risks” (Avanceña et al., 2021, p. 1404).

However, placing the blame on high-income individuals and their preferences or for the general “distrust of government by many in the general population” allows the real reason for rising healthcare costs and a disparate impact on poor and minority populations to go unchecked: bureaucracy. Bureaucracy is responsible for a third of all healthcare costs—“the *Annals of Internal Medicine* finds that health care bureaucracy cost Americans \$812 billion in 2017” and “represented more than one-third (34.2%) of total expenditures for doctor visits, hospitals, long-term care and health insurance” (Himmelstein et al., 2020). The long-term trend of increasing bureaucracy has been overshadowed by references to the wealth of billionaires increasing by \$1.1 trillion during the COVID-19 pandemic, which is glaring when juxtaposed with the fact that “the poverty rate increased from 9.3% in June 2020 to 11.8% in December 2020” (Avanceña et al., 2021, 1404). The problem with the focus on the billionaire class is that it does not strike at the heart of government policies which are driving determinant health factors, though some billionaires fund lobbyist groups which are responsible for pushing policies which have led to wealth concentration and shrinking social safety nets. Identifying problematic policy levers is important given that income and housing affordability are significant to the health and well-being of all U.S. residents.

The focus on specialization is not to blame either, even as there is a shortage of primary care physicians. In 1918, there were no specialists. Today, “specialists working as a team can save the same patient who a century ago would have died, unnoticed, in the corner of a busy and overcrowded ward” (Brown, 2020, para. 9). While it is true that preventive care would help ameliorate the increasing need of specialists, focusing on incentives for individuals to choose

primary care as a career is the better choice to improve health outcomes, rather than lamenting the number of specialists in the medical field. Doctors, nurses, and other healthcare professionals specializing in different areas of health and medicine have led to the advances which have held back more catastrophic outcomes during the health disasters Americans have faced in recent years. The 1918 Influenza and 2020 COVID-19 pandemics have reflected there is a great need for both generalists and specialists, not only to help prevent comorbidities that make one more susceptible to succumbing to a pandemic, but to save lives in cases where acute medical intervention is necessary.

U.S. government agencies also engage in redundant practices, which if abolished, would mean that the savings could be better used toward improving quality of care for the economically downtrodden. One example of redundant practices is that the Agency for Healthcare Research and Quality (AHRQ) “has an alphabet soup of four different quality indicators that it uses: HQIs, PSIs, PQIs, and PDIs” at the same time “being fully aware that there are many other entities that already look at quality” (Troy, 2015, p. 9). In addition to examining policy prescriptions that may better serve racial minorities and individuals with modest means, cutting inessential activities and waste could go a long way toward a “significant savings in health care spending” (Troy, 2015, p. 9). This combined with increased leverage employed by other players alongside government in the healthcare marketplace could reduce the occurrence of health disparities by generating “true competition within the supply chain,” thus resulting in “quality improvement and affordability in health care” (Troy, 2015, p. 9). Administrative costs have been reduced as “virtually all billing has been computerized and EHRs have become commonplace, but the promised breakthrough in administrative efficiency has not materialized” (Himmelstein et al., 2020). This is shocking in an

era of machine-learning and against the backdrop of the COVID-19 pandemic where telemedicine technology has risen to prominence. It is clear more work is needed in harnessing electronic mediums in healthcare spaces to receive the full benefits of the technological revolution.

It is anticipated that the COVID-19 pandemic will have far-reaching effects including the expectation of “significant disparities arising from the lack of health insurance due to one of the highest unemployment rates in history”—an especially dire situation for vulnerable and minority populations who were already faced with a lack of access to meaningful healthcare (Kim et al., 2020, p. 2442). Proposed interventions thus far have proved either elusive or exceedingly difficult to implement in an era where competing interests drown out the voices of average Americans. One recent healthcare policy initiative—the *No Surprises Act*—has been passed by Congress to respond to the issue of Americans ending up at out-of-network hospitals during an emergency and thus receiving surprise medical bills:

Starting January 1, 2022, it will be illegal for providers to bill patients for more than the in-network cost-sharing due under patients’ insurance in almost all scenarios where surprise out-of-network bills arise, with the notable exception of ground ambulance transport. Health plans must treat these out-of-network services as if they were in-network when calculating patient cost-sharing. The legislation also creates a new final-offer arbitration process to determine how much insurers must pay out-of-network providers. (Adler et al., 2021)

If effective, the “Congressional Budget Office estimates that the *No Surprises Act* will reduce commercial insurance premiums by between 0.5% and 1%, saving taxpayers \$17 billion over ten years and saving consumers about twice that much between reduced premiums and cost-

sharing” (Adler et al., 2021) There is, however, a lag time between enacted legislation regarding health policy initiatives and any visible effect it has on the general populace, so its success or failure is indeterminate at this juncture but will be something to track into the future to verify outcomes. What is clear now is that the legislation does little to help the uninsured, a demographic repeatedly referenced in government hearings on health policy and one that also includes an inordinate percentage of minorities.

Another healthcare policy initiative took effect on January 1, 2021, at the beginning of the second year of the COVID-19 pandemic: the *Hospital Price Transparency* rule. It mandates that hospitals post a “display of at least 300 shoppable services in a consumer-friendly format” and provide a “machine-readable digital file with all items and services” as well (CMS, 2020). The measure was enacted in hopes that it will somewhat demystify the amounts that hospitals charge for specific services and add to the continuing conversation surrounding health care costs, health insurance policies, and health care outcomes, but it will take time to ascertain the effect on minority, low-income, and working communities. It is not readily apparent that posting chargemaster prices will be effective since this is the starting price which hospitals use to negotiate with carriers and does not represent what the insured will pay after a service has been performed. The transparency rule legislation is governed by the *Centers for Medicare & Medicaid Services* (CMS), an organization that indicates for noncompliant hospitals it will issue a warning notice, request a corrective action plan, and impose a civil monetary penalty and publicize the penalty on a CMS website (CMS, 2020). Proponents of the *Hospital Price Transparency* rule express the hope that patients will be able to acquire healthcare services at preferable prices with better

information. It has been indicated that payers and providers will negotiate better pricing arrangements knowing that the information is public.

Although transparency is generally seen as a social good, the new rule was not enacted without controversy as hospitals along with the American Hospital Association (AHA) are on record as opposing the new legislation, pursuing objections in court during the COVID-19 pandemic after having “lost a lower court ruling in June 2020” (Felt-Lisk et al., 2020, p. 3). With the COVID-19 pandemic still affecting the industry, hospitals have requested that the Department of Health and Human Services (DHS) “exercise enforcement discretion” until the public health crisis has ended (Henderson & Mouslim, 2021). The AHA’s position is that the new rule “will not help patients and instead will confuse them, will accelerate anticompetitive behavior among commercial health plans and will impose significant costs on providers” (Daly, 2020, para. 20). Arguments also notate an imbalance of obligations being applied to only one side of the equation because the rule does not address how health insurance carriers reimburse services. There is also the added fact that because elective procedures were halted during the COVID-19 pandemic, health care insurers saw twice their typical earnings. The excess premiums were a windfall for insurance corporations with net income for UnitedHealth Group increasing from \$3.4 billion to \$6.7 billion and for Anthem, Inc. from \$1.1 billion to \$2.3 billion (Plott et al., 2020, p. 1713). Objections by hospitals notwithstanding, the new rule “will not be a silver bullet” but is just a starting point for further discussions surrounding healthcare costs, social justice, and market justice concerns (Felt-Lisk et al., 2020, p. 3).

Although it is not yet known what impact recent legislation will have on racial minorities, especially in the aftermath of dealing with COVID-19, there are policies currently on the books

for which there are unintended consequences. For example, lower reimbursements for Medicare and Medicaid eligible patients in cases where individuals are deemed dual-eligible for both, often results in healthcare providers engaging in cost-shifting from one program to the other to avoid revenue shortfalls. In this way, the healthcare system compounds inequalities because “eligible patients tend to be both poorer and sicker than average” which means poor and racial minorities will “fail to receive the coordinated care they need” (Troy, 2015, p. 4). Per an NCHS (National Center for Health Statistics) Data Brief in 2015, the practice of providers accepting patients with private insurance was 84.7% compared to 68.9% of new Medicaid patients according to data gathered from the 2013 National Electronic Health Records Survey (Hing et al., 2015).

Additionally, “prices that U.S. medical providers charge incorporate a hidden surcharge to cover their costly administrative burden”; hospitals and other healthcare organizations experience increased pressure to cut spending and administrative costs where possible to continue operations (Himmelstein et al., 2020). This is just one of many conflicts of interest inherent to the current healthcare industry in the U.S. which amplifies health disparities. A widespread problem providers experience in the U.S. regarding healthcare costs stems from increased “administration due to the complexity entailed in billing multiple payers and dealing with the bureaucratic hurdles insurers impose” (Himmelstein et al., 2020). There is also a conflation of health insurance with health care in the U.S., yet they are not one in the same, and having costly health insurance does not equate to having access to quality care.

Even though over ten years has passed since the passage of the Affordable Care Act (ACA), the COVID-19 pandemic began with “29 million people lacking health coverage” (Parrott et al., 2021, p. 2). Any policy discussion regarding socioeconomic impact would be remiss if the role

that healthcare insurance carriers play in escalating healthcare costs is not mentioned. With the profit motive on full display in the health insurance industry during the pandemic, “COVID-19 has crystallized the need to address the “toxic combination of poor social policies and programmes, unfair economic arrangements, and bad politics” that are “responsible for the fact that a majority of people in the world do not enjoy the good health that is biologically possible” (WHO, 2008). However, the notion that governments will improve a situation in which public policies have already produced negative and repressive effects is doubtful, though progress could be better achieved through more bipartisan environments.

It is a feature common to the American political landscape that it takes a seismic event for wide-reaching policy reforms to be enacted. For example, this can be seen with the New Deal reforms in the 1930s or the introduction of Medicare and Medicaid in 1966 after the number of individuals over age 65 without insurance or an ability to pay for care increased significantly. In the same way, the COVID-19 pandemic will usher in an era of major political change that may allow for substantial health care reform. However, “designing and implementing a better health care system will not be easy”; arguments regarding inequities in health care coverage have been a feature of health care policy arguments for several decades (Fuchs, 2020, p. 233). Many Americans disagree on how to arrive at a streamlined healthcare system. Those who are against a one-size-fits-all policy approach to the healthcare system, however, may find common ground with those who prefer a social justice approach in that changes are best implemented in stages. Arguments that administrative costs would be reduced by government control over healthcare, however, is not readily apparent since the government is currently “the largest single payer of health care in the United States” (Troy, 2015, p. 1).

As far as equitable healthcare is concerned, where market justice and social justice could intersect in an ideal world is in market freedom which entails increased competition to address healthcare costs, and equal access which involves removing obstacles that put certain populations, including minorities, at a disadvantage. As the current situation stands, healthcare in the United States is “too costly, too unequal, and too uncertain in its eligibility and coverage” (Fuchs, 2020, p. 233). It is possible for both market justice and social justice to coexist simultaneously in policy prescriptions and could be used strategically to create a more just health care system for minorities and, of course, society at large. As the U.S. government has significant influence over the healthcare market and as private payers respond to government policy implementation in the healthcare space, then “the key question is whether the changes undertaken by these players will, together with government, enhance or detract from the widely proclaimed goal of better quality health care at a more affordable cost” (Troy, 2015, p. 1).

Examining the U.S. healthcare market as it currently exists from the lens of market justice and social justice during a pandemic reflects just how challenging it is to design a system that works for all citizens. Advocates for increased social justice interventions in healthcare argue that “Medicare for All could save more than \$600 billion each year on bureaucracy and repurpose that money to cover America’s 30 million uninsured and eliminate copayments and deductibles for everyone” (Himmelstein et al., 2020). Others give pause by pointing to exponential administrative costs as well as expressing concern that “enrollment is projected to swell “to 93 million, while the ratio of workers per beneficiary is expected to decline from 3.2 to 2.3 by 2050,” resulting in considerably less tax revenue (Cubanski et al., 2015, p. 34). Regardless of where healthcare policy experts stand on the issue, all Americans involved in the U.S. healthcare system should care about

equity because individuals in society are interrelated; adverse socioeconomic factors, poor healthcare delivery, and subsequently poor outcomes greatly affect society overall in a variety of spheres, adding to societal ills.

Education is important in every facet of life, and in all sectors of the U.S. economy. The realm of public health is no exception. Collective experiences with the 1918 Influenza Pandemic and now the 2020 COVID-19 Pandemic has made this abundantly clear. Though structural inequities have held the disadvantaged back and public schooling has not served as a great equalizer, technologies used in the education of finance and healthcare are making headways toward lifestyle improvement with the aim of a more just society. A greater focus on remedies is needed, however, because “the accident of birth should not place a limit on one’s destiny” - “children, regardless of socio-economic background should have a more or less equal opportunity to succeed and thrive in the United States of America” (Reid, 2020, p.11). If education and accompanying technological tools are effectively used to promote preventive care and proactive measures, it could lead to a serious reduction in poor health outcomes in the future, though structural issues such as the way schools are funded, if not corrected, will continue to prevent progress, and persist as a critical determinant in subsequent outbreaks. In effort to make education a focus along with healthcare and technology, “addressing gaps in educational attainment will be essential to improving economic resiliency against future shocks” (Daly, M. C., et al., 2020, p. 1).

Healthcare interventions work not only from an individual perspective but also when considering cooperation at the community level, though when discussing the latter, it is key to avoid “conflating social determinants of health with individual social needs” (Alberti et al., 2020, p. 925). That said, market justice and social justice do not have to be completely at odds—an

example being how swift legislative roadblocks were removed so that “technological interventions such as telemedicine visits with patients” were available for those without access to hospitals during the pandemic (Shah et al., 2020, p. S367). Those involved in a hospital or healthcare organization’s efforts to influence healthcare policy can lead the way in working together to achieve health equity through promoting effective use of available technologies. This advocacy along with the benefit of reducing overall costs and improving both social and economic determinants of health is a path forward in being fully prepared for pandemics to come.

A Path Forward: Capitalizing on Technology and Innovation

Americans in the COVID-19 era live in an age of technological revolution and modern medical advancements which Americans living in 1918 could only hope for and dream about. It is something for which Americans take for granted, some not knowing a time when state-of-the-art therapies and technologies were not available. In the modern world, COVID-19 is less of a puzzle than ‘H1N1 Influenza A’ was for health professionals a century ago. Capitalizing on American strengths, especially regarding technology and innovation while also improving the conditions required for pandemic preparedness, are the keys to winning out over the next viral outbreak. It is not only constructive to examine current weaknesses in the U.S. response to pandemics, but also to take stock of what went right and consider how the successes of scientific advancements, medical breakthroughs, and technological innovations may be replicated. Not only that, those concerned with health care outcomes will also want to design ways to use the technologies and transformative therapies at our fingertips more effectively. During the post-pandemic reflection, it is necessary to not only assess the many ways where pandemic preparedness fell short and take

corrective steps, but also to analyze and maintain actions and developments that were favorable in reducing poor health outcomes during the COVID-19 pandemic.

Innovation, technology, and vaccines were tools in favor of modern society, despite the lackluster pandemic response initiatives that were too heavily reliant on antiquated measures that, when broadly applied, contributed to sharply disparate health outcomes along with social and economic conflict arising from deficient policies. A minority of outlets have indicated that the 2020 COVID-19 Pandemic is the deadliest in American history, but this is just not the case when considering population size. The truth is that Americans are the beneficiaries of a century of social, economic, and technological progress, which has aided in ‘flattening the curve’ of mortality to a significant degree, especially when considering how bad it could have been if mortality rates were the same between the 2020 COVID-19 and 1918 Influenza pandemics. In taking account of how pandemic preparedness faltered, Americans are still fortunate in the many ways health care has advanced in society prior to the pandemic. The scale of mortality between 1918 and 2020 are entirely dissimilar—it is the one-size-fits-all measures and the subsequent social and economic fallout which somewhat mirrors the former pandemic. Technological marvels such as telemedicine, experimental drug therapies, and vaccines alongside traditional non-pharmaceutical methods saved the day, though they were not always used efficiently or strategically.

One way to encourage innovation in pandemic preparedness planning is to highlight major differences between 1918 and 2020 pertaining to the evolution of medical science. During the former pandemic, “many patients were crowded into shared wards where dozens or even hundreds of other people lay coughing” (Brown, 2020, para. 7). Telemedicine along with proper isolation procedures changed this familiar scene completely. eHealth has grown in noteworthiness as a

viable option to relieve hospitals of non-emergent cases, improve access to care for patients who are unable to travel, and to the management of data integrity and related functions that add to a healthcare organization's overall robustness. Healthcare organizations that embrace telemedicine and by extension telecommuting as an added tool to their healthcare practices may prepare for the next pandemic in significantly industry-changing ways while also effectively decreasing cross infection at in-person health centers (Ye, 2020, p. 2). The downside to moving to digital platforms is the increased risk of data breaches, loss of revenue tied to regulatory violations, and errors to patient data that cost time and money to correct. The upside, however, is said to be greater than the risks. Digital patient engagement and technology used in the field of telemedicine frees up valuable time, and for healthcare providers working in emergency facilities, speeds repetitive data collection procedures, and creates potentials for greater streams of revenue by improving costs and health outcomes.

Many benefits of telemedicine have yet to be realized. Its implications signal great transformative effects on the US healthcare system in the following decades. One early benefit that is easily recognizable is how it may be used as a strategy to relieve emergency care resources for those who need it most, while still providing beneficial services to those in need of care for non-emergent conditions. Nevermore will patients have to sit for lengthy periods in waiting rooms with other individuals suffering a variety of illnesses, an obvious benefit that has been realized in the wake of the COVID-19 pandemic. Telemedicine may also be used to avoid Emergency Medical Treatment and Active Labor Act (EMTALA) violations by ensuring there is always a physician on call. The Center for Medicaid and Medicare Services (CMS) altered normal business practices during the COVID-19 pandemic to make eHealth feasible, which is something that, along

with the enthusiasm and momentum for telemedicine and telehealth services, may pressure policy makers to permanently remove hurdles that hinder its practice:

In response to COVID-19, the Center for Medicaid and Medicare Services has permitted patients to be seen through videoconferencing in their homes, without having to travel to a qualifying “originating site” for Medicare telehealth encounters. Furthermore, the Drug Enforcement Administration approved an exception that allows prescriptions for controlled substances through telemedicine without a prior in-person evaluation. (Latifi & Doarn, 2020, p.1107)

It is evident that telemedicine provides social and economic incentives, not only for providers and hospitals, but also for patients. If a healthcare manager handles the protection of patient data effectively while advocating for the removal of regulatory burden and if policy makers allow for telemedicine across state lines even after the COVID-19 pandemic has come to an end, it will usher in a new digital era and ease strain on hospitals and other healthcare facilities.

The practice of telemedicine was already on a slow-paced rise to being a viable healthcare alternative, especially with the drive toward automation to improve costs; it is the necessity in the wake of a pandemic that thrust it into greater prominence. That necessity has created opportunities for provider and patient alike, and as of this moment, “the full potential of telemedicine services has not yet been unleashed” (Peters et al., 2015, p.79). The expansion of telehealth is currently being used to alleviate physical and mental health care gaps created by COVID-19 mitigation strategies (Menon & Belcher, 2020). For example, telepsychology emerged in 2020 as a way for the public to cope with the anxiety and depression that accompanied loss of freedom and a heightened uncertainty about the future. The technological developments which aid in mental

health care “foreshadows future trends that include “smart” mobile devices, cloud computing, virtual worlds, virtual reality, and electronic games in addition to the traditional psychotherapy tools” which will help individuals with traumatic stress (Saladino et al., 2020, p. 3). Moreover, digital technology will be instrumental in the future with respect to improving pandemic response measures, including screening for infection, clinical management, planning and tracking, securing medical supplies, contact tracing and isolation measures, though digital privacy will always be a chief concern (Whitelaw et al., 2020).

Another innovation that was promoted during the COVID-19 pandemic helped head the disease off at the pass for at-risk patients exhibiting early symptoms. Monoclonal antibodies (mAbs) prevent hospitalization and reduce the time an individual is infected. Like telemedicine, active and passive immunotherapies including monoclonal antibodies were an underused resource prior to the pandemic. Neither asset was particularly new with both having been born prior to the turn of the 21st century, yet they have received renewed focus with the added sophistication of technology coinciding with a time of crisis. While the first FDA-approved monoclonal antibody treatment goes back to “an immunosuppressant for the treatment of acute transplant rejection” in 1986, named muromonab-CD3 (branded as Orthoclone OKT3), its development can be traced back further to Emil von Behring, 1901 Nobel Prize winner in Physiology or Medicine (Kaufmann, 2017; Lu et al., 2020, pp. 1-6).

Behring’s work in serum therapy, as it happens, was later used by physicians to treat tetanus and diphtheria in World War I and was credited with 1918 Influenza being “the first reported pandemic for which convalescent blood therapies were used as therapeutic agents” (Kaufmann, 2017; Ripoll et al., 2021). Convalescent plasma is a predecessor to monoclonal antibodies and is

traditionally donated by recovered patients but can also be collected from animals. Next-generation passive immunotherapy treatments such as “Regeneron’s monoclonal antibody cocktail” gained prominence in 2020 after being authorized for emergency use to replicate white blood cells which have been exposed to COVID-19 proteins in a lab setting. (Rubin, 2021, p. 1895). This is a tool which elicits a more immediate immune response for at-risk patients compared to vaccination which takes longer and is more appropriate as a preventive tool in reaching general herd immunity.

Whether naturally sourced or cloned by a medical laboratory, antibodies block the COVID-19 virus from attaching to cells within the body and replicating. Essentially, using traditional mechanisms, an individual who has recovered from the virus may confer their immunity onto another individual via transfusion. The same effect can now be achieved via lab creation. For the therapy to “maximize clinical or mortality benefit,” however, it must be administered in the early stages of infection (Ripoll et al., 2021, p. 25). The treatment limited COVID-19 from causing further damage in newly infected patients by thwarting the activity the virus needed to reproduce. Thus, the infection was rendered less severe.

Monoclonal antibodies were already being used in treatments against cancers, infectious disease, as well as metabolic, neural, and auto-immune conditions prior to the pandemic (Lu et al., 2020). Harnessing the power of existing research and adapting it to treatments which work with the human immune system is having notable effects. For instance, scientists and researchers from across the globe are exploring different mechanisms to administer monoclonal antibodies including direct delivery to a patient’s lungs. Inhaled delivery including the use of vibrating mesh nebulizers (VMN) is one way that medical researchers have sought to increase efficacy and overcome past failures. While the inhalation of monoclonal antibodies is still in its development

phase and requires clinical trials, “studies of the nebulized delivery of a variety of biologics have generally shown them to be exceptionally safe” (Cruz-Teran, 2021, p. 112).

In previous studies, delivering antibodies systemically via injection has not been concentrated enough to defeat a disease deep within the lungs. On top of that, RNA viruses sometimes advance too quickly to be caught in the early stages before a patient is hospitalized, as in the case of 1918 influenza. COVID-19 presented medical researchers with an opportunity in that there was enough time before symptoms progressed to address the virus before it had a chance to spread. Otherwise, hospitalized patients were already wrestling with associated inflammation and complications, which necessitated a different therapeutic approach (Cruz-Teran, 2021). This is the backdrop against which Americans with underlying conditions including chronic lung diseases and various cancers, despite having been fully vaccinated, found it critical to “shelter in place more than a year and a half into the pandemic” (Rubin, 2021, p. 1895). SARS-CoV-2 was still a threat to their blunted immune systems, so enjoying the liberties they once took for granted was impossible without other medical interventions.

The immunocompromised in these cases make up a relatively large amount (40%) of those who have become infected with COVID-19 even after receiving the full course of vaccine doses (Rubin, 2021, p. 1896). This is yet another example of how Americans were impacted differently to a far greater degree than in 1918-1919, but for far different reasons. It is also the catalyst which thrust monoclonal antibodies into the limelight, though there are limitations in that the treatments are more expensive than vaccines and the immunity conferred varies with some authorized treatments only lasting a few weeks. Limitations aside, the proactive development of alternative

therapeutic techniques has significant future implications for life-changing drug therapies, especially during future viral encounters.

That immunotherapies and experimental drugs have come this far in just over a century suggests that Americans along with the rest of the world are on a precipice which could mean far less mortality than ever before when it comes to eliminating pandemic disease. That is, if obstructions and legal hurdles to their development and use are eliminated. If viruses can be defeated in the beginning stages by using monoclonal antibodies or serve as a temporary place hold before life-saving vaccines are created and distributed, it may open a new world of possibilities in the realm of healthcare and the pursuit of wellness in the total population. Another important feature of antibody-based therapies such as convalescent plasma or monoclonal antibodies is the “potential long-term immunization and treatment strategies for patients who are unable to receive a vaccine” (Ripoll et al., 2021, p. 24). One is not a substitute for the other, and it is not intended for those who have already been vaccinated or hospitalized but is yet another effective tool in a pantheon of medical treatments which may help slow the spread in the absence of the ability to completely eradicate disease. Perhaps low instances of infectious disease in the future will continue to shift the healthcare industry’s focus to preventive care at the same time value-based programs reward providers for the quality of care they give.

As well as promising developments in telemedicine and advanced immunotherapies, new mRNA vaccines are revolutionary. The new vaccines break with how vaccines were produced in the past. Traditional vaccines introduced a body to weakened or dead bacterial or viral pathogens to assist the body in recognizing a threat and building an immune response. With mRNA vaccines, an antigen protein is delivered to the nucleus of a cell which teaches it to replicate novel

coronavirus spike proteins which in turn causes the body to produce antibodies and remember the infection in case of a recurrence in the future. There are several advantages the new mRNA vaccine has over conventional methods of immunization including its efficacy, safety profile, and the ability to accelerate clinical trials and production at a much faster pace than was previously possible (Kim et al., 2021, pp. 84-85). A downside to the new vaccine technology is its limited shelf-stability and that it requires refrigeration.

The creation and application of mRNA vaccines involves nanomedicine as demonstrated by its self-assembly capabilities. According to Kim et al. (2021), “self assembly of “smart” materials is a highly sought-after approach in many areas of materials science - simply mix the components, and intermolecular interactions will assemble these components into the desired structure with the desired properties” (p. 91). The delivery methods used in administering mRNA vaccines seem simple enough, but are affected by physicochemical characteristics such as size, charge, shape and structure, and surface composition (Kim et al., 2021). Despite these challenges, those working in the field of science did so tirelessly to develop the most effective vaccines possible to defeat COVID-19 as non-pharmaceutical methods of confining disease are only temporary and are not reliable long-term strategies. That is not to say there are no points of criticism, especially when considering the need for cold storage. When approaching concerns of vaccine equity, it is found that mRNA vaccines may not be available in certain geographic regions and in communities where refrigeration is scarce. However, barriers to distribution can be resolved in a timely and creative manner during what will be a revolutionary period in vaccine science in the years ahead.

These developments which have been spurred on by the threat of emerging infectious disease are just a small fraction of the myriad of possibilities in the future delivery of quality health care. There are many other therapeutics and innovative care delivery methods advanced in response to the COVID-19 crisis that will continue to be used and developed after the pandemic comes to an end. Many solutions did not evolve from a vacuum but out of prior research and development going back years, decades, and sometimes prior to the last major global pandemic of 1918. Adding to groundbreaking therapies which have materialized as of late, the importance of more recent innovations in health information technology (HIT) and informatics cannot be understated or dismissed. Artificial intelligence (AI), the Internet of Things (IoT), and mobile health applications are examples of how the integration of technological tools into health networks aids in disease surveillance, managing patient care data, and in treating hospitalized patients.

AI has wide applications, from smart networking infrastructure to robotics, and is particularly promising in responding to a virus like SARS-CoV-2 which has “strong transmission and weak lethality” as well as an increased potential to overburden health systems with substantial caseloads (Ye, 2020, p. 3). Additionally, the IoT allows for the “intelligent management of information” by linking together electronic devices and clinical equipment which has a broad array of utilizations, including the monitoring of real-time data. Lastly, mobile health applications have revolutionized the way in which health data is gathered, assessed, and stored while allowing for reliable contact tracing, though “a balance between public governance and citizen protection” is necessary to protect against undue harm (Ye, 2020, p. 5). The technological leaps in the next couple of decades will assuredly outpace what has occurred over the past hundred years, and as such, implementing security frameworks which guard against real threats to humanity, like what

artificial intelligence can impose, must be approached in a proactive rather than reactive manner. The propensity for political leaders to respond only when there is a crisis lends to measures which are ‘too little, too late.’

That brings us to a word of caution for future government officials and healthcare leaders regarding the relentless pursuit of progress if accompanied by scientific hubris and intellectual arrogance. Scientists and scholars in the realm of 20th Century medicine were motivated to “pursue the truth, no matter to what abyss it led” (Barry, 2005, p. 14). However, pursuing truth and the growing concerns surrounding gain-of-function research has blurred the lines between the cautious application of the scientific method and opening a most lethal Pandora’s box. In October of 2014, the White House placed a ban on research which created ‘superviruses’ that do not exist in nature and the restriction stayed in place until December of 2017 due to the obvious security risks involved (Brown, 2018). New guidelines were put in place for strict oversight which allowed the practice to resume. However, it is of particular and relevant concern given recent discussions in Congress regarding its funding. Although there is no clear evidence of artificial design, the prospect should not be dismissed out of hand, and those involved have a duty to remember the past, because it is not out of the realm of possibility for future lab incidents or breaches in security frameworks given what has already occurred.

The controversial resumption of creating recombinant viruses in lab settings and the benefits it could bring is understood, but it cannot come at the expense of vulnerable populations or public trust. A bioweapon of a greater magnitude than 1918 Influenza would be incredibly devastating to all of humanity, whether the release of such a contaminant is done intentionally or by mistake. Unintended consequences abound when medical environments slip into

disorganization and carelessness. It is a proverbial principle that the human condition is one that leads to inquiry and the testing of a hypothesis in hopes of improving the environment and surrounding lives, yet it is best to err on the side of caution, taking into consideration the harm which may arise. The Office of the Director of National Intelligence (ODNI) released an unclassified report on August 27, 2021, which indicated that most intelligence agencies do not believe the COVID-19 virus was artificially created with two agencies indicating there is insufficient evidence to make any determination (ODNI, 2021). It has been cited in the report released to the press that we may not ever know definitively.

Regardless, the mere fact that there were such heated public exchanges between officials regarding alleged funding of controversial research and that there have been laboratory incidents in the past, leaders may want to investigate and ensure appropriate safeguards are in place. Though the ODNI indicates that the COVID-19 virus was likely not bioengineered as a weapon, there is at least one intelligence community (IC) element which “assesses with moderate confidence that the first human infection with SARS-CoV-2 most likely was the result of a laboratory-associated incident, probably involving experimentation, animal handling, or sampling by the Wuhan Institute of Virology” (ODNI, 2021, p. 1). This is reflective of the risks involved with gain-of-function research in that accidents have the potential to set off life-altering events and cause deaths on a worldwide scale. While it is perhaps comforting to believe angels exist among humans, Americans amid war and strife (from World War I to the war in Afghanistan) and during two of the deadliest viral cataclysms, learned all too well humanity’s imperfections. Mistakes happen, but most mistakes do not kill. It is up to leaders in healthcare to ensure that the medical establishment

leaves unintentional lab leaks and stories of infectious contaminants placed in the wrong hands to the realm of science fiction drama.

Americans have good reason to be concerned with gain-of-function research based on experience with health care atrocities in the past, some categorized as mistakes, and some breaches of ethics. Furmanski (2015) highlights four “extramural escapes of high-consequence pathogens” from high-profile U.S. laboratories in 2014 alone, including anthrax, avian influenza, and the gram-negative *Burkholderia pseudomallei* bacteria which causes the infectious disease ‘melioidosis’ or Whitmore’s disease (named after the pathologist Alfred Whitmore who made the discovery in the 20th century). There are those who dismiss slippery slope arguments, yet history highlights those concerns are not unfounded and are not all rooted in fear mongering or conspiracy theories. In 1977, after having been extinct for almost 20 years, “an H1N1 descendant of the 1918 virus suddenly reemerged to reestablish post pandemic circulation with one of its own further descendants, the H3N2 influenza virus” which continues to circulate to this day (Morens & Fauci, 2007, p. 1024; Nickol 2019).

There are disagreements surrounding the 1977 event as researchers have found the release was not naturally occurring. Some believe it is the result of a laboratory leak while others indicate that even though the strain originated in a laboratory, the administration of “an inappropriately attenuated vaccine” to Chinese soldiers is what caused the release of the once extinct virus (Rozo, 2015b, p. 1). Whatever the case may be, the 1977 influenza strain is 98.4% identical to a strain from the 1950s, though 27 years had passed. (Rozo, 2015a). The troubling history provides background information and context for the reasons gain-of-function was banned in 2014, the same year 75 CDC staff members were exposed to *Bacillus anthracis* (anthrax) after a lapse in safety

protocols (CDC, 2014). Lab incidents occur around the world with surprising regularity to the point it periodically causes alarm. Fortunately, the 1977 influenza strain was not particularly lethal, but it does put more focus on how accidents in medical laboratories can set off a chain of consequential events which hurt whole populations uninvolved in what is being researched but who stand to suffer most from the actions of the few involved.

Far more sinister is the possibility of governments actively developing biological weapons despite signing well-known disarmament treaties—a deadly virus in the wrong hands, whether released for nefarious purposes or by accident, which then becomes the subject of a cover up—is not an unheard-of story in history. It was only in 1992 after the collapse of the Soviet Union when the truth came out about a military laboratory incident which killed 66 people who lived nearby after they encountered airborne anthrax (Troianovski, 2021). Given the parallels with how the COVID-19 pandemic began, revisiting gain-of-function research and dual-use governance is appropriate to fostering a “culture of responsible science” (Musunuri et al., 2021, p.8). Incidentally, as of this moment, 1918 influenza is locked behind the walls of a “level-four biohazard laboratory” where its study has provided valuable insights into how viruses emerge and replicate—if no accident ever occurs, “the cost-benefit analysis” favors those who guard it (Spinney, 2017, p. 187). Though, because descendants of the 1918 Influenza Pandemic circulate with seasonal regularity, the next etiological agent to afflict the world may not be influenza, as was indeed the case with 2020 COVID-19. There is still a possibility, though, as Jester et al. (2018) state, “the risk of pandemic influenza remains” when considering the emergence of the Influenza A (H7N9) virus (p. 1472).

Musunuri et al. (2021) highlight current risks surrounding gain-of-function research by citing both the Global Health Security (GHS) Index and the World Health Organization (WHO) Joint External Evaluations which have both indicated that most countries are vulnerable due to “inadequate capacity and policies for biosecurity” (p. 1). Of particular concern is how research may be mishandled or used in ways that have unspeakable repercussions. Studies in gain-of-function are categorized as ‘Dual Use Research’ because of knowledge therewithin that can potentially be misapplied. A suggestion to counteract this potential is to safeguard against the release of sensitive information in the peer-review process. An example is how information about mutations may be enhanced or how certain strains may be reconstructed and made resistant, based off information gleaned from research publications (Musunuri, 2021). Proactive and preventive measures are the best course of actions against threats which may be artificially manufactured.

One hopes that the idiom ‘third time’s the charm’ will apply to preparing for the next major pandemic outbreak and that leaders will not exhibit purposeful amnesia this time around; to do so will sacrifice an opportunity to move society forward in an effective and meaningful way that will engender positive health outcomes and hopefully mitigate, if not eliminate, the disparate impact caused by social and economic determinants. Public health officials and government leaders were simply not ready in 1918 or 2020, but in examining the events over the COVID-19 pandemic, there are innovative ways to blend traditional public health protocols with technological and medical progress to make the next response more effective in curbing the spread of disease while causing the least amount of social and economic disruption. In hindsight with an eye on future preparedness, Americans must not only take stock of their successes over the course of the COVID-19 pandemic but also their failures even in the presence of well-intentioned aspirations.

Continued technological and scientific progress may one day make traditional control methods an anachronism and may also render pandemics a thing of the past. In the meantime, preparing for the next global pestilence includes using all the modern tools available in the most effective manner possible, and with information gleaned in hindsight after the experience of what is now two major pandemics.

A Message for the Future: Two Major Pandemics in Hindsight

Even in light of the “interdependence of the global economy” and clarion calls to action on pandemic response plans, “the issue has generated only limited attention in both the public and the private sectors worldwide because preparing for a pandemic is a daunting challenge to begin with” - it is “hard to justify in terms of both financial resources and time” as major pandemics are rare (Osterholm, 2007, p. 48). If another century passes before the next major pandemic, there may be little urgency for both the public and private sectors to draft suitable pandemic emergency response measures into their strategic planning processes. Hospitals and healthcare organizations are uniquely positioned to take the lead on such pandemic preparedness efforts. A page can be taken from healthcare foundations which have sought to “achieve measurable improvements in healthcare, health status, and/or health equity” by “taking into account their resources, position, and values, as well as the needs and interests of the community” (Easterling & McDuffee, 2018, p. 94). Though the public sector is fraught with political wrangling and special interests, private organizations in “collaboration with the public sector” are without a doubt “critical to any prevention campaign or emergency response” and the possibilities have been made greater with the effective use of scientific and technological achievements. (Osterholm, 2007, p. 53).

Nonetheless, neither the 1918 Influenza or 2020 COVID-19 pandemics were “socially neutral” or an “equal-opportunity threat” in terms of social and economic devastation. The COVID-19 Pandemic that began in the U.S. at the start of 2020 impacted working class and minority populations to a far greater degree than all others (Alberti et al., 2020, p. 921; Bambra et al., 2020, p. 964). Specialists in the medical field argue that “claims that the virus ‘does not discriminate’ and that ‘we are all in this together’ significantly misrepresent the asymmetric impact, experience and likely consequences of COVID-19” (Moreira & Hick, 2021, p. 267). In 1918, there was a “widely held popular and scientific consensus of the time which held that ‘the flu hit the rich and the poor alike’, which in hindsight we know to be false, both then and now (Bambra et al., 2020, p. 964). Similar platitudes branded in the COVID-19 era were met with criticism for the very reason that pandemics hit the less fortunate in ways that more affluent citizens are unlikely to experience, socially or economically. In their “need to signal virtue,” numerous examples abound where an organization, private or otherwise, missed the mark in exhibiting sincerity and authenticity as their moral grandstanding has been interpreted as “aligning with the issue for its own benefit” (Demsar et al., 2021, p. 417).

Regardless of motive, messaging in 1918, 2020, and in lesser “pandemics” in between proved that “language is both a weapon and a handicap when waging a campaign” against viral disease (Brown, 2018, p. 80). Messaging from leaders in government and private organizations in every facet of the U.S. economy during a public health crisis matters. Regrettably, U.S. leaders in healthcare were at times evasive and not always forthright when scientific information conflicted with other objectives, a particular course of action that did not win public compliance (Noar & Austin, 2020). When the political establishment clashes with the medical establishment, the result

has now been made clear: Americans in a polarized society were left confused about which organizations, media outlets, and representatives to trust. An often-cited contrast is Sweden's pandemic response, highlighting a "culture of trust and responsibility" as the reason lockdowns were avoided, though Swedish officials were heavily criticized for the contrarian strategy (Weible, 2020, p. 227). It is not readily apparent that Sweden's voluntary experiment was a complete success with reference to a higher case-fatality ratio of 1.25% compared to 0.65% attributed to neighboring Denmark, as of November 18, 2021 (JHU, 2021). A counter viewpoint is that Sweden has nearly twice the population of Denmark with double the number of high-density populations, which is a key factor of high case rates and number of deaths. As stated previously, population density makes social distancing more difficult and is an overwhelming factor in mortality rates.

The case-fatality ratio measures the number of deaths per 100 confirmed cases and (as of November 18, 2021) is 1.62% for the U.S., with the highest case-fatality ratio of 9.05% attributed to Peru in relation to population size (JHU, 2021). Researchers in Peru cite an 'infodemic' of fake news due to health illiteracy and the promotion of unapproved prescription drugs like "hydroxychloroquine plus azithromycin, tocilizumab, or ivermectin" on why the country had difficulties containing COVID-19 from the start (Alvarez-Risco, 2020, p. 583). The government there created a 'Don't Spread #FakeNews' campaign and was the first Latin American country to threaten prison terms of up to 6 years for the dissemination of false information via social media. The U.S. was neither the best nor the worst regarding case-fatality ratios with thirteen out of twenty of the most affected countries having a higher observed case-fatality ratio than the United States (JHU, 2021). Of note, Peru had one of the strictest lockdowns in Latin America while Mexico had virtually none at the start, and Mexico's case-fatality is 1.48% lower than Peru at 7.57%, though

both are strikingly contrastive in comparison to other nations around the world (JHU, 2021). In reference to 1918, historians have highlighted that some areas with the strictest lockdowns had no better or sometimes worse outcomes than those with virtually no restrictions, and in high-density areas COVID-19 mimicked this same scenario in 2020 (Barry, 2005; Crosby, 2003). Researchers from Mexico cite “questionable leadership” in that the President minimized the impact of the pandemic while indicating that “he’s more concerned about pushing his political agenda” (Ibarra-Nava et al., 2020, p. e18). In both Peru and Mexico, the case-mortality rates are considerably high, which brings a global perspective to the U.S. experience. Messaging during pandemic responses in various nations around the world featured similar complaints about inept leadership.

Be that as it may, messaging about scientific concepts and how and why measures were implemented were often muddled in the minds of average Americans. A “polluted science communication environment” lent to a situation where Americans were divided in terms of “representation of dueling levels of government” (Hart et al., 2020, p.689). Even the most compliant citizens echoed contradictory information via social media channels, which in recent years has come to be expected when the bulk of content is created by those who cannot claim to be doctors, nurses, or other trained experts. It does not help matters that the prevailing blasé attitudes toward pandemic preparedness “follows a cycle of ‘panic-neglect-panic-neglect’” where American officials “fail to prepare adequately and then respond to an outbreak with ineffective and needlessly draconian measures” (Greenberger, 2018; Parmet & Rothstein, 2018, 1436). Noar & Austin (2020) recall that messaging was most clear at the start of the pandemic with efforts to “flatten the curve,” but as circumstances changed, “the U.S. could have launched a national campaign focused on key behaviors that the public should engage in to prevent the spread of the

novel coronavirus, as was done with HIV/AIDS” (p. 1735). There are indeed many better ways that could have been explored, yet that will be something for health professionals to parse out before the next pandemic materializes.

There is also disagreement regarding how COVID-19 has been reported in reference to unknown asymptomatic cases. The difficulty with the accuracy of mortality data regarding COVID-19 is that asymptomatic cases are unclear and may take some time to identify within the years that immediately follow the pandemic. In effort to strike a balance between the most stringent and the laxest pandemic protocols, a more targeted effort, one that is varied and determined upon a set of key features such as the individuals most at risk or geographic areas where viral activity is prominent, could alleviate negative outcomes in mortality metrics as well as preserve social and economic health in the future. Above all else, when COVID-19 moves to distant memory, reflection on practices that proved applicable and those which need improvement or to be discarded altogether must commence so that preparation for the next pandemic will mean far fewer compounding effects. A common situation to avoid post-pandemic is how “humans tend to stick to what they know best,” resisting “path-breaking change” (Moreira & Hick, 2021, p. 262). The importance of preventing change-resistance is made even more critical by the fact that there are several aftereffects of the COVID-19 pandemic which must be addressed in addition to pandemic preparedness and avoiding partisan rhetoric.

To negate politicization, leaders must take note of the distinct differences between the messaging of media outlets in both eras, which diverge considerably. The press in 1918 “considered the epidemics’ costs, though, it also tended to dilute these reports in storylines that recreated the upbeat narrative of healthcare professionals” and downplayed their powerlessness

over viral complications (Bristow, 2012, p.173). COVID-19 emerged in the age of mass media, and unlike news media in 1918, sensationalist headlines and filter bubbles dominated a vast electronic media landscape, promoting negativity over optimism and fear over possibility. In this media environment for which outlets survive on ratings and internet clicks to generate revenue streams, there was a tendency to stretch truths or exaggerate the severity of the pandemic. For example, on September 21, 2021, *National Geographic* published an article that reads “COVID-19 Surpasses 1918 Flu as Deadliest Pandemic in U.S. History” and *Smithsonian Magazine* published on September 24, 2021, the similarly titled “COVID-19 Surpasses 1918 Flu to Become Deadliest Pandemic in American History” (Gamillo, 2021; Mckeever, 2021). Even though the number of deaths is tragic and inordinate for a short timeframe, the problem with this type of attention-grabbing news tactic is that the severity of COVID-19 did not come close to that of 1918 Influenza when considering different population sizes, mortality rates, and affected demographics, as well as the technological advances that aided in the likelihood of survival in 2020.

Hart et al. (2020) examined the politicization and polarization present in newspapers and televised news in the initial three months of the COVID-19 pandemic which reflected a sharp increase in political messaging and shaped opposing attitudes to pandemic response measures. Using Lexis Nexis, the researchers extracted messaging from newspapers such as *The Atlanta Journal-Constitution*, *The Minneapolis Star Tribune*, *The New York Times*, *The Philadelphia Enquirer*, and *The Washington Post*. Along with newspapers, network news coverage from the following outlets were examined using machine learning methods: *ABC*, *NBC*, and *CBS*. Using the frequency with which political figures were mentioned, it was found that both newspapers and network news were highly polarized, while news stories are particularly politicized in newspapers.

From this study, it is made demonstrable that Americans in 2020 formed opinions along ideological lines and “in line with political elites they trust,” rejecting any information which does not align, including information from science experts (Hart et al., 2020, p. 682). There is little victory during a health crisis where the environment has been deeply polarized beforehand. The mechanisms which divide Americans prevent a more unified response. Trust is of prime importance in restoring a sense of cohesion that will inspire cooperation in the future.

Deaths worldwide due to influenza in 1918-1919 are estimated to be between 50 to 100 million, which is a great chasmic distance from the 5 million deaths worldwide (as of November 18, 2021) due to COVID-19 (Bristow, 2012, p. 3; Brown, 2018, p. 58; Dong et al., 2020; JHU, 2021; Morens & Fauci, 2007, p. 1018). In preparing for future pandemics, a commitment to ethics and honest reporting by media organizations is one way to restore public trust and confidence in public health policies used to protect against avoidable deaths. The 1918 Influenza Pandemic remains the deadliest in American history and the reporting to the contrary, at least in the way of headlines only to be negated by a more nuanced take within an article, reflects a future post-pandemic need to advocate for protections against media bias and propaganda when informing the public of pandemic details which greatly affect their lives (Bristow, 2012, p. 190).

Inaccurate or exaggerated media narratives run the risk of bleeding into public policy as misinformation promoted by national outlets has often caused a greater swell of public anxiety and outrage. The 1918 Influenza Pandemic differs from the 2020 COVID-19 Pandemic in that respect with the reluctance of officials around the world in the early 20th Century to reveal information surrounding demographics and data that would illuminate the scope of those impacted:

On the one hand, newspapers were essential to publicizing emergency measures to contain the epidemic, such as closing cinemas and theaters or prohibiting other types of gathering, including funerals. On the other, any mention of the horror that was unfolding was to be avoided. Even sounding death bells was sometimes forbidden, to prevent their continual dismal tolling from revealing the extent of the tragedy that was to be hidden. (Martini et al., 2019, p. E66)

This was done to avert panic, but consequently it did not lend to the creation of effective public health policy afterwards as the impact was soon forgotten in a post-pandemic world. This oversight is being remedied with the 2020 COVID-19 Pandemic, which will provide much better and more extensive information on health disparities and mortality rates as well as the role of social and economic health determinants. It is one area of public health policy that is being closely followed, though there will still be many more lessons to learn in the pandemic's aftermath.

Continued transparency and documentation of past efforts will inform future leaders for the sake of pandemic preparedness and hopefully lead to a more cooperative and equitable result when the next pandemic arrives. Much of the public health policy implementation in the COVID-19 era was gleaned from resources and insights from the last major global pandemic the U.S. faced a century ago. The 1918 Influenza Pandemic taught Americans the values of disease surveillance, social distancing, proper hygiene, and responsible isolation. However, health disparities, especially those experienced by minority communities were not given a proper examination at the time (Bristow, 2012). The current focus on health disparities experienced by vulnerable and minority populations as well as the social and economic determinant causes will be a much-needed addition to public health policy considerations going forward and will better inform future

generations on effective measures for the next major pandemic. What is certainly a significant advantage current generations have over the past are the technological advances and major breakthroughs in vaccine and antiviral drug therapies. When combined with a thorough examination of effective policies to reduce the spread of disease, the socioeconomic impact of the next pandemic does not have to be as severe. Those involved in public health policy should seize on this unique opportunity to better health outcomes.

Seizing on the opportunities the COVID-19 pandemic has presented is much easier said than done, especially considering increased globalization and consolidation. Companies that invest very little in business continuity plans in preparation for a pandemic may gain advantage in the short term over those organizations that invest a lot into a scenario which may not occur for decades. However, those with a more long-term vision can prevail as an organization's reputation will be bolstered by pandemic preparedness and the demonstrable improvement to health outcomes in the surrounding community prior to such an event. Channeling resources effectively while maintaining a healthy margin is something for which all healthcare organizations should aspire, especially in deference to mission and values. In relation to mitigating social and economic determinants which will in turn improve the health of an organization's surrounding community as well as its reputation, "becoming strategic requires time, commitment, in-depth analysis, hard choices, focused action, a host of complex skills, the ability to learn, and the willingness to let go of approaches that aren't working" (Easterling & McDuffee, 2018, p. 91).

While Americans are well beyond the days where pandemics were blamed on meteorological or atmospheric events, or where treatments such as "bloodletting, enemas, champagne, toxic fumes, and castor oil were used, there is still so much to learn regarding effective

responses to pandemics in ways that are innovative and relevant to geographic hotspots (Bristow, 2012, p. 36; Brown, 2018, p. 28). Americans no longer use folk cures such as “evaporative oil of turpentine,” though there are minor examples of fringe practices in 2020-2021 (Bristow, 2012, p. 36). Pointing to fringe ideologies which are relics of the past is an ineffective strategy in garnering public trust or inspiring cooperation and collaboration between organizations, communities, and individuals. In both eras, 1918 and 2020, allopathic medicine won out over homeopathy and the minority of anti-vaccine groups. Public officials, journalists, and media personalities must avoid giving fringe groups a platform for misinformation—extrapolating them to most hesitant individuals who may have valid concerns is counterproductive. Instead, leaders in healthcare and government policy should focus the narrative around social and economic determinants of health and how to end the disparate impact that leads to public distrust so that all Americans, regardless of income, are able to thrive. One far more effective approach to quelling public anxiety is to reach out to individuals on a community level and explain how the groundbreaking ‘mRNA’ vaccines work and how they are the answer to returning society to a sense of normalcy. Taking strategic actions with a humane and thoughtful approach will more effectively combat future outbreaks.

To ensure that the global outbreak of COVID-19 does not become another “forgotten pandemic,” Krishnan et al. (2020) warn against “delaying swift public health measures” as inaction “could result in new waves of disease, as was the case in 1918” (p. 478). Officials may also want to view pandemic preparedness from a global perspective and collaborate with leaders from other nations as pandemics are not confined to one country or locality, but similarities in health disparities can be viewed cross-culturally for more insightful public health policy implementation. To that end, “we must learn to innovate, plan, and test evidence-based pandemic protocols; develop

and resupply stockpiles of protective gear, intensive-care devices, medications, and vaccines; and fund basic infectious-disease research” as well as “insist that our leaders demand transparent communication and disease surveillance” (Markel, 2021, para. 9). Fostering a strategic planning mindset in crafting effective solutions to problems that afflict multiple communities and sectors during a pandemic is the way forward when discussing how Americans may benefit from pandemic preparedness. The first step to mapping out a new course in pandemic planning is to analyze critical events that occurred throughout the COVID-19 pandemic. The following steps entail charting a necessary direction for infectious disease control and socioeconomic resilience. Formulating strategies to that end will prepare the U.S. population for the future and ensure that experiences with a virus are short-lived.

Though the World Health Organization crafted recommendations for a future influenza pandemic, the guidance is applicable to the novel coronavirus as well. The difficulties observed throughout the COVID-19 pandemic, however, relates to the recommendations to “maintain and build public trust in public health authorities, before, during and after” a pandemic and to “minimize social and economic disruption” (WHO, 2009). These recommendations have proven themselves arduous, and sometimes impossible to achieve in the case of COVID-19, yet there is still ample opportunity to “facilitate implementation of lessons learned for immediate application, as well as for future needs” post-pandemic (WHO, 2009). Incentivization and informative persuasion when it comes to health care is greatly needed along with removing barriers to effective health measures. The pandemic made it a necessity for telemedicine to be broadened to urban as well as rural areas but should not have been restricted as far as incentives are concerned in the first place. Hospitals and healthcare organizations still need a margin within which to operate, so the

restriction of reimbursement for this essential service is not conducive to a more equitable healthcare system. Legal barriers prove unjust if allowed to persist for basic access of care. Regulatory burden plays a part in officials not being able to address pandemics with great efficiency—leaders in healthcare must advocate on behalf of the patients and communities they serve to ensure barriers are eliminated to be better prepared for future contagions.

Related to regulatory initiatives, mandates may be good political theater in the realm of partisanship and political gamesmanship on a national and federal level, and may even work in the short-term, especially with the polarization of Americans with differing ideologies. However, mandates make for public health policy that is complicated at best and unethical or discriminatory at worst. Incentives and collaboration work far better than authoritarian dictates ever could, especially since “medicine is subject to ethical constraints” (Pruski, 2021, p. 272). From a socioeconomic standpoint, mandates do not consider the specific circumstances of each individual American, which in the healthcare space should be left to primary care physicians and their patients. When it comes to providing health care services, informed consent is of paramount importance, which includes the administration of vaccines. Healthcare professionals must remember that “vaccination is an irreversible medical procedure, not just a behavioural preference” (Kowalik, 2021, p. 3). With such an important undertaking performed by medical staff, it is essential to exercise caution with respect to informed consent, irrespective of utilitarian viewpoints. Public trust is important now more than ever to break with past mistakes and strike a balance between community health and the ethical considerations which make life worth living. As Pruski (2021) states, “Mistrust is not created by healthy critique of something one generally supports, but by the creation of an atmosphere where any critique, even if justified, is viewed as a

faux pas” (p. 277). Acting in accordance with bioethics is of particular importance in the realm of public health where encountering different belief systems is common.

Otherwise, capitulating to media narratives and the push for authoritarian precepts only increases the burden of poor and minority communities and stifles economic growth, especially regarding industries already facing worker shortages. It further erodes trust in public health leadership and is counterintuitive to goals aimed at protecting citizens from the worst health outcomes. The dictates coming from those with immense wealth and power during 1918, and even more far-reaching in 2020, is a testament to the failure of pandemic preparedness over the span of decades. Furthermore, mandates touch on questions of medical ethics when considering moral discernment between public health and human values such as personal autonomy. The government in concert with corporations mandating through threat of unemployment what should be a personal medical decision with the guidance of a primary care physician creates different and unequal classes of people. Creeping authoritarianism injures the people most affected by negative determinants of health. “Non-compulsory vaccination strategies” coupled with better awareness and outreach, including innovative methods to improve health education while also investing in hospitals and other healthcare organizations, will garner better results in producing herd immunity (El Amin et al., 2012, p. 11). A renewed commitment to upholding the highest standards of ethics in the healthcare industry is one way to restore public confidence.

The sharp advance of authoritarianism in liberated societies prior to and witnessed over the course of the COVID-19 pandemic is ruinous to principles which have promoted individual and civil liberty as well as societal cohesion in the United States. It is not only in totalitarian states where corruption occurs or where leaders take advantage of health crises to enact unrelated

restrictions which also have the effect of harming vulnerable members of society. Similar themes have been seen before with the 1918 Influenza Pandemic in which the public began to defy authoritarian measures when illiberal policies conflicted with their principles. There are still arguments surrounding what should be done in the name of “the common good,” though incentivization is more in line with the principles which are most recognizable to American citizens; mandates (or threats thereof) are viewed as inventions of dictatorial regimes (Bayer, 2007, p. 1099). As the global economic fallout will continue to plague societies after the COVID-19 pandemic passes, “the slowed or negative growth, straitened budgets, devastated middle classes, and swelling ranks of poverty-stricken citizens will create political pressure on governments around the world—authoritarian and democratic alike” (Carothers & Wong, 2020, para. 3). To preserve the values which are hallmarks of peaceful societies, Americans will want to approach public health in a way that harmonizes public cooperation and public trust, so that future outbreaks can be eliminated as quickly as possible when an intolerable disease makes its appearance.

Balancing the paternalistic nature of public health initiatives with the values of self-determination and free will is a challenge, but leaders must be “fully cognizant of difficult trade-offs when we make policy determinations” (Bayer, 2007, p. 1102). For instance, in the practice of disease surveillance and contact tracing, there is a line which should be drawn between acceptable intervention and rights to privacy—a release of patient names to the public is possibly the most grievous action as it can lead to ostracism and economic consequences for individuals already faced with overcoming a challenge to their health. Leaders in healthcare should also implement checks and balances to enormous power which has a great potential to be abused. Policy prescriptions have historically had far more imposing effects on the marginalized and less

privileged members of society. Many people now grapple with the possibility that “a post-quarantine world could be less democratic than its previous iteration; the tools that have been temporarily deployed in the fight against a once-in-a-lifetime disease may become permanent” (Wang, 2020, para. 3).

In 1918, there was a “failure of public health leaders to mobilize the nation in advance of the approaching scourge,” and then an erasure of the fact that “the influenza pandemic was the worst health disaster in recorded history” (Bristow, 2012, p. 11). The years following the 2020 COVID-19 Pandemic must break with that troubling past and chart a new course of action based on effective use of the tools gained from revolutions in germ theory, medical research, and health technology, in conjunction with a respect for unity, human values, and public trust. One part of pandemic preparedness (and perhaps the most important) is prevention. An ideal course of action is to be prepared if the occasion arises but to prevent it if possible. Implementing safety protocols aimed at preventing biological agents from escaping the confines of research and development (R&D) spaces is essential. Ensuring that the Strategic National Stockpile has a sufficient supply of personal protective equipment (PPE), vaccines, and antibiotics is a priority as well. Beyond that, being prepared for the next pandemic requires a strategic planning approach between a variety of organizations, both within the healthcare sector and in sectors which contribute to determinants of health.

As the saying goes, “an Ounce of Prevention is worth a Pound of Cure” (Franklin, 1735). With increasing automation along with the effects of globalization, the time has come to take a more proactive approach to alleviate the determinant factors which contribute to poor health outcomes from pandemic disease. The matter has become urgent when considering an aging

population and the likelihood of a greater number of Americans leaving the workforce, both voluntarily and involuntarily, in the coming years. The convergence of negative determinant causes is a signal for leaders to work together in effort to implement preventive measures in a variety of social and economic spheres, especially when it comes to necessities such as food, water, housing, and the income needed to maintain basic sustenance. Preventive measures which address the predominant causes of disparate health outcomes are likely to have more restorative effects than those which are reactive. There are innovative policy suggestions, some being more controversial than others, which promise to improve health determinants, but Americans must change the way in which they relate to one another for impactful strategies to gain ground. Also, applicable pandemic protocols should be implemented immediately at the onset of a pandemic as “evidence supports the idea that measures of social distancing added to those of individual prevention” (...) have produced “the best results in the prevention of contagion” (Scarpa, 2020, p. 3). No one measure represents a definitive answer for all communities, but a combination of cautionary activities which slow the spread of disease is best to protect the most at-risk.

In the wake of the preceding SARS-CoV-1 pandemic in 2002-2003, the precautionary principle was suggested for use in future pandemics to weigh the potential consequences of certain public health actions (Gostin et al., 2003). The principle calls on public health leaders and elected officials to avoid doing more harm than good, to err on the side of caution especially amid uncertainty, and to bridge the tensions between public health and individual rights. That tension between collective good and individual liberty is still a prominent feature in the American experience of pandemics. With the common themes which have still plagued American society since that time, it is clear there is much to do in the arena of pandemic preparedness and aligning

it with American values. Officials may want to consider the least intrusive methods to prevent viral spread, choosing voluntary cooperation over coercive action where possible, to meet the goal of disease mitigation. Incentivization and persuasion are also preferable tools in a free society where liberty is a paramount value. It is also important to not prolong measures once the threat is under control or more knowledge gives insight on who is predominantly affected, leading to more creative methods of responding and less social and economic damage. As such, transparency and effective leadership are keys to future pandemic preparedness endeavors, especially in promoting unity and cooperation.

To unite the nation around a common cause, and to foster the kind of unity it takes for the U.S. population to weather the storm of future pandemic waves, collaboration and cooperation are necessary tools. If there is any hope for American society in "mastering history's lessons," we must first address "inadequacies in policy, preparedness, response, and media reaction" and learn how to mitigate health disparities and the resulting damage to society's socioeconomic fabric (Brown, 2018, p. 80; Morens et al., 2021, p. 1086). Learning from the past while looking to the future with an eye on equitable solutions and breaking new ground in pandemic preparedness strategies is the way forward for leaders in healthcare. Doctors, nurses, and other healthcare professionals, like those in 1918 who soldiered on despite being "participants in the greatest failure of medical science," are now through increasing knowledge and experience "better prepared to deal with the problem of an epidemic than any group of healers ever before" (Crosby, 2003, pp. 18-19). During the post-pandemic reflection and subsequent advocacy for meaningful healthcare changes, members of the healthcare establishment may take comfort in the fact that "whatever happens next, it won't be a second 1918" (Brown, 2020, para. 1).

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