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Chapter 3

Lessons from pandemic history



Bird-beak style mask associated with plague doctors. Wellcome Collection gallery (2018-03-22)

Lessons from pandemic history

Matthew C. Ward

The COVID-19 pandemic has unleashed positive and negative aspects of human behaviour. From the Black Death to H1N1, this chapter explores the history of pandemics and how much of the impact and experience of COVID-19 is not new. As the Spanish philosopher George Santayana wrote, “those who cannot remember the past are condemned to repeat it”. As we take this journey, judge for yourselves as to whether the world has learned the lessons of the past.

Writing shortly after the Black Death had swept through Europe, the fourteenth-century Italian scholar Giovanni Boccaccio painted a vivid picture of life in the city of Florence during the pandemic of 1348.

“Each thought to secure immunity for himself... very many, both men and women, abandoned their own city, their own houses and homes, their kinsfolk and possessions, and sought the country seats of others... townsman avoided townsman and that well nigh no neighbour took thought unto other and that kinsfolk seldom or never visited one another and held no converse together save from afar...” (Boccaccio, 1886, p. 13-18).

Although written almost 700 years ago, Boccaccio’s description of a city under siege, the rich fleeing to their second homes in the country, the streets deserted, neighbours avoiding each other and conversing only from a distance, sounds eerily like a city under Covid-19 lockdown. As Boccaccio’s depiction of the Black Death in Renaissance Florence demonstrates, the experiences of past societies and communities when faced with epidemic and pandemic disease often closely echo the experiences of societies today.

Many, if not most, of the challenges posed by COVID-19 have been faced before, and through the experience of pandemic disease, solutions and policies have been developed. Perhaps the three most fundamental ways in which past epidemics have influenced present practices have been through the development of concepts of quarantine, masking, and vaccination. However, each of these policies posed specific problems which had to be overcome, and they all faced widespread opposition. By examining some of the issues raised by attempts to control epidemic disease in the past, we can contextualise more effectively some of the issues faced by governments and policymakers today.

Quarantine

The idea of a specific process of quarantine had its roots in the fourteenth-century Italian city-states, in the time of Boccaccio and the Black Death. Because there was no understanding of how infectious diseases spread, and no sense of how long individuals or vessels needed to be isolated to prevent the spread of disease, the standard requirement for quarantine was based on the references to forty days and forty nights which repeatedly appear in the Bible. Individuals and vessels arriving from overseas would be forced to isolate completely from the community in which they had arrived for a period of forty days, *quaranta* in Italian, hence quarantine. (Bick et al., 2020).

By the eighteenth century, the idea of limiting all travel and closely monitoring the movement of peoples across borders had developed much more extensively. The Austro-Hungarian Empire built a permanent line of forts and checkpoints along its extended border with the Ottoman Empire, known as the military border. The border had official crossing points where travellers could be isolated and examined. In times of plague, which was perceived as being particularly common in the eastern Mediterranean and the lands of the Ottoman Empire, the border could be closed completely, and plague kept out. The border operated with a considerable degree of success for over 150 years between 1710 and 1871 and provides one of the first and most successful examples of international travel restriction (Snowden, 2019).

The concept of quarantine was applied broadly to limit the spread of a range of infections. In North America, *lazarettos*, or quarantine stations, were established to monitor the arrival of all immigrants. Initially, these were relatively small facilities, such as Province Island in the Delaware River outside Philadelphia, but they would eventually develop into large processing stations such as Ellis Island on the East Coast and Angel Island on the West Coast. Over the course of the nineteenth century, particularly in North America, but also in other parts of the world where there was substantial immigration, immigrants became viewed as dangerous transmitters of infectious disease, and there were extensive attempts to monitor all migrants at the border and to exclude any whom inspectors thought might pose a risk to the community. In these centres, thousands of immigrants could be held and examined in an attempt to prevent the transmission of contagious disease (Kraut, 1994).

As the nineteenth century progressed and the apparatus of state government became more powerful, the ability to impose an almost all-embracing national quarantine and isolation in times of pandemic developed. In 1918, as 'Spanish' influenza swept around the globe, Australia imposed strict quarantine laws. All arriving international travellers were quarantined, and internal quarantine boundaries between the states and territories were also established. While this did not prevent influenza from arriving, the quarantine did delay its arrival by many months, by which time the

country was better prepared, and it appears that the virus had also mutated to become slightly less virulent. Many thousands of lives were thereby saved (Cohn, 2018).

The most successful quarantine was implemented by the government of American Samoa in 1918-1919. In order to prevent the arrival of Spanish influenza, the territory implemented a strict all-embracing maritime quarantine, which amounted to the complete exclusion of any arrivals from other islands. Extreme measures were put into effect, which included shore patrols to force back refugees from neighbouring islands struck badly by the pandemic. Neighbouring Western Samoa lost nearly a quarter of its population to Spanish influenza, but American Samoa escaped the pandemic completely. But such policies of complete isolation to exclude disease seem to have worked only effectively in small and relatively isolated locations (Tomkins, 1992).

It was the growing interconnectedness of the world which made the control of infectious disease increasingly difficult in the twentieth century. The growth of global trade, from the medieval period onward, transformed the ability of diseases to spread. The Black Death was only able to penetrate throughout Europe because of the expansion of trade networks in the fourteenth century. In the nineteenth century, the rapid expansion of trade and the growing speed of transport with the development of steamships greatly facilitated the spread of a wide range of infectious diseases from Yellow Fever to Cholera and Bubonic Plague (Harrison, 2012). Today, the volume and speed of air travel is an unprecedented accelerant of airborne infectious disease.

Cholera was the most feared infectious disease in nineteenth-century Europe. Between 1830 and 1923, it repeatedly swept throughout Europe. It was feared not only for its very high death rate but also the speed with which it afflicted its victims. A healthy young adult could leave their home in the morning and be struck down within hours, often without being able to return to their home. By evening they would be dead, and because of the speed of the disease death often took place in a more public space. The violent retching and diarrhoea would dehydrate the victim leaving their skin a pale blue (Hays, 2005). All European states sought to exclude the disease, whatever the cost. By the middle of the nineteenth century, it had proved impossible to exclude cholera by quarantine because the disease was not airborne. Consequently, there was a move away from policies based on quarantine that were designed to prevent sick individuals from entering a population to policies based on isolation that aimed to limit the spread of a disease once it had already entered a community (Barnes, 2014). This distinction is significant because the greatest challenges posed by infectious diseases were when those diseases breached the walls of quarantine and entered the community. Communities might support policies of quarantine because, in general, they involved other people; they kept out strangers. But policies of isolation affected the whole community and

frequently promoted intense opposition for many of the reasons seen during the COVID-19 pandemic.

When influenza arrived in the United States in 1918, localities followed a range of different policies. Worried about the impact on civilian morale and desperate to continue the drive for wartime government bonds which saw widespread public gatherings, Philadelphia allowed public meetings, and the city even held a large parade in support of the war bond effort. Before long, over 12,000 Philadelphians had died from the infection (Stetler, 2017). In Wisconsin, health officials initially only warned individuals to avoid theatres and crowded streetcars and ordered school teachers to send home any students who appeared sick. In addition, warning signs were posted on residences where flu cases were suspected. However, as cases of influenza rose quickly, state authorities ordered the closure of all public institutions and the halting of all public activities, from schools to movie theatres to public meetings. However, some local authorities interpreted the state's orders with a degree of discretion and allowed schools and other wartime related public activities to continue (Steven, 2000). St. Louis followed an equally draconian but better-enforced policy, demanding that all influenza cases should be reported within two days after the illness was diagnosed and required that infected individuals should isolate in their homes. All public places, from schools to churches and movie theatres, were closed, and public gatherings of any sort were forbidden (Oldstone, 2020).

Masking

The idea of masks, like so much else, had its origins in the Black Death. It was believed that the plague, and other diseases, were spread by *miasmas* in the air and the purpose of the plague costumes was to create distance and a barrier between those who had the plague and their carers who feared contamination. Initially, these were just tight masks, often with a sponge soaked in vinegar or a similar substance, designed to filter the air. By the early seventeenth century, this had developed into the bird-beak style mask associated with plague doctors. But with the exception of plague, and even in cases of plague outside of *pest houses* and *lazarettos*, the use of masks was uncommon until the end of the nineteenth century (Carmichael, 2006).

With the outbreak of Spanish influenza in the USA in 1918, masks became seen as an important component in the fight against the disease. (Peterson, 1989) While not used extensively in previous epidemics, their use had been widespread in wartime hospitals, and modern scientific medicine suggested their utility. In San Francisco, an assemblage of many leading authorities, including the Mayor, Board of Health, and the Red Cross, placed an advertisement in local newspapers urging residents to 'WEAR A MASK and Save Your life' (Crosby, 2003, p. 103-113). However, there was substantial opposition to such restrictions. Many felt that where restrictions

had been imposed, they had failed to stop the emergence of the disease and that, despite the assurances of doctors and health officials, they were ineffective in preventing its spread. Ironically, in believing this, opponents of masking in 1918 may have been, for the most part, correct. Not only were the type of masks worn insufficient, physicians and scientists mistakenly believed that the Spanish Influenza was caused by Pfeiffer's Bacillus (Eyler, 2010). Although it proved impossible to demonstrate a direct connection between the bacillus and the disease, this misapprehension fuelled the conviction that gauze masks could prevent the spread of the bacillus and led to their widespread use, or often misuse. Any protection that the gauze masks provided against a virus, especially when not worn correctly was insufficient. They were often worn loosely around the face and did not cover the nose, and when they were worn it was largely outdoors, not indoors.

The belief that Pfeiffer's Bacillus was the cause of the 1918 Influenza pandemic even led to the development and widespread distribution of vaccines and the inoculation of hundreds of thousands of people. The vaccine offered no protection at all against influenza. (Rockefeller, 1986) Indeed, the measures taken to combat influenza in the United States, including the closing of public spaces and the requirement to mask, seem to have had a limited impact because they were not always imposed and enforced effectively. Alfred Crosby has pointed out that the death rates in localities which enforced mask ordinances and strict closing orders and encouraged vaccinations were no lower, and in some cases were higher, than authorities that did not impose such measures. In many instances, he argues, these measures were simply an attempt to be seen to be doing something in the face of an overwhelming pandemic (Crosby, 2003).

Resistance

Disputes about quarantine and mask policies became most intense during the third wave of the pandemic. By this time, individuals and communities had become tired of the extensive restrictions, and their faith in the proposed preventative measures had waned. The public's weariness with the restrictions, and the opposition of shopkeepers and entertainment venues who feared for the loss of revenue such restrictions would cause, meant that even when authorities passed ordinances mandating the wearing of masks, they were often ignored (Luckingham, 1984). The waves of influenza, particularly the belief that the pandemic had been overcome at the end of the second wave, demonstrate how its re-emergence can be even more devastating and make the reestablishment of preventative measures extremely hard. The yoyo effect of ebbs and flows of disease on human behaviour continues to be seen today.

The influenza pandemic of 1918-19 came in three distinct waves, although they were experienced differently in different parts of the world and even in different regions of the same country. The first wave in the spring and summer of 1918 seems to have been comparatively mild.

Its presence went widely unreported, partly because of wartime restrictions, partly because in most countries and jurisdictions influenza was not a reportable disease, and partly because it was not that unusual. The first wave is only visible in retrospect by an examination of death certificates and a thorough investigation of the records of institutions such as the armed forces and prisons. These reveal a much higher than usual incidence of death from influenza and pneumonia in the spring of 1918 (Crosby, 2003).

Sometime in the late summer of 1918, the virus seems to have mutated and became much more virulent. In the United States, the second wave began in ports on the Atlantic Ocean and radiated outwards with devastating impact. The epidemic rampaged across the country in the autumn, but in December, the number of deaths declined dramatically, and most people believed that the epidemic had passed. But then, in January 1919, it returned for a third wave (Morens & Fauci, 2007). Unsurprisingly, the waves of influenza followed a very similar pattern in the United Kingdom although slightly later than in the United States. The second wave was generally the most deadly in both the United States and the United Kingdom, although some regions, such as parts of Scotland, which had seen lower mortality in the second wave, suffered their highest mortality rates in the third wave (Johnson, 2006). Similar waves of influenza appear to have occurred in 2009 when influenza, H1N1, as in 1918-1919, again became a pandemic. In England, the first wave peaked in July 2009 and the second in November. As with the 1918-19 Influenza, the second wave saw much higher mortality figures (Mytton et al., 2012).

Inequality

Mortality rates can be affected by many different factors. For many infectious diseases, a fundamental factor affecting mortality rates and rates of infection has been poverty (Johnson, 2006). For some epidemic diseases such as cholera, this link has always been very apparent. An outbreak of cholera in London in the 1840s led to substantial efforts to improve sanitation in the poorer parts of the city to reduce the risk of future outbreaks (Thomas, 2010). Such measures were repeated in cities across Europe and North America. For other diseases such as smallpox, the link between poverty and infection has been less apparent, and this may be why smallpox was so widely feared by the wealthy and why such efforts were made to find effective remedies. Rich and poor were equally likely to contract smallpox. However, some evidence shows that the wealthy had a slightly lower mortality rate, possibly due to better and more attentive care. (Snowden, 2019)

However, during some epidemics, mortality rates appear to be counter-intuitive. In the Influenza Pandemic of 1918, the African American population in the United States had a lower mortality rate than the population overall. This contradicted patterns for almost every other epidemic disease, where poverty and crowded housing meant that the African American population

typically suffered much higher mortality rates. (McBride, 1991). One possible explanation for this is that in the spring of 1918, the first and largely unreported wave of influenza had hit the African American community particularly hard. Therefore, much of the African American population had immunity when the second and more deadly wave arrived in the autumn (Crosby, 2003, p. 222).

This should serve as a reminder that possibly the most significant factor affecting mortality rates has been the prior exposure of a community to that disease. When infectious diseases encounter a susceptible population that lacks immunity, the resulting disease spreads unchecked throughout the entire population, in what has been termed a 'virgin soil epidemic.' No event illustrates this better than the arrival of European diseases in the Americas in the sixteenth century. Native Americans had not previously encountered a range of European diseases, from smallpox to bubonic plague, and from measles to influenza (Thornton, 1987). When Native Americans encountered these diseases for the first time, they endured wave after wave of destructive outbreaks. Each successive outbreak weakened the entire community and left it even more exposed to another epidemic of a different disease. During the first century of contact, the Indigenous populations of the Americas may have declined by as much as 95% as a result of repeated pandemics (Dobyns, 1983), a pattern of devastation affecting many colonised peoples.

Vaccination

Perhaps the most deadly disease to strike Indigenous peoples, and perhaps most feared amongst European communities throughout history, has been smallpox. Smallpox was highly contagious and killed around a third of those who contracted it. Those who survived were left with disfiguring pockmarks if they were lucky; if they were less fortunate, complications included blindness. Smallpox was by far the leading cause of blindness in eighteenth-century Europe (Snowden, 2019). Because of its ubiquity, high mortality, and severe complications, societies attempted to find methods of reducing the impact of the disease. The initial means of alleviating, rather than preventing, smallpox was *variolation*. This entailed the deliberate infection of a susceptible individual with the disease. Early techniques varied, but many included making a powder from dried smallpox scabs taken from those infected, and breathing them in through the nose, thus infecting the individual with smallpox but generally a mild case. This procedure may have been practised as early as the tenth century in China (Oldstone, 2020). By the eighteenth century, the practice had evolved. It was more often called inoculation but still involved infecting a susceptible individual with the disease by taking pus from a pustule on someone infected. The pus was soaked into a length of thread and then poked in an incision on the patient's arm (Fenn, 2004). The nature of the procedure influenced the naming of the process as inoculation was a horticultural term for a

process of grafting, allowing a farmer or gardener to grow different variants on the same rootstock (Oxford English Dictionary, 2021).

In the early eighteenth century, the wife of the British Ambassador to Turkey, Lady Mary Wortley Montagu, witnessed the procedure in Turkey and had her daughter inoculated by this method. On her return to Britain, many of her friends and acquaintances sought to learn about the procedure. Aided by the increasing interest of the Royal Society in eastern inoculation, Lady Montagu's social position allowed her to convince many of the British elite that inoculation was a preferable alternative to smallpox and to popularise the method (Barnes, 2012). The spread of the practice was made easier when in 1762, English physician Robert Sutton developed a new form of inoculation. Serum was drawn from a smallpox blister and was introduced to those susceptible only by a superficial puncture of the skin (van Zwanenberg, 1978). Sutton's method was viewed as much safer with fewer complications for it had 'only' a one per cent fatality rate. The technique became very popular, and Sutton was able to inoculate entire communities, the fear being that one inoculated individual—who after all did have smallpox—could infect the entire community with smallpox (Gordon-Reed, 2008).

The first attempts at broader community inoculation took place in North America not Europe. Smallpox had been relatively uncommon in North America in the seventeenth century, as low population numbers and the long ocean voyage limited the continent's contact with Europe. When smallpox did arrive, it thus encountered a population which had had little prior exposure to the disease, and severe outbreaks soon developed. To control them, most colonies resorted to strict quarantine and isolation policies (Duffy, 1972). However, when smallpox broke out in Boston in 1721, infecting almost a quarter of the city's population and killing hundreds, the first experiments with inoculation in North America were made. Support for inoculation came from the city's leading Congregational clergy, in particular Cotton Mather, better known for his involvement in the Salem Witchcraft Trials (Peterson, 2019). Mather encouraged Zabdiel Boylston to develop a procedure based on the literature available to him in Boston, and he successfully inoculated several patients. However, as news of his experiment spread, it created outrage. In the ensuing debates, those opposed to inoculation presented fabricated evidence which discredited Boylston's work although he continued with inoculation in secret (Amalie M, 2012).

Over the next half-century, opposition to smallpox remained intense, particularly in Boston. However, at the start of the Revolutionary War, the arrival of tens of thousands of British troops directly from Great Britain led to an extensive epidemic that again began in Boston. This would transform attitudes to inoculation. The nascent Continental Army suffered severely, and outbreaks

spread throughout the army, threatening to paralyse the American war effort (Becker, 2004). In February 1777, George Washington wrote that,

“Finding the Small pox to be spreading much and fearing that no precaution can prevent it from running through the whole of our Army, I have determined that the troops shall be inoculated. This Expedient may be attended with some inconveniences and some disadvantages, but yet I trust in its consequences will have the most happy effects” (Grizzard, 1998, p. 26).

Over the following months, the Continental Army successfully undertook an unprecedented large-scale inoculation of most of the army. By 1778, the army was essentially free of smallpox. That the army would inoculate all its men during the war created broader confidence in the process. As the war continued, smallpox continued to ravage the civilian population and growing numbers of American civilians also began to seek inoculation. Abigail Adams reported from Massachusetts that “such a Spirit of inoculation [sic] never before took place; the Town and every House in it, are as full as they can hold... I immediately determined to set myself about it, and get ready with my children.” (Butterfield, 1963, pp. 45-49). The eagerness with which so many Americans embraced smallpox inoculation in the 1770s successfully overcame the epidemic. However, there was still considerable concern that the death rate from inoculation itself remained around 1%. However, in 1796 English doctor Edward Jenner discovered that inoculation with the mild disease cowpox provided the individual with immunity to smallpox (Rusnock, 2009).

Jenner’s discovery was the birth of vaccination, for the word vaccine specifically means derived from cows, from the Latin, *vacca*, meaning cow (Oxford English Dictionary, 2021). The use of a vaccine from cows itself provoked opposition. Opponents of vaccination argued that infecting an individual with material taken from an animal was a moral outrage. They even claimed that some of those who had been vaccinated sprouted horns and began to look like cows (Oldstone, 2020). In the wake of Jenner’s discovery, Britain attempted to develop a national vaccine policy that provoked widespread resistance. This opposition became particularly intense in the wake of the Vaccination Act of 1853, which made vaccination compulsory and was enforced by a range of punishments. In 1867, the Anti-Compulsory Vaccination League was founded. It supported the publication of numerous publications. By the 1880s, numerous journals such as the *Anti-Vaccinator*, the *National Anti-Compulsory Vaccination Reporter*, and the *Vaccination Inquirer*, were producing a range of materials and evidence, much of which they fabricated, opposing vaccination, not dissimilar to today’s ‘infodemic’. There were widespread protests across the country, some of which were substantial. In 1885 an anti-vaccination rally in Leicester may have seen 100,000 protestors (Wolfe & Sharp, 2002).

In the nineteenth century, the experiences of Britain and the United States in promoting smallpox vaccination reveal the importance of public support for government policy. The impact of public confidence in government can be seen most clearly in 1885 when a smallpox epidemic broke out in Montreal. There were nearly 20,000 cases and 6,000 deaths. But these cases were not distributed evenly across the community. 90% of those who died were from the French-Canadian community. The Anglophone population of the region were active supporters of vaccination and had mainly been vaccinated, whereas the more impoverished francophone community, whose trust in the anglophone administration was much more limited, were broadly unvaccinated (Bliss, 1991).

Conflicting interests

Fears and misconceptions about vaccines continued into the twentieth and twenty-first centuries, notably when science and religious, superstitious, political or misinformed beliefs have clashed. In northern Nigeria, attempts to vaccinate against polio met with substantial opposition and mistrust. Datti Ahmed, chairman of the Supreme Council for Shari'a in Nigeria, warned Nigerians against vaccinating their children, claiming that the vaccine had been tainted. He claimed that there was a campaign by western governments against Muslim Nigerians and that they had "deliberately adulterated the oral polio vaccines with anti-fertility drugs and contaminated it with certain viruses which are known to cause HIV and AIDS." Consequently, the vaccination programme in northern Nigeria ground to a halt, and unsurprisingly the disease began to remerge (Yahya, 2007). On occasion, such fears have been linked much more to attempts by the press to sell newspapers. Perhaps most infamously in Britain in the late 1990s, rumours began to circulate in the tabloid press of a link between autism and the MMR vaccine. When the medical journal *The Lancet* published a scientific paper that seemed to support these speculations, anxieties about the vaccine became widespread. Even though *The Lancet's* report was quickly discredited and ultimately withdrawn, popular distrust of the vaccine meant that vaccination rates in Britain plummeted and have not recovered (Horton, 2004).

Disputes and debates about the safety or efficacy of vaccines have clearly hampered attempts to vaccinate the broader community and have increased the incidence of some preventable diseases. However, it was not simply conflicting messages or lack of trust in government policy that could hamper policies attempting to prevent nor limit the spread of disease. Quarantine and isolation policies have also come under repeated attack, particularly since the second half of the nineteenth century. Some of this opposition has understandably come from within the affected communities, as individuals opposed the restrictive measures imposed upon their lives. In Naples, during the cholera epidemics of the early twentieth century, the city's population usually flouted any restrictions attempting to ban public assemblies and limit individual contact with others. But

opposition went further. When doctors entered districts looking for patients, angry crowds assembled, fearing isolation and the removal of patients to hospitals. Angry mobs surrounded the doctors who were tending to the sick, and some even had to be rescued by the army (Snowden, 1995). However, in addition to opposition from communities, there has also generally been opposition from business interests, particularly from businesses involved in international trade. In the nineteenth century, British manufacturers and merchants repeatedly claimed that quarantine and isolation measures were an unwarranted interference by the state in their trade and the free movement of goods and people (Huber, 2006). Such opposition became particularly intense in the wake of cholera in Britain from 1832 onwards. Many British merchants and financiers argued that the strict measures that the government imposed to limit the movement of people and goods in and out of infected locations would destroy the country's economy and were considerably worse than the impact of the disease itself (Bick et al., 2020).

During the Yellow Fever outbreaks, which hit the south-eastern states of the USA in the nineteenth century, many towns and cities moved to enforce strict quarantines and attempted to limit the arrival of outsiders and monitor train lines. However, they too were opposed by local merchants and railroad corporations who claimed that such quarantines were illegal and created the impression of widespread illegal shutdowns across the South. These restrictions were completely legal, but the impression of widespread shot-gun quarantines became commonplace and encouraged people to disregard the restrictions (Huffard, 2013).

Such opposition has, if anything, only intensified over time. During the influenza pandemic of 1918-19, business interests globally opposed measures limiting movement and preventing public gatherings (Crosby, 2003). Similarly, when moves were taken to restrict travel, following the outbreak of SARS, there was again substantial opposition from a range of business interests. So intense was this opposition that Jacalyn Duffin argued that "when quarantine is invoked on a large, impersonal scale, its economic consequences generate self-righteous anger and unfair exceptions. Powerful elites perceive threats to their wealth and aspirations." (Duffin & Sweetman, 2006, p. 5). Almost every attempt by democratically elected governments to control the spread of disease in the past two centuries has been opposed by business interests.

Even when government policies are clear and policy decisions are made in the light of the best scientific evidence, attempts to limit the spread of disease can still be a dismal failure if local concerns and anxieties are not taken into account. Nowhere is this clearer than in the plague riots that shook Bombay in 1897. Bubonic plague arrived in Bombay in 1896. To combat the plague, the British administration introduced the Epidemic Diseases Act. There were two notable features of the act: firstly, that it sought to protect all those living in India not just Europeans; secondly, that it was

one of the most draconian pieces of legislation ever imposed and it completely ignored the cultural practices and even human rights of the civilian population. Convinced of the superiority of western science and medicine, the British began an all-out assault on the plague. (Echenberg, 2007)

The government sent out search parties to find anyone who might be sick. These parties had the right to enter any building and subject any individual to an often intimate physical examination. This included the examination of Indian women, often accustomed to seclusion from unrelated men, by white, male doctors. If anyone was suspected of having the plague, they were removed with all their potential contacts to 'health camps' where they lived under canvas in cramped quarters with no attention to the mixing of different ethnicities, religions and castes. Even those who died were not spared as post-mortem examinations of suspected plague victims interfered with customary funeral rites and traditions. Outraged mobs soon began to rampage through the city. The city's main hospital was attacked, and the city's Plague Commissioner was assassinated. Wild paranoia began to surface, and rumours circulated that bubonic plague was a poison spread by the British to kill poor Indians and solve the problems of overpopulation and poverty in Bombay. Some even argued that there was a plot by Queen Victoria to sacrifice Indians to the god of plague so that Britain would be spared (Snowden, 2019). With wild rumours such as these circulating, there was fear of any policy that the British administration now attempted. Consequently, attempts to control the plague failed dismally and were counter-productive. The sick were concealed and others fled, helping to spread the disease more widely. Relief of a kind came only when the governor decided to abandon the more draconian measures and launch a more conciliatory campaign, but the damage had been done. Plague continued to rage in India, and over the following 25 years, it killed an estimated 12 million people (Sarkar, 2001).

Similar irrational fears emerged in Africa in response to AIDS. As in India, attempts in Africa to combat the transmission of HIV were hampered because international medical policies often conflicted with the perceptions that many Africans themselves had of the crisis. Initially, many in Africa were unwilling to accept that AIDS was an African illness and argued that it had been imported from abroad by wealthy white tourists and business people. It was perceived as a disease of American and European homosexual men, not heterosexual Africans. Some declared that there was evidence that it had been created in western laboratories; others maintained it was a legacy of Apartheid and had been spread by tear gas, and was specifically designed to kill the black population (Iliffe, 2017).

When Thabo Mbeki became president of South Africa, he gave credence to many of these ideas. He claimed that poverty, not HIV was the primary cause of AIDS, and maintained that the antiretroviral drug AZT was toxic and restricted its use. In 2000, he wrote an open letter to Bill

Clinton, Tony Blair and Kofi Anan, accusing them of organising a campaign of persecution against those who disagreed with their views of AIDS that was akin to 'racist apartheid tyranny.' With the President of South Africa openly avowing such sentiments, popular attitudes in southern Africa to AIDS remained uninformed. 23% of South African army recruits said that AIDS was "God's way of punishing sinners." 4% believed those with AIDS had been bewitched (Johnson, 2010). These failings meant that the HIV and AIDS crisis spread almost uncontrolled in southern Africa to such an extent that Susan Hunter has called AIDS in southern Africa in the 21st century "The Black Death" (Hunter, 2003.) A study published in 2008 estimated that over 330,000 South Africans had died as a result of the failure of Mbeki's administration to provide access to drugs and medical care (Ceccarelli, 2011).

AIDS also had another lesson. Mirko Grmek has suggested that the development of international travel and tourism was part of what allowed AIDS to spread across Africa and then internationally spreading rapidly. He concluded that "carriers of bacteria and viruses who in another day may have taken the stagecoach, the long-haul trains, and ships now take to the skies" (Grmek, 1989, p. 21). If the Black Death of the thirteenth century was spread along the trade routes and caravans that linked the world together, if cholera in the nineteenth century was spread by steamships plying the oceans, modern pandemics are spread at lightning speed by passengers flying the global skies.

International cooperation

To halt the spread of disease and the emergence of new pandemics, it has become necessary for governments to cooperate ever-more effectively. Such attempts at international cooperation are not new and have their roots in the nineteenth century. The remorseless spread of cholera around the world, spread by global shipping routes, revealed how important it was for countries to cooperate to limit the spread of disease. The development of the International Sanitary Conferences, which met between 1851 and 1894, was designed to help coordinate efforts to limit the spread of cholera epidemics, and in many ways presaged the development of the World Health Organisation. (Huber, 2006) The plague outbreak in Bombay was part of a global pandemic, the third major pandemic of bubonic plague, which swept through port cities around the globe from Sydney to Glasgow, from San Francis to Rio de Janeiro, at the turn of the twentieth century (Echenberg, 2002).

Nowhere was the global threat of a pandemic shown more clearly than in the coordinated global campaign to control SARS in the early twenty-first century. The WHO's ability to access a wide range of governmental and non-governmental sources and cooperate in real-time through the internet was crucial in limiting the spread of the pandemic. However, such cooperation can only

work if all governments work together (Fidler, 2004). SARS revealed the limits of global cooperation and the fragility of some healthcare systems and almost brought the hospitals in Toronto to their knees. Paul Caulford, the head of Family Medicine and Community Services at Scarborough Hospital in Ontario, wrote of the near-collapse of health services in the city. “Despite all our efforts, many hospitals became infected at alarming rates, making non-SARS care too risky. Elective surgery, including that for newly diagnosed cancers, was postponed as operating rooms and outpatient clinics shut down across the city. It would be months before they reopened” (Caulford, 2003).

The most basic lesson that can be taken from a history of disease is that epidemics and pandemics have been a fundamental part of human history. For much of human history, society has been shaped and overshadowed by the spectre of disease (McNeill, 1979). Many of the same problems and issues repeatedly appear in past epidemics, and many of these have reappeared in the Covid-19 pandemic. As the Spanish philosopher George Santayana wrote, “those who cannot remember the past are condemned to repeat it” (Santayana, 1917, p. 284). What is most striking about any survey of past pandemics is how many of the current debates and issues have clear precedents in the past, even the far past. But a study of disease can also demonstrate how effective measures have been developed over the years to overcome the challenges of a range of diseases and the social, economic and political problems that such solutions themselves posed. In particular, the use of vaccination, the awareness of preventative measures such as masking, and policies of quarantine and isolation, have all been used with varying success in the past. However, each had its limitations, and each has provoked different degrees of opposition. Vaccination can be hugely successful and even eliminate a threat, but popular misconceptions can also prevent successful vaccination programmes. Masks can only be effective in certain circumstances and if widely accepted. Quarantine and isolation have been more effective historically in keeping disease out of communities rather than containing it once an outbreak has begun. It is also apparent that governments need to provide clear and consistent information, collaborate with other governments, and most importantly, be open and honest both with their citizens and the governments of other countries.

Reflective questions

1. What surprised you most about the history of pandemics?
2. Thinking about COVID-19, are there key lessons we should have learned?
3. What key scientific, social, cultural and political factors have featured in pandemic management throughout history?

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