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PERSPECTIVE ESSAY

The politics of disease

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Abstract

The COVID-19 pandemic highlights a long-known but often neglected aspect of international relations: the ability of disease to challenge and change all aspects of security, as well as the ability of public policies to change the course of disease progression. Diseases, especially mass epidemics like COVID-19, clearly affect political, economic, and social structures, but they can also be ameliorated or exacerbated by political policies, including public health policies. The threat of pandemic disease poses a widespread and increasing threat to international stability. Indeed, the political implications of pandemic disease have become increasingly evident as COVID-19 has precipitated death, economic collapse, and political instability around the globe. Any pandemic disease can precipitate catastrophes, from increasing health care costs to decreased productivity. This theoretical discussion highlights the intertwined interactions between social, political, and economic forces and the emergence and evolution of pandemic disease, with widespread implications for governance and international security.

Keywords: disease; international security; politics; COVID-19; flu

The COVID-19 pandemic highlights a long-known but often neglected aspect of international relations: the ability of disease to change and challenge all aspects of governance and international security, as well as the ability of public policies to affect the trajectory of illness. The former occurs as a consequence of the disease itself; the latter emerges as leaders and publics strive to overcome these impacts. Mass epidemics and pandemic disease are among several atypical threats, such as extensive environmental destruction, climate change, and human trafficking, that can challenge existing, more state-centered, rationalist concerns and models of international relations, such as terrorism and war, that nonetheless potentially compromise international security. Diseases, especially mass epidemics like COVID-19, clearly affect political, economic, and social structures, and they are affected by these factors in turn. The consequences of both illnesses and public reactions to them create a widespread and increasing threat to worldwide governance and stability. Therefore, they should be conceptualized not only as a serious national security threat posing risks to individuals and states, but also as a threat to international security writ large (Albert et al., 2021). The political implications of pandemic disease have become clearer to everyone throughout the COVID-19 pandemic, which precipitated death, economic collapse, and political instability around the globe, but are certainly not limited to COVID-19.

Pandemic disease can precipitate catastrophes in a number of areas, from increasing health care costs to decreased productivity. Such costs prove particularly burdensome for poor countries and those that are just beginning the transition to democracy, where a diversion of scarce resources to health costs presents an opportunity cost to the timely construction of essential, stable political institutions such as courts and free and fair elections, as well as the development of a free press. Even during brief epidemics, such as the first SARS epidemic in 2003, which affected 26 countries and resulted in over 8,000 cases, huge amounts of money can be lost, if only through reduced levels of business travel and tourism revenue

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(Emanuel, 2003). In the case of the 2003 SARS epidemic, the cost was estimated to be about 40 billion (2003) U.S. dollars (Lee & McKibbon, 2004).

As everyone knows, the COVID-19 pandemic has been devastating globally. But this was not the first pandemic, nor will it be the last. In fact, the reverse is likely true: the prospects for pandemic disease outbreaks are vastly increased going forward, at least partly as a result of climate change (Baker et al., 2022). Processes of globalization, which create highly mobile populations through increased and more rapid transportation, allow for the quick transmission of infection vectors. In addition, overpopulation, resource deprivation, and increased deforestation encourage people to push ever farther into enclaves that were previously inhabited solely by wildlife, precipitating the kind of zoonotic transfer of diseases from animals to humans that poses the greatest risk for global spread (Dobson et al., 2020). This is the kind of threat that will only increase as the planet warms and climate change precipitates unpredictable and unexpected movements of large numbers of people and animals (Mills et al., 2010). Mosquitos, for example, have moved farther north because of the warming climate, leading to the first cases of domestic transfer of malaria in the United States in many decades (Centers for Disease Control and Prevention [CDC], 2023). The risk of widespread zoonotic transfer is evidenced by such things as the wet markets in China, which spawned the SARS epidemic in 2002 and have been blamed by many for the outbreak of COVID-19. Such wet markets demonstrate the recurrent risk posed by practices that place humans and live wildlife in close proximity (Perlman, 2020; Webster, 2004).

This article begins with some brief definitions and discussion of the history of pandemic disease, and then it mentions some specific concerns regarding the lessons and implications of COVID-19. The main analysis surrounds a theoretical outline of the intertwined interaction between social, political, and economic factors and pandemic disease, with the implications of these forces for governance and international security.

Pandemic disease

Pandemic disease refers to those diseases that affect large numbers of people over large geographic regions; in this way, they are more widespread than an epidemic that might be contained to a particular geographic area, as has traditionally occurred with episodes of Ebola in West Africa, or within a given vulnerable population, such as occurred globally with monkeypox in the summer of 2022 and remained largely contained to the gay male community.

There are many infectious diseases that occur around the world, resulting in an enormous amount of suffering, loss of life, and economic productivity. The most common illnesses worldwide involve tuberculosis and HIV/AIDS, although malaria, hepatitis, cholera, various hemorrhagic fever viruses, and other illnesses, including variants of influenza, cost millions of lives and dollars, cause untold suffering, and risk domestic and international security and economic prosperity in affected areas.

In 2000, the U.S. Central Intelligence Agency issued a report on new and emerging diseases, arguing that many, especially HIV, posed a threat to global security. That same year, the G-8 noted in particular the economic concerns that arose from three so-called diseases of poverty: AIDS, tuberculosis, and malaria (National Economic Council, 2000). At that time, the G-8 noted that over 2 million people died of tuberculosis and over a million died of malaria every year. Over 6 million a year died of diarrheal and respiratory illnesses, and over 3 million children died of preventable illnesses such as measles because of lack of vaccination. This was in addition to the millions of children who were orphaned every year by AIDS. Although some things have improved since that time, other factors have worsened. For example, President George W. Bush's $100 billon PEPFAR program to provide antiretroviral drugs has done a great deal to reduce rates of HIV and its transmission in Africa since its inception in 2003, saving an estimated 25 million lives (Webster, 2023). However, during that same period, huge resurgences in preventable childhood illnesses such as measles occurred as rates of vaccination plummeted. This began even before the COVID-19 pandemic as a result of vaccine hesitancy within particular communities, and it has only been exacerbated by the vaccine politics surrounding COVID-19 (Cousins, 2019).

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Many pandemic diseases begin in animals, transfer to humans, and become particularly contagious or lethal because humans have not yet developed immunity to these novel agents. The history of such plagues is long and bloody, and often connected to war or forced migration. During the Antonine Plague (166 BCE), Roman troops brought the plague back to Rome from Syria. This plague subsequently decimated Europe along Roman trading routes and, some say, contributed to the fall of the Roman Empire. This plague was most likely smallpox or measles. Bubonic plague, carried by rats as the natural animal reservoir, traveled from China to Europe in the 14th century, ultimately killing about 25% of the population of Europe (Glatter & Finkelman, 2021). Other zoonotic illnesses proved equally deadly. In the 1500s, for example, African slaves shipped to Latin America brought malaria and yellow fever, causing the population of Mexico to decrease by over 95% within a decade (McNeill, 2011).

Prior to the current scourge, the pandemic disease whose history is most accessible to modern Westerners was the influenza pandemic of 1981–1919, which killed over 25 million people worldwide. That pandemic was likely facilitated by the close and unhygienic conditions perpetuated by the First World War. The flu epidemic most likely originated in Haskell County, Kansas, near what was then known as Camp Funston (now Fort Riley) (Barry, 2004b). Infection among soldiers began a transmission that carried onto troop ships to Europe, likely potentiated by the live chickens and pigs they brought along for food, with the birds providing the natural animal reservoir (Patterson & Pyle, 1991). The devastation and disruption caused by the war and its aftermath helped spread the disease widely, to catastrophic effect. As bad as COVID-19 has been, the 1918 flu pandemic, which occurred across three waves into 1920, with the 1919 wave being the most severe, killed a higher percentage of the population. Importantly, unlike COVID-19, which targeted the old, the 1918 flu pandemic disproportionately affected the young, particularly male, population, causing even more economic and political disruptions than would have occurred if it had primarily affected the largely unemployed elderly part of the population. The political response at the time was to quarantine those affected and isolate and restrict the movement of those who had been exposed but not infected (Barry, 2004a). Just prior to COVID-19, many would have considered such responses antiquated in light of modern medicine, but, of course, COVID-19 showed how little progress any amount of modern medicine can make in the face of a novel infectious agent, and lockdowns once again became prevalent, if similarly controversial, around the world.

Large economic effects can result from pandemics as well. For example, direct costs such as hospitals and medication during the Ebola epidemic in West Africa in 2014 cost the United States over $6 billion (Gostin & Friedman, 2015). Indirect costs can prove high as well. For example, the 2003 SARS epidemic led to a 1% decline in China's gross domestic product that year (Qiu et al., 2017). These kinds of expenses include the costs associated with care for the afflicted as well as the consequent loss of productivity among those who die or remain permanently impaired. However, many times these effects are short-lived, as was the case with the negative effects of the influenza pandemic (Garrett, 2007), and the longer consequences encouraged economic growth. As Brainerd and Seigler (2003) wrote, "controlling for numerous factors including initial income, density, human capital, climate, the sectoral composition of output, geography, and the legacy of slavery, the results indicate a large and robust positive effect of the influenza epidemic on per capita income growth across states during the 1920s." (p.1)

COVID-19

The United States, more than most peer countries, did not do well in handling the COVID-19 outbreak. The United States has had much higher death rates from the pandemic than most other countries. This is typically assessed as "excess mortality" in terms of deaths per million. The official U.S. numbers are about 3,099 per million, worse than the United Kingdom (2,688), Russia (2,594), France (2,115), Sweden (1,849), and Germany (1,707), although better than Peru (6,481) (Statista, 2023). Other countries have fared much better. For example, South Korea rolled out widespread testing immediately, and Hong Kong and Singapore displayed only the linear growth typically experienced with infectious disease when classic

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public health containment strategies prove effective early on, unlike places like Italy and the United States that were geometrically overcome.

Of course, there can be many reasons for this discrepancy in outcomes. In many ways, the early experience with COVID-19 infection patterns constitutes an amazing natural cross-cultural experiment exposing the strengths and weaknesses inherent in various governance strategies, including issues involving leadership, social and institutional trust, and authoritarian coercion, as well as issues reflecting divergence in underlying population health, including factors such as universal health insurance. Some democratic countries with strong and consistent leadership, as well as high levels of trust in government and each other, such as New Zealand and Iceland, did relatively well, although certainly geographic isolation likely helped in those cases. By contrast, the United States failed utterly in any effort at accurate surveillance, at least partly because the government refused the testing technologies developed and offered by the World Health Organization (WHO), insisting on waiting for the Centers for Disease Control and Prevention (CDC) to roll out its testing kit. The CDC botched its attempt, leading to a recall and delays in surveillance. Previous chronic cuts to public health funding and surveillance, built up during the George W. Bush and Barack Obama administrations but slashed during Donald Trump's early years prior to the pandemic, exacerbated the problem (Reardon et al., 2017). These cuts to public funding included cuts not only to the CDC but also to local county health boards. In addition, the pandemic response team in place during earlier administrations had been eliminated, and resource shortages imposed overly restrictive crisis criteria for testing cases as well as the use of masks. In short, the lack of adequate preparation and the complete absence of clear and consistent leadership induced additional and unnecessary panic in a population already politically polarized and distrustful of government.

Interestingly, competent leadership was available. Specifically, Anthony Fauci, head of the National Institute of Allergy and Infectious Diseases, had been around since the Ronald Reagan years and was largely intellectually responsible for the huge improvements that had occurred since that time in the treatment and prevention of HIV (Fauci, 1996). He was centrally involved in controlling the 2009 swine flu epidemic; schools at the center of the epidemic, Los Angeles, never even had to close (Yang et al., 2009). In that case, President Obama turned over public health advice and leadership to Fauci, as he did during the subsequent response to the Ebola epidemic in West Africa in 2014 (Fauci, 2014). In both cases, skill, competence, experience, preparation, organization, and the commitment of adequate resources saved countless lives and prevented enormous economic and social disruption.

The difference in the case of COVID-19 clearly involved many factors, not least the political polarization dividing the country. Although President Trump refused to commit the kind of material and political resources early in the pandemic needed to control its initial spread, he did subsequently commit enormous resources through Operation Warp Speed to fund the development of a largely safe and effective vaccine quickly (Kim et al., 2021). It is, unfortunately, not at all clear that any of these primarily political challenges related to polarization and paralysis will improve upon the occurrence of the next pandemic, or that global governance is any more prepared to deal with the consequences of such an event. As a result, it is useful to examine the ways in which pandemic disease and international relations continue to be inextricably intertwined.

The interaction of pandemic disease and international relations

Unfortunately, political science in general and international relations in particular have paid less attention to the impact of pandemic disease on global security. This should be surprising, but it is not to anyone who has witnessed the preoccupation of "isms" debates that offer little room for the introduction of factors that are not related to large state military affairs. Wenham (2019) contrasts this statist response, primarily focused on security, with a more globalist approach that strives to advance human rights and well-being. She argues for an integration of these perspectives that appeared promising earlier in the century. However, in a comprehensive review across seven time periods, Wenham et al.

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(2023) note the tension between such traditionally statist views of global health and more global approaches embodying a more transnational focus, and the re-emergence of a more statist approach to the containment of infectious disease as a result of COVID-19. The larger debates in IR, which often take place in quite abstract form, seek to elide the most critical question raised by Han, Bayly, and Millar (2021): "How will, and should, politics value human lives in the post-pandemic world?" (p. 5).

The answer to that is not so clear within IR, much less in the world at large, and this detachment from human emotions such as loss reflects a much wider and deeper neglect in political science and IR. However, the purpose of this article is not to undertake an ethical examination of the field or to cover all the relevant materials in public health; several valuable comprehensive treatments already exist (Harman, 2012; Youde, 2012). Rather, the purpose here is to provide a more specific set of theoretical suppositions regarding the interaction between disease and international relations.

Nonetheless, work in public health remains critical for the insight it provides into the way that politics, and the perception of interests, influences public health policies regarding how best to control disease emergence and transmission. For example, Davies (2008) has done critical work on the securitization of infectious disease. She argues that the WHO has emerged as the central agency that states, especially Western ones, rely on to contain disease outbreaks, primarily through the Global Outbreak Alert Response System. This network in particular has given the WHO special authority in coordinating global responses to disease outbreaks. Davies and Wenham (2020) argue that the WHO remains an inherently political organization and suggest that it would be wise for the organization to embrace this reality and rely more heavily on experts in foreign policy and diplomacy to facilitate more effective disease surveillance and containment. They note that international political cooperation remains essential if the world is to effectively combat pandemic infectious agents such as COVID-19.

Seven issues challenging international relations in the face of pandemic disease

There are at least seven specific, primarily political problems that the world confronts in trying to address the emergence of any pandemic disease (Herrick & McRae, 2003, ch. 10). First, in many cases, such as AIDS, it can prove very difficult to develop effective drugs or vaccines, and even harder to do so quickly, forcing more politically and socially challenging and divisive issues of prevention to the fore. Although such challenges involving masks and lockdowns were particularly salient during the COVID-19 pandemic, they certainly predate the most recent outbreak. For example, it took decades for scientists and pharmaceutical companies to develop treatments for HIV, and even longer to create the current pre-exposure prophylaxis, known as PrEP. There still is no vaccine to prevent HIV, although attempts to use the mRNA platforms that provided the foundation of the COVID-19 vaccine for this purpose are currently underway (Mu et al., 2021).

During the early decades of the HIV pandemic, the main strategy reverted to prevention, but this was very difficult because the mode of transmission was primarily, although not exclusively, sexual. As a result, there were enormous political roadblocks to instituting public education campaigns because of concerns that such information might be too explicit for general public consumption that might include children. Other actions undertaken by public health officials were targeted at reducing risky behavior. These efforts proved quite restrictive and controversial, not least because people's sense of freedom was restricted against their will. For example, in a central site of early case transmission, the San Francisco health commissioner, Mervyn Silverman, was blasted for shutting down bathhouses, which he suspected were the sites for a great deal of infectious transmission; he was accused of being homophobic and received threats of various kinds (Disman, 2003). In a more widespread example, long discussions preceded the public health campaign that sent information regarding modes of transmission to every household; ultimately, the informational brochure came packaged in plastic the way that magazines like Playboy were mailed at the time, to make sure that impressionable children were not exposed to information they may not have been prepared to see (Brier, 2009).

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But, as COVID-19 shows, even when the development of a vaccine is remarkably rapid, in that case taking about a year, slow public uptake can occur because of political opposition on both a societal as well as an individual level. While the original political opposition to AIDS public education surrounded concerns about sexual orientation, drug use, and sexually explicit materials, the opposition to COVID-19 policies followed predictable, if regrettable, ideological lines. Republicans tended, on average, to oppose lockdowns, school closures, and mask and vaccine mandates and to eschew vaccines. The result, over the course of three years, has been a 76% greater COVID-19 mortality among Republicans than among Democrats (Wallace et al., 2023), a divergence that only emerged after the vaccines became available. Many factors beyond mere political ideology may have contributed to this outcome, including discrepancies in access to accurate information, health care, and health insurance; income levels; and rates of underlying comorbidities. However, in light of recent evidence showing a 43% increase in the excess death rate among Republican voters after vaccines became available (Webster et al., 2023), political ideology seems to have exerted a significant and independent effect on morality rates over and above other factors. This is extremely unfortunate because such a difference in outcome resulting from political ideology should be wholly avoidable, even if other contributing factors such as underlying comorbidities are not. Such a huge difference in mortality along ideological lines is not only regrettable and unnecessary, but it points to the central role that politics can play in domestic governance as well as international security.

These examples simply serve to highlight the recurring dynamic that the politics of prevention can prove contentious regardless of the domain along which it occurs. These divisions need not be ideological in nature, as they have been during COVID-19, but they do pose serious challenges to the ability of the public health sector to limit transmission of infectious disease through the mechanism of prevention, as opposed to treatment, precisely because many people will oppose the particular strategies employed to reach this goal. These opponents are not necessarily stupid or blind but may instead privilege different values, such as economic survival or child development, over wider, albeit inequitably distributed and amorphous, public health concerns.

Second, there is often an inability or refusal on the part of affected states to accurately report numbers to the WHO, or even more so to domestic surveillance agencies, for fear of damage to trade and tourism. This makes epidemiological planning extremely difficult. This denial of the true scale of effect was especially evident in China during the early days of the pandemic, when the satellite observation of rapid construction of huge hospitals proved the best indicator of how serious and widespread the government feared the illness might be, but it certainly applies to other pandemics as well. For example, in the early days of the AIDS epidemic, many countries refused to give epidemiological data to the WHO or downplayed their numbers. Russia was a notable example of a country that continually reported numbers far below those that could be publicly observed. Similarly, countries affected by the first SARS epidemic in 2003 did not report the full extent of those affected by the illness for fear of disrupting travel and trade (McKercher & Chon, 2004).

During COVID-19, the most notable illustration of this phenomenon occurred around testing. Early on, certainly in the United States but elsewhere as well, testing availability was so restricted that accurate numbers were almost impossible to achieve. This problem was enhanced by the occurrence of asymptomatic infection, as many people who were infected appeared not to know they were sick yet and were still able to transmit the virus to others. This element of asymptomatic transmission proved surprising and particularly challenging in trying to control the spread of the virus. Yet even as tests became more widely available, most people did not report the results of home tests, rendering wastewater surveillance the most innovative and accurate way to determine infection rates within larger communities (Hillary et al., 2020). This strategy provides an interesting example of how techniques developed to combat one pandemic may be able to help us anticipate, if not ward off, future ones since the technology is simple, reliable, and readily available.

All these dynamics make it very difficult for international organizations such as the WHO to accurately predict and plan for tests, treatments, and other public health actions, including surveillance or quarantine, that might reduce the impact of a given disease on the wider population. The fact that each

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country tends to deal with outbreaks in its own way, even in the midst of a shared global crisis, makes effective collective action on the part of international organizations all but impossible to achieve. Any realist will tell you that the anarchic self-help system demonstrates the limits of international cooperation, but such limits can prove remarkably self-destructive in the face of a global disease that does not recognize geographic boundaries.

Setting up standing systems that provide constant monitoring could prove extremely helpful in identifying and responding to disease outbreaks early, before a rapid transmission pattern starts. Albert et al. (2023) put forth a model of epidemiological intelligence centers that rely on public health information to help contain the spread of disease. Such a model would prove quite useful not only to identify and hopefully stop disease transmission early, but it could also help identify early outbreaks resulting from biological weapons use.

Third, many states refuse to undertake the kind of sex and drug education needed to prevent the spread of many illnesses that are transmitted through these mechanisms. There are, of course, a wide variety of credible and challenging political and religious reasons for such reluctance. This was evident in the midst of the AIDS epidemic in the ways just described. Interestingly, this can work in opposite directions as well. In the summer of 2022, a unique mpox (then called monkeypox, now renamed) outbreak occurred globally. This version was unusual not only for circulating outside Africa and away from the animals that normally serve as the reservoir, but also because it appeared to be circulating through human-to-human, skin-to-skin, and sexual contact, which had not been a prevalent form of transmission before. As in the early days of HIV, mpox appeared to be spreading through the sexually active members of the gay male community, with the original site sourced to a male sex worker from Brazil who attended a series of summer dance parties on Ibiza. However, unlike the earlier AIDS epidemic, a vaccine, however limited, was available. And, unlike COVID-19, the affected population, likely at least partly because of their earlier traumatic experience with AIDS, changed their behavior rapidly and had very high levels of vaccine uptake right away (Wenham & Eccleston-Turner, 2022). This resulted in the rapid diminishment of the epidemic, reducing to single-digit numbers within months, as opposed to the COVID-19 pandemic, which is still, at its current lowest level, killing about 300 people a day in the United States (although admittedly, many now are dying *with* COVID-19 as opposed to *from* COVID-19, with advanced age being the most notable risk factor for mortality). This example illustrates that when accurate, rapid, and complete information is provided to a receptive population that trusts the medical establishment, at least to a certain degree, containment of infectious illness can be achieved fairly rapidly and effectively if treatments are available. However, clearly not all infectious disease transmission responds so quickly and effectively to public health information and intervention. Oftentimes, it is political opposition to public health information, particularly in the domains of sex and drugs, that prevents people from undertaking the kind of behavioral change that might help protect them from individual infection, and prevent more widespread transmission in the larger population (Albert et al., 2021).

Fourth, the nature of the incipient health care systems in many countries remains inadequate, rendering people more likely to become vulnerable to disease and less likely to be able to obtain adequate care, or recover, once ill (Fauci, 2014). Importantly, even in the United States, where the larger health care system is quite sophisticated, many people cannot access the best facilities or treatments because of lack of adequate medical insurance. The inability to access affordable and reliable preventive care potentiates the development of serious underlying comorbidities such as diabetes, in the wider population. Such individuals with preexisting illnesses or comorbidities, particularly if left untreated for long periods of time, become more vulnerable to other sorts of infections and less able to mount effective immune responses against them. This, of course, relates not only to the structural health care system, but also to the background environmental factors of the population in general, including exposure to air and water pollution, poor diet, sedentary lifestyle, and other risk factors for illness in general.

Fifth, and related, poverty and lack of social cohesion as a result of civil wars, drought, famine, labor migration, and especially climate change increase the rapid spread of disease across the globe (Baker et al., 2022). Indeed, as noted earlier, in July 2000, the G-8 cited the three diseases of AIDS, tuberculosis,

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and malaria as strongly associated with poverty (National Economic Council, 2000). But these diseases are not alone. Health inequalities occur around the globe by class as well as other demographic characteristics, including age, sex, sexual orientation, race, education, religion, and other factors (Baker et al., 2021). The COVID-19 pandemic, for example, laid bare the many health inequalities by race and class as well as age that existed in the United States but were exacerbated by the pandemic (Albert et al., 2021). Essential workers who could not stay home, and often have to live in cramped quarters with others who also have to work outside the home, remained especially vulnerable to infection, just as those without running water, most especially pronounced on Native American reservations, suffered disproportionate mortality levels.

These rending of the social fabric may not result from a given pandemic but can be heightened and highlighted by the underlying mechanisms of disease transmission. Other factors can facilitate disease transmission as well, including conflict and trade, central features in any analysis of international relations (Qiu et al., 2017; Wenham et al., 2023). War and conflict make hygiene more difficult, if not impossible. Drought, floods, and famine lead to malnutrition, weakening the immune system. Lack of stable housing, along with substance abuse and serious mental illness, also increases the risk for concomitant illnesses that can pose infection risks to the larger community. These factors can be precipitated not only by international political tensions such as war, but also by domestic governance failures to provide basic social services to vulnerable populations (Davies & Wenham, 2020).

Indeed, many of these risk factors are fundamentally and primarily political issues that increase the risk, and the consequences of, serious infectious diseases running rampant within larger communities. And while risk may disproportionately fall on the most vulnerable, even the richest and most privileged suffer increased risk from any infectious disease as well, precisely because all humans exist in social communities where it can be difficult if not impossible to contain certain diseases, especially those that circulate through the air (Davies, 2008).

Sixth, and connected, processes of globalization increase the rapid transmission of disease, making containment ever more difficult and international in nature (Qiu et al., 2017). This process has been evident from early plagues, such as the Antonine and bubonic plagues mentioned earlier. Routes of transmission tend to follow trade routes, just as the early days of AIDS transmission followed not only trade routes, but the roads between towns where day laborers worked and their home villages (Qiu et al., 2017; Wenham et al., 2023). Other cultural practices catalyzed transmission as well, including tendencies in some areas for brothers to marry widows so as to provide for surviving children, spreading sexually transmitted diseases within kin networks early in the AIDS epidemic. The 1918 flu pandemic also traveled along the routes of soldiers going to and coming from war (Brainerd & Siegler, 2003). What is different now is the speed with which such transport can take place, meaning that many people might be able to travel somewhere quite far away before they are even aware they are sick (Baker et al., 2022). Temperature checks and other precautions can be instituted at borders and airports, and while this may slow transmission somewhat, COVID-19 dramatically demonstrates that these are ultimately strategies of delay and mitigation at best, and they can never serve the purposes of complete prevention, much less improve the prospects for eradication. How devastating a pandemic becomes depends primarily on things like mode of transmission (sexual versus respiratory, asymptomatic or symptomatic, etc.), rate of reproduction (how many people each person infects), and mortality rate.

The risk that derives from increased globalization is not restricted to human forms of transportation but affects supply chains as well. If borders are shut for fear of disease, it can make it much harder for goods and services to circulate freely, leading to the kind of critical shortages that everyone experienced especially in the early days of COVID-19, from toilet paper to masks (Davies & Wenham, 2020). Even almost four years in, critical shortages exist in many areas, including chemotherapy medication.

Last, but certainly not least, political corruption undermines all attempts at health education, disease prevention, and efforts to create and fund institutions that are necessary for effective health care treatment and policies to develop (Fauci, 2014). Especially in poor countries, resources that might otherwise go into institutional development of court systems, central banks, police, a free press, or other domestic governance structures must disproportionately go to disease treatment if not abatement,

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particularly in countries that have national health care, where the government picks up the tab for the health care of its citizens (Albert et al., 2023). Huge health care costs in underdeveloped and poor countries can destabilize these states, placing increased demands for costly humanitarian interventions by the United States and United Nations (Davies & Wenham, 2020). In addition, high health care costs in developing countries in particular raises the specter of economic collapse for those nations, including defaults on loans to other countries (Wenham et al., 2023). Such costs render other political goals such as democratization distant at best. Sustainable economic development becomes increasingly difficult for states mired in high health care costs, especially in situations where huge swaths of the elite or working age population are lost to disease and death.

The inability to establish strong governmental institutions, or the destruction of incipient ones, limits the ability of weak institutions and the rule of law to contain the emergence of authoritarian leaders. It also limits the availability of resources to help fund the public health system, leaving all citizens more vulnerable to disease as well as government dysfunction and exploitation (Davies & Wenham, 2020). This can not only delay or prevent economic development, but may also cost a country the rich resources of a population that is too sick to work, or whose death places additional undue burdens on families, leaving widows, orphans, and others with few other recourses for survival.

Consequences of governance and international relations on pandemic disease

These challenges posed by pandemic disease for domestic governance and international security, and the failure of political institutions to help contain illness, all become more pronounced in the context of newly emergent diseases. One of the most profound impacts is exerted on domestic political processes. In the United States, for example, the divisions over how best to handle COVID-19 have enhanced political polarization, as noted earlier. So the importance and relevance of pandemic disease for international relations remains inherently intertwined in cause and effect: it is not just how disease affects political processes and outcomes, but how politics affects the containment of disease (Davies & Wenham, 2020). As a result, it is imperative to explore how governments can and should respond politically to various health crises, especially the emergence of novel infectious diseases with pandemic potential (Davies & Wenham, 2020). What types of policies prove more or less effective in preventing and combating the spread of pandemic disease? How can these threats, and preparation for them, increase the ability to respond to bioterrorist attacks? These questions can be explored from a couple of different perspectives.

First, specific government policies might improve prospects for the effective early containment of newly emerging epidemics. This can occur through at least three specific processes. To begin, how the government responds to the outbreak of new diseases such as West Nile virus, SARS, or COVID-19 when they first emerge can influence how widespread these diseases become in the wider population (Fauci, 2014). Especially with a disease that spreads rapidly, early attempts to contain spread can be much more effective than even stronger strategies undertaken later in an emerging pandemic (Fauci, 2014). Establishing national early warning surveillance through ongoing strategies such as wastewater surveillance and maintaining early pandemic response teams can help enormously in this regard (Farkas et al., 2020). Being able to see what is coming before it gets out of control and having public health professionals in place who have already worked to establish trusting relationships with local officials and populations can help contain outbreaks earlier, inform the public in a reliable and consistent manner, encourage uptake of vaccines and treatments, and hopefully reduce overall negative effects (Emanuel, 2003).

Second, how governments control the research and marketing of pharmaceuticals matters as well. As we saw with COVID-19, government subsidies, or temporary reductions in restrictive regulatory processes, can vastly speed the development of vaccines and treatments (Kim et al., 2021). Moreover, fewer people will use any prevention or treatment that is costly, which is why it is in everyone's best interest for the government to subsidize any effective prevention or treatment, as well as testing, for any disease they hope to contain. One of the challenges here is that although many of the effective vaccines and treatments rest on technology, innovations and research conducted on the basis of public support

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through national research grants provided to academic communities through taxpayer dollars, pharmaceutical companies work to privatize the gain developed on the basis of socialized research (Wenham et al., 2023). Working during less stressful times to align the incentive structures across these divisions could also improve efficiency and equitability.

Third, and related, lobbying groups impact the way in which the federal budget gets earmarked to fund research on certain diseases at higher levels than others. This goes far beyond infectious and pandemic disease, of course, with some diseases such as breast cancer and AIDS receiving much more funding than illnesses that affect fewer people, or have less effective lobbies and constituencies (Wenham et al., 2023).

Next, it is important to examine the impact of political processes on disease outbreak and progression once it has begun. The ramifications of this consideration are painfully obvious in light of the recent political battles over lockdowns, mask wearing, and vaccinations during the COVID-19- pandemic (Davies & Wenham, 2020). There are at least two critical issues in this area of consideration. First, as noted earlier, the nature of vaccine politics means that political processes and ideological divisions can affect how many people get sick and the demographic and ideological identity of those most afflicted. For example, with COVID-19, those who opposed vaccines were more likely to get sick and die. This is true of many preventable diseases such as measles, as those who adhere to standard medical recommendations do much better overall than those who refuse such treatments. This means that the political and ideological proclivities of individuals and populations can have a profound effect on public health outcomes, rendering some groups more vulnerable to both background as well as emerging illnesses and diseases (Wallace et al., 2023).

Second, it is important to consider the ways in which government-sponsored biological research and weapons development opens up the risk for accidental widespread infections should security precautions fail. This refers not only to the development of biological weapons for intentional use in circumstances of conflict, as has occurred in many countries for years, but also to the kind of laboratory leak that many believe caused the COVID-19 outbreak, whether intentional or accidental (Albert et al., 2021; Glatter & Finkelman, 2021). Although no definitive conclusion has been reached in the COVID-19 case, the possibility for such leaks escalates as a result of all kinds of political factors, such as combat occurring in a place where such samples might be stored. In addition, governmental pressure to make quick scientific advances, or loose or shoddy regulatory standards, can increase the likelihood that accidental leaks could occur with obvious global repercussions.

Because of the severe economic, social, and humanitarian burden of disease on international stability and security, and the influence of disease on global and domestic governance, such issues deserve to be addressed with the same attention that more traditional threats such as terrorism receive (National Economic Council, 2000). The interaction between public health policy and international relations has become both more obvious and more critical during the COVID-19 epidemic but these issues are not restricted to this pandemic alone.

Conclusions

This discussion has attempted to help illuminate some specific ways in which pandemic disease and international relations intertwine in ways that can pose profound threats for every country, but especially for those nations struggling to establish or maintain stable political and economic institutions.

The impact of pandemic disease is not restricted merely to the immediate occurrence of the disease and its direct consequences. Rather, the effects can be quite widespread and enduring. For example, many survivors of pandemic disease experience post-traumatic stress disorder (PTSD) as a result of their experience, and certainly many who experienced illness or death of loved ones in the wake of COVID-19 have had similar consequences (Yuan et al., 2021). Clearly, the imposed social lockdown and isolation makes PTSD as well as other psychological sequelae such as depression and anxiety much more likely and much worse than is the case in more contained or less socially restricted pandemics. Yet the

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consequences of these experiences can last decades, even without the physical sequelae that many experience with long COVID. The social fabric in the United States was already terribly frayed prior to COVID-19 because of the fraught political divisions and extreme economic inequality, and COVID-19 seems to have made everything much worse for the vast majority of people. Whether or not the remaining decaying social fabric will break completely and devolve into something like civil war will depend, in part, on whether people can come together toward the common good. Observing the huge increase in mass shootings since the start of the pandemic (Peña & Jena, 2021), a clear sign of emblematic of societal fear, anger, and rupture, it is hard to remain optimistic.

In some ways, COVID-19 represents the largest and most expensive social science experiment ever undertaken, not just in the United States but around the world. We will not know for a long time whether the relative loss of lives from the virus is greater or less than an uptick in mortality precipitated by the lockdowns: increased domestic violence deaths, suicides, maternal and child mortality, and other public health outcomes such as heart attacks and delays in cancer diagnoses, with more serious disease resulting, because people were so afraid of going to the doctor or hospital for so long. And that calculation still leaves out the sheer economic toll of the lockdowns, which disproportionately affected those already economically most vulnerable, as well as the serious and already evident problems associated with delays in child development because of schools being shut down for so long (Colvin et al., 2022). Clearly, the social and emotional damage already far outweighs any educational and intellectual delays for anyone watching carefully.

The most evident aspect of the effect of pandemic disease on domestic governance and international security revolves around the lost opportunity to really learn from our mistakes and figure out not only how to respond better medically to ongoing consequences such as long COVID-19 and massive spikes in mental health problems, but also how to prepare better politically for the next inevitable pandemic. Many have commented on how the 1918 flu pandemic was followed by the raucous roaring 1920s, when everyone sought to forget the collective trauma and loss the world had just endured. That is often how people respond to trauma: to try to forget and move on. But that can be a very dangerous strategy (Markel, 2022). Forgetting rarely heals deep hurt and collective damage. Without sufficient attention to acknowledging the tremendous loss, and working to bring more attention to early warning systems, along with implementing active attempts to heal political divisions, the consequences of the next pandemic could be even worse than COVID-19 in terms of prospects for peace, security, and prosperity, much less its precursor, life itself.

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