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Michael Boylan *Editor*

Ethical Public Health Policy Within Pandemics

Theory and Practice in Ethical Pandemic Administration

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Dedicated to All the Public Health Workers
and
All Medical Personnel
Who have risked their lives
During the COVID-19 Pandemic,
So that others might live

Preface

This book began as a response to the COVID-19 pandemic in its early stages in March, 2020. At the current time in the summer of 2022, it seems as if the SARS Corona Virus-2 and its variants will be around for a long time. Vaccination seems to be a key to controlling the virus, but getting vaccination rates to 70% and above seems to be difficult to achieve for most countries. This is because (A) poorer countries do not have access to the vaccines or because (B) within wealthier countries there are those who equate vaccination as giving up their individual rights to make their own choices (individualism). This stands in contrast to the community perspective of public health. These factions are at odds with each other and threaten the implementation of effective response to the disease.

Therefore A & B are obstacles in controlling the spread of the disease and limiting the deaths caused therein. This is curious, since with other diseases, vaccination is not so problematic. People regularly agree to and have access to inoculations against childhood diseases, and those for adults—like shingles, tetanus, pneumonia, TB, et al. What makes this disease outbreak different? Time will tell, perhaps. What we do know is that within pandemics certain ethical protocols are necessary to lessen the inequality in civic responses nationally and internationally. This volume seeks to explore some of the more important policy issues that will be necessary to enable an effective and ethically justifiable response to pandemics now and in the future. We hope that these essays spark public debate on these questions so that we might formulate the best possible responses to pandemic public policy going forward.

Arlington, USA — Michael Boylan

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Part I
Theoretical Background

Chapter 1
Introduction

Michael Boylan

Abstract This Introduction sets out the broad context of the book through the Theoretical Background section and the Public Policy and Administration section. The focus of the book is the theory and practice of public health policy during infectious pandemics. Our shared experience with the COVID-19 pandemic shows how important this is. It is hoped that this book will stimulate conversations on these topics.

Keywords Public Health Policy · Pandemics · Ethics · Social and Political Philosophy

I have structured this project in the following way: First, I have divided this book into two parts: (1) The Theoretical Background and (2) Public Policy and Administration (the application of the theoretical background). This bifurcation of theory and practice has been my organizing principle in all my books on practical, applied ethics over the years.

In this introduction, I will give the reader a glimpse at the relation between the two large sections of the book as well as the justification of topics chosen. Let us begin with the theoretical section. My Introduction essay addresses this in two ways: (a) first, I set out the long-removed and short-removed history of pandemics and how public policy has reacted. Many of these policy responses are neither effective or ethical. This first part of the essay is meant to set out some of the social and political factors that went into the reaction to these public health emergencies. (b) Second, I set out a groundwork for public health ethics. This framework owes much to my earlier writings in both ethical theory and public health ethics.[1] Because of space considerations, I can only set out the highlights of the ethical theory and how it grounds public health ethics.

In Chapter 3, Per Bauhn sets his model concerning "public health responses" upon the theoretical distinction between seeing the Covid-19 threat through two lenses: (a) a utility-based approach versus (b) a rights-based approach. Now at this point

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in the essay, many readers might connect the utility-based approach with vaccine mandates, lockdowns, masking, et al. against the rights-based approach that would support the anti-vaxers and their ilk. However, Bauhn, by making reference to James Griffin and then especially to Alan Gewirth, shows that the most important criterion is "needfulness for action" which Gewirth supports via the Principle of Generic Consistency. Bauhn examines the various worldviews of the two sides and shows how they actually *flip* from what was initially expected in setting out his two poles. When the Swedish agency in charge of public health policy thought they were moving towards a position that emphasized both—with a lean towards "rights-based," they were actually moving towards "utility-based" because the fundamental aspect of Gewirth's primary concern in the supportive state toward providing a framework by which all prospective purposive agents (PPAs) might realize their ability to act, *requires* scientifically-based public health restrictions so that the "rights-based" approach requires legislation that might include vaccination and mask mandates. Politicians who want to pander to those who want to ignore the legitimate rights-claims to freedom to act and the goods that will allow that (with the end of maintaining or acquiring well-being), are *really* utility-*based.* And Sweden, as a case study, failed to make the correct theoretical assessment that underlies these public policies, and, as such, had higher mortality outcomes than other Scandinavian countries that required more public health mandates.

In Chapter 4, Sahotra Sarkar uses the methodology of philosophical epistemology to sort out the claims of the various stakeholders that follow from their held values. Starting at the beginning in China, Sarkar documents how fundamental ignorance of biology and epidemiology color the responses of various segments among the peoples of the world. There is a paucity of data that should have been easier to ramp-up, since we saw this virus-type earlier in the 2002–2003 SARS outbreak. But what is really operational in this political milieu are the underlying values of the stakeholders in each community. One dimension is the relative social worth of "citizen health" versus "citizen economic well-being." Obviously, the former would suggest *group sacrifice* while the latter would prioritize keeping the economic engine running even if it meant the death of the underpaid workers who are so essential to the operation of the economy.

Now science can estimate what the effects of certain sorts of public health measures might have on a given population, via the reproduction number R_o number. What science does is descriptively set out the probability of various policy initiatives in keeping the reproduction number as low as possible. But it does *not* show how these should be brought forth in rational decision theory. This is because decision theory needs to have parameters that will first describe what is to be ultimately valued and how possible trade-offs are to be assessed.

Sarkar then puts forth formal models of analysis that seek to clarify the best ways to assess the up-sides and down-sides of possible policy avenues. These multi-criteria analysis models become more complicated as they seek to account for permutations of different sorts of utility criteria. In the end, it is the creation of value hierarchies that will allow for the establishment of rationally-based public health policies.

In Chapter 5 Peter Tan explores the role of values in public policy formation. Giorgio Agamben suggested that governments might use a biological threat as a pretext to take an over- amount of control over people's lives: a form of totalitarianism. This conundrum is based upon a misunderstanding of how values should play a role in policy formation. Tan sets up two ways to understand value: (a) a fixed realm—such as Agamben's value of autonomy, and (b) a developing process that is constantly being worked and developed/refined. Tan believes that the latter is the truer and more useful for creating public policy.

To this end, Tan creates a model that relies upon Charles Peirce's pragmatic analysis of human inquiry formation, along with Jürgen Habermas's concept of performative contradiction in public discourse. This two-part process will reveal where values begin and how they are justified.

Step one is that public health policy must be the product of an iterative process that engages the language of values that can be publicly discussed. Step two is to free the public health policy from any performative practical contradictions. When the stated policy does not match what is happening on the ground, corrections must be implemented.

Lastly, the planning and roll-out of the public health policy must be transparent and structured to engage in public feedback that is taken seriously.

The structure of value is patterned after the structure of human inquiry that is continuously being created and revised. These values are intertwined with reason and can be assessed for their rational content which will allow one to evaluate their central role in the development of public health policy.

Chapter 6 is the last essay in the theory section of the book. Matose and Taylor discuss how pandemics can act as both a racialized and racializing phenomenon. This is because first, race is brought in to the *explanans* of the public health pandemic *explanandum.* And second, that this sort of *argumentum ex ignoratia* can lead to unequal public health outcomes. Finally, racist inputs can lead to higher death rates among those targeted.

The first point means that race must be taken seriously when planning and assessing a public health response to a medical pandemic. The authors put forth a consensus race theory that supplants classical race theories that have been responsible for the rise of racial oppression. Consensus race theory is a critical, revisionary alternative to the classical race theories that have done so much to shape the modern world. In consensus race theory a critical structure is created in the realms of politics, economics, sociological dynamics, et al. to ascertain how patterns of advantage and disadvantage are created that are not functionally based upon achieving work-based outcomes. The fundamental statistical inconsistencies call for causal factors that would account for these.

The second point is illustrated via the example of distribution of smallpox vaccines after Jenner's discovery. In the public health policy concerning distribution of these vaccines, the so-called "worth" of potential victims (based upon race) unethically entered into the public health planning of its distribution. Such calculations affect the statistical outcomes of victims. These unethical biases made their way through so-called scientific circles as eugenics caught the imagination of these "luminaries."

The third point glances historically at how various plagues always seemed to hit minority populations the hardest. From the plague to cholera epidemics, it was the racialized groups whose mortality percentages were the highest.

These are very important dynamics that are often left out of the theoretical perspective on how we should conceptualize ethical public health policy.

Chapter 7 begins the *application* section of the book. Here the essays focus upon particular practical/ethical problems raised by how we should apply and administer the theorical considerations that went into properly constructing a public health policy.

Wanda Teays begins this section with an inquiry on the extent of the moral and professional duty to provide medical treatment by doctors, nurses, and staff. Do physicians, nurses, and other healthcare workers have a duty to treat during a pandemic? Is working in a pandemic different from the ethical/professional duty during other medical contexts?

Teays cites the American Medical Association's 2020 statement that these are not ordinary times—implying that we need to do some examination on how this change might affect moral/professional duty.

Teays cites several cases from Monkey Pox to Ebola. Many caregivers became sick, and some died. Knowing this risk, is it incumbent upon the medical community provide care? Is there a maximum acceptable risk? Certainly, the responsibility to treat during a mass casualty incident is different from the responsibility to treat during an infectious disease. In the former case we are talking about working overtime while in the latter case we may be talking about working for the last time.

Sometimes decisions about acceptable risk have to be made during a short time interval. Patients present themselves at hospitals requesting care. It is certainly difficult for individuals trained to give that care to turn patients away, but it is probably better to consider these dynamics before patients show up at the emergency department.

Teays then examines professional responsibility from the perspective of oaths and codes. "Do no harm" is not environmentally specific. How far does promoting beneficence go? Most of these oaths and codes are meant to apply to circumstances in which the healthcare worker's life is not in jeopardy. Paraphrasing Judith Thomson, if we cannot be good Samaritans, perhaps we could become decent Samaritans. But what this means in clinical settings is left unclear by most codes of professional standards concerning risk to the health and life of physicians.

Teays then examines the arguments in favor of there being a duty to treat in pandemic times and the arguments against such a duty before coming up with her own position.

In Chapter 8, Jonathan Lewis and Udo Schuklenk examine principalism as a strategy for ethical action-guidance in pandemics. Using David DeGrazia's definition, principalism is: (1) Any ethical theory that emphasized principles, (2) Features more than one basic principle, (3) Leaves some of its principles unranked relative to each other. Lewis and Schuklenk then bring forward Beauchamp and Childress as an example of a bioethical principalist approach: respect for autonomy, beneficence, non-maleficence, and justice constitute an example of a principalist approach.

Then Lewis and Schuklenk summarize some of the debate that has arisen on this principalist approach since it was put forward in the 1970s. The result of this discussion suggests seeking out: (a) coherence between the principles, (b) restrictions on the origins and operation of the necessary reflective equilibrium, and (c) formation of considered judgments under justifiable epistemic conditions. Otherwise, the principalist approach is actually an exercise in ethical intuitionism of the individual making the judgment.

Concerning pandemics, one model put forth by Canada's Public Health Ethics Framework, suggests a five-step process that is meant to give better action-guiding structure across various policy making venues: 1. Identify the issue and gather the relevant facts, 2. Identify and analyze ethical considerations and prioritize the values and principles upheld, 3. Identify and access options in light of values and principles, 4. Select the best course of action, and 5. Evaluate. However, some of the same problems that haunted biomedical ethical principalism find themselves appearing here, as well.

What the authors put forward is a model in which public transparency of the justifications for specific pandemic guidelines are discussed by diverse panels that develop procedures for consistent, explicit criteria for interventions that are based upon epistemically justifiable alternatives for action.

In Chapter 9, Klaus Steigleder and Johannes Graf Keyserlingk put forth a rights-based approach that is consistent with that put forward by Per Bauhn in Chapter 3. Steigleder and Keyserlingk start out by positing the state as the proximate political entity that is responsible for providing the conditions for freedom and well-being to its citizens.[2] All people have the *right* for these conditions and since rights and duties are correlative, the society at large (in a proximate way) and the world (in a remote way) have the duty to provide these conditions to those within their boundaries.

This is not a libertarian conception that advocates "egg carton communities"[3] but the notion of the supportive state and the community of rights set out by Alan Gewirth. As such, the duty bearers must also exhibit concern for those who do not possess those goods of agency necessary to allow the agent to pursue freedom and well-being (one component, of which, is health). The policy question is how to make this happen in the most efficient and equitable fashion for all groups and individuals within the state (or extended political units in the region or globally).

The "costs" and "benefits" and their relative calculus may be different in various societies that have more or less a community sensibility already existing withing their traditions. This can create two perspectives: from within (internal) and from without (external). These two perspectives vary among cultural traditions such that the creation of public policies within pandemic conditions must reflect these differences in the way they deliver the basic goods of agency to people within their countries (first) and then to others. The first-order metaethical duty[4] is the same, while the execution of it will vary according to societal resources. However, the wealthier nations bear a general duty to be prepared, as much as is possible, for public health emergencies (such as pandemics) and to assist other nations in preventative measures since these are the most effective.

In Chapter 10, Rita Manning begins her essay by reviewing the early stages of the COVID-19 pandemic by noting how shortages of essential hospital equipment (such as ventilators) and supplies required an allocation formula. Unfortunately, this occurred regionally and locally such that there were conflicts between strategies—and some were so poorly thought out that needless deaths were the result. Clearly, allocation of medical goods and services is a crucial problem in pandemics.

In section one of her paper Manning considers basic concepts of allocation and distributive justice. Key terms, such as "rationing," "triage," and "prioritization" are brought forth and discussed. The contexts of care (micro and macro) along with the structure of the healthcare system (private and mixed systems of healthcare delivery) are also key. Further, is the status of certain goods as "entitlements" and being essential for continuance of life along with the temporal conditions such as being in a crisis. Finally, vulnerable populations are examined.

In section two of her paper Manning considers features of essential goods that must be allocated fairly. The agencies that control this in the U.S. vary—with states at the vanguard and the Federal government using specialized public health agencies (like the Center for Disease Control) to offer advice on policy considerations.

In section three Manning discusses who is responsible for allocating these goods and how such responsibility is authorized. The models she brings forward for analysis are: consequence-based (Utilitarianism), virtue ethics (AMA Code of Ethics), and principled-based (examples from Rawls, Kant, and, from a different perspective, libertarianism)—also existing structural documents like the Universal Declaration on Human Rights can play a role.

Finally, in section four Manning sets out how principles of justice can be used to drive a principled allocation with special attention to the Crisis Standards of Care that apply directly to the current pandemic.

Debra DeBruin begins Chapter 11 citing the tremendous toll that the COVID-19 pandemic has had upon the nations of the world. This has raised issues of distributive justice particularly among Black individuals, Indigenous individuals, and People of Color: BIPOC populations.

First of all, as she points out in Table 11.1, the number of infections, hospitalizations, and deaths vary according to race and ethnicity. The toll, that these exact, is also unequal. This claim is born out in Table 11.2 which focusses upon hospitalization rates per 100,000 in various age and race/ethnicity groupings compared to Whites. These facts show that there is clearly health disparity in BIPOC populations.

In Table 11.3, this disparity is shown to carry through to mortality (the worst possible outcome). BIPOC population mortality is many times higher than White populations. This exacerbates a trend in pre-pandemic mortality rates so that some of this disparity may be due to unequal access to healthcare in general which gets worse when a health emergency (such as a pandemic) comes to the fore. Thus, part of the inequity of care within the United States is the fact that our healthcare system has structural flaws that are biased against BIPOC populations.

Because these routine, profound disparities are built into the healthcare system, it is no surprise that they become even more evident when extra pressure is exerted upon the system during a pandemic.

Some of these disparate outcomes can be addressed in a way that does recognize BIPOC populations, as such (like living and work arrangements—the so-called *neutral approach*). But any comprehensive approach must address BIPOC populations directly (*beyond neutrality*).

DeBruin then sets out a middle ground approach which combines neutral and beyond-neutral approaches taking what works best in each. By working both sides of the spectrum, it is possible that healthcare may be improved for BIPOC populations both within the pandemic and afterwards.

In Chapter 12 Rosemarie Tong explores how COVID-19 affected nursing homes and other long-term care facilities (LTCFs). She begins by recounting her experience in 2007 as co-chair of the North Carolina's Department of Public Health Task Force on Ethics and Pandemic Influenza Planning. The purpose of the task force was to set out ethical guidelines in advance of a pandemic. The task force had a diverse membership. They principally examined: (1) Healthcare workers' responsibility to provide care during a pandemic, (2) The responsibility of workers in critical industries to continue at their jobs, (3) Balancing the rights of individuals with the duty to protect the public, and 4. Prioritization of limited resources during pandemics. However, what they failed to see was that residents of long-term care facilities (LTCFs) and other congregate living situations, such as prisons and homeless shelters, would be disproportionately affected by an infectious disease outbreak.

The medical needs of those 75+ years of age is a growing, vulnerable population and is predicted to constitute 23% of the U.S. population by 2060. Taken with the fact that there have been a number of pandemic outbreaks in the past century or so, and the need to create public health policies to protect especially vulnerable populations, it becomes a necessary task for us to attend to as soon as possible.

Concerning the responsibility to provide care during a pandemic Tong refers to a 2003 survey that found 80% of physicians willing to continue care during a pandemic outbreak, but that number drops to 55% when the care might threaten their own health and to 40% who were willing to risk their lives to do so. The North Carolina task force recommended giving healthcare workers who were endangering themselves, priority in resources for their own care and prevention.

Among those in critical industries (from caregivers in nursing homes to supermarket workers) many take such risks for low pay and long hours. Because the NC Ethics Task Force was focused upon hospitals, these individuals were not singled out, but probably should be a part of a comprehensive public health policy during pandemics.

The rights of individuals and the duty to protect the general populace have been a point of some conflict during the COVID-19 pandemic, but the NC Ethics Task force argued that the duty to the general population supervened individual displeasure at being inconvenienced during the maintenance of public health measures designed to protect the community.

Finally, is the issue of allocation of resources during the pandemic. The NC Ethics Task force set out that priority should be given to: (a) the functioning of society; (b) reducing the spread of the disease; (c) protecting those who have the most years to

live; (d) every group has an equal claim for healthcare resources; (e) protecting those who have the most stages of life still ahead of them (quality of life).

Having clear guidelines for public health policy during pandemics helps ensure that the number of hospitalizations and deaths will be as low as possible.

In the last chapter of the book Ikiko Ito brings an international perspective to the problem. Ito, who works at the United Nations in a leadership capacity, is in a good position to comment on the international response to the pandemic. Though the pandemic has touched virtually every country in the world, it has not affected all citizens in those societies equally. Those who daily face discrimination—such as women and girls with physical disabilities, those who have invisible or psychological disabilities, migrants, refugees, and racial and other minorities—face a higher impact (hospitalization and fatality) than others in that society. The U.N. and various nations who have extra resources have tried to address these issues of justice and fairness, though the need is very great.

The U.N.'s Inter-Agency Support Group on the Convention on the Rights of Persons with Disabilities (IASG-CRPD) and the UN Partnership on the Rights of Persons with Disabilities (UNPRPD) have instigated international dialogue along these lines to create policy guidelines and muster assistance among member states. These also include data assessments and good practices that have worked elsewhere. For example, making COVID-19 testing more available to those who are wheelchair-bound can be a life-saver to many.

Making health information readily available as the pandemic progresses is also of critical importance. But many public health measures that have been in place, such as lockdowns and social distancing, can have a higher negative impact on those with disabilities. It is important that this sub-population not be left behind. So, by continuing to focus on this sub-population is essential in order to give them the equal right of an expectation for health and safety—especially during a pandemic that is so virulent. The WHO has listed special guidelines to help toward protecting disabled individuals around the world. The problems are enormous and the patterns for response through community outreach, etc. continue to grow. It is important for international organizations be at the forefront for these efforts.

Notes

1. My principal works in ethical theory are: Boylan (2004a, 2011, 2015, 2021). My principal works in public health ethics are: Boylan (2004b, 2008)—a second edition of this book is due out in 2023. For critical examination of my theoretical ethical position see: Gordon (2008), *Journal of Applied Ethics and Philosophy* (September, 2016) special theme issue on my theory of natural human rights. Discussion of my treatment of Immigration from my book, *Morality and Global Justice: Justifications and Applications* in a Theme Issue: *Journal of Applied Ethics and Philosophy* "Author Meets the Critics: Michael Boylan's Morality and Global Justice" *Journal of Applied Ethics and Philosophy* 4 (2012): 34-45. "Michael Boylan" by Robert Paul Churchill in Chatterjee's (2012).

2. For an example of the structure of such a state see the depiction of the "supportive state" in Gewirth (1978: 318–320); and the "community of rights" in Gewirth (1996: 59–60).
3. The term "egg carton communities" is one that I coined in Boylan (2004a: 115–116). These are communities in which individuals see themselves as totally separated from others with no duties or obligations to others: just like eggs in an egg carton that are set out so they don't touch and break!
4. First order metaethical duties are those that govern the creation of normative theories of distributive justice. For Alan Gewirth it is the *Principle of Generic Consistency*, see Gewirth (1978: 135) and Michael Boylan's *Personal Worldview Imperative* Boylan (2004a: chapter two).

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Chapter 2
The Context and Foundations of Ethical Public Health Policy

Michael Boylan

Abstract This essay begins by examining a few historical examples of pandemics in the context of a schema of common categories of comparison. It then uses this historical framework to give context to the developing COVID-19 pandemic. The second part of the essay examines the moral basis of public health and uses these frameworks to suggest several key policy strategies that should be adopted in the face of this or any future infectious pandemic.

Keywords Antonine Plague · Spanish Flu pandemic · HIV/AIDS pandemic · Ebola pandemic · SARS and MERS pandemic · COVID-19 pandemic · Ethical Grounds for Public Health Policy

2.1 Prologue

This essay begins in the middle of things. This is how one often finds herself when there is an infectious disease, public health crisis. At the beginning are various symptoms presenting among a population or populations. Are the symptoms connected causally? Is a bacterium, virus, or a fungal protist acting as the causal agent? Is this causal agent also spread among people by other people—community spread? Who is most susceptible? Are sub-groups of a population (*demos*) more at risk for some particular reason (*en-demos*) or is it moving in the direction of the entire population (*epi-demos*). Perhaps it's spreading wildly everywhere (*pan-demos*)?[1]

Since this essay is being written in the middle of a pandemic caused by the pathogen SARS-CoV-2 that causes the spread of the disease COVID-19, whose biological mechanics are still being studied, there is much about the facts of the virus and the effects of the disease that are still unknown.[2] This means that this essay (and other essays in this book) cannot view the COVID-19 pandemic as a finished case, but as one in-progress. However, by combining a few, select examples of pandemics from history, we may be able to discern certain commonalities that

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might be useful in assessing pathogenic development along with appropriate, ethical public health responses.

In this regard, I will briefly touch upon the Ancient Greek World before skipping to the 1918 Spanish Flu pandemic; the HIV/AIDS pandemic circa 1980, onwards; Ebola circa 1989, onwards; SARS circa 2003/MERS 2012 onwards; and COVID-19 current.[3]

In the second part of this essay, an ethical framework is set out that is intended to be a guide for public health policy, in general and in particular to pandemics—such as the current COVID-19 pandemic.

2.2 Introduction

We start our select history with the Hippocratic writer of *The Sacred Disease* (epilepsy), "I am about to discuss the disease called "sacred" (*hieres*). It is not, in my opinion, any more divine or more sacred than other diseases, but has a natural cause (*phusin prophasin*)."[4] *Disease,* especially multiple instances of symptoms within a small sample space of people is atypical. Most ancient Greek texts that have come down to us are clinical: one-to-one in orientation. One slight exception to this is the Hippocratic physician (probably Cnidian, a physician from the island of Cnidos)[5] who wrote *Epidemics III* (*Epedemion gamma*) that sets out symptoms, a crisis, and the result—most often death.[6] The book is meant to be a clinical handbook for the attending physician to assist in diagnosis. It is assumed that the attending physician would treat the symptoms that present according to the contraries: hot, cold, wet, and dry.[7] As these are pre-humor theory texts, there was little that the physician thought he could do except try and balance too much *hot* with *cold* (and vice versa) and too much *wet* with *dry* (and vice versa).[8]

What we should bring away from these two texts is: (1) That disease (from the earliest times) has by physicians largely been seen to be caused by physical causes and not divine causes[9]; and (2) That in the search for these physical causes of disease, the physician needs to rely upon empirical evidence to assess what disease is presenting and therefore lay the groundwork for treatment and prognosis based upon what other patients have.

In the ancient world probably the most devasting event we have record of is the Antonine Plague (circa 165–180 C.E.). What makes this event so vivid is the fact that one of the greatest of ancient physicians, Galen, was at the center of it.[10] Though Galen does not give consistent, systematic description of symptoms, scholars have thought that it is probably an early form of small pox (though a minority suggest an early form of measles). We do know that it was described by Galen to be a big plague (*megalas loimos*) which creates an extreme common disease event (*epidemon*). Fatalities are hard to quantify but some estimates suggest as many as 5 million Europeans or one-third of various recorded populations. At one time as many as 2,000 Romans per day were dying.

Some side notes from Rebecca Flemming which deserve attention are: (1) It seemed important to those in Rome and Italy to blame the disease on a foreign entity—in this case from the far east (China via Persia); (2) There seemed to be a recognized connection between infected armies spreading disease as they entered towns (though there is no macro civil response to this fact); (3) That marginalized peoples (especially those enslaved)—who become victims, don't much matter to mainstream society—in fact (for some), the infestation of cattle is thought to be a greater problem. (4) Galen continues in the midst of a wide-spread outbreak to continue treating one patient at a time while those in political power ignore and do not solicit any generalized civil reaction (public health).

Some of these responses from two thousand years ago resonate with contemporary reactions to pandemics—especially the one we are experiencing at the writing of this essay (COVID-19). The most salient, is the lack of a public health response to a killer plague (*megalas loimas*) which is widespread (*epidemon*).

2.2.1 How Do We Assess Infectious Diseases?

Before moving to our starting point in the modern era, the 1918 Spanish Influenza, it is useful to set out a few key factors that will be common to all the pandemics that we will examine (as a means for structuring the setting for ethical evaluation of public health responses).

A. First, there is *communicability*. This is measured by the means of transmission and how easy it is to avoid it. For example, measles is very communicable and the transmission is airborne. We all have to breathe to stay alive so this makes measles especially difficult to control. Another source is contact with a person with the disease (either directly or via a third entity (like a solid surface such as a door knob) that was in contact with that person). Rhinovirus transmits like this. Then there is a bite from an outside agent, e.g., an insect—such as a mosquito (malaria and yellow fever transmit like this). Then there is contact with the bodily fluids of an infected individual, HIV/AIDS and Hepatitis transmit like this. Finally, there is contact with contaminated water or food; cholera transmits like this. The agents of transmission are generally bacteria, viruses, and/or fungi (or other protists)—ringworm and athlete's foot transmit via fungi while malaria transmit via protists.
B. Second, is the *probability and degree of Human harm*. The probability of substantial human harm refers to the symptoms and how long lasting and harmful they are to an individual who undergoes no treatment. For example, rhinovirus has a high probability of causing symptoms of a stuffy nose, sore throat, and a headache, but most people can rid themselves of the virus within 5–14 days with no permanent effects. Other diseases have either lower or higher probability thresholds of possible infection and greater or lesser degrees of human harm. When assessing human harm, sometimes the infectious agent

causes the harm directly to the body attacking a bodily system, like respiration—such as influenza. Other infectious agents stimulate auto-immune reactions (causing the body to attack itself—e.g., lupus, celiac disease, Sjögren's syndrome, et al.).

Finally, if one were to take the anthropocentric standpoint,[11] infections of other animals and/or plants can have deleterious effects upon humans that can cause disease by cross-over (such as HIV from monkeys and Marburg virus disease from bats). Other practical effects of plant pandemic can be the loss of valuable [to humans] products—such as trees and the Dutch Elm pandemic in North America. The Irish Potato Famine of 1845-1849 did not *directly* kill people but took away a primary dietary source of nutrition that led *a fortiori* to human mortality.

C. Third are the *civil reactions*. These follow three sorts of response: (1) Prophylactic (via isolation or quarantine of infected populations; inoculation against the pathogen (somewhat after the initial outbreak as this takes time for discovery and human testing); (2) Effective Treatment (also a time intensive approach that seeks to control/minimize the disease or to rid the body of the pathogen; (3) Finally, when all else fails, there is herd immunity response that kicks in when 70–85% of the population (the survivors) have effective antibodies to combat the disease lowering the *Reproduction Number*: R_x (where x approaches 0). This may be called the evolutionary answer (though it may come at a high human cost of lost lives and human suffering).[12]

2.3 Part One

2.3.1 A Brief View from Select Pandemics

Using the assessment criteria above, let's take a brief look at some of the more recent pandemics that express themselves through one or more of the categories to have caused excessive human harm and the public health responses to the same.

Spanish Flu: 1918–1919: The so-called "Spanish Flu" actually showed its first symptoms in the United States at a military base in Kansas, March 11, 1918.[13] It then went to Europe—probably through troop movements during the last phases of World War I. Very soon, thereafter, the King of Spain, Alfonso XIII, contracted the disease (though some say he got scarlet fever instead). He recovered. After that, the disease was pinned upon Spain—who, in turn, pinned it upon France. However, the first case was in the United States! Why is it so important to *nationalize* the blame for a virus that carries no passport?[14]

According to David Killingray, though the British Empire had dealt with epidemics before through yellow fever, sleeping sickness, small pox, cholera, and the bubonic plague, they were unprepared for effective public health responses to this strain of flu.[15] The infection rate was much higher (up to 40% of the world's population) and there was more consequential human harm (21–50 million dead).[16]

Most at risk were the young and healthy (so that World War I soldiers fit into this category).

In the case of this pandemic, the first wave was not too far from normal in infection rates and human harm causing civil reactions to be rather restrained. It was the second wave of the viral infection that occurred in the autumn hitting Asia (especially in India and then moving east). Again, Killingray believes that part of the cause of this was the British shipping industry that carried the flu from Europe to India and to Hong Kong.

The communicability of the disease was very high—especially for particular sub-populations. *The British Medical Journal*[17] estimates that incidence rates among native populations around the world was as high as 80% in some locales. In general, white populations in the Commonwealth Nations and the United States was as high as 60%. Among the military, the British Navy was around 30% and the British Army around 20%. (Interestingly enough, those military who had been exposed to poisonous gas during the war had their incidence rate drop to 4.7%). This can be compared to similar "in season" flu populations today that have up to an 8.3% incidence rate.

From the same source, the probability of human harm (in this case fatality) was greater than 2.5% overall for those who became sick with this strain of the flu. This can be compared to 0.1% for flu outbreaks in general populations today.

Further, the human harm continues beyond mere fatalities. In one study that focused upon the U.S. population 22+ years after the outbreak, the aftermath among the offspring of pregnant women who were affected exhibited: (1) Reduced educational attainment; (2) Increased physical disabilities; (3) Lower modal incomes throughout life; and (4) Decreased socio-economic status (due to #1–#3).[18]

Concerning civic, public health responses, though there were sporadic efforts that varied city-by-city, no effective, comprehensive public health measures were undertaken even though there had been prior influenza epidemics in 1889–1890. Some examples of what *was* done in the United States includes first New York City where the sick were (in many cases) quarantined from the healthy. Public health "runners" went about the city taking notes on which areas of the city seemed to be worse. The city's board of education engaged in health education about hygiene and what symptoms to note about sickness (and what course of action to take). New laws concerning public hygiene (such as anti-spitting laws) were enforced.[19] Then, as infections and deaths mounted, schools were closed.[20] African Americans were given systematic, inferior treatment due to attitudes concerning biological inferiority and general racism. They were put into segregated, sub-standard hospitals without state-of-the-art equipment. Because of this, their mortality rates exceeded their percent of the population.[21]

In San Antonio, Texas (a major city in that era) the public health response was three-fold: ban children from schools, quarantine the sick, and prohibit large public gatherings. This was moderately effective.[22]

In Pittsburgh, Pennsylvania (a manufacturing city at the time one-third the size of Philadelphia), there were inconsistent standards. This was caused by a political tug of war between the governor and the mayor. Once people showed signs of clear