

The Bioethics of Infectious Disease and Bioterror: A Medical Student's Perspective

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Assumed to be written by Hippocrates, the oath which bears his name has laid foundation to 2500 years of bioethical discussion. Yet the emergence of medical ethics as an autonomous discipline is a recent phenomenon, born from the revolutionary advances in science and technology seen in the latter half of the twentieth century. As modern medicine developed, so did the complex moral and political dilemmas inherent in its practice. The discipline thus emerged of its own volition, dedicated largely to the ethical analysis of cutting edge treatments and advanced interventions. Greatly lacking, however, have been similar examinations of ethical issues involving infectious disease and the closely related issue of bioterrorism (Selgelid, 2005). As these are critical factors in the health of developing and developed nations alike, it is important that medical students understand their bioethical implications. The lack of "ethical attention" to issues surrounding infectious disease and bioterrorism is, perhaps, an historical consequence of the period in which the discipline itself was born. Beginning in the early 1900's, widespread technological advances in medicine gave rise to a powerful sense of medical optimism. Flemming's discovery of penicillin in the 1920's, the commercialization of antibiotics in the 1940's, and the success of the polio vaccine in the 1950's created a belief that science would have the capacity to eradicate or control communicable disease to the point that the microbes responsible would be of little concern or research interest (Ginacotti, et al., 2008). As such, the birth of medical ethics occurred at a time when the dictum of popular thought was that infectious diseases would cease to be a central concern of medicine (Selgelid, 2005). As medical ethics emerged as an independent discipline, public health problems relating to communicable pathogens moved from the general focus of the medical community. As a consequence, there was little justification for collective population measures to fight disease, and individualist principles of patient autonomy and anti-paternalism flourished throughout

medical ethics without appropriate counterbalance of utilitarian arguments.

Contrary to expectations, however, a number of infectious diseases have remained prevalent and new ones have emerged (WHO, 1999). The paramount ethical importance of infectious diseases is underscored by the fact that each new outbreak carries with it a host of socioeconomic and public health consequences. Indeed, the first years of the human immunodeficiency virus/acquired immunodeficiency virus (HIV/AIDS) pandemic in the mid-1980's, the alarm over drug-resistant tuberculosis in the 1990's, the multinational severe acute respiratory syndrome (SARS) outbreak in the early 2000's, and the present concern over global swine flu (H1N1) have each brought with them new legal, ethical, and moral questions regarding the large public health risks of infectious diseases. Adding complexity to the situation, threats of bioterrorism and increases in international travel have provided new conduits for the rapid emergence and spread of pathogenic agents. Modern bioethics has, therefore, been charged with the task of rebalancing the relationship between public and private interest, between the collective good and individual civil rights (Gainotti, et al., 2008). More so than our predecessors, as current medical students, we must decide where each of us stands on this complex issue. We must decide when we will speak out for civil liberty and when we will stand firmly behind our duty to protect life and promote the health of the populace. However, before we can engage in public discourse, we must first understand precisely the issues at stake.

It is clear that the cost of public health emergencies, in term of lives lost and resources expended, necessitates effective disease control. It is also clear that science and technology alone cannot contain the spread of infectious diseases and require appropriate legal support to bolster their effectiveness. No effective public health policy can exist, however, without acknowledging both the utilitarian aim of promoting public health and the libertarian aim of

protecting privacy and individual rights. Neither liberty nor utility, regardless of the circumstance, can be given absolute priority.

Like most young Americans, I greatly value my autonomy and demand my government protect it. As individuals we reflect the sum of our experiences, the nature of which arises from our freedom to choose. I chose where I wanted to go to college. I chose to enter medical school. Every day I choose to be the person I am by saying “yes” or “no” to each choice which comes before me. It is our choices that define us, and any restriction of that freedom to choose thwarts our ability to determine our own fate, to determine who we are.

However, it is critical that a government, in addition to promoting liberty, protect the health, safety, and well being of its citizens (MSEHPA, 2001). This function requires the formulation and implementation of public health policies, which are underpinned by legal regulations authorizing governmental intervention into the lives of citizens (Coker, et al., 2007). In order to prevent disease, such policies typically include surveillance, name reporting, quarantine, isolation, travel restrictions, mandated testing/examination, and/or compulsory treatment/vaccination (Gostin, et al., 2003).

While no two countries enlist the same set of compulsory measures in a response to public health emergencies, it is critical to the success of any policy that such measures represent a culturally acceptable balance between the role of government in public health and its function to

¹ It is worth noting here, that ethical issues associated with infectious disease are closely connected to issues of social justice, as communicable pathogens tend to prey upon the poor. Because microbes do not respect national borders, it is increasingly easy for local infectious diseases to become global pandemics. This can be particularly devastating in developing nations where poor nutrition, dirty water, crowded living conditions, low education, and numerous other factors have left people extremely vulnerable to communicable pathogens (WHO, 1999). The risk of infectious diseases in these nations is further compounded when, in addition to impoverishment, oppression and governmental corruption, local populations have compromised access to quality health care.

protect individual autonomy. Since this is a worldwide issue, it is important for us, as medical students, to understand varied foreign and domestic national policies to determine the appropriateness of such measures within their cultural context.

In a comparative study of national laws relating to the control of tuberculosis across Europe, Coker, et al. (2007) defined four legislative models based on the level of culturally permissible restrictions of individual liberty. At one extreme, the “authoritarian” model permits enforcement of a high number of compulsory disease control measures (i.e. examination, detention, and treatment) as well as compulsory preventative measures (i.e. screening and vaccination). Public health policies in Russia, Estonia, Norway, and Switzerland all fit this legislative model. Coker, et al., (2007) assert that while the soviet cultural legacy may have led to the acceptance of such policies in Russia and Estonia, the homogenous cultural identity and enthusiastic embracing of conformity which have kept Switzerland and Norway outside the European Union, provide insight into the acceptance of such policies in the latter two countries. At the other extreme is Spain, where no compulsory public health measures exist. This “laissez faire” model presupposes a certain degree of culturally accepted convergence of societal and individual interests, based on social contract theory stating that it is in an individual’s rational self-interest to voluntarily give up freedom in order to obtain the benefits of societal stability. In between these two extremes lie the “moderate” model and its converse, the “preventative” model. The former (used in England, Germany, and Israel) mandates governmental enforcement of compulsory control measures without recourse to preventive tactics of screening and vaccination, while the latter (used in France and the Netherlands) is based mainly on compulsory provisions directed at preventative measures rather than compulsory treatment or detention.

The recent history of the United States provides additional opportunities for us, as medical students, to reflect upon and study domestic policy responses to public health threats. After terrorists attacked on 9/11, panic gripped our nation as anthrax mailings further threatened public health and safety. In response, the Center for Law



and the Public's Health at Georgetown and Johns Hopkins Universities, at the request of the Centers for Disease Control and Prevention (CDC), drafted the Model State Emergency Powers Act. This act was designed for adoption by state legislatures to promote efforts to detect and curtail epidemics resulting from bioterrorism as well as naturally occurring infectious diseases (Gostin et al., 2002).

The Model Act proposed giving broad powers to public health officials including full authority to use, evacuate, or destroy any health care or non-health care facility in the state (Article IV, Section 402, 403); submit citizens to compulsory medical examinations, laboratory tests, treatments, and vaccinations (Article V, Section 502, 504, 505); and order physicians to perform particular examinations or treatments (Article V, Section 502). Under the Model Act, those refusing to comply with public health officials would be subject to quarantine or criminal punishment (Article V, Section 502-505), while public health officials would be subject to no liability save for instances of gross negligence or willful misconduct (Article VIII, Section 804).

The Model Act failed to find a culturally acceptable balance between utility and liberty and was thus widely criticized. When the Act was drafted, I, and many Americans, believed that adults have the right to refuse examination/treatment, that physicians have the right to refuse to treat, and that exercise of one's rights in both cases should not result in imprisonment. I still believe this. I believed that in the United States, where we maintain a strong culture of civil rights and individual autonomy, excessive and unnecessary limitations on a citizen's freedom would be and should be resisted, even for reasons of public health. I still believe this. In response to overwhelming public sentiment, the Model Act was redrafted. The revised version softened the mandates of its predecessor, eliminating the possibility of criminal prosecution for failure to comply but still allowing the possibility of isolation/quarantine (Revised version; Article VI, Section 602, 604, 605). This version was intended to serve only as a starting point for discussion, not as an official policy statement or endorsement of the CDC. In the service of public health, the removal of liberty

is the most profound sanction the state can impose on an individual, and the Model Act controversy is testament to the foundational role cultural sensitivity must play in utilitarian public health policy. However, had the United States done nothing in response to the threat of bioterrorism, enacted no legislation, and simply let individual autonomy reign in the face of infectious disease, an even more fervent outcry may have ensued. One need only think of Africa, where the high price of AIDS medications makes them largely unavailable to the people who need them most, to recognize the injustice inherent in a political system in which individuals (particularly the poor) are left sick and suffering. As a citizen of the United States and a future physician, I believe that it would have been seen as a similar injustice had our government done nothing to protect its citizens from bioterrorism or epidemic illness and had simply allowed Americans to suffer needlessly at the hand of a disease that could have been curtailed with proper preventative measures. Thus, compulsory measures taken to protect public health and prevent the spread of disease can indeed be justified, provided any restrictions on individual liberty fall within a culturally acceptable window. While too few restrictions could be useless in the fight against epidemic disease, too many could alienate those individuals the public health laws were meant to help and could ultimately cost more lives than they save.

It was early in the AIDS epidemic that public health officials realized that mandatory screening and quarantine would rouse public distrust and encourage people to avoid physicians, subsequently driving the disease underground and allowing it to spread faster and wider (Annas, 2002). Since then, bioethicists have attempted to define criteria upon which public health laws may achieve a culturally acceptable restriction of liberty within a free and democratic society. If such criteria are both accurately defined and reliably met, it is supposed that legitimate restrictions on individual liberty in response to public health emergencies will be met with public trust and cooperation. One such commonly described criterion is two-pronged in that both the precautionary principle, which stipulates an obligation to protect populations against reasonably foreseeable threats even under conditions of uncertainty, and the harm principle, which indicates that clear and measureable harm to others would be inevitable in the case where a disease or exposure remain unchecked or untreated, must be met (Gostin, et al., 2002, 2003; Gainotti,



et al., 2008). Additionally, most bioethicists hold that the least restrictive or intrusive policy that can still accomplish the goals of public health should be used and that if society asks individuals to relinquish personal liberty for the sake of others, it then has the obligation to assist that person in his or her responsibilities to work and family (Annas, 2002; Gainotti, et al., 2008). A final often cited criterion is that policy makers must clearly communicate the justification for their actions and allow for a process of legal appeal (Annas, 2002; Gostin, et al., 2002, 2003; Gainotti, et al., 2008).

These criteria, and others like them, are designed to ensure such trust in public health law so that negotiating a trade-off between public good and individual liberty will be unnecessary. All discussion over the proper balance between libertarian and utilitarian goals within public health law, particularly regarding those laws which rely on police enforcement, are seemingly based on the assumption that the public is unlikely to cooperate with their health officials. However, in instances where public health risks necessitate restrictions on individual autonomy, those restrictions are effectively communicated, and the public views those restrictions as fair and reasonable, there is no evidence that health care providers or the general public are reluctant to cooperate with public health officials.

In order to engage in public health discourse, it is critical that we, as medical students, understand the ethical implications of infectious disease, a topic which transcends both law and science and reaches the core of how we define ourselves individually as well as culturally. By looking to both foreign and domestic health policy, we can see that only culturally sensitive public health laws can effectively prevent disease outbreaks. Such laws minimally infringe upon civil liberties and thereby preserve both public safety and individual autonomy. As future physicians, we must be able to differentiate public health law that is culturally sensitive from that which is not and must advocate only for compulsory measures the public will actively choose to follow as necessary acts to protect themselves and their loved ones.

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Students can learn more about emerging infectious diseases at the CDC website: <http://www.cdc.gov/ncidod/EID/index.htm> and the WHO website: http://www.who.int/topics/infectious_diseases/en/

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