

Review Article

## The Next Pandemic: Physician's Ethical Duty to Treat During an Global Influenza Pandemic Based On Medical Specialty

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### Abstract

In regards to infectious diseases, much of the discussion has recently focused on the ebola virus disease (EVD) that has killed over 10,000 individuals since December 2013. However, other new infectious viral diseases such as Severe Acute Respiratory Syndrome (SARS), avian influenza (H5N1), influenza A (H1N1) and Middle East Respiratory Syndrome (MERS) are capable of causing even greater mortality than EVD in a short period of time that will overwhelm many healthcare systems due to surge capacity. The world is due for an infectious disease pandemic of similar proportion as the 1918-1919 Spanish influenza that was estimated to have killed between 40-100 million individuals worldwide in a 12-month period. During such a pandemic where morbidity and mortality is high, do physicians have a duty to treat patients where there is significant risks of contracting the disease that could cause extreme illness and even death to themselves? The answer to this dilemma and controversy is "yes" and that it is based on medical specialty, or the provider's scope of practice. This essay will discuss this dilemma, including recommendations regarding the physician's duty to treat based on medical specialty in the face of personal risks during a global influenza pandemic.

**Keywords:** Pandemic; Duty to Treat; Ethical Principles; Medical Specialty; Standard of Care; Viral Infectious Disease; Morbidity and Mortality

*"Perhaps the only good news from the tragic Ebola epidemic in Guinea, Sierra Leone and Liberia is that it may serve as a wake-up call- Bill Gates, New England Journal of Medicine (2015)."*

### Introduction

The Ebola virus infection that has ravaged West Africa is unlike any of the previous 24 other outbreaks in that region of the world [1]. Because there are no effective treatments to cure ebola virus disease (EVD) or a vaccine to prevent the spread of this lethal virus, EVD has a 70-90% case fatality in West Africa. Since December 2013, EVD has killed over 10,000 people and continues in that part of the world [2]. On September 30, 2014, the Center for Disease Control and Prevention (CDC) reported the first documented case of EVD in the United States in Dallas, TX [3]. Since the first reported case where the patient died from EVD, there have been 8

other confirmed cases of EVD in the United States.

The EVD epidemic has mobilized the international health community to react and to control the spread of the virus to other parts of the globe before it can become a pandemic [1,2,4,5]. For those old enough to have experienced the United States HIV/AIDS epidemic in the 1980's, the current panic and anxiety in the United States brings back memories of the hysteria and discrimination of the response to the emergence of AIDS. In the last 15 years bioterrorism and new infectious diseases such as Severe Acute Respiratory Syndrome (SARS), avian influenza (H5N1), influenza A H1N1) and Middle East Respiratory Syndrome (MERS)

have created global threats to human life that can produce the same fear and hysteria of EVD [6,7]. Ebola virus disease, SARS, H5N1 and H1N1 are highly contagious and infectious with high morbidity and mortality because there is no effective vaccine or treatment to prevent the spread and termination of the infectious disease [1,2,8].

In this essay, I want to discuss a real-life scenario that will happen in the United States and the rest of the world. It is just a matter of time when it occurs, as the right conditions are met. That scenario is the next global influenza pandemic. During such a public health emergency, the question of a physician's ethical (and legal) duty to treat is critical for the public's health and survival. The duty to treat is not absolute, but *prima facie* [9,10,11,12,13,14]. For a global pandemic to occur, such ideal conditions are biological shifts in a microbial pathogen that favors disease transmission, lack of timely and effective public health response, increased population mobility, increased population density in cities across the United States and the rest of the world, human and environmental changes in interaction, dysfunctional public health infrastructure, health care systems that lack resources to keep the public healthy and distrust of public health authorities [1].

The goal of this essay is to create critical thought and opinion concerning the physician's duty to treat in a pandemic, and the patient's needs afflicted with a lethal and highly contagious virus. There has always been controversy regarding the physician's autonomy rights and the obligation to treat their patient [10,11,14,15]. But, with cases of EVD now in the United States, this has increased public awareness and spread fear in the public [3,5]. Questions raised in the medical and the ethics literature include the following: should there be a different standard of care for patients with a highly infectious disease such as EVD or the influenza virus? Are physicians (and other healthcare providers) obligated to place themselves at increased risk while treating these patients because of their profession [11,13, 14, 16,17,18,19] To put it bluntly, the question is if a physician can ethically refuse to treat a patient, or to what extent to provide treatment for a patient with a highly infectious and contagious viral disease? The answer to this dilemma and controversy, is yes and that it is based on medical specialty, or the provider's scope of practice [20]. To support my argument, I will create two groups of physicians. Group A will consist of the following medical specialists: physicians who are infectious disease specialist, emergency room physicians and anesthesiologists. Group B are physicians such as dermatologists, occupational physicians and eye surgeons, such as retina and cornea specialists. This essay will make recommendations regarding the duty to treat based on medical specialty in the face of personal risks.

## Ethical Principles of Medicine and Public Health

The guiding light for physicians regarding the duty to treat is based on the four ethical principles [21]. Respect for autonomy is the patient's right to self-determination. Beneficence is to help another individual, while non-maleficence is to do no harm to the patient. Justice is treatment based on medical

need of the patient and not merit. These four principles are codified in ethical codes such as the Hippocratic Oath and the American Medical Association's Code of Medical Ethics [11,12,16,22,23]. A lethal influenza pandemic will require careful application of medical ethical principles which seeks the greatest good for the greatest number. However, the high risks of disease transmission to healthcare staff, especially physicians may create conflict with the ethical principles. Obligation of physicians regarding the duty to treat and the healthcare system during such a pandemic are to contain the spread of the disease and protect healthcare staff which at times may take priority over patients with a poor chance of survival. Such adjusted standards of care will evolve in response to amount of risks and chances of success in resuscitation of the influenza patient with a poor prognosis [11,12,14,20,22,23,24].

## American Medical Association, Medical Oaths and Professional Codes of Ethics

The phrase, "duty to treat" refers to an obligation of the physician to care of their patient despite the potential for the physician becoming ill, or even dying in the face of the same contagious infectious disease as their patient. Self-sacrifice is considered a professional virtue for physicians. However, are there limits to such an obligation? During the course of a pandemic, physicians and the entire healthcare system may have to adjust the standard of care when the existing health of some acutely ill patients will be in conflict with the survival of others. In fact, The Hippocratic Oath does not mention about the physicians absolute duty to treat [5,11,16].

In 1847, the American Medical Association (AMA) was founded and drafted their initial professional code of ethics which provided opinion and commentary on various issues related to professional standards of medical practice. The first version emphasized that physicians must alleviate human suffering and during times of epidemics must put themselves at risk for the benefit of the patient [9]. The AMA's initial Code of Ethics (the Code) served to define the physician's professional obligations to their patients. From 1847 to 1957, many physicians believed that the code of ethics articulated a duty to treat in the face of personal risk. An example is the 1918-1919 Spanish influenza, where many physicians did perish from the influenza virus while treating their patients. Such ethical guideline was reemphasized during the AIDS epidemic of the 1980's in the United States. The AMA's code of ethics stated very clear that physicians are required to treat HIV seropositive patients within the realm of competence.

In 2002, the AMA revised the Code and did not directly state the physician's duty to treat during emergencies, such as the attack of the World Trade Center on September 11, 2001 [11]. Rather, the AMA in its Declaration of Professional Responsibility stated that physicians should apply their knowledge and skill set when needed, which might put them at risk. Such a statement clearly assumes that the risk to the physician is low, and beneficence to the patient is high. However, the AMA in this document does not delineate how the physician should determine their level of risk. Therefore, does the

physician have to forfeit their autonomy rights such as in an influenza pandemic even when facing possible death?

### History of Medical Ethics and the Duty to Treat

The amount of personal risk physicians should be exposed to while treating their patient during an infectious disease epidemic regarding their medical license has not been discussed beginning with the first version of the code in 1847 [11]. Such a lack of consensus as to a physician's duty to treat during an infectious disease epidemic is also a reflection of the divide among physicians regarding both medical ethics and professional conduct from the time of the black plague to the present [9,11,14]. Physicians (and other healthcare staff, such as nurses) are usually the first healthcare responders to come into contact and begin treating the sick. They are also usually the first casualties to die when lethality rates are high. With highly virulent contagious diseases, physicians may question their obligations in the duty to treat.

During the 1800's, there was no consensus among physicians regarding the ethical duty of providing care to patients during an epidemic [10,11]. Patient abandonment by physicians was not universally condoned by their peers. During this time period, physicians made such a decision based on their individual feelings of physician responsibility. As an example, during the black plague of the 14<sup>th</sup> and 15<sup>th</sup> centuries many physicians in Venice, Italy fled the city to save their own lives, instead of staying behind to treat the sick [9]. In the 17<sup>th</sup> century, physicians in London, England left the city during the bubonic plague rather than remain in the city to care for their patients. In 1793, Philadelphia, PA experienced a yellow fever epidemic and many physicians fled the city to save their own lives. But, many physicians also remained in the city and treated the sick. Reasons for staying behind to care for their patients ranged from religious beliefs to financial compensation. In the modern era of medicine, such example of physicians abandoning their patients was observed in 1995 in the Democratic Republic of Congo. At Kikwit General Hospital, a physician from the Centers for Disease Control arrived at the hospital and discovered that every physician and nurse had fled the hospital, leaving their patients to die. All of the above examples of physicians failing to treat their patients to save their own life is not considered unethical [9,10].

### Epidemiology of Pandemics

Three pandemics occurred in the 20<sup>th</sup> century- the 1918-1919 Spanish influenza; the 1957-1958 Asian influenza and the 1968-1969 Hong Kong influenza [22,24,25,26,27]. Compared to influenza epidemics which usually occur annually in the winter months, pandemics occur less frequently [28]. The Spanish influenza of 1918-1919 is the deadliest disease recorded in modern times [22,25,26,27]. It is estimated that during this pandemic, 40-100 million deaths occurred in a 12-month period globally. Half of the deaths were in the 20-40 age group [29,30]. Therefore, it is estimated that 8-10% of all young adults living during this time may have been killed from the influenza virus. In addition, greater than 50% of the world's population might have been infected with the

virus, but survived [25]. In the United States, the Spanish influenza killed 675,000 people among the 105 million settlers [22,30,31]. The lethality (death rate) was approximately 1.3% of the population.

Recent influenza pandemics (1957 and 1968) have ranged from a lethality rate of 0.1% to the lethality rate of the Spanish influenza (2.5%) in developed countries [32]. Li et al [32] estimates that the H5N1 avian influenza lethality rate could be between 14-33%. The World Health Organization (WHO) in 2009 predicted that a new influenza pandemic was on the horizon that could be more lethal than the 1957 and 1968 pandemics, but not as lethal as the 1918 influenza. But, such pandemics could cause a surge capacity that will exhaust all health care resources due to increased virulence [22,33,34].

### Who Will Volunteer in Hospitals to Treat Patients or Opt Out?

The spirit and cooperation of volunteerism to remain in hospitals to care for patients infected with a highly contagious influenza disease among physicians and other healthcare professionals has been investigated in several surveys. Among studies conducted in the United States, one study discovered that 40% of physicians would put themselves at risk of contracting a highly infectious disease while treating patients [35]. In an anonymous study, 73% of physicians, and 44% of nurses would volunteer to work during an avian influenza pandemic [36]. After the SARS epidemic in 2003, in a survey among Taiwanese nurses, only 57% were willing to care for patients infected with SARS [37]. Results of such a survey were similar in New York, where only 50% of healthcare staff would report for duty in a SARS epidemic. But, 84% would report for duty during a mass casualty event [38]. In the United States, a professor of nursing predicted that many physicians and nurses would abandon their duties during a pandemic [17].

### Physicians Ethical Duty to Treat During an Influenza Pandemic

Physicians have a moral ethical duty to treat their patients and accept the risk of becoming ill or dying from the same disease as their patients [3,5,10,12,15,23,28]. During a pandemic, physicians will have to make some difficult decisions about providing treatment or deferring to care to their patients.

Physicians who enter the profession of medicine knowingly accept the risk of contracting a disease and possibly dying from that disease while treating patients [5,10,12,18,24,39]. Physicians who specialize in treatment of infectious diseases, emergency medicine and anesthesia would be critically needed in such a pandemic and directly exposed to patients infected with the contagious virus [5,12]. During an influenza pandemic, these medical specialists would be at the forefront of providing treatment as they are uniquely qualified and skilled in providing acute life-saving procedures that the pandemic patient requires while trying to reduce disease transmission. Clinical life-saving skills that may expose the clinician to the viral pathogen may include the following:

intubation of the airway to prevent respiratory arrest, placement of central lines for fluid resuscitation and hemodynamic monitoring and administration of advanced cardiac life support (ACLS) during a cardiac or respiratory arrest. With the skilled physician who is comfortable managing the infectious disease patient, the health and safety of the patient and healthcare team are realized. Such justice, beneficence and non-maleficence regarding risk to the physician and healthcare team are well-controlled in such an environment [5,12].

The decision and action of physicians must not harm (non-maleficence) the healthcare team during treatment. Medical centers around the country are evaluating if specific procedures for patients with EVD or other highly contagious infectious diseases should be avoided [5,39,40,41]. Such maleficence can easily occur during an acute scenario, such as a respiratory arrest in the emergency room where advanced cardiac life support (ACLS) measures will be instituted. In a respiratory arrest where ACLS is utilized to resuscitate the medically compromised patient (such as in multi-organ failure), body fluids such as urine, blood, saliva and feces are extruding from many orifices due to chest compressions, airway intubation and placement of intravenous lines. Exposure to such body fluids puts the entire health care team at risk of contracting the infectious disease [5,39,41]. Chest compressions may result in increased hemorrhagic bleeding that could increase the risk of exposure to the infectious pathogen. In this scenario, the standard of care may be adjusted when there is a serious threat from a communicable viral disease and the prognosis of survival is poor. Such beneficence and non-maleficence in protecting the physician and entire healthcare team takes precedence over the individual infected with the infectious disease [5,14,39,41].

All patients have a right to receive medical care (fairness and justice). But, no patient has the right to receive every medical intervention available in an attempt to save their life [5,14,39,41]. Therefore, a critical question is, how much beneficence is entitled to the patient? If it is determined that resuscitation efforts will be futile to save the life of the acutely ill influenza patient with a poor prognosis, should the patient and their family expect the doctor and healthcare team to put themselves at risk of contracting the disease during resuscitation efforts and waste precious healthcare supplies that can be used for other patients? For patients who are dying and the prognosis is poor, heroic attempts to save the life of such a patient would have no benefit, but actually harm (maleficence) the patient by causing pain from intervention procedures. Under these circumstances, physicians should have the right to self-autonomy to make such difficult decisions and defer on treatment. Part of the duty to treat should allow physicians to not take risk that is unreasonable that could jeopardize their life, non-infected patients and healthcare team members. With EVD, the University of Nebraska Medical Center in Omaha will defer on providing CPR to patients with EVD [40]. Such adjusted patient standard of care may be justified as the physician workforce is not infinite. Beneficence not only includes the patient, but the entire healthcare system and physicians must carefully evaluate

the benefits versus risks of providing medical services and the ability to treat patients in the future [5,14,16,39,41].

Delineating the limits of risk based on medical specialty may decrease the number of physicians from refusing to treat patients in the face of an infectious disease pandemic where morbidity and mortality is high. For example, physicians who are specialist in dermatology, occupational medicine and eye surgeons who specialize in retinal surgery may argue that they are not medically qualified in treating the patient who has an acute infectious disease. Lack of appropriate medical training and clinical experience in the subspecialty of infectious diseases could actually harm the patient and iatrogenically expose healthcare members to the viral contagion. Under these circumstances, the duty not to treat supports the ethical principles of beneficence and non-maleficence for the patient and entire healthcare team [5,9,10,11,12,13,39,41].

## Recommendations

State medical licensing boards may be in a position to best identify which medical specialists should be involved in managing the acute patient in an infectious disease pandemic such as the influenza virus. Identifying highly trained physicians may avoid the dilemma of the duty to treat and control the spread of infection [5]. With such highly trained physicians in managing the infectious disease patient, medical interventions (beneficence to the sick patient) will be provided that are considered the universal standard of care. Examples include: intravenous hydration, nutrition, pharmacologic intervention to sustain blood pressure and renal dialysis.

With a high mortality rate in an influenza pandemic, there will be questions if the standard of care will be identical to non-influenza patients who require life-saving resuscitation procedures, such as CPR and ACLS. If the chances of survival are futile during a resuscitation attempt, consideration of "do not resuscitate orders" should be considered on a case-by-case basis, evaluating the realistic chances of survival and risk of disease transmission to the physician and other healthcare members [5,14,39,41]. Such beneficence, non-maleficence and justice to the entire healthcare team and the general public should take priority over the acutely ill influenza patient with a poor prognosis.

Upon inpatient admission of the infectious disease patient during a pandemic, an open dialogue should be initiated between the patient, family members, the physician and hospital regarding end of life medical treatment and decision-making [5,39].

Physicians have the same human and constitutional rights as any other private citizen. Volunteering (physician self-autonomy) should be the norm and not force [14,23]. There is no obligation for any physician to initiate treatment in an acutely ill influenza patient with chances for a successful outcome.

## Conclusion

Patients and the general public should not expect physicians to expose themselves to extreme risk during an infectious disease pandemic. They must have realistic expectations regarding the duty to treat. The duty to treat the influenza patient during a pandemic is primarily for experienced clinicians. I therefore, have recommended that the duty to treat in a pandemic where morbidity and mortality is high is based on medical specialty that includes the physician's level of training and experience with patients who are highly contagious with a virulent pathogen. If the physician lacks the level of expertise in infectious disease, they have the duty to defer on treatment and triage the patient to a specialist who can competently manage such a patient. The recent pandemic of SARS and ebola epidemic is an alarming call for physicians and bioethicists to examine this concept of the duty to treat in much greater detail while there is no global pandemic at the moment.

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