

## Review

# Clinical review: Influenza pandemic – physicians and their obligations

Devanand Anantham<sup>1</sup>, Wendy McHugh<sup>2</sup>, Stephen O'Neill<sup>2</sup> and Lachlan Farrow<sup>2</sup>

<sup>1</sup>Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Duke-NUS Graduate Medical School, Outram Road, Singapore 169608, Singapore

<sup>2</sup>Ethics Support Service, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA 02215, USA

Corresponding author: Devanand Anantham, [anantham.devanand@sgh.com.sg](mailto:anantham.devanand@sgh.com.sg)

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## Abstract

An influenza pandemic threatens to be the most lethal public health crisis to confront the world. Physicians will have critical roles in diagnosis, containment and treatment of influenza, and their commitment to treat despite increased personal risks is essential for a successful public health response. The obligations of the medical profession stem from the unique skills of its practitioners, who are able to provide more effective aid than the general public in a medical emergency. The free choice of profession and the societal contract from which doctors derive substantial benefits affirm this commitment. In hospitals, the duty will fall upon specialties that are most qualified to deal with an influenza pandemic, such as critical care, pulmonology, anesthesiology and emergency medicine. It is unrealistic to expect that this obligation to treat should be burdened with unlimited risks. Instead, risks should be minimized and justified against the effectiveness of interventions. Institutional and public cooperation in logistics, remuneration and psychological/ legal support may help remove the barriers to the ability to treat. By stepping forward in duty during such a pandemic, physicians will be able to reaffirm the ethical center of the profession and lead the rest of the healthcare team in overcoming the medical crisis.

## Introduction

As the specter of an influenza pandemic looms, preparation is underway to cope with what may be the most lethal public health crisis to confront the world [1]. By virtue of their training and expertise, doctors will have a pivotal role in a successful response to a pandemic in the areas of detection, containment and treatment [2]. A commitment by physicians is needed to ensure that this role will be fulfilled despite the presence of an elevated level of personal risk arising from exposure to contagious influenza patients.

The obligation to render treatment in the presence of increased risks needs to be first justified as legitimate. Arguments that rationalized the abandonment of patients in

previous epidemics include futility when medicine is powerless to help and the depletion of finite resources when physicians fall ill [3]. If obligations can be legitimized, however, and if the medical profession as a whole does have a societal duty, then to which individuals within the profession does this responsibility fall? Some limits in the level of risk will be needed for these obligations to be practically binding, and society will need to question the extent to which doctors have to endanger their lives for public good. There will inevitably be reciprocal demands on society by such physicians who face a disproportionate burden of risks. Barriers to the ability to render aid need to be overcome with the appropriate resources and planning. Standards of care may have to be adjusted and the legal repercussions of these adjusted standards need to be addressed. The present review will confront all these issues in order to aid pandemic planning.

## Obligations of the medical profession

The obligations of the medical profession in a medical emergency revolve around the issues of rule of rescue, free choice of profession and the profession's contractual duties to society.

## Rule of rescue

The rule of rescue prevents the abandonment of those in need of help and prompts a certain minimal decency that is expected from all individuals who are in a position to render aid at a time of crisis [4]. Clark has highlighted that the obligation to assist at such a juncture involves four factors: need, proximity, capability and last resort [5] (see also [6]). The greater the need, the greater the responsibility to help; therefore, the duties that physicians will have are in part dictated by the extent of the need. If influenza does strike in pandemic proportions, this need is likely to be tremendous. The planning assumptions for a 1957-like moderate pan-

SARS = severe acute respiratory syndrome.

demic estimates 45 million people seeking outpatient care in the United States and 865,000 requiring hospitalization [7]. The number of people needing hospitalization would rise to nearly 10 million, with about 1.5 million in an intensive care setting, should a 1918-like severe pandemic strike [7].

Proximity refers to notice of expectations rather than to physical space, and in this respect the medical profession's obligations stem from public expectations of the profession in a crisis. These expectations are bound to the nature of the profession's contract with society. The international experience of the severe acute respiratory syndrome (SARS) outbreak suggests worldwide public expectation is that doctors will respond by continuing to provide care in a pandemic even if this involves elevated risks. Expectations also increase when acceptable levels of excess risks are made explicit and agreed upon in advance of the outbreak [8].

Capability is based on Kant's principle of 'ought implies can'. In rendering aid during an infectious disease crisis, the benefits that can be gained at the expense of the same risks undertaken are much higher for physicians by virtue of the expert knowledge they possess. This professional expertise may also provide doctors with better self-protection in dealing with any infection risks.

The last resort argument is that responsibility increases as the probability that someone else can serve decreases. Unqualified personnel without medical capabilities cannot provide services such as diagnosis and treatment of disease. The public will therefore have absolute reliance on healthcare workers in an infectious disease emergency.

### **Free choice of profession**

In freely joining a profession designed to combat disease, doctors make an implicit commitment to some degree of occupational risk [5,9]. Risks that are intrinsic to a profession are not unique and are similar to the risks that firefighters and police officers face in their line of work [4]. Indeed, the somewhat mundane exposures to tuberculosis and seasonal influenza already take an unaccounted toll on healthcare workers [8]. An era of successful antibiotic development, effective public health measures and the relatively long time gap since the last pandemic (1968 to 1970), however, have resulted in a generation of physicians entering the profession with little thought regarding work-related risks and mortality [10].

The issue of having to provide care for patients with contagious diseases for which there is limited treatment was put sharply back in focus during the early years of the HIV epidemic and during the 2003 SARS outbreak. With an influenza pandemic looming as an imminent probability, all physicians need to ask what sacrifices are demanded in the name of their profession and what minimal standard of risk would be acceptable in order to be able to continue working. Free choice of the medical profession implies free choice of

accepting the associated occupational hazards. Ultimately, the only way to avoid all such risks will be to change careers [8].

### **Contract with society**

Society bestows upon the medical profession prestige and guild-like powers of self-regulation [11]. These benefits are arguably over and above the remuneration received from the contractual obligations of providing healthcare. In return for these benefits, the profession has made fiduciary commitments to care for individuals who are compromised by the misfortunes of disease [12]. These commitments are enshrined in classical professional ethics as values such as beneficence and justice. Moreover, professional codes dating back to the American Medical Association code of 1847 have repeatedly affirmed the moral duty to treat the sick during pestilence despite personal risks [5]. As members of a profession who have taken advantage of its contract with society to reap social rewards, it is then onerous on physicians to commit to the obligations of the profession when called upon to do so [5]. This is the essence of John Rawls' 'no free rider' principle [13].

### **Individual obligations**

With the obligations of the medical profession as a whole established, on which individuals within the profession will this burden fall [4]? Practitioners will inevitably be exposed to differing levels of risk depending on the roles and responsibilities assumed. Risk exposure should ideally be controlled by distributing it such that those most prepared for risks would then face the highest burden of risk exposure. Intensivists, emergency physicians, anesthesiologists and pulmonologists would therefore be obligated to face higher risks than other specialists because their expertise will afford better protection to cope with these increased risks. By being less likely to be infected, these professionals will reduce further nosocomial transmission and consequently protect the frontline medical team better. The therapeutic interventions these specialists can offer are also likely to be more beneficial.

Risk does not always respond to claims of fairness and is unfortunately encountered by both choice and chance [14]. Professional and institutional solidarity is likely to play a role in distributing these risks. The risk that is refused by any individual physician is left to be absorbed by someone else. In a crisis, this someone else does not become another hypothetical doctor, but a known colleague [14].

### **Limits to risk**

Expecting a physician to treat without any regard to his or her own safety is both an extreme and unrealistic approach [5]. Reasonable limits to an acceptable level of risk are necessary. Risks become reasonable when they are proportional to the probability of successful rescue and when the overall good that is achievable from undertaking that risk is substantial [4]. Professional obligations can then be weighed against competing personal obligations to health and families.

The level of risks, the nature of risks and the ability to foresee risks, as well as the magnitude of increased risks compared with baseline levels, are issues that need to be addressed in risk assessment [4]. The true level of risk in pandemic influenza is unknown because this is a virus in evolution [15]. We only have historical evidence from previous pandemics and experience with smaller seasonal outbreaks. The estimated case fatality in the 1918 Spanish flu pandemic was 2.5%, which is more than 20-fold higher than seasonal outbreaks [16]. More alarmingly, the fatality rate in human cases of H5N1 avian influenza, which is a prime candidate for the next disease pandemic, is greater than 50% [7].

The nature of the risk spans more than personal morbidity and mortality, but also includes transmission to family members. Prevention of transmission to loved ones may be a higher priority for healthcare workers than self-protection against infection [17]. In the most severe cases, the predicted nature of influenza infection is that of rapidly progressing respiratory distress and multiorgan failure with a high mortality rate [15].

The suspected cyclic pattern of antigen shift suggests that the next outbreak is not only predictable, but is in fact imminent [18]. An influenza pandemic is therefore not a hypothetical crisis but a foreseeable one.

Finally, if pandemic influenza should strike, the risks to all healthcare workers may dramatically increase in magnitude from the baseline level of occupational risk. This increased risk will impact hardest those who work in the frontlines of emergency rooms and primary care. The SARS outbreak showed that a large proportion of the second wave of victims was healthcare workers who were inadvertently infected before the realization of a new infectious disease outbreak [2]. The infection risk to medical professionals therefore becomes part of the baseline risks assumed by all who continue to provide frontline healthcare. After a case definition was established for SARS and infection control was instituted, the transmission among healthcare workers fell precipitously [19]. The infections in the healthcare profession that followed were attributable to either lapse in infection control or to close contact during high-risk pulmonary aerosol-generating procedures [20]. The actual increased risk incurred after the outbreak was identified and the infection control instituted was relatively small.

Therefore, pandemic influenza imposes foreseeable high risks to physicians with the potential consequence of mortality. Survey data suggest that 24% of physicians find it acceptable to abandon their workplace during such a pandemic in order to protect themselves and their families [21]. These risks must therefore be significantly mitigated and compensated for by societal and institutional support to ensure adequate turnout of the medical workforce (see Table 1).

**Table 1**

**Issues related to healthcare workers in pandemic planning**

1. Availability of personal protective equipment
2. Vaccine and chemoprophylaxis allocation
3. Training in protective equipment and infection control
4. Policy awareness and roles/expectations in an emergency
5. Psychologically sustainable working conditions
6. Emergency plans for the family, including childcare and eldercare
7. Transportation to work
8. Lodging
9. Financial compensation for risks and extra hours
10. Sickness/death benefits
11. Liability protection for altered standards of care
12. Objective triage criteria and independent triage teams

**Societal/institutional support**

When confronted with increased risk in the line of duty, it would be fair for physicians to demand that protective equipment and psychologically sustainable working conditions are available [14]. Approaching risks with caution is not the same as refusing to treat [22]. International experience with SARS confirms that, with adequate protective equipment, most healthcare professionals continued to turn up for work. Availability of personal protection will reduce ill-conceived heroism whereby doctors fall ill by rushing to treat victims unprotected. These ill doctors will compound the crisis by concurrently increasing the numbers who need treatment and decreasing those who can provide care [5,12]. Priority to healthcare workers in vaccine and chemoprophylaxis allocation as well as adequate protective equipment is therefore justified by the principles of optimizing effectiveness and maximizing benefits. These reciprocal demands for logistics support by physicians need to be proportional to the extent of risk faced in order to facilitate a just distribution of scarce resources [23].

Identifying and overcoming the barriers that impede the ability of physicians to provide care during a crisis must be the cornerstone of pandemic resource planning. Training in protective equipment and infection control, mask fitting and policy awareness are pre-emptive measures that cannot be delayed until the onset of a pandemic. Clear expectations regarding their specific role in an emergency may increase staff turnout in the initial chaos and confusion surrounding a pandemic [17]. Perhaps insisting on every physician having a family emergency plan that outlines how the family will function in a pandemic should be part of annual performance reviews and hiring decisions [17]. Logistical support that will be needed for physicians' other childcare/eldercare obligations and transportation/lodging needs have to be addressed

before a crisis [17]. Realistic financial incentives for the extra risk and hours have to be worked out, and predictable compensation must be available to the families of those who succumb to disease [2]. Survey data suggest that the degree of institutional preparedness for a potential pandemic is a strong predictor of individual healthcare professional preparedness [24].

### Doctor–patient relationship

Standards of care that will be considered acceptable will probably change in a crisis. Doctors must reconcile their instincts to provide good care with inevitable delays in resuscitation codes in order to suit up in personal protective equipment [14]. The ability to perform emergency medical procedures such as endotracheal intubation will also be hampered by the cumbersome nature of such protective equipment. Physicians are not an inexhaustible resource, however, and should weigh the future benefits that a healthy doctor can provide against the good that can be done immediately [25]. Consequently, an influenza pandemic may reach such proportions that expected standards of care may be lowered. Resuscitation codes may be even abandoned because the low probability of success may not justify the risk exposure to healthcare professionals. Doctors will need institutional support and liability protection in making such judgments in difficult situations.

Physicians may also have to relinquish the principle of the primacy of an individual patient's needs when confronted with demands of allocation of scarce resources. With rising health budgets and constrained resources, there is already an acknowledgement of physicians' obligations to society through just and prudent resource distribution even in the absence of a pandemic. The need for triage and resource allocation will inevitably strain the doctor–patient relationship. The obligations to the patient at the bedside inevitably appear more pressing than the obligations to the yet to be admitted patient waiting at the Emergency Department. Development of objective triage/allocation criteria and having teams independent of the attending medical team to make triage decisions will alleviate some of these conflicts.

### Conclusion

The obligation of the medical profession to provide treatment in an influenza pandemic stems from the expertise that physicians uniquely possess. This expertise enables doctors to provide care that the general public would not be able to provide. Free choice of profession and the profession's contract with society affirms this obligation. Within the profession, the duty will fall on those who are most qualified because they will both provide the most effective care and also be able to protect themselves best. This obligation to treat is not binding against infinite risks, but comes instead with risks that can to some extent be mitigated and managed. Institutional and societal support must be available and proportionate to the increased burden of risks to overcome

the many barriers to the ability to treat [26]. Although no clear distinction between supererogation and duty can be made without the experience of the actual circumstances of the pandemic, the present review has highlighted the issues that will be considered in defining these boundaries when an outbreak strikes.

Physicians must be able to overcome their personal fears regarding infection risks and must commit to coming forward in the face of surging medical demands because they will need to lead a myriad of other essential healthcare workers who will have less understanding, less luxury of choice and less social/economic reward than doctors [14]. This obligation is neither an unrealized or uncompensated burden that the medical profession shoulders [5]. Soft penalties include loss of professional esteem and autonomy. The limitation of legal enforcement of duties is that it enables only a bare minimum expectation to be demanded, which is unlikely to suffice [8]. Without a strong and positive response, influenza will run its course undiagnosed, unconfined and untreated, leaving entire populations ravaged – and then history will judge physicians harshly [2].

### Competing interests

The authors declare that they have no competing interests.

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