The Ethics of Pandemic-Driven Health Care Resource Rationing  
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ANNOTATED BIBLIOGRAPHY


In times of contagion, the key role of nurses brings fears, dangers, and unique demands. The ethics of such challenges need to be explored and understood. Using Callahan's framework for thinking ethically and Taylor's "worries" of modern life, the author elucidates some of the challenges and then argues that the current approach to pandemic ethics, with its reliance on moral reasoning, is insufficient to guide nurses' ethical actions. Relational ethics, which explicitly situates ethics within relationships and our commitment to one another, and which recognizes that context matters in ethical decision-making, is offered as a viable alternative for nurses in considering how to respond.


**Context:** The novel influenza A(H1N1) pandemic affected Australia and New Zealand during the 2009 southern hemisphere winter. It caused an epidemic of critical illness and some patients developed severe acute respiratory distress syndrome (ARDS) and were treated with extracorporeal membrane oxygenation (ECMO).

**Objectives:** To describe the characteristics of all patients with 2009 influenza A(H1N1)–associated ARDS treated with ECMO and to report incidence, resource utilization, and patient outcomes.

**Design, Setting, and Patients:** An observational study of all patients (n=68) with 2009 influenza A(H1N1)–associated ARDS treated with ECMO in 15 intensive care units (ICUs) in Australia and New Zealand between June 1 and August 31, 2009.

**Main Outcome Measures:** Incidence, clinical features, degree of pulmonary dysfunction, technical characteristics, duration of ECMO, complications, and survival.

**Results:** Sixty-eight patients with severe influenza-associated ARDS were treated with ECMO, of whom 61 had either confirmed 2009 influenza A(H1N1) (n=53) or influenza A not subtyped (n=8), representing an incidence rate of 2.6 ECMO cases per million population. An additional 133 patients with influenza A received mechanical ventilation but no ECMO in the same ICUs. The 68 patients who received ECMO had a median (interquartile range [IQR]) age of 34.4 (26.6-43.1) years and 34 patients (50%) were men. Before ECMO, patients had severe respiratory failure despite advanced mechanical ventilatory support with a median (IQR) PaO2/fraction of inspired oxygen (FIO2) ratio of 56 (48-63), positive end-expiratory pressure of 18 (15-20) cm H2O, and an acute lung injury score of 3.8 (3.5-4.0). The median (IQR) duration of ECMO support was 10 (7-15) days. At the time of reporting, 48 of the 68 patients (71%; 95% confidence interval [CI], 60%-82%) had survived to ICU discharge, of whom 32 had survived to hospital discharge and 16 remained as hospital inpatients. Fourteen patients (21%; 95% CI, 11%-30%) had died and 6 remained in the ICU, 2 of whom were still receiving ECMO.

**Conclusions:** During June to August 2009 in Australia and New Zealand, the ICUs at regional referral centers provided mechanical ventilation for many patients with 2009 influenza A(H1N1)–associated...
respiratory failure, one third of whom received ECMO. These young adults with severe hypoxemia had a 21% mortality rate at the end of the study period.


Most accounts of why physicians have a duty to treat patients during a pandemic look to the special ethical standards of the medical profession. An adequate account must be deeper and broader: it must set the professional duty alongside other individual commitments and broader social values.


**Background:** Anticipated circumstances during the next severe influenza pandemic highlight the insufficiency of staff and equipment to meet the needs of all critically ill victims. It is plausible that an entire country could face simultaneous limitations, resulting in severe shortages of critical care resources to the point where patients could no longer receive all of the care that would usually be required and expected. There may even be such resource shortfalls that some patients would not be able to access even the most basic of life-sustaining interventions. Rationing of critical care in this circumstance would be difficult, yet may be unavoidable. Without planning, the provision of care would assuredly be chaotic, inequitable, and unfair. The Task Force for Mass Critical Care Working Group met in Chicago in January 2007 to proactively suggest guidance for allocating scarce critical care resources.

**Task Force suggestions:** In order to allocate critical care resources when systems are overwhelmed, the Task Force for Mass Critical Care Working Group suggests the following: (1) an equitable triage process utilizing the Sequential Organ Failure Assessment scoring system; (2) the concept of triage by a senior clinician(s) without direct clinical obligation, and a support system to implement and manage the triage process; (3) legal and ethical constructs underpinning the allocation of scarce resources; and (4) a mechanism for rapid revision of the triage process as further disaster experiences, research, planning, and modeling come to light.


**INTRODUCTION:** In order to prepare for pandemics, it is important to assess the likelihood that hospital personnel would report to work and to identify the issues that may affect this decision. **OBJECTIVE:** To survey hospital personnel regarding their attendance at work in the hypothetical event of avian influenza pandemic, and what factors might influence this decision. **METHODS:** A voluntary, confidential, institutional review board-approved survey was offered to a convenience sample of hospital workers regarding their willingness to report to work and what issues would be
important in making this decision. Surveys not returned and individuals declining to participate were recorded.

RESULTS: Of 187 surveys offered, 169 were completed (90% response rate): 34% were doctors, 33% were nurses, and 33% were clerical and other associates (other). The average age of the participants was 38 years, and 32% were males. Participants were asked: "In the event of an avian pandemic, and patients were being treated at this hospital, would you report to work as usual?". Of those who responded to the survey, 50% reported "yes", 42% reported "maybe", and 8% reported "no". Doctors were more likely than nurses or others to respond "yes" (73%), as were males (66%). For the "maybe" responders, the most important factor (83%) was: "How confident I am that the hospital can protect me". For 19% of the "maybe" responders, financial incentives would not make a difference for them to work, even up to triple pay.

CONCLUSIONS: Personnel absenteeism during a pandemic due to fear of contracting an illness may result in a significant personnel shortage. Ensuring worker confidence in adequate personal protection may be more important than financial incentives.


BACKGROUND: Healthcare workers (HCWs) will play a key role in any response to pandemic influenza, and the UK healthcare system's ability to cope during an influenza pandemic will depend, to a large extent, on the number of HCWs who are able and willing to work through the crisis. UK emergency planning will be improved if planners have a better understanding of the reasons UK HCWs may have for their absenteeism, and what might motivate them to work during an influenza pandemic. This paper reports the results of a qualitative study that explored UK HCWs' views (n = 64) about working during an influenza pandemic, in order to identify factors that might influence their willingness and ability to work and to identify potential sources of any perceived duty on HCWs to work.

METHODS: A qualitative study, using focus groups (n = 9) and interviews (n = 5).

RESULTS: HCWs across a range of roles and grades tended to feel motivated by a sense of obligation to work through an influenza pandemic. A number of significant barriers that may prevent them from doing so were also identified. Perceived barriers to the ability to work included being ill oneself, transport difficulties, and childcare responsibilities. Perceived barriers to the willingness to work included: prioritising the wellbeing of family members; a lack of trust in, and goodwill towards, the NHS; a lack of information about the risks and what is expected of them during the crisis; fear of litigation; and the feeling that employers do not take the needs of staff seriously. Barriers to ability and barriers to willingness, however, are difficult to separate out.

CONCLUSION: Although our participants tended to feel a general obligation to work during an influenza pandemic, there are barriers to working, which, if generalisable, may significantly reduce the NHS workforce during a pandemic. The barriers identified are both barriers to willingness and to ability. This suggests that pandemic planning needs to take into account the possibility that staff may be absent for reasons beyond those currently anticipated in UK planning documents. In particular, staff who are physically able to attend work may nonetheless be unwilling to do so. Although there are some barriers that cannot be mitigated by employers (such as illness, transport infrastructure etc.), there are a number of remedial steps that can be taken to lesson the impact of others (providing accommodation, building reciprocity, provision of information and guidance etc). We
suggest that barriers to working lie along an ability/willingness continuum, and that absenteeism may be reduced by taking steps to prevent barriers to willingness becoming perceived barriers to ability.


Because of the importance of including ethical considerations in planning efforts for pandemic influenza, in February 2005 the Centers for Disease Control and Prevention requested that the Ethics Subcommittee of the Advisory Committee to the Director develop guidance that would serve as a foundation for decision making in preparing for and responding to pandemic influenza. Specifically, the ethics subcommittee was asked to make recommendations regarding ethical considerations relevant to decision making about vaccine and antiviral drug distribution prioritization and development of interventions that would limit individual freedom and create social distancing. The ethics subcommittee identified a number of general ethical considerations including identification of clear goals for pandemic planning, responsibility to maximize preparedness, transparency and public engagement, sound science, commitment to the global community, balancing individual liberty and community interests, diversity in ethical decision making, and commitment to justice. These general ethical considerations are applied to the issues of vaccine and antiviral drug distribution and use of community mitigation interventions.


We describe an evidence-based approach to enhancing the resilience of healthcare workers in preparation for an influenza pandemic, based on evidence about the stress associated with working in healthcare during the SARS outbreak. SARS was associated with significant long-term stress in healthcare workers, but not with increased mental illness. Reducing pandemic-related stress may best be accomplished through interventions designed to enhance resilience in psychologically healthy people. Applicable models to improve adaptation in individuals include Folkman and Greer's framework for stress appraisal and coping along with psychological first aid. Resilience is supported at an organizational level by effective training and support, development of material and relational reserves, effective leadership, the effects of the characteristics of "magnet hospitals," and a culture of organizational justice. Evidence supports the goal of developing and maintaining an organizational culture of resilience in order to reduce the expected stress of an influenza pandemic on healthcare workers. This recommendation goes well beyond the provision of adequate training and counseling. Although the severity of a pandemic is unpredictable, this effort is not likely to be wasted because it will also support the health of both patients and staff in normal times.

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When an infectious pandemic occurs in the United States, emergency care providers (ECPs) will be on the frontlines caring for infected, potentially infected, and non-infected patients. Logistically, the current emergency care system is not ready for a pandemic, but are the providers ethically ready? Some of the most difficult and challenging issues that will be raised during a pandemic will be ethical in nature. An ECP likely will be confronted with ethical values and value conflicts underlying restriction of liberty, duty to care, and resource allocation. This report summarizes the ethical concerns and challenges that ECPs face during an infectious pandemic, and raises ethical questions that may arise related to the role of an ECP as a healthcare provider and stakeholder.


In this paper we outline the seven primary truths supporting the call for requiring influenza immunization of all health care workers. We view this as a serious patient safety issue, given the clear and compelling data regarding the frequency and severity of influenza infection. In addition, clear-cut safety, efficacy, economic, legal, and ethical platforms support the use of influenza vaccine. Unfortunately health care workers have demonstrated, over almost 25 years that they are unwilling to comply with voluntary influenza immunization programs utilizing a variety of education and incentive programs, at rates sufficient to protect the patients in their care. We suggest that an annual influenza immunization should be required for every health care worker with direct patient contact, unless a medical contraindication or religious objection exists, or an informed declination is signed by the health care worker. High rates of health care worker immunization will benefit patients, health care workers, their families and employers, and the communities within which they work and live.


OBJECTIVE: To use a deliberative forum to elicit community perspectives on communication about pandemic influenza planning, and to compare these findings with the current Australian national communication strategy.

DESIGN: Deliberative forum of 12 persons randomly selected from urban South Australia. Forum members were briefed by experts in infection control, virology, ethics and public policy before
deliberating on four key questions: what, how and when should the community be told about pandemic influenza and by whom?

**RESULTS:** The forum recommended provision of detailed and comprehensive information by credible experts, rather than politicians, using a variety of media including television and internet. Recommendations included cumulative communication to build expertise in the community, and specific strategies to include groups such as young people, people with physical or mental disabilities, and rural and remote communities. Information provided should be practical, accurate, and timely, with no 'holding back' about the seriousness of a pandemic. The forum expressed confidence in the expert witnesses, despite the acknowledged uncertainty of many of the predictions.

**DISCUSSION AND CONCLUSION:** The deliberative forum’s recommendations were largely consistent with the Australian national pandemic influenza communication strategy and the relevant literature. However, the forum recommended: release of more detailed information than currently proposed in the national strategy; use of non-political spokespersons; and use of novel communication methods. Their acceptance of uncertainty suggests that policy makers should be open about the limits of knowledge in potentially threatening situations. Our findings show that deliberative forums can provide community perspectives on topics such as communication about pandemic influenza.


Many healthcare organizations and government agencies are making detailed preparations for the possibility of a pandemic of highly virulent influenza. All plans to date have recognized that there will undoubtedly be a greater need for medical resources than will be available. Thus, we will be faced with a situation in which not all will be offered curative care, even if they could benefit from it. Even if there were sufficient amounts of vaccines, hospital beds, ventilators, and antibiotics, there are still expected to be large numbers of deaths as well as stress due to the overwhelming nature of the pandemic. The challenges of caring for the incurable, the uncured, healthcare workers, and the survivors and their families will place almost unprecedented demands on mental health workers. In this article, I discuss these ethical and medical challenges and the role that social workers will be called on to play.

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**Background:** Plausible disasters may yield hundreds or thousands of critically ill victims. However, most countries, including those with widely available critical care services, lack sufficient specialized staff, medical equipment, and ICU space to provide timely, usual critical care for a large influx of additional patients. Shifting critical care disaster preparedness efforts to augment limited, essential critical care (emergency mass critical care [EMCC]), rather than to marginally increase unrestricted, individual-focused critical care may provide many additional people with access to life-sustaining interventions. In 2007, in response to the increasing concern over a severe influenza pandemic, the Task Force on Mass Critical Care (hereafter called the Task Force) convened to suggest the essential critical care therapeutics and interventions for EMCC.

**Task Force suggestions:** EMCC should include the following: (1) mechanical ventilation, (2) IV fluid resuscitation, (3) vasopressor administration, (4) medication administration for specific
disease states (e.g., antimicrobials and antidotes), (5) sedation and analgesia, and (6) select practices to reduce adverse consequences of critical illness and critical care delivery. Also, all hospitals with ICUs should prepare to deliver EMCC for a daily critical care census at three times their usual ICU capacity for up to 10 days.

**Discussion:** By using the Task Force suggestions for EMCC, communities may better prepare to deliver augmented critical care in response to disasters. In light of current mass critical care data limitations, the Task Force suggestions were developed to guide preparedness but are not intended as strict policy mandates. Additional research is required to evaluate EMCC and revise the strategy as warranted.


This paper explains the ethical importance of infectious diseases, and reviews four major ethical issues associated with pandemic influenza: the obligation of individuals to avoid infecting others, healthcare workers’ ‘duty to treat’, allocation of scarce resources, and coercive social distancing measures. In each case, ways in which the ethical issues turn on both philosophical and empirical questions are highlighted. The paper concludes that ethicists should play a greater role in identifying ethically important empirical questions, and that scientists should take the ethical as well as the scientific importance of such questions into consideration when choosing research projects.


**OBJECTIVES:** To coordinate local responsibilities and identify options to enhance local health system capacity during a pandemic. The purpose of this paper is to illustrate the application of a Delphi exercise in an Ontario Public Health Unit as a first step in this complex planning task. Its strengths and weaknesses are presented.

**PARTICIPANTS:** Stakeholders representing nine categories of health care organizations. **SETTING:** Public Health facilitated the Delphi process.

**INTERVENTION:** The exercise occurred in three rounds. In round 1, stakeholders identified a series of questions pertaining to the subject. Round 2 involved formulation of issue-related statements outlining possible strategies or solutions. Level of agreement regarding the statements by panel members were indicated. In round 3, a facilitated face-to-face meeting allowed statements to be fed back to the panel, enabling discussion of their own and other panel members' previous statement views.

**OUTCOMES:** Statements were formulated from questions generated by the expert panel, collated into categories and sent to all panel members. A total of 72 unique statements were developed. Agreement was obtained for 56 of the statements.

**CONCLUSION:** The Delphi exercise proved to be an effective approach to commence planning a coordinated local health system response to a pandemic. This process permitted advancement of the planning exercise to Phase 2 which aimed to develop operational plans for primary assessment centres, alternate care sites and hospital surge capacity.
The threat of nosocomial transmission of seasonal flu is real and well documented. Despite decades of concerted and sustained efforts at voluntary vaccination, healthcare institutions have failed to achieve sustained high-level annual vaccination rates. By considering basic principles of biomedical ethics in which welfare concerns outweigh concerns about autonomy, and by examining the virtues of the healing professions and the derivative institutional obligations we argue that healthcare institutions have an obligation to achieve adequate vaccination rates including, if necessary, mandatory vaccination. We also discuss the practical implications of this argument for implementing such policies and touch on the potential that such policies have for future pandemic preparedness.

Public health emergencies, such as hurricanes and the constant threat of an influenza pandemic, present public health responders with many ethical issues and little time to think them through. We interviewed 13 responders in the Epidemiology Section of the North Carolina Division of Public Health to learn how they have identified and addressed ethical issues in public health emergencies affecting the state and to identify potential means of improving those processes for North Carolina and other states. The Epidemiology Section staff demonstrated an awareness of several ethical issues in public health emergencies and an ability to identify and address issues through group interactions. However, few study participants in the section had received any training in public health ethics. Perhaps for this reason, the range of ethical issues they identified excluded several mentioned in the Public Health Code of Ethics. Moreover, their ethical decision making could be enhanced by a more detailed understanding of the ethical issues they named. We recommend seven practical steps that the Epidemiology Section can take to improve their ability to identify and address ethical issues in a public health emergency. The recommendations are likely relevant to many state, city, and county public health departments throughout the United States.

In Europe at any given time there are about 1.8 million people imprisoned in penal institutions. About 1 million personnel are working in prisons. With prisons, from the start there are fundamental problems in many parts of Europe. Poor housing conditions in prisons and a high proportion of prisoners who already suffer from severe health problems mean the chance of an outbreak in prison during a pandemic must be quite high. We expect it can be up to 90%. In this article we explain what the characteristics are of the prison population from a health point of view. A high rate of detainees suffers from mental health disorders and/or addiction. A high prevalence of communicable and infectious diseases is the rule, not an exception. According to the European Prison Rules and many
other international rules, statements and documents prison health care should be an integral part of the public health system of any country. However, it has to be accepted that the prison population is the least popular in society and in politics. In reality in many countries in Europe the situation in prison cannot meet the level strived for by the European Prison Rules. We compare preparedness on pandemic flu in The Netherlands, Latvia and Romania. We explore the problems and ethical issues that may arise if a pandemic breaks out. There are three ethical dilemmas that require consideration: equivalence of care and prisoners' right to health care; prisoners' interests verses society's interests; countries in need and calls for bilateral help.


A public health emergency, such as an influenza pandemic, will lead to shortages of mechanical ventilators, critical care beds, and other potentially life-saving treatments. Difficult decisions about who will and will not receive these scarce resources will have to be made. Existing recommendations reflect a narrow utilitarian perspective, in which allocation decisions are based primarily on patients’ chances of survival to hospital discharge. Certain patient groups, such as the elderly and those with functional impairment, are denied access to potentially life-saving treatments on the basis of additional allocation criteria. We analyze the ethical principles that could guide allocation and propose an allocation strategy that incorporates and balances multiple morally relevant considerations, including saving the most lives, maximizing the number of "life-years" saved, and prioritizing patients who have had the least chance to live through life's stages. We also argue that these principles are relevant to all patients and therefore should be applied to all patients, rather than selectively to the elderly, those with functional impairment, and those with certain chronic conditions. We discuss strategies to engage the public in setting the priorities that will guide allocation of scarce life-sustaining treatments during a public health emergency.


The influenza pandemic caused by the 2009 H1N1 virus underscores the immediate and critical need to prepare for a public health emergency in which thousands, tens of thousands, or even hundreds of thousands of people suddenly require and seek medical care in communities across the United States. In the event of such emergencies, officials rely on standards of care policies and protocols to protect the public’s health. As the nation prepares not only for the 2009 influenza pandemic, but for any disaster scenario in which the health system may be stressed to its limits, it is important to describe the conditions under which standards of care would change due to shortage of critical resources.

At the request of the Office of the Assistant Secretary for Preparedness and Response in the Department of Health and Human Services, the Institute of Medicine convened a committee to develop guidance for crisis standards of care that should apply in disaster situations—both naturally occurring and manmade—under scarce resource conditions. The committee’s report, Guidance for Establishing Crisis Standards of Care for Use in Disaster Situations, is focused on articulating current concepts and guidance that can assist state and local public health officials, healthcare facilities, and
professionals in the development of systematic and comprehensive policies and protocols for crisis standards of care in disasters where resources are scarce. In addition, the committee provides guidance to clinicians, health care institutions, and state and local public health officials for how those crisis standards of care should be implemented in a disaster situation.