Pandemic, Ethics, and the Lessons of History

By David W. Kenney, MA, MA, BCC

I had a little bird,
its name was Enza.
I opened a window, and
in-flu-enza[1]

Whatever will we do? Approaching the second decade of the twenty-first century, bioethicists around the world are immersed in the moral considerations which arise in planning for a possible new global pandemic influenza. This daunting process engages a painstaking study of history and a delicate balancing of values and needs that are both reminiscent of and in some regards utterly unlike the professional and public ethos that attended the unprecedented, calamitous plague of a century ago: the Great Pandemic of 1918. This paper will examine the contrasting ethical norms and ideals which have characterized the periods preceding these actual and threatened pandemics, and will take note of the ways in which some contemporary, prevailing ethical assumptions, norms and ideals are being challenged and transformed by pandemic awareness and the processes it has engendered. I will argue that the so-called "first principles" of present-day moral reasoning are being enhanced by other principles developed in response to the pandemic threat, thus occasioning a dramatic re-framing of paradigmatic models of ethical reasoning in health care. My analysis will focus primarily upon developments in North America, and primarily on the clinical setting of health care.

Certainly, it was incomprehensible in 1918 that things might get worse. The American public had, beginning just a year earlier, already adjusted to the enormous impositions of

national mobilization in support of the country's entry into the First World War. Europe was in flames, and American soldiers were dying (ultimately, over 116,000 military deaths, not including from disease; the flu toll was nearly equal to this number[2]). The military conflict in Europe was unimaginable, but a dreadful worsening was about to spread like wildfire across the globe.

The Great Influenza was beginning, and within a few months it would exact a toll far greater than that of all the wars of the 20th century combined. The influenza caused as many as 50 to 100 million deaths.[3] Around the world, city and countryside were ravaged without warning. A first wave in the Spring of 1918 was pandemic in strength, afflicting many tens of thousands, but its mortality was limited. The second wave, in the Fall, was the killer. Though the relatively young sciences of epidemiology and virology already noted a pattern to pandemic contagions, and despite the emergence of public health as a sector of government planning and preparedness for such outbreaks, no one seems to have anticipated the Great Influenza, nor was any country prepared for it.

In America as elsewhere, there was an astonishing quasi- official lack of candor in acknowledging the pandemic, even as quarantines, containments and myriad interdictions were enforced under the equivalent of martial law. John Barry devotes considerable attention to this unfortunate lapse in truth-telling, in which the press – local and national – was unconscionably complicit.[4] Moreover, the American response was hampered by glaring incompetence at high

levels especially within the civilian public health apparatus, and was further compromised by the military's constant need to replenish its troop strength as European battlefield losses (to both to combat and disease) mounted. The ethical implications of this deliberate (Barry makes a compelling case that it was just so) camouflage of the truth – on whatever grounds – include the damage to trust and worse, the impairment of effective control of disease spread and treatment of those afflicted.[5] These are lessons for the present.

Surprisingly little has been written about the tragic pandemic; only a few authors besides John Barry and Alfred Crosby[6] have undertaken scholarly histories of the event. There is scant fiction or theatrical literature to be found.[7] And there is virtually no commentary whatsoever, either dating from the period or retrospectively, in regard to the ethical issues involved in the world's response to the pandemic: issues regarding human rights, triage, access to health care, quarantine, the suspension of liberties, truth-telling, cooperation among nations and communities, or other complex moral questions. In surveying the literature, I was surprised that even those scholarly texts which have traced the evolution of medical ethics through history – including this era – are strangely silent about the Great Influenza or the ethical concerns arising within it.[8] These are striking omissions, given the historic significance of that horrific contagion. Thus is it a challenge to fully appreciate not only the historical moment, but the dynamic momentum of history – of "what is moving forward," as theologian Bernard Lonergan conceived it.[9]

But history has indeed been moving forward, and the apt image is a rising tide, its waves not merely carrying, but essentially comprised, of several elegantly intertwined phenomena:

- The continued evolution of the Type A Asian Flu Virus, ever-mutating, becoming more lethal, growing nearer to its next deadly advent of human-to-human transmission.
- The advance of medicine and technology through the applied sciences, exemplified in the fields of virology and epidemiology and related disciplines.
- The development of the field of public health and of governmental planning and preparedness for emergencies including pandemic contagions.
- The continued enrichment of philosophy and theology, leading to the birth of bioethics as a discipline in its own right, especially addressing the moral dimensions of health care.
- Globalization, and its implications for solidarity among nations in the face of catastrophe.

In 2008, these waves land on shores of public consciousness eerily reminiscent of 1918. There is but little discernible public apprehension in 2008, although a poll in 2006 indicated a very high degree of awareness of avian flu (attributable to the considerable press coverage given the 2003-4 outbreaks).[10] The same poll reflected a distressingly low (15%) incidence of being "very concerned" about a pandemic. It was encouraging to note that a majority of respondents indicated they would cooperate with pandemic precautions including social distancing, use of vaccines and antivirals if available, and even quarantine. Perhaps it is for many citizens simply incomprehensible, or at least altogether unexpected, that a contagion could sweep the United

States (not to say, the entire world) and be met with anything less than a fusillade of miraculous countermeasures developed to turn just such a tide. We are in the age of astonishing wonderments in medical technology, and there is great optimism, even hubris surrounding our medical capabilities. But, reminiscent of the unaccountable optimism of journalism in 1918, American news reports in 2008 on pandemic influenza, though numerous, reflect precious little public interest.

The World Health Organization and other groups are devoted to altering the global consciousness. WHO declared following the outbreak of the H5N1 Avian Flu virus in Asia, Africa, and parts of Europe in 2003 and 2004 that countries must prepare for:

> "an 'inevitable flu pandemic' it believes will probably come from a mutated bird flu virus . . . as many as seven million people could be killed . . . it is only a matter of time – we have gone beyond wondering whether there will be one; the stage now is trying to forecast when a pandemic will hit."[11]

In fact, national and local government entities worldwide are indeed engaged in such preparations, especially since the recent Avian Flu outbreaks. In all corners of the world, governments, medical science and non-governmental organizations are amassing plans, stockpiling antivirals and other medications, and pre-distributing emergency supplies.[12] In October 2005, the Canadian Government sponsored an international meeting of Ministers of

Health to address the subject of pandemic preparedness. Over 30 countries were represented, as well as nine international organizations.[13] At about the same time, President Bush announced the formation of the International Partnership on Avian and Pandemic Influenza (IPAPI), at the United Nations General Assembly.[14] The Department of HHS publishes regular "Updates" on American and international planning efforts and coordination.[15] These and many other widely reported efforts exemplify a striking international collaboration in addressing the threat of a new pandemic.

A virtually unprecedented, frank and explicit commitment to ethical values and processes is included in many of these developing comprehensive plans. Though organizations such as the WHO have long advocated ethical analysis of population health problems and remedies, never before have moral concerns been so prominently weighed by all partners in such a global project.[16] The WHO offered a register of crucial ethical questions to be addressed, and of the values which should undergird any response:

> "Many critical ethical questions arise in pandemic influenza planning, preparedness and response. These include: Who will get priority access to medications, vaccines and intensive care unit beds, given the potential shortage of these essential resources? In the face of a pandemic, what obligations do health-care workers have to work notwithstanding risks to their own health and the health of their families? How can surveillance, isolation, quarantine and social-distancing measures be undertaken in a

> way that respects ethical norms? What obligations do countries have to one another with respect to pandemic influenza planning and response efforts?"
>
> ". . . the principles of equity, utility/efficiency, liberty, reciprocity, and solidarity … [they] are especially helpful in the context of influenza pandemic preparedness planning. Although these principles often give rise to competing claims, they provide a framework for policy-makers to assess and balance the range of interests that follow from them. All ethical deliberations must take place within the context of the principles of human rights, and all policies must be consistent with applicable human rights laws."[17]

To these, the WHO document adds such other important values as: confidentiality; fair process; distributive and global justice; proportionality; solidarity; and transparency. The WHO definitions of these values are provided in *Appendix A*. Other governments, including the United States, have issued similar lists of important ethical questions.[18]

Seeking out the specific values underpinning the American approach requires careful analysis of myriad documents. The United States' primary offering is the HHS Plan for a Pandemic Influenza. It is vast (395 pages) and comprehensive, detailing the roles, action steps required, and accountability of various departments, divisions and agencies. Included are the proposed protocols for vaccine and antiviral allocation, and these specify criteria for prioritization of population subgroups. Curiously, however, the HHS Plan does not explicitly cite ethical guidelines operative in this prioritization, but rather provides "rationales" which are

premised in medical/scientific evidence-based approaches. One can inductively surmise an ethical framework and even values implicit in the Plan, but its explicit ethical content is lacking.

However, the U.S. Centers for Disease Control and Prevention (CDC), does explicitly reckon with the ethical dimensions of the matter in its publication, *Ethical Guidelines in Pandemic Influenza*.[19] Here, the ethical values cited are narrow, relevant to the role of the Centers in relation to vaccine and antiviral production and allocation, and development of interventions limiting individual freedom and creating social distancing.[20] Given that circumscribed range, the guidelines proposed are nonetheless salient.

Thorough analysis of the CDC plan is worthwhile but beyond our present scope. It is important to note that these ethical guidelines comport substantially with those enumerated by the University of Toronto Joint Centre for Bioethics (JCB), discussion of which follows. The CDC is to be complimented for its thorough consideration of the ethics involved in this endeavor. Among U.S. agencies, its attentiveness in this regard is singular.

Outside the United States, two non-governmental sources have provided the most extensive studies of the ethical parameters of pandemic planning. I have already noted the first: the World Health Organization. The second is the aforementioned Toronto JCB in its publication, *Stand On Guard for Thee: Ethical Considerations in Preparedness Planning for Pandemic Influenza*.[21] Both of these documents represent departures from the conventional wisdom among many Western bioethicists, especially in the clinical setting, as to the operant

values and norms for moral reasoning in health care, which in the past twenty-five years have been primarily inclined to the model of principlism.[22]

The Toronto JCB group's proposed values are set forth in ten substantive and five procedural sets. They are displayed with elaborations in *Appendix B,* and are itemized here:

Substantive Values: Individual Liberty; Protection of the Public from Harm; Proportionality; Privacy; Duty to Provide Care; Reciprocity; Equity; Trust; Solidarity; Stewardship.

Procedural Values: Reasonableness; Openness and Transparency; Inclusiveness; Responsiveness; Accountability.

For one accustomed to the vernacular of the vaunted "four principles," these are intriguing but nearly unfamiliar concepts, estimable in themselves but on first look seeming to require an altogether different lens for assessment. Particularly in America, the bioethicist, ethics committee member or consultor will perhaps be somewhat taken aback by this configuration of principles/values. We are here presented with a challenging redefinition of the metrics of ethical reckoning. On close inspection, we can detect the essence of beneficence (duty to provide care, equity, trust); non-maleficence (protection from harm, proportionality); and certainly of justice (reciprocity, equity, trust, stewardship) in the Toronto value system. But whither our sacralized autonomy? The values of individual liberty, proportionality and privacy

seem to glance against our construal of the right of self-determination without exactly cohering with it. Indeed, a "population health" approach to bioethics veers away from the individual and self-interest toward the communal.[23]

These are *utilitarian* and *communitarian* questions and principles. They are posed in respect of public, social values and concerns, over and above the personal and individual. There is a motif of "global values" – the greatest good for the greatest number – enshrining a particular interest in the *Other*, over against *One's Self*. As Zoloth has noted, this framing rubs against the essential premises of autonomy.[24]

While the WHO/Toronto articulations do not offer "new" values, they certainly comprise an alternative baseline for ethical analysis in health care. It is different to speak of "individual liberty" and to conjure its possible limitation in service of a greater – public – good, than to appeal to the nigh-absolute value of "autonomy." Protection of the public from harm is certainly an element of non-maleficence, but it is an uncommon reflection on that premise, for in health care we are typically focused upon the individual. We do speak often of openness and transparency, but these tend to be heralded as subsets of autonomy via discussion of informed consent and disclosure rather than as values in their own right – as though all major values and virtues must be encompassed within the great "Four." But considered in the light of the pandemic planning documents, we can see that these additional moral values have great and independent weight, apart from their relevance to understandings of self-determination. So too

in America we are addressing issues of justice with increasing fervor, but notions such as "solidarity" (with the world), or "stewardship" are rarely introduced.

In each of these instances, the "international" values can significantly expand our conventional frame of reference. Over the course of thirty years, the "four principles" have become formative: not only a commonplace but a definitive, and for some an exclusive, framework for ethical analysis in the clinical setting. Is it possible that in years to come, our ethical vernacular, and thus our analytical perspective, may be broadened by adapting to these capacious restatements? And will this engender a more resounding global awareness of the necessary elements of moral inquiry and reasoning – an awareness more comfortably inclusive of multicultural varieties of experience, beliefs and values?

The "principlist" framework elaborated by Beauchamp & Childress has no doubt been inadequately understood by many present day ethics committee members and consultors – perhaps the unfortunate consequence of insufficient education and training, coupled with the facile conversion of four principles to a "shorthand" usage. But it is not unreasonable to suggest that even if the four principles may be construed to include each and all of the "international" principles we have discussed above, still that theoretical comprehensiveness does not do justice to the other values, which in my estimation ought not to be subsumed, but deserve independent presentation and consideration.

Take for example the case of the triage protocols now being advanced for use in pandemic influenza. Questions relating to access to care are uppermost in the minds not only of planners but of all citizens of the world. One may argue that the social-distancing, quarantine and isolation issues are equally important, but they are not likely in my estimation to seize public consciousness with the same intensity as the concerns about triage. I contend that our familiar language and frame of reference, premised in the four principles, does not prepare us for reckoning with communitarian, much less global, values which necessarily apply to pandemic triage.

The emerging consensus model protocol for such triage is exemplified in a study published by the Canadian Medical Association Journal in 2006.[25] The study initially failed to identify any existing triage protocols for critical care in a pandemic situation;[26] thus the working group set out to create one, borrowing elements from other protocols developed for trauma and other events, including an illness severity scoring system known as SOFA.[27] This protocol has four major parts: inclusion criteria; exclusion criteria; minimum qualifications for survival; and a prioritization tool which utilizes SOFA scores. The inclusion and exclusion criteria, and the prioritization tool, are displayed in Appendix C.

The first, bracing realization is that, under this protocol, many who under ordinary circumstances would be offered admission to critical care services in the hospital *will not* be admitted in a severe pandemic. The treatment recommendations normally flowing from

considerations of the values of beneficence and non-maleficence ("It is a severe malignancy and surgery is indicated"; "This is his third MI – he needs revascularization now"; She's been in a terrible auto accident, sustaining major trauma") will simply have to be suspended – at the very least a cognitive disconnect from our normal perceptions of appropriate treatment. The determination of such a triage strategy could not have been achieved – at least in a morally acceptable way – except for the application of broader, utilitarian and communitarian principles. We in the clinical setting will have to come to terms with this very significant shift – and be prepared to assist clinicians, patients and their loved ones in adjusting as well.

To be sure, some have questioned this strategy, wondering if a purely scientific, evidence based premise can suffice for determining how best – how justly – to allocate critical care services.[28] I believe the caution is warranted, and in particular, I would advocate the development of provisions for exceptions to the protocol, not only for particular communities or settings, but for particular cases. Nonetheless, the Toronto group does provide a careful, thorough ethical reasoning to support the triage principles being advanced, and I support them.

I believe history, coupled with the exigencies of pandemic preparedness, insists that ethics committees and consultors must now undertake study and training, to reflect on possible new frameworks of moral reasoning, and to learn about and become immersed in the specific plans developed in their States and for their locations in regard to vaccine and antiviral allocation and triage for critical care. Health care professionals schooled in ethics will have to closely

companion not only patients and families in the midst of pandemic crisis, but physicians and other professionals as well. According to this and most other developing protocols, in each hospital, only a few "supervising physicians" will be in charge of triage decisions. Other attending physicians will have no say in the triage allocations, but will be charged with continuing caring for their patients at the determined treatment level. The enormous psychological and moral burdens of being responsible for – or being excluded from – such decisions will require not only empathic, compassionate support, but sound ethical rationales and case-by-case reasoning for the application of the standards. If the consulting ethics representatives are themselves unable to understand and appreciate, present, mediate, and interpret the values which support the triage and allocation standards, then their role of providing capable moral guidance will be hopelessly undermined.

This paper has sought a judgment of "precisely what is going forward in the data of the past uncovered and understood."[29] We may bear in mind that there was no "bioethics" in 1918. Even in the 1960's, the term had scarcely been uttered and the notions it implied were barely a glimmer in the eyes of a very few individuals from medicine, science, the academy and philanthropy.[30] But there was and had been a vibrant tradition handed down, first expressed in ancient notions of decorum and deontology, and of the later (medieval period) "politic ethics." This tradition was first codified by Hippocrates, and modified by his successors through

Percival,[31] Hays and Bell,[32] and others around the world seeking to establish dependable norms of professional medical behavior and character.[33]

The original Code of the American Medical Society (1847) had copious references to physician duty, including obligations to the public good. Certainly these were communitarian – expressing a "politic ethics," as Jonsen describes it.[34] The duty to provide care extended in particular to "measures for the prevention of epidemic and contagious diseases, and when the pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives."[35] Revised in 1903 and again in 1912, the Code by the time of the Great Influenza had been considerably modified, but this great commission to face danger alongside one's patients, "even at the risk of their own lives," was substantially retained. Barry and Crosby make clear that physicians at all levels of the response effort performed ably and even heroically, in fulfillment of this duty. The obligation to provide care – the moral value of beneficence – was honored and carried forward.

The AMA Code, and other professional codes like it, lent themselves as models for an ongoing elaboration of moral theories and, eventually, the articulation of a *common morality*, around which persons and communities and nations might gather in commitment to moral norms and ideals. This evolution of ethos – of reckoning with the good of one and the good of all – is of the very essence of the waves of history coming ashore in the story of the Great Influenza and

its inevitable successors. The questions, scientific, medical, social and moral, remain with us. Whatever will we do?

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Appendix A

Ethical values advocated by the World Health Organization:

Value	Description
Equity	The fair distribution of benefits and burdens. In some circumstances, an equal distribution of benefits and burdens will be considered fair. In others, the distribution of benefits and burdens according to individual or group need will be considered fair. For example, in some circumstances, may be equitable to give preference to those who are worst off, such as the poorest, the sickest, or the most vulnerable. Inequities are differences in health that are unnecessary, avoidable, and are considered unfair and unjust.
Utility/Efficiency	The principle of *utility* requires that one acts so as to maximize aggregate welfare. This implies an additional principle of *efficiency*, i.e. the idea that benefits should be obtained using the fewest resources necessary.
Reciprocity	A relationship between parties characterized by corresponding mutual action. Reciprocity calls for providing something in return for contributions that people have made. For example, reciprocity implies that society should support those who face dispro-portionate burdens in protecting the public good, as well as taking steps to minimize those burdens as much as possible.
Solidarity	Union or fellowship between members of a group or between peoples of the world. Individuals in solidarity with one another are firmly united by

common responsibilities and interests, and undivided in opinion, purpose and action.

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Appendix B

Ethical Values Advocated by the Toronto Joint Centre for Bioethics:

(Ten substantive values, and five procedural values to guide ethical decision-making for a pandemic influenza outbreak.[36])

Substantive Value	Description
Individual Liberty	In a public health crisis, restrictions to individual liberty may be necessary to protect the public from serious harm. Restrictions to individual liberty should: Be proportional, necessary and relevant; employ the least restrictive means; and be equitably applied.
Protection of the Public from Harm	To protect the public from harm, health care organizations and public health authorities may be required to take actions that impinge on individual liberty. Decisions makers should: weigh the imperative for compliance; provide reasons for public health measures to encourage compliance; and establish mechanisms to review decisions.
Proportionality	Proportionality requires that restrictions to individual liberty and measures taken to protect the public from harm should not exceed what is necessary to address the actual level of risk to or critical needs of the community.

Privacy	Individuals have a right to privacy in health care. In a public health crisis it may be necessary to override this right to protect the public from serious harm.
Duty to Provide Care	Inherent to all codes of ethics for health care professionals is the duty to provide care and to respond to suffering. Health care providers will have to weigh demands of their professional roles against other competing obligations to their own health, and to family and friends. Moreover health care workers will face significant challenges related to resource allocation, scope of practice, professional liability, and workplace conditions.
Reciprocity	Reciprocity requires that society support those who face a disproportionate burden in protecting the public good, and take steps to minimize burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on health care workers, patients, and their families.
Equity	All patients have an equal claim to receive the health care they need under normal conditions. During a pandemic, difficult decisions will need to be made about which health services to maintain and which to defer. Depending upon the severity of the health crisis, this could curtail not only elective surgeries, but could also limit the provision of emergency or necessary services.
Trust	Trust is an essential component of the relationships among clinicians and patients, staff and their organizations, the public and health care providers or organizations, and among organizations within a health system. Decision makers will be confronted

	with the challenge of maintaining stakeholder trust while simultaneously implementing various control measures during an evolving health crisis. Trust is enhanced by upholding such process values as transparency.
Solidarity	As the world learned from SARS, a pandemic influenza outbreak will require a new vision of global solidarity and a vision of solidarity among nations. A pandemic can challenge conventional ideas of national sovereignty, security or territoriality. It also requires solidarity within and among health care institutions. It calls for collaborative approaches that set aside traditional values of self-interest or territoriality among health care professionals, services, or institutions.
Stewardship	Those entrusted with governance roles should be guided by the notion of stewardship. Inherent in stewardship are the notions of trust, ethical behavior and good decision-making. This implies that decisions regarding resources are intended to achieve the best patient health and public health outcomes given the unique circumstances of the influenza crisis.

Procedural Value	Description
Reasonable	Decisions should be based on reasons (i.e., evidence, principles and values) that stakeholders can agree are relevant to meeting health needs in a pandemic influenza crisis. The decisions should be made by people who are credible and accountable.
Open and Transparent	The process by which decisions are made must be open to scrutiny, and the basis upon which decisions are made should be publicly accessible.
Inclusive	Decisions should be made explicitly with stakeholder views in mind, and there should be opportunities to engage stakeholders in the decision-making process.
Responsive	There should be opportunities to revisit and revise decisions as new information emerges throughout the crisis. There should be mechanisms to address disputes and complaints.
Accountable	There should be mechanisms in place to ensure that decision-makers are answerable for their actions and inactions. Defense of actions and inactions should be grounded in the other ethical values proposed above.

Appendix C

Criteria for Inclusion or Exclusion from Critical Care Services During a Pandemic Crisis.

Michael Christian, Laura Hawryluck, et al, "Development of a Triage Protocol for Critical Care during an Influenza Pandemic," in *CMAJ* (November 21, 2006).

Inclusion Criteria

The patient must have one (1) of the following:

A. Requirement for invasive ventilator support
   - Refractory hypoxemia (Sp02 <90% on non-rebreather mask or FIO2 > 0.85)
   - Respiratory acidosis (pH < 7.2)
   - Clinical evidence of impending respiratory failure
   - Inability to protect or maintain airway

B. Hypotension (systolic blood pressure < 90mm Hg or relative hypotension) with clinical evidence of shock (altered level of consciousness, decreased urine output or other evidence of end-organ failure) refractory to volume resuscitation requiring vasopressor or inotrope support that cannot be managed in ward setting.

Exclusion Criteria: 3 Categories

- Patients who have a poor prognosis despite care in an ICU
- Patients who require resources that simply cannot be provided during a pandemic

- Patients with advanced medical illnesses whose underlying illness has a poor prognosis with a high likelihood of death, even without their current concomitant critical illness.

Under these guidelines the patient is **excluded** from admission or transfer to critical care if any of the following is present:

A. Severe Trauma

B. Severe burns of patient with any two of the following:
   a. Age > 60 yrs
   b. > 40% of total body surface area affected
   c. Inhalation injury

C. Cardiac Arrest
   a. Unwitnessed cardiac arrest
   b. Witnessed cardiac arrest, unresponsive to electrical therapy (defibrillation or pacing)
   c. Recurrent cardiac arrest

Or, if the patient has suffered:

D. Severe baseline cognitive impairment

E. Advanced untreatable neuromuscular disease

F. Metastatic malignant disease

G. Advanced and irreversible immunocompromise

H. Severe and irreversible neurologic event or condition

Or, if she or he has:

I. End-stage organ failure meeting the following criteria:
   a. *Heart* NYHA class III or IV heart failure
   b. *Lungs*
      - COPD with FEV, < 25% predicted, baseline PaO2 < 55mm Hg, or secondary pulmonary hypertension
      - Cystic Fibrosis with postbronchodilator FEV, < 30% or baseline PaO2 <55mm Hg
      - Pulmonary fibrosis with VC or TLC < 60% predicted, baseline PaO2 < 55 mm Hg, or secondary pulmonary hypertension
      - Primary pulmonary hypertension with NYHA class III or IV heart failure, right atrial pressure > 10 mm Hg, or mean pulmonary arterial pressure > 50 m Hg
   c. *Liver*
      - Child-Pugh score ≥ 7

Or, if she or he is:

J. Age > 85 yr

K. Candidate for Elective Palliative Surgery

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Endnotes

[1] A children's rhyme of the period cited by many authors including Richard Crawford, "The Spanish Flu," Stranger Than Fiction: Vignettes of San Diego History (San Diego Historical Society, 1995). *Cf.* http://edweb.sdsu.edu/sdhs/stranger/flu.htm

[2] Wikipedia, "World War I Casualties." *Cf.* http://en.wikipedia.org/wiki/World_War_I_casualties

[3] Lone Simonsen et al., "Pandemic Influenza and Mortality," in Stacy Knobler et al, eds., *The Threat of Pandemic Influenza* (Washington DC: National Academies Press, 2005).

[4] Barry, *idem*, 335.

[5] *Ibid.*

[6] Alfred Crosby, America's Forgotten Pandemic (Cambridge, UK: Press Syndicate of the University of Cambridge, 2003).

[7] The best known work is Katherine Anne Porter's *Pale Horse, Pale Rider*. Historian Alfred Crosby found it such a compelling account of the ravages of the disease that he dedicated his history, *America's Forgotten Pandemic*, to Porter.

[8] For example, three comprehensive, excellent works which omit mention of the historical impact of the Great Influenza or its ethical implications: Robert Baker, Arthur Caplan, et al, eds., *The American Medical Ethics Revolution* (Baltimore: Johns Hopkins University Press, 1999); Paul Starr, *The Social Transformation of American Medicine*, (New York: Basic Books, 1982); Albert Jonsen, *A Short History of Medical Ethics* (New York: Oxford University Press, 2000).

[9] Bernard Lonergan, *Method in Theology*, Cf. also Carla Mae Streeter, OP, "The Glossary Project," The Lonergan Website: http://lonergan.concordia.ca/index.htm

[10] Harvard School of Public Health, "While Concerned, Most Americans Do Not Expect Widespread Human Cases of Avian Flu …" (Press Release, February 23, 2006) *Cf.* *http://www.hsph.harvard.edu/news/press-releases/2006-releases/press02232006.html*

[11] Dr. Klaus Stohr, Influenza Program Coordinator World Health Organization, "Pandemic Influenza: A Global Perspective," presented at *Conference on Vaccine Production: Potential Engineering Approaches to Pandemic* (Cleveland, OH, April 2006).

[12] The World Health Organization tracks the development of such plans, which are linked on its website: http://www.who.int/en/

[13] Health Canada Report on the "Ottawa 2005: Global Pandemic Influenza Readiness Conference: An International Meeting of Ministers of Health," *Cf.* http://www.hc-sc.gc.ca/ahc-asc/intactiv/pandem-flu/

[14] U.S. Department of Health and Human Services: *Pandemic Influenza Plan, Appendix H: International Partnership on Avian and Pandemic Influenza. Cf.* http://www.hhs.gov/pandemicflu/plan/pdf/AppH.pdf

[15] For example, see HHS Secretary Michael Leavitt's "HHS Pandemic Planning Update V," June 29, 2006, reporting U.S. efforts to build vaccine production capability; stockpile antivirals; and lend support to other countries (e.g., contributing supplies of antivirals to Asia).
Cf. http://www.astho.org/pubs/panflureport2HHS.pdf

[16] World Health Organization, "Ethical Considerations in Developing a Public Health Response to Pandemic Influenza," (Geneva: WHO Press, 2007). See also *WHO Checklist for Influenza Pandemic Preparedness Planning* (2005).
Cf. http://www.who.int/csr/resources/publications/influenza/FluCheck6web.pdf.

[17] WHO, "Ethical Considerations", 3.

[18] Michael Leavitt, HHS, *idem.*

[19] Ethics Subcommittee of the Advisory Committee to the Director, Centers for Disease Control and Prevention, *Ethical Guidelines in Pandemic Influenza* (February, 2007).
Cf. http://www.cdc.gov/od/science/phec/guidelinesPanFlu.htm

[20] Ibid. "Social distancing refers to methods for reducing frequency and closeness of contact between people in order to decrease the risk of transmission of disease. Examples of social distancing include cancellation of public events such as concerts, sports events, or movies, closure of office buildings, schools, and other public places, and restriction of access to public places such as shopping malls or other places where people gather."

[21] *Stand on Guard for Thee*, Report of the University of Toronto Joint Centre for Bioethics, Pandemic Influenza Working Group, November 2005.

[22] James Childress and Tom Beauchamp, *Principles of Biomedical Ethics*, 5th ed. (New York: Oxford Univ Press, 1979, 1994). Beauchamp and Childress pioneered the recognition of four "first principles" for bioethics: autonomy, beneficence, non-maleficence and justice. Though the principlist approach is far from universally acclaimed, and has been the subject of ardent criticism, it nonetheless has been established as the prevailing starting-point for ethical analysis among health care professionals.

[23] For a discussion of the field of population health see Christine Cassel, "The Challenge of Serving Both Patient and Populace," in Baker, Caplan et al, *AMER, idem.*

[24] Laurie Zoloth, "I Want You: Notes Toward a Theory of Hospitality," in Lisa A. Eckenwiler and Felicia Cohn, eds., *The Ethics of Bioethics* (Baltimore: Johns Hopkins University Press, 2007).

[25] Michael Christian, Laura Hawryluck, et al, "Development of a Triage Protocol for Critical Care during an Influenza Pandemic," in *CMAJ* (November 21, 2006).

[26] *Ibid*., 1378.

[27] "Sequential Organ Failure Assessment Score." For a critical analysis of SOFA, see Timothy H. Pohlman, H. Scott Bjerke, Patrick Offner, "Trauma Scoring Systems," in *Emedicine* (July 16, 2007). *Cf*. http://www.emedicine.com/med/TOPIC3214.HTM

[28] Alison Thompson, Karen Faith, et al, "Pandemic Influenza Preparedness: An Ethical Framework to Guide Decision-Making," in *BMC Medical Ethics* (2006) 7:12
Cf. http://www.biomedcentral.com/1472-6939/7/12

[29] Streeter, *Ibid*

[30] Albert Jonsen, *The Birth of Bioethics* (New York: Oxford Univ Press, 1998).

[31] Thomas Percival, 18th century physician and philosopher and author of *Medical Jurisprudence: Or a Code of Ethics and Institutes Adopted to the Professions of Physic and Surgery;* Isaac Hayes, receives an appreciative treatment in the editors' Introduction: Baker, Caplan et al, *AMER, idem*.

[32] Isaac Hays and John Bell, primary authors of the original Code of Medical Ethics of the American Medical Association (1847). Bell wrote the seminal Introduction. They are presented in Robert B. Baker, "The American Medical Ethics Revolution," in Baker, Caplan et al, *AMER, idem.*

[33] The AMA's *Code of Medical Ethics* had first been published in 1847, then revised in 1903 and again in 1912. See also the *International Code of Medical Ethics*, World Medical Association (1949, Revised 1968, 1983, 2006. *Cf.* http://www.wma.net/e/about/index.htm

[34] Jonsen, *A Short History*, 45.

[35] Code of Ethics of the American Medical Association, 1847, Chapter III, Article I, 1. As reprinted in Baker, Caplan et al, *idem*, 333.