

## Flu Pandemic and the Fair Allocation of Scarce Life-Saving Resources: *How Can We Make the Hardest of Choices?*

If—many experts say when—the next influenza pandemic strikes the United States, what values should guide our decisions on allocating tragically scarce resources such as vaccines, antiviral drugs, and ventilators? What ethical resources do we have to guide us in making these immensely difficult choices?

### **The Risk: Unpredictable But Unavoidable**

In 1918, nearly one in every two deaths in the United States was due to “Spanish influenza.” Few Americans living today can remember that pandemic, which killed 675,000 Americans in a single year and tens of millions globally. Recent scientific studies suggest that the devastating influenza of 1918 was a bird flu virus that mutated to permit rapid human-to-human transmission.

Could it happen again? Avian influenza A (H5N1), which has killed 141 people worldwide as of August 2006, has not yet mutated into a virus capable of triggering a pandemic. This particular virus may never make that final, catastrophic change. But, experts agree, a new flu pandemic is inevitable. The US Department of Health and Human Services estimates that a pandemic, spreading rapidly among a much larger US population, could sicken 90 million of us, and kill 1.9 million. Ten million of us will need to be hospitalized; 1.5 million will require intensive care, as wave upon wave of new patients arrives in ERs.

Patients who are admitted to hospitals with acute respiratory infections may need up to 18 days in the ICU, as health care workers in Toronto and Singapore learned from treating SARS patients.

### **The Response: A Shortfall in Resources**

According to HHS estimates, during the first year of a pandemic, fewer than 10% of us will receive an effective vaccine. While there are federal stockpiles of experimental vaccines that may or may not prove effective, the mutated virus will be transmitted much faster than an effective vaccine, matched to the particular strain of the virus that triggers widespread human-to-human transmission, can be developed, manufactured, and distributed.

***“Who shall live when not all can live?” is not a question most Americans are accustomed to asking. But in a pandemic, rationing is inevitable.***

We will also probably lack an adequate supply of antiviral medication such as Tamiflu (oseltavir) for the tens of millions of us who will need it. In addition, we may not have enough ventilators for the hundreds of thousands sick enough to require mechanical ventilation to help us breathe and allow our damaged lungs to heal. And what about the patients who are already



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in the ICU, or already on ventilators, when the pandemic strikes? Some of the resources we will need in a pandemic will inevitably already be in use by the very sickest patients in our hospitals.

### Hard Choices: The Necessity of Trade-Offs

The prospect of a pandemic, and the reality of tragically scarce resources, compels all of us—policy makers, bioethicists, public health officials, and health care providers—to answer the hard question posed by Hastings Center Fellow John Arras: “Who shall live when not all can live?” This is not a question most Americans are accustomed to asking about our health care system. As a nation, we tend to be uncomfortable talking about “rationing” in health care. But in a pandemic, rationing is inevitable because there will not be sufficient resources to go around. And rationing,

**How can pandemic plans help medical personnel make rapid and ethically sound decisions about who gets antiviral drugs or ventilators when all are desperate for care?**

provided it is done in an ethical manner, will serve justice and save lives by conscientiously distributing scarce life-saving resources in harmony with our nation’s deepest values, including fairness.

If we accept, as we must, that tragically scarce resources must be rationed, and that rationing decisions should not be left up to first responders, or to administrators and state and local policy makers working in isolation, what do federal policy makers need to know about the ethics of resource allocation to ensure that the nation’s pandemic plans are ethically sound?

### Options: Directing Scarce Resources Where They Will Do the Most Good

In a recent article in *JAMA*, Hastings Center Fellow Lawrence O. Gostin describes seven ethical options for rationing scarce health resources in a pandemic. These options can be summarized as follows:

- *Prioritize preventing new infection:* As Gostin points out, this is the “historic mission of public health.” An ethically sound resource allocation plan should consider the extent to which limited supplies

## Background Readings

Material for this report was drawn from the following sources:

- Arras, John, “Ethical Issues in the Distribution of Influenza Vaccines,” *Yale Journal of Biology and Medicine* (in press).

- Emanuel, Ezekiel J. and Alan Wertheimer, “Who Should Get Influenza Vaccine When Not All Can?” *Science* 312 (May 12, 2006): 854-55.

Includes definition and examples of the “life-cycle principle” in resource allocation described above, presented as an alternative ethical framework to the NVAC and ACIP allocation recommendations (see below).

- Glazer, Sarah, “Avian Flu Threat: Are We Prepared For the Next Pandemic?,” *CQ Researcher* 16, no. 2 (January 13, 2006): 25-48.

Useful summary of epidemiology, risk assessment, historical analysis, and other background material.

- Gostin, Lawrence O., “Medical Countermeasures for Pandemic Influenza: Ethics and the Law,” *JAMA* 295, no. 5 (February 1, 2006): 554-56.

See section on “Ethical Allocation of Scarce Resources” for examples of rationing criteria described above. Reference list includes many further articles and websites of interest.

- Hick, John L. and Daniel T. O’Laughlin, “Concept of Operations for Triage of Mechanical Ventilation in an Epidemic,” *Academic Emergency Medicine* 13, no. 2 (February 2006): 223-29.

Focuses on resource allocation of ventilators, with attention to the needs of emergency personnel for guidance from ethically grounded plans, and to “fair-process effect” as a factor in public acceptance of resource allocation plans.

- Pesik, Nicki, Mark E. Keim, and Kenneth V. Iserson, “Terrorism and the Ethics of Emergency Medical Care,” *Annals of Emergency Medicine* 37, no. 6 (June 2001): 642-46.

Includes a discussion (with table) of factors involved in resource allocation; emphasizes the need for ethical decision making to be reflected in the policies that guide emergency workers.

of vaccine or antiviral drugs should be reserved for “feasible, rapid deployment” to “contain localized outbreaks.”

- *Prioritize essential medical and scientific personnel:* Protecting professionals who have specialized

training and a duty to care for the sick is universally recognized as an ethically sound approach to resource allocation in a public health emergency. In a flu pandemic, essential personnel will also include the scientists working to identify effective vaccines and the public health workers responsible for tracking and responding to outbreaks. Determining who counts as “essential” is a key question: Should all physicians be vaccinated, or only those with training in certain specialties? Should all individuals involved in the vaccine-manufacturing process be vaccinated? What are the obligations of essential personnel once they have been prioritized for vaccination?

- *Prioritize health and safety infrastructure:* This is an extension of the “essential personnel” criterion—ambulance drivers, police, pharmacists, sanitation workers, and many other workers are crucial to the care of the sick, the functioning of health care organizations, and the safety of the general public. As with medical and scientific personnel, determining who counts as “essential,” preventing abuses of this category, and describing the obligations of those who have been prioritized to receive scarce resources are essential parts of this ethical analysis.

- *Prioritize those with the greatest medical needs:* Health professionals prioritize patients according to medical need in emergency rooms every day. However, a pandemic will result in surges of acutely ill persons arriving at ERs for weeks or even months. How can pandemic plans help medical personnel make rapid and ethically sound decisions about who gets antiviral drugs or ventilators when all are desperate for care? Past flu pandemics, in 1918, 1957, and 1968, plus data from seasonal flu outbreaks, do not tell us who will be most susceptible to a new avian flu pandemic, or whose medical needs will be greatest. The very old and very young are most vulnerable to seasonal flu, but young adults were most vulnerable to the 1918 virus. What will happen to a hospital’s current patients, including those on ventilators and others too sick to be discharged, when a pandemic looms or strikes? How will resource allocation plans address the plight of flu patients whose underlying health care problems make them less likely to respond to available therapies?

- *Prioritize based on life cycle:* Is it ever appropriate to consider age when determining whether one indi-

vidual should be given priority over another? Some physicians argue that triage, for example, should never be done on the basis of age alone, although it is ethically acceptable to take a patient’s overall health into account when determining who is most likely to benefit from care when all cannot be served. But Hastings Center Fellow Ezekiel J. Emanuel argues in favor of a “life-cycle allocation principle” for vaccina-

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tion in particular. Under this principle, scarce vaccines would go to younger persons, preserving their opportunity to live a long, full life. Families contain persons of all ages, and pandemic planning must also consider how resource allocation decisions will affect different members of the same family and whether families will understand why a pandemic plan may provide different levels of protection to different persons.

- *Prioritize the chronically underserved:* One of the conditions for ethical action is that it must be applied fairly. An ethical plan for resource allocation can never be concerned solely with one’s own institution or community, but must take into account existing imbalances in access to health care and to the resources needed in a pandemic. Pandemic planners have an obligation to make sure that low-income, rural, and isolated communities, and the health care institutions that serve them, are prepared for the pandemic and that existing imbalances are not exacerbated when the plan is put into action.

- *Prioritize early detection and response globally:* Gostin points out that avian flu vaccine manufacturing and distribution will take place “almost exclusively in Europe, North America, and Asia.” The world’s poorest regions will have unequal access to vaccines at a time when a new pandemic is added to HIV/AIDS, malaria, tuberculosis, and other pandemics that already disproportionately affect the world’s poorest citizens. Ethics and epidemiological strategy alike argue in favor of thinking globally in pandemic plan-

ning, including using surveillance, vaccination, and treatment outside the United States to prevent or contain dangerous outbreaks.

- *Prioritize transparency and public cooperation:* If the public is to trust and comply with a resource allocation plan, the plan must both be fair and be seen to be fair. No one says this will be easy. However, people who are given advance notice of a process and who view that process as fair are more accepting of it than are those who are simply ordered to follow it. This “fair-process effect,” as it is known, applies to medical professionals as well as to those in need of health care: hospitals cannot expect physicians to comply with a vaccination priority list unless they understand the ethical reasoning underlying it.

### Coordinating the Response: What Policy Makers Can Do

The inevitability that some people will never trust or comply with a resource allocation plan and will try to obtain scarce resources by any means necessary should not distract us from the central task of devising and implementing resource allocation plans that are consistent with our values, including fairness, and that squarely address the hardest questions: when a pandemic hits, how will we fairly distribute our limited supplies of vaccine, Tamiflu, ventilators, and ICU beds? Pandemic planners at every level will need to consider how each of these rationing criteria, singly or in combination, may apply to different resource allocation scenarios, include vaccination of essential workers, vaccination of members of the public, allocation of Tamiflu, access to hospitals, and access to levels of care within hospitals. They will need to work with regional, state, and local authorities and with health care professionals to put workable resource allocation systems and guidelines into place. They will need to work with the media and with trusted public figures and civic institutions to teach the public about the need for resource allocation during a pandemic. They must be prepared to defend the ethical reasoning underlying resource allocation, acknowledging the inherent tragedy of these hardest of choices while

## Further Resources

- Toner, Eric, Richard Waldhorn, Beth Maldin, et al., “Hospital Preparedness for Pandemic Influenza,” *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 4, no. 2 (2006): 1-11.

Report from a March 2006 meeting organized by the University of Pittsburgh’s Center for Biosecurity, focusing on the impact of a pandemic on hospital operations, with attention to the need to ration all hospital services including access to staff and supplies, to hospital solvency when normal revenue flows are disrupted, and to what Congress and the Administration can do to help hospitals prepare for a pandemic.

- University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, “Stand on Guard for Thee: Ethical Considerations in Preparedness Planning for Pandemic Influenza” (November 2005).

Recommends that all pandemic plans at all levels include ethical analysis; includes a 15-point ethical guide for use by planners. Available at [www.utoronto.ca/jcb/home/documents/pandemic.pdf#search=%22stand%20on%20guard%20for%20thee%22](http://www.utoronto.ca/jcb/home/documents/pandemic.pdf#search=%22stand%20on%20guard%20for%20thee%22)

- US Department of Health and Human Services (HHS), *HHS Pandemic Influenza Plan* (HHS, Washington, DC, 2005), supplement E at [www.hhs.gov/pandemicflu/plan/](http://www.hhs.gov/pandemicflu/plan/)

Appendix D includes recommendations from the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC) on allocating vaccines and antivirals.

- See also [www.pandemicflu.gov](http://www.pandemicflu.gov), the US government’s informational website on pandemic flu, managed by HHS; includes worldwide epidemiological statistics.

nurturing the conditions for hope, trust, and cooperation to flourish in difficult times.

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