The Hastings Center
Bioethics Backgrounder
▶ Ethical decisionmaking during an influenza pandemic

The Five People You Meet in a Pandemic—and What They Need from You Today

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In April 2007, all state public health directors submitted their pandemic influenza preparedness plans to the Centers for Disease Control (CDC), in response to an assignment and template from the National Strategy for Pandemic Influenza, coordinated by the Departments of Health and Human Services (HHS) and Homeland Security. Officials were required to describe how they will deploy public agencies and private sector partners in the event of an outbreak, and in coordination with federal agencies responsible for surveillance, vaccine development, the distribution of antiviral medications, and restrictions aimed at controlling the spread of the virus. The federal agencies will review and score the states' plans.

In June 2007, the *American Journal of Public Health* published a survey of the federal and state pandemic plans published to date.[1] The authors of this report noted that the federal template and scoring criteria did not require states to be specific about the ethical decisions that are integral to pandemic planning and to public health and safety during a crisis. As a result, **few plans contain concrete guidance on how officials and first responders can make ethical decisions—fair decisions—under immense pressure during a sustained crisis**, or on how to allocate limited resources fairly. While the CDC has published recommendations for rationing vaccines and anti-viral medicines, these are not the only scarce goods and

PROVIDENCE Center for Health Care Ethics

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Who's got the plan?

The national Pandemic Influenza Preparedness and Response Plan[10] describes the following responsibilities of the Federal government during a pandemic:

- Surveillance
- Epidemiological investigation
- Development of lab tests
- Vaccine development, testing, evaluation, deployment, safety evaluation; deployment of antiviral agents in the Strategic National Stockpile
- Enacting travel or other quarantines
- Facilitating medical and public health communications

The Federal plan requires that state plans cover[11] :

- Identification of public and private sector partners needed for effective planning and response
- State coordination with federal efforts aimed at surveillance and infection control
- Integration of pandemic influenza planning with other public health planning activities overseen by federal agencies, including the CDC's Public Health Preparedness program and the Health Resources and Services Administration (HRSA)'s Hospital Preparedness program
- Coordination with local authorities, such as county and city public health departments, to assist in developing local plans on which state plan depends
- Development of data management systems
- Coordination with adjoining jurisdictions, including other states and regional authorities

services that will need to be distributed fairly during a pandemic.[2]

The ethical duty to plan

When a wave of influenza deaths begins in a community, it will be too late to start thinking about ethics, or to alter public health and medical and other social systems so care is organized more ethically. Foreseeable ethical challenges—how a community will make fair decisions about using scarce resources, protecting public health, and keeping basic services running—must be discussed today.[3]

The ethical duty to develop rules and tools for making fair decisions

To be fair is to provide individuals and groups with what they need: food, water, shelter, health care, safety, information, justice. A public health emergency will require rationing of these necessities in the interest of the community's survival. When planners know there will not be enough of what people will need, they have a duty to create and test the rules and tools that will help first responders make fair decisions during a crisis. Samples of rules and tools are included in this document. Deciding what "trigger"—such as the declaration of a state of emergency by a state's governor—will alert first responders to the epidemiological conditions that authorize them to begin using these pandemic guidelines and other rules and tools are among the responsibilities of pandemic planners.

The ethical duty to be accountable to one's community

Every community member has a stake in its pandemic plan, because every community member has a stake in the community's survival. Planners have a duty to make their ethical reasoning clear, and to share it with community members. They can do this through public meetings, by posting draft versions of rules and tools on websites for public review and comment, and by including experts in communication and public education in planning activities.

The "five people"

The "five people" described in this document are representative community members who are first responders. Each will have particular duties during a pandemic. Each will rely on planners to anticipate and

Flu Facts

Good ethics starts with good facts. Here are the current facts, and expert opinions, on the potential for flu pandemic:

- **International public health experts agree that a new flu pandemic—possibly triggered by a mutated avian flu such as H5N1—is inevitable;** that current vaccine stockpiles are incapable of preventing a future outbreak; that current antiviral drugs will be effective only in limited conditions; and that the nation's hospitals do not have enough ventilators for patients who will be sick enough to need them.

- According to the CDC, more than 60 countries have confirmed cases of H5N1 in animals.[12] The WHO reports 319 cases of H5N1 among humans, resulting in 192 deaths from H5N1 to date.[13] Although its transmission rate among humans is still low, H5N1 has a fatality rate of more than 50%. The 1918 flu had a fatality rate of just 2%—and killed 50-100 million people.[14, 15]

- Reconstructions of the 1918 flu strain (H1N1) suggest that flu strains that cause acute inflammation can also make flu victims vulnerable to opportunistic, contagious infections such as bacterial pneumonia. H5N1 shares a similar pathology to H1N1.[16]

- H5N1 is just one flu strain capable of mutating into a pandemic-causing virus. It receives much of the scientific and public health attention because it has already spread from birds to humans—and in very rare cases from humans to humans.[17] Failures to control other flu strains within bird populations, and the rapid growth of poultry-processing industries worldwide, are increasing the likelihood that a pandemic strain will develop.[18]

- In April 2007, the FDA approved the first vaccine against avian flu.[19] At this time, the federal government purchased enough vaccine for the National Vaccine Stockpile contained enough of the vaccine to treat 6.5 million people: the target is 20 million stockpiled doses for public health workers. However, experts strongly question the vaccine's usefulness and effectiveness.[20, 21] Effectiveness could be further reduced by the rapidly mutating nature of a flu virus: the virology of a pandemic strain would certainly differ from the H5N1 strain the stockpiled vaccine has been designed to combat.[22] At most, the stockpile will provide a stopgap in the initial days of an outbreak until a more effective vaccine can be developed from the actual pandemic strain.[23] It will take 6-8 months fol-

lowing the identification of the outbreak strain for an effective vaccine to be available.[24]

• The antiviral Tamiflu is effective only when taken within the first 12-48 hours following the onset of symptoms.[25] Tamiflu-resistant flu strains have been identified.[26]

• When pandemic influenza hits, most hospitals' ventilators will already be in use by critically ill patients. Rationing access to available ventilators—and to oxygen and staff to operate them—will be an inevitable part of patient care during a pandemic.

Experts also agree that a pandemic will profoundly disrupt daily life. If vaccine supplies are limited to the most essential workers, the most effective public health strategy will be restrictions on public gatherings, and quarantine. Few living Americans have ever experienced these conditions for sustained periods.

Discussing how compromised communities will function during a prolonged public health emergency, how emergency policies can protect—or harm—vulnerable groups within communities; and who will be capable of and responsible for making fair decisions as they arise during a prolonged crisis, is part of the ethical duty to plan.

• CDC guidelines released in 2007 recommend closing schools, canceling public gatherings, staggering working hours and voluntary quarantine in the event of an avian flu outbreak.[27] According to a report by the Trust for America's Health report, the US economy could lose three working weeks of productivity from workers who are ill, are caring for sick family members, or are unable to get to work.[28]

• As normal infrastructure and supply chains are disrupted by illness or quarantine, communities may face shortages of clean water, safe food, utilities, and other necessities. Hospitals will face the same shortages as they care for waves of patients and attempt to maintain safe conditions.[29] The secondary consequences of a pandemic—such as outbreaks of diseases associated with poor sanitation or with interruptions in access to primary care, and the disruption of outpatient care for persons with chronic conditions—have the potential to damage the public's health beyond the obvious threat of pandemic influenza itself.

discuss ethical challenges; to develop ways to make fair rationing decisions; and to be transparent before, during, and after the crisis. Planners can use these five people as tools for their own discussions—and may identify other representative community members who will rely on them.

From well-meaning words to real frameworks for real communities: the regional public health planning challenge

An influenza pandemic will force first responders, including health care workers, to think and act differently than they normally do. In a crisis, they need clear protocols to follow. But if these rules seem unfair, or don't match the situation at hand, the burden on first responders will be excruciating. As a society, we must not shift the burden of deciding how to be fair onto the same first responders we will rely on to treat the sick and maintain public health and safety.

Pandemics do not respect boundaries. What happens in one city, county, or state will affect its neighbors. Yet home-rule traditions are strong: we have now had 50 separate conversations about pandemic planning.

We have also had 5,000 other conversations, as the nation's hospitals developed their own pandemic plans. While some hospitals have collaborated in planning with their competitors, others have worked in isolation. A pandemic will force competitors to become collaborators.

We are now having 3,066 more conversations, as each county public health department grapples with regional planning needs, at the level where state plans and local health and safety resources must meet. Major cities in multi-county and multi-state regions are also responsible for integrating federal and state plans with the plans drafted by area hospitals.

Regional planners at the civic, county, multi-county, and multi-state levels must identify gaps in state and federal plans, including the absence of clear ethical guidance. They also need to identify gaps in their local hospitals' plans: are hospitals in the same region working from the same epidemiological models, or are they planning for different pandemics? Are some hospitals better prepared or better equipped than others? How can regional planners encourage collabora-

tion between hospitals with greater resources and those with fewer resources? And because pandemic plans must describe how basic services will be delivered during a sustained public health crisis, regional planners need to know how to create comprehensive, practical plans that are also ethically sound, plans that first responders can trust and the public can support.

In September 2006, The Providence Center for Health Care Ethics and The Hastings Center partnered to convene a meeting of public health officials, experts on public health ethics and clinical ethics, and clinicians to discuss the challenge of building pandemic plans on an ethically sound framework. The Providence Center for Health Care Ethics at Providence Health and Services, a system based in the Pacific Northwest that includes 26 hospitals, more than 35 other health care facilities, and 45,000 employees, funded the meeting through a grant from the Providence St. Vincent Medical Foundation.

This expert group identified several ongoing problems with how pandemic plans, and other disaster plans, handle ethics:

■ ***Plans may include priority lists without justifying why certain individuals or groups are given priority access to scarce resources.***

A pandemic plan that is ethically sound describes different resource allocation scenarios, selects one, justifies this selection in terms of epidemiological data, available resources, the public's health and welfare, and the interests of groups affected by the plan; and is clear about who made these decisions. It describes how this plan will work in practice. It makes the plan available to the public for review and comments. And it identifies the "trigger" that puts the plan into effect. By being clear about the trigger, public officials take responsibility for switching the practice of medicine in their community from "clinically appropriate" under normal circumstances to "ethically appropriate" under emergency rules. New York State's Allocation of Ventilators in an Influenza Pandemic Guidelines is an example of a resource allocation plan that fulfills all of these conditions.[4]

■ ***Plans may fail to acknowledge the existing disparities of income, resources, health, and access to health care,***

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or may fail to describe efforts to avoid worsening these disparities.

An ethically sound plan must describe how existing resources will be fairly distributed across communities, and between competitors, during a public health emergency. Again, New York State's ventilator allocation plan is a good example of how this can work in practice. In that state, a standing bioethics task force, reporting to the governor, was available to work with hospitals, experts in bioethics, infectious disease, disaster medicine, and legal and public health authorities to develop a fair plan for ranking patient access to ventilators under the dire circumstances of a pandemic.

However, not all states have a standing bioethics task force with professional staff, available to help regional planners and health care institutions analyze complex emerging health care problems and their potential to worsen health and health care disparities. Public health officials in regions that include both affluent suburbs and lower-income cities may have difficulty getting members of these communities to acknowledge their interdependence, and the infrastructure linking them.

And because chronic health problems, such as asthma or diabetes, may be more common in some populations than in others, failure to acknowledge existing health disparities now means that members of these "sicker" populations will likely have less access to scarce resources during a pandemic: they may be less able to get to a hospital, or less likely to be high priority for a ventilator should they need it. They may be more likely to die. Health care professionals and community members who deal with endemic chronic disease may ask whether planning for a disease that is not yet threatening their communities will direct funding and attention away from those diseases that already threaten them. Planners must acknowledge these concerns.

■ ***Plans may fail to explain how public health ethics, with its emphasis on fair distribution of limited resources, differs from everyday clinical ethics, with its emphasis on protecting the rights of individual patients.***

"Ethics" means different things in different health care contexts. Behaving ethically in ordinary clinical circumstances leads us to focus on individual patient preferences and values. Behaving ethically in a disaster may shift the balance toward doing what is best for the community as a whole. Plans that will go into effect during particular types of disaster must anticipate the particular challenges the community will face, and must offer ethical guidance relevant to these challenges.

So, a pandemic plan must describe a fair protocol for removing a patient from a ventilator after a time-limited trial when clinicians determine that another patient is more likely to benefit from a scarce resource both need. This protocol should describe the palliative care the first patient will be offered if the ventilator is removed, and should also describe how clinicians will regularly review the protocol after it goes into effect to fix problems and prevent abuses. But the protocol cannot rely on individual values and preferences as a guide to ethical care: many patients in this situation will—understandably—prefer to remain on the vent.

If clinicians, hospital administrators, ethics committee members, and public health officials involved in pandemic planning are not familiar with public health ethics during a disaster as distinct from everyday clinical ethics they will not be able to create plans that will help first responders think and act differently, but ethically.

The three Rs and the three Vs

For physicians and other clinicians whose professional obligations are based on the duty to care for the sick, the ethical dilemmas posed by a pandemic can be summarized in three "Rs": rationing, restrictions, responsibilities. These first responders need plans that will give them clear guidance on how to fairly distribute limited resources; that will anticipate the restrictions that may affect the delivery of health care; and that reflect an understanding of their professional responsibilities. First responders also need public health officials to be responsible for providing a clear set of triggers that will tell first responders what to do and when to do it.

Members of the public who are thinking about pandemics are thinking about three "Vs": vaccine, venue, ventilator. Will my family be vaccinated? Will we have access to basic health care? Will we have access to technology if we need it? The public may not yet see the three Vs as ethical dilemmas, but questions about access to scarce resources, about restrictions aimed

How Oregon Created an Ethical Decision-Making Matrix

by John F. Tuohey, *Providence Center for Health Care Ethics*

Like other states, Oregon needed an emergency preparedness plan to address public health and ethical issues that would arise in a pandemic. The state's Director of Public Health formed a Medical Advisory Group (MAG), which includes representatives from county health departments, health professional organizations, insurers, local governments and tribal organizations, plus a health care ethicist and an expert in mass communications, to develop this plan. MAG members developed a decision-making matrix as a tool to describe how to integrate ethical principles into the types of decisions that must be made prior to and during a pandemic or other emergency.

Oregon's matrix [see illustration, below] is based on those values MAG members believed to be most at risk during a pandemic: social solidarity; professional standards; and justice. The matrix lists the characteristics of these values: for example, "equality" is one of the characteristics of justice, because a just policy or practice assumes that people are equal, although their needs may be different. The matrix also lists ethical terms, or principles, that may be used when applying these values in a public health crisis: for example, because truth-telling is characteristic of a society that values justice, a just policy or practice will need to uphold this principle when communicating with the public or with individual patients.

The overlapping areas of the matrix show where decisionmaking takes place, illustrating how each decision involves different relationships among different principles in each sphere. Every decision must be accountable to each facet of the matrix: there can be no assumption that any decision will involve only one set of principles. Decisions about public announcements during a pandemic, for example, must be accountable to the justice principle of truth telling as well as the social solidarity principle of public order and the professional principle of reciprocity.

This approach to decisionmaking anticipates the information crises that are likely to occur during a public health emergency. Rather than scripting ethical recommendations in advance for every possible public-information scenario, MAG members concluded that changing conditions during a pandemic will require decision-makers to consult with one another on an ongoing basis, using the matrix to assess the ethics of a given situation. MAG continues to consult with the Department of Public Health on how the matrix will be disseminated, and what will trigger its use.

at infection control, and about the hard choices that providers will make concerning who gets access to intensive care, are all ethical questions. The duty to plan includes helping the public to understand their responsibilities as well as their rights during a public health emergency.

There are many different kinds of first responders: community members whose responsibilities and needs must be reflected in any pandemic plan that is both ethical and practical. Here are five of them:

The truck driver
The gatekeeper
The triage officer
The janitor
The public health official

These five "people" are really five groups of people. The "truck driver" represents community members responsible for essential non-medical tasks in a public health emergency. The "gatekeeper," the "triage officer," and the "janitor" represent groups working inside of hospitals, responsible for a variety of essential tasks and decisions. The "public health official" represents local, state, and federal authorities responsible for making or carrying out the rules—laws, regulations, emergency triggers, policies—that communities will follow during an emergency, and that will help them to recover after an emergency.

All of these people have interests of their own, including an interest in being protected while doing their jobs under difficult, distressing conditions. And all of these people need to have confidence in the plan they are following: it must make sense to them, and it must clearly reflect the public's interest.

The truck driver:

community members to think about when making ethical decisions about vaccine allocation

CDC and NIH estimates continue to warn that we must plan for an extreme scarcity of effective vaccine at the outbreak of pandemic, due to the impossibility of predicting which influenza strain (or which mutation of which strain) will become pandemic and due to the time needed to manufacture and distribute the right vaccine. So every pandemic plan must clearly answer this ethical question: Who should be vaccinated first, and why?

One person who will be high on the priority list, for example, is the truck driver who delivers essential supplies that cannot be stockpiled, or when stockpiles run out: these may include food; medical supplies; fuel, even clean water. Other essential personnel include the workers who will load and unload these trucks, police, fire fighters, and workers responsible for public safety, the factory workers meeting the demand for vaccines—all of these people, like essential medical personnel, must report for work, and must work in situations where they may be exposed to pandemic influenza. So, these workers who are protecting the public's health must first be protected.

In thinking about that vaccination priority list, planners must answer other ethical questions.

Incentives:

• What are appropriate and inappropriate incentives to offer to essential workers, and why? Extra pay—or other employment-related benefits—is an appropriate incentive: essential workers will work long hours under difficult conditions. However, offering vaccine to essential workers' family members is not appropriate, unless these individuals are also at high risk of infection. The ethics of fairly rationing scarce medical resources require that these resources be reserved for other essential workers charged with protecting the public's health.

Medical personnel:

• Physicians are community members, too. Which physicians should be vaccinated immediately, and why? Which physicians should not be vaccinated immediately, and why? Not all physicians who want to help in a crisis are professionally qualified to be first responders in a pandemic, when the crucial specialties will be emergency medicine and critical care. An ethically sound pandemic plan will describe the responsibilities of physicians and other health care providers in terms of epidemiology and skills, rather than relying on the usual professional hierarchies to guide the distribution of scarce resources. In a flu pandemic, respiratory technicians outrank neurosurgeons in terms of their value to the public's health—

and all health care workers may be outranked by workers responsible for maintaining a community's supply lines.

Community leaders:

• Where do community leaders other than officials responsible for public health and safety fit on the vaccination priority list? Clergy, business leaders, and nonprofit executives, among others, may want and expect to help out in a crisis, but they too may lack the specific skills of essential workers that justify top priority for vaccination when vaccine is scarce. Even when vaccine is more widely available, simply showing up at the emergency room, ready to volunteer, may add to the burden of first responders without aiding those in need of medical evaluation and treatment. In what concrete ways can community leaders be encouraged and prepared to use their constituencies, their financial resources, or their facilities to support essential workers, as well as families under quarantine or other restrictions, and communities experiencing illness and death on an unprecedented scale?

The gatekeeper:

making ethical decisions about access to acute care facilities

Community members expect their local hospital to be open all the time, and the human tendency to go to the hospital for safety and shelter as well as medical care is strong. During a pandemic, epidemiological conditions will work against these expectations: once the emergency plan is triggered, inpatient care will be reorganized to cope with influenza patients sick enough to be admitted, while ICU personnel continue to care for other patients too sick to be released. Emergency departments will be flooded with waves of influenza patients, even as everyday medical emergencies continue. Keeping hospitals open and functioning safely with reduced staff is one of the challenges in a disaster: it cannot be taken for granted. Hospitals will need "gatekeepers" to ration access to these public facilities.

During a pandemic, the gatekeeper role is partly medical: physicians and other clinicians may volunteer to support emergency medicine specialists, by registering patients and keeping the system moving. It is partly communications: administrators, chaplains, and social workers may volunteer for the difficult task of turning people away, including family members who arrive with patients, and individuals who are not ill enough to be admitted under emergency rules. And it is partly safety: the hospital's security staff will be responsible for keeping patients and staff safe if the hospital becomes a target for desperate individuals.

However, the gatekeeper role begins with planners, and also includes local media, hospital CEOs, and leaders of other local institutions, from corporations to congregations to nursing homes.

In thinking about the gatekeeper role, and in preparing to support the individuals who will fulfill that role during a crisis, planners must answer these ethical questions.

Public education:

• How will the public be educated about its responsibilities during a pandemic, including obeying quarantine or other restrictions? What clear guidance will they receive about the symptoms of pandemic influenza, and about seeking medical attention, at hospital, or other emergency health care facility, should they become ill?

Collaboration:

• How will competing hospitals collaborate with one another, with public health officials, and with the media, to plan for and provide information about access to acute care facilities throughout affected communities, and to prevent any single hospital from becoming overwhelmed with patients?

Public information:

• Media organizations and individual journalists also have ethical obligations to their communities that trump self-interest—how will planners enlist the media (television, radio, print, web and other electronic communications) to provide accurate information and prevent panic? How will media organizations, media professionals, and influential nonprofessional sources of information in a community, such as bloggers, monitor their own conduct?

Community health care:

• What is the appropriate gatekeeper role of community health care providers that are not acute-care facilities? Leaders of clinics and physicians in community-based medical practices will need clear information on their responsibilities as health care providers in communities under quarantine or other restrictions. To ensure fair access to needed medical services and technologies while keeping hospitals from being overwhelmed, some of these facilities may also be designated as temporary emergency clinics or even ICUs, requiring that medical professionals be trained to use vents or other equipment. Leaders of sub-acute health care facilities, such as nursing homes, will also need clear information on how to protect the health of their residents and staff while vaccine stockpiles are limited to essential workers, and on their responsibility to reduce the burden on acute-care facilities by caring for residents' medical needs in place whenever possible.

The triage officer:

making ethical decisions about access to ventilators and other critical care resources

Nationwide, 65.7 percent of ICU beds are occupied on any given day.[5] Should pandemic influenza break out, some ICU beds will already be occupied by patients who are critically ill and cannot be moved. Remaining beds will quickly be filled by influenza patients who are sick enough to be admitted to the ICU. Current epidemiological models project that at least 50 percent of these flu patients will need ventilators.[6] However, hospitals faced with inadequate staffing may restrict ICU access to the sickest patients: in this scenario, fully 100 percent of flu patients in the ICU will be sick enough to need ventilators.

Pandemic plans must anticipate a shortage of ventilators, because some ventilators will already be in use by critically ill patients, and because influenza is a respiratory disease. Who gets access to available ventilators, and under what conditions, are rationing questions that planners must address in concrete, actionable, ethically sound terms.

Ethical and clinical guidelines will help frontline medical staff decide who goes on a ventilator, the length of time-limited trials, the criteria for removing patients from ventilators when recovery is uncertain and there are other patients with equal or greater needs for ventilator access; and how patients who "fail" the trials will be cared for. These are perhaps the most distressing situations that medical personnel will face during a pandemic.

The decision to remove a patient from a ventilator or other life support can be stressful under normal circumstances. During an influenza pandemic, some patients will be removed from ventilators without their consent or the consent of a surrogate, in the interest of giving other patients with equivalent claims to these scarce resources a fair chance to survive. What would be unethical under normal circumstances becomes ethical under the emergency rules activated by the trigger. The act of removing a patient from a ventilator when this patient might recover given a bit more time on the ventilator imposes a terrible burden on the clinicians with the technical skills to care for critically ill patients. It is unfair to add to this burden by demanding that these same clinicians also decide which patients will have time-limited trials, and which patients should be removed from ventilators. An ethically sound pandemic plan will specify that a senior supervising physician act as a triage officer to make these decisions on behalf of front line clinicians.[7]

The triage officer is a gatekeeper with very specific duties, focused on ventilators. The triage officer must be supported by a rotating shift of administrators, including but not limited to clinical ethicists, who are capable of assessing clinical situations inside a public-health framework, and of applying clear, consistent rules that acknowledge the rights of individual patients while also acknowledging that, for the duration of the emergency, the need to be fair to all patients may trump individual claims.

In thinking about the triage officer role, and in preparing to support the individuals who will fulfill that role during a crisis, planners must answer these ethical questions.

Fairness:

• How fair, or unfair, are the criteria that the triage officer and colleagues will use to ration access to ICU beds and technology? For example, giving younger

persons priority may not be defensible if current epidemiological models do not support the claim that older persons are less likely to benefit from critical care measures. But using "mileage" rather than age—giving priority to persons whose overall state of health is better—as a rationing rule means that persons with chronic diseases will be low priority for critical care during a pandemic, which means that the populations who disproportionately suffer from chronic diseases will have less access to scarce resources. The doing of ethics as part of pandemic planning means being candid about ethical trade-offs. Creating practical rules to help frontline workers quickly identify which patients are most likely to benefit from scarce resources means acknowledging existing health disparities and further acknowledging that these disparities will worsen in a crisis, while making access to scarce health care resources as fair as possible.

Who jumps the queue?

• Does an ER physician who becomes ill go to the top of the ventilator list, as a reward for taking greater risk? Or should a critically ill physician, who will not be able to return to duty quickly, be subject to the same criteria as any other critically ill patient?

Palliative care:

• What comfort care will be provided to the critically ill patient who will not have access to life-saving treatment—surgery, antibiotics, and other treatments and technologies in addition to ventilators—that hospitals may not be able to provide during a pandemic? Pain management and palliative care specialists are not accustomed to caring for patients who do not want their services; providing comfort care to patients who want curative care may be stressful to these medical personnel. And while some of these patients may die, others may recover; the personnel caring for them must be prepared for both possibilities. What ethical and clinical guidelines can planners provide to clinicians caring for these patients so suffering is minimized and clinicians understand and are not overwhelmed by their duties?

End of life care:

• What care will be provided to the dying person whose family cannot be present due to public-health restrictions? Clinicians who care for dying patients assume that if the patient has a family, the family will be at the bedside. During a pandemic, patients will die without their families present, and clinicians will be solely responsible for the care of these patients. Providing clear, compassionate ethical and clinical guidance to these clinicians, and involving them in pandemic planning and preparedness, is yet another responsibility of planners.

Training for triage:

• How will the triage officer and team be recruited and trained for their responsibilities? What clinical and ethical training do they need, in advance of a public health emergency, so they are ready to apply ethical rules more stringently than usual, and to let fairness trump individual preferences while ensuring basic procedural justice for individuals facing life or death situations? Which decisions are foreseeable and can be addressed in guidelines? Who is responsible for reviewing these guidelines to ensure that they are fair and useful? How can bad—unjust, inconsistent, or impractical—decisions be prevented when the triage officer and team are confronted with a situation their guidelines do not cover?

The janitor:

protecting vulnerable health care workers

Like the truck driver, the hospital janitor is another essential worker during a public health emergency. Unlike the truck driver, the janitor is a health care worker, and may be at greater risk of infection due to the location and nature of the job. In the early weeks and months of a pandemic flu outbreak, vaccine stockpiles may not be sufficient to cover the janitor, the laundry workers, the orderlies, the staff members who deliver meals—all of these workers come into direct contact with sources of infection and are in danger of becoming ill themselves, whether from the flu virus or from secondary infections carried by patients in hospitals that cannot maintain normal sanitary standards.

Do these workers have a duty to come to work during a pandemic? In ethics, "duty" tends to refer to professional responsibilities, or to enforceable civic obli-

gations, such as a duty to obey the law. Nonprofessional health care workers may identify with and take pride in the institutions where they work, or in their role in the care of the sick. Hospitals cannot function without these workers. However, these workers do not enjoy anything like the authority and status of physicians or senior executives, or even of much less powerful professionals in the hospital hierarchy who may recognize a duty, as health care professionals, to come to work during an emergency. It is never ethically appropriate to add to the burden of the most vulnerable members of any society. If low-status workers do not receive a fair share of their society's benefits, it is not fair to tell them they have a professional or civic duty to do dangerous work.

In thinking about the janitor and other vulnerable health care workers, planners must answer these ethical questions.

Incentives:

• What are appropriate and inappropriate incentives to offer to these workers, and why? The answers to these questions may seem to be the same as for the truck driver: The janitor's incentives should reflect the risk this worker is exposed to, but should not divert scarce resources from others who have an equivalent claim on these same resources. However health care workers may face special risks or burdens during a health care emergency, and their incentives should reflect these risks and burdens. Workers who may be quarantined in hospitals to avoid becoming vectors of infection may need to make sure that their families quarantined at home have enough food or cash, or that safe child care is available in their communities. Workers who are able to go home after their shifts may need to know that they can bring food home from work, or that they will receive flu medication for family members.

Rationing supplies:

• How will hospitals stockpile and ration food, water, protective gear (masks, gloves), and antiviral and other medications among essential health care workers? Hospitals do not maintain supply warehouses, instead using "just in time" practices to order supplies as needed. Breakdowns in the safe use of protective gear triggered a second wave of SARS cases in Toronto in 2002: several nurses died.[8] So that these goods are not distributed by rank, or according to first come, first served, and so that hospitals with less cash on hand to purchase supplies do not leave their essential workers unprotected, planners must work with providers to develop equitable and effective ways to establish, activate, and maintain supply lines and infection-control procedures during a prolonged emergency.

The public official:

making good decisions—and preventing "bone-headed" ones—before and during a public health emergency

In a public health emergency, members of the public should believe that their leaders are on their side and are making good decisions on their behalf. Studies of communities that have endured natural disasters and other crises find that if a community's leaders and citizens have a shared sense of social solidarity—of working together for the good of the community—before a crisis, they will function well during and after a crisis. In the United States, however, social solidarity at the local level—neighbors helping neighbors—does not always extend to trust in state or federal leadership.[9]

Establishing who is in charge during a public health emergency can be a challenge. Governors are responsible for declaring states of emergency, which may be the trigger for local first responders to activate their pandemic plans. As health care provided under emergency guidelines may not meet normal standards of care as defined by state law and other standards and policies, physicians and other clinicians fear they could be vulnerable to charges of negligence in the aftermath of a crisis. As pandemic plans will call for hospitals to cancel elective procedures and release all but the most fragile patients, hospitals' cash flow from Medicare and insurance reimbursements will be profoundly disrupted even as they continue to need to maintain payroll, pay vendors, and purchase supplies. These are among foreseeable problems that require the attention of public officials well in advance of the declaration of a public health emergency. Failure to acknowledge and address these problems through practical guidelines is an ethical failure as well as a

policy failure.

In thinking about elected and appointed public officials, and other individuals whose decisions before and during a pandemic will have consequences for the public health and for the functioning of health care facilities, planners must answer these ethical questions:

• How can clinicians, health care administrators, and local public health officers limit the likelihood that public officials will make bad decisions during a crisis? Public officials who are experienced in disaster management are more likely to make good decisions under pressure than are officials who lack this experience.

First responders at all levels can use case studies of previous disasters—including the public-sector responses to them—to familiarize themselves with how decisionmaking authority should, and should not, be exercised during a crisis, and how this authority should be distributed within a community. Clearly written policies, disseminated and discussed in advance of a crisis, will reduce the need for crisis-driven decisionmaking, as the policies themselves will be authoritative, giving first responders rules to follow. Having ethically sound policies in place will also help to limit the effects of bad decisions that will, inevitably, be made during a crisis: officials will need to justify why it is in the public's interest to depart from broadly accepted policies.

Transparency:

• How transparent is the pandemic planning process? How are the social values of fairness and equality—the basis of an ethically sound pandemic plan—evident in this process? In what ways do planners call attention to existing, ethically troubling health and health care disparities in the communities covered by its plan? To what extent are they listening to communities that do not expect to be well-served during a public health emergency, as well as from communities that expect to receive quality health care?

Public engagement:

• How are members of the public involved in planning activities, through public hearings or opportunities to read and comment on draft documents? What is the public education component of the planning process? What evidence is there that members of the public believe in the plan—believe that it is in their collective best interests, and that it can be followed?

Private sector:

• How will public officials engage private-sector leaders in planning to help communities enduring a prolonged public health emergency to function, and to recover? Using case studies as part of the planning process will help public and private community leaders understand what community members are likely to need during a disaster and how community leaders can support first responders to meet these needs.

What can planners do today to help these five people do their jobs well during a pandemic?

• **Recognize that the duty to plan, the duty to develop rules and tools for first responders, and the duty to be accountable to one another, as civic duties as well as professional duties.** Urge state leaders, regional public health officials, leaders of health care organizations, and media executives to coordinate their pandemic planning rather than work in isolation. Give private-sector leaders and the public opportunities to discuss the plan and understand their roles and responsibilities during a disaster.

• **Give ethics a seat at the planning table.** The ethicist recruited to participate in pandemic planning must understand, and be able to explain, public health ethics as well as clinical ethics. The ethicist must be good at asking "why"—in particular, why is a resource-allocation option fair, rather than simply expedient? The ethicist should also have experience drafting ethical guidelines for practical use: first responders need rules and tools, not abstract principles.

All of these decisions are hard decisions. To say these decisions are too hard to make today is to shirk our duty to plan, and to make the duties of first responders even more difficult.

And to say Americans won't plan, or won't ration, or won't care about others—and will no longer trust the public sector to be on their side—is to allow cyni-

Selected Resources

Websites and electronic documents

- The New York State Task Force on Life and the Law is an interdisciplinary, 23-member state commission with a standing mandate to develop public policy for the range of ethical issues raised by biomedical advances. The task force's recommendations for ventilator allocation provide a model for ethical planning.

NYS DOH/ NYS Task Force on Life & the Law, *Allocation of Ventilators in an Influenza Pandemic* (2007), at http://www.health.state.ny.us/diseases/communicable/influenza/pandemic/ventilators/docs/ventilator_guidance.pdf.

- Maryland's pandemic plan includes an example of a detailed vaccination priority list that includes essential workers and members of the public.

Maryland Department of Health and Mental Hygiene, Maryland Pandemic Influenza Plan, Version 6," at http://bioterrorism.dhmh.state.md.us/docs_and_pdfs/DRAFTFluPlanDec2006Part2.pdf: pages 207 and following.

- The Pandemic Influenza Working Group from the University of Toronto's Joint Centre for Bioethics recommends a 15-point ethical guide for use by planners.

R. Upshur, K. Faith, J. Gibson, A. Thompson, C.S. Tracy, K. Wilson and P. Singer, *Stand on Guard for Thee: Ethical Considerations in Preparedness Planning for Pandemic Influenza* (2005), at http://www.utoronto.ca/jcb/home/documents/pandemic.pdf.

- The University of Michigan's Center for Infectious Disease Research and Policy and Pew Center on the States have launched an online database to share promising practices for pandemic preparedness.

CIDRAP, "Promising Practices," at http://www.pandemicpractices.org.

- Maintained by the US Department of Health and Human services, PandemicFlu.gov offers status reports, allocation guidelines and other planning resources from federal agencies.

US Department of Health and Human Services, "PandemicFlu.gov," at http://www.pandemicflu.gov.

Articles and reports

D.J. Alexander, "An overview of the epidemiology of avian influenza," *Vaccine* 25, no. 30 (2007): 5637-5644.

J.D. Arras, "Rationing vaccine during an avian influenza pandemic: Why it won't be easy," *The Yale Journal of Biology and Medicine* 78, no. 5 (2005): 287-300.

V. Colizza, A. Barrat, M. Barthelemy, A. J. Valleron and A. Vespignani. "Modeling the worldwide spread of pandemic influenza: Baseline case and containment interventions," *PLoS Medicine* 4, no. 1 (2007): e13.

J.K. Taubenberger, D.M. Morens, and A.S. Fauci, "The next influenza pandemic: Can it be predicted?" *JAMA : The Journal of the American Medical Association* 297, no. 18 (2007): 2025-2027.

J.C. Thomas, N. Dasgupta and A. Martinot, "Ethics in a pandemic: A survey of the state pandemic influenza plans," *American Journal of Public Health* 97 Suppl 1, (2007): S26-31.

E. Toner and R. Waldhorn, "What hospitals should do to prepare for an influenza pandemic," *Biosecurity and Bioterrorism : Biodefense Strategy, Practice, and Science* 4, no. 4 (2006): 397-402.

R. Wray, J. Rivers, A. Whitworth, K. Jupka and B. Clements, "Public perceptions about trust in emergency risk communication: Qualitative research findings," *International Journal of Mass Emerging Disasters* 24, no. 1 (2006): 45-75.

cism to triumph over civic responsibility and the public interest. In considering these five people, pandemic planners must show the rest of us how we will care for one another, as communities and as a society, in perilous times.

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