COMMENTARY

Ethical Guidelines for an Influenza Pandemic

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The major challenge facing public health officials is that they do not know when the next pandemic influenza will occur or how severe it will be. History indicates there are approximately three pandemics each century. Since the last outbreak of pandemic influenza occurred in Hong Kong in 1968-1969, many experts suggest that we are overdue for another influenza pandemic. They warn that it is not a question of *if* but *when* the next influenza pandemic will arrive.

The North Carolina Department of Health and Human Services, Division of Public Health (DPH) will have the responsibility of coordinating the public health response to an influenza pandemic. The goal of the public health response will be to reduce morbidity, mortality, and social disruption. In order to carry out its *North Carolina Pandemic Influenza Response Plan*,[1] DPH will need the assistance of health care workers and workers in other critical industries, such as public safety, food, and transportation. Certain individuals will need to work, despite risks of infection, to ensure that society can continue to function during the pandemic. To prevent the spread of disease, DPH may need to pursue social distancing strategies, such as quarantine, isolation, or closing of schools, which may at times conflict with individuals' civil liberties. In addition, DPH will be responsible for allocating scarce resources, such as vaccinations and/or antiviral medications. An outbreak of pandemic influenza will pose many ethical dilemmas (Table 1).

During an influenza pandemic, it is likely there will not be enough time to discuss publicly the ethical tradeoffs inherent in critical decisions. It is impossible to anticipate all the critical decisions that may need to be made during an outbreak. Therefore, it is important to identify the ethical principles that should be considered when faced with difficult choices. Developing an ethical blueprint that incorporates public input in advance of a pandemic and later applying these recommendations during the crisis will help assure the public that decision makers are making reasoned responses to the crisis. Public acceptance of the ethical framework will increase the likelihood that society maintains order during the emergency.

DPH determined the need to develop an ethical framework from which to base implementation of its Pandemic Influenza Response Plan and asked the North Carolina Institute of Medicine (NC IOM) to help in this effort. The NC IOM convened a task force to explore some of the ethical issues the state may face during an influenza pandemic and to consider the rights and responsibilities of private organizations and individuals. The Task Force was comprised of different stakeholder groups including representatives of (1) public health and safety, (2) other governmental agencies, (3) health care providers,

Table 1.
Ethical Dilemmas that May Arise During Pandemic Influenza

Scenario 1: Nancy has been a nurse in an orthopedist's office for 10 years. She heard the local hospital needs nurses to take care of pandemic influenza patients. Nancy wants to help, but she is concerned that she is unfamiliar with the type of care flu patients will require. She also is worried she might catch the flu and bring it home to her family. Does Nancy have a responsibility to work? What responsibility does society or the hospital owe to Nancy and her family to minimize the threat of infection?
Scenario 2: Bill is a cook at a diner and gets paid by the hour. During the height of the pandemic, the government has asked that people stay home from work for two weeks in order to prevent the spread of disease. Bill wants to stay home, but he needs his wages to pay his rent and he is afraid his boss will find someone else to do his job. If Bill responds to a governmental request that nonessential workers remain at home, what responsibility does government have to assure that his basic subsistence needs are met?
Scenario 3: The state has defined priority populations for pandemic influenza vaccinations, but the local health department does not have enough vaccines to cover everybody who falls into the priority populations. How should the health department allocate the limited vaccines among different priority populations?

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(4) business and industry, (5) the faith community, (6) advocacy groups, and (7) ethicists. In addition, NC IOM partnered with DPH and the Old North State Medical Society to host four regional forums in order to obtain public input into these difficult ethical decisions.

The Task Force weighed different ethical considerations in developing its framework, including (1) the need to ensure accountability, (2) equitable treatment among similarly situated individuals, (3) proportionality of actions, and (4) inclusiveness and timeliness in decision making. Government must act as the public steward, operate in a transparent fashion, and make decisions that are reasonable and responsive in order to garner the public's trust. It is important to foster cooperation and collaboration among different governmental agencies, the public and private sectors, and private citizens. The Task Force developed an ethical framework for guiding decision making in the following areas: responsibilities of and to health care workers and other critical workers, the balance between the rights of individuals and protection of the public, and prioritization and utilization of limited resources. The Task Force's report will be available shortly at www.nciom.org.

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Responsibilities of and to Health Care Workers and Other Critical Workers

An influenza pandemic would have widespread, significant effects on North Carolina's workforce. During an influenza pandemic, 40% of workers may be out ill, creating challenges for businesses and organizations to maintain normal operations. However, critical industries, such as food, utilities, and transportation, will need to continue functioning to provide society's essential goods and services during a pandemic.[2]

North Carolina's critical industries have experience maintaining essential functions during natural disasters, such as hurricanes and ice storms. However, an influenza pandemic would place unprecedented stresses on the ability of industries to function due to its duration, likely limited outside support, lack of workers, and risk of secondary infection. An influenza pandemic may consist of multiple waves lasting eight weeks or longer; in contrast, the immediate impact of many natural disasters is shorter in duration. Also, natural disasters often impact only a limited area, allowing other communities to provide support to the impacted area. In contrast, a pandemic likely will impact most, if not all, of the state and country, limiting the availability of outside support. Further, it may be difficult to find sufficient workers in general. During a pandemic, many workers may become infected with the virus and, as a consequence, will be unable to work. A pandemic also will lead to high absenteeism because workers may fear contracting the flu and may need to take care of sick family members. Thus, North Carolina's critical industries are likely to face unprecedented challenges in the event of a particularly virulent pandemic.

An influenza pandemic in North Carolina would be especially hard on the health care system. The health care system would face tremendous challenges in providing appropriate care for thousands of patients with acute, life-threatening infections, as well as continuing to provide care to others who are ill or injured. North Carolina might experience as many as 1.6 million doctors visits and 29,000 hospitalizations during one wave (ie, 8-12 weeks) of a moderate pandemic, although the numbers could be eight times higher in the event of a particularly virulent pandemic (Table 2).

Table 2.
Impact of Regular Flu versus Projected Impact of Pandemic Flu in North Carolina

	Regular Flu	Moderate Pandemic Flu
Doctor visits	750,000	1.6 million
Hospitalizations	6,000	35,000
Deaths	1,100	7,900

To get industries thinking about operational issues that could arise during an influenza pandemic, the Task Force recommended that **employers and contractors design business continuity plans to prepare for events such as a pandemic.** Plans should identify those positions that are critical to the continued operation of the industry and determine whether jobs need to be performed on-site or can be adequately performed off-site. Workers who would be required to work should be made aware of the expectation to work during events such as an influenza pandemic upon hiring or upon the adoption of the plan. Employers and contractors should specify the supports that will be available to the critical workers to enable them to work, as well as the sanctions that will be enforced if critical workers fail to show up for work during a time of crisis.

Despite the difficulties that will arise during an influenza pandemic, critical industries will need to continue providing their essential goods and services during an influenza pandemic. Workers in critical industries should acknowledge a responsibility to continue to work in times of crisis so that essential goods and services are provided to maintain the functioning of society. In general, the enhanced obligation to work during a crisis stems from three main responsibilities: professional, employment, and general human responsibilities to care for others (Table 3). Health care professionals have an added obligation to provide

Table 3.
Responsibilities of Critical Workers to Work

Professional Responsibilities: Licensed professionals in critical industries have a professional obligation that results from their choice of profession. This obligation is based largely upon the special expertise of licensed professionals, the unique roles granted by reason of licensure, and the authority to self-regulate the profession.

Employment Responsibilities: In return for their salary, employees are expected to meet their job responsibilities and to support the work of the organization. Society has an expectation that critical industries will continue to function in the event of a public health emergency. Businesses can only operate with sufficient staffing. Thus, workers who have chosen to work in a critical industry are assuming a heightened responsibility to continue to work even during times of crisis. In addition, employees may have a formal contractual obligation that specifies their duty to work during emergencies.

Human Responsibilities: The welfare of everyone in the community is enhanced when all its members recognize their moral responsibility to assist each other in times of great need.

care because of their professional license and because their ability to provide care is greater than that of the public. By freely choosing that profession, health care personnel have assumed an ethical obligation to act in the best interests of the ill and to assume a proportional share of the risks to which their professions and/or employment setting expose them. As a result of these obligations, the Task Force recommended that **workers in critical industries have an ethical responsibility to perform their regular employment duties during an influenza pandemic *and* to assume new responsibilities for which they are trained, as long as their actions will not lead to greater harm than the failure to act.** Although workers in critical industries may have enhanced obligations to work during a crisis, the Task Force also agreed that their responsibility to work must be balanced against other considerations, including their own safety and their responsibility to care for family members who are ill.

Critical industry employers and contractors, as well as government, have a reciprocal responsibility to protect and support workers to enable them to continue working during an influenza pandemic. Depending on the nature of the influenza virus, certain workers in critical industries may face disproportionate health risks. Workers may be asked to work longer hours or under more stressful work conditions than generally allowed. If critical organizations are short-staffed because of increased demand, worker illnesses, or absenteeism, other workers may be called upon to provide services outside their normal scope of work. The Task Force determined that **government and employers have a reciprocal responsibility to ensure that workers are protected from pandemic influenza-related harm and liability to the extent possible.** For example, workers in critical industries at increased risk of infection should receive priority for available personal protective equipment, vaccinations, antiviral drugs, and other nonmedical control measures. All critical workers should receive behavioral health services and other goods or services needed to enable them to work. In addition, employers have a responsibility to ensure that workers are appropriately trained to fulfill the tasks assigned to them during a crisis. Government should also provide health care personnel and organizations with qualified immunity from liability, in order to encourage health care professionals to work under less than ideal conditions (eg, limited resources, lack of health care professionals, the need to assume new responsibilities).

Balancing the Rights of the Individual and the Need to Protect the Public

Public health leaders are specifically charged with promoting, protecting, and improving the overall health and well-being of the population during emergencies. In a pandemic, public health officials may need to implement measures to limit illness and death or to slow the progress of the epidemic that could conflict with personal liberties and individual privacy. These measures include isolation, quarantine, or other forms of social distancing. Public health officials may require individuals with the influenza virus or who have been exposed to the influenza virus to remain at home, in temporary housing, or in a health care facility to prevent the spread of the disease to others. Isolation and quarantine are most effective in the early stages of an influenza pandemic when few people have been infected. Government should ensure that people who are subject to isolation or quarantine have their basic necessities met. To accomplish this, the Task Force recommended that **all levels of government ensure that individuals who are affected by isolation or quarantine orders receive needed assistance in accessing resources to meet their basic needs while they are subject to restrictions.**

Other types of social distancing measures may be necessary once the influenza virus is more widespread. The goal of social distancing measures is to reduce contact with potentially infected individuals. Such measures may include, but are not limited to, closing schools or day care centers and asking churches to suspend their normal services. Social distancing measures may also include voluntary requests that employees stay home or work off-site and that people take care of sick family members at home, rather than bring them to overcrowded health care facilities. For the individuals and families involved, restrictions on personal liberties can pose significant difficulties, such as loss of income and social support. Business and industry may be affected by the loss of workers or other sources of income.

Safeguards are needed to ensure that infringements on personal liberties are proportional to the need and are applied equitably to all similarly situated individuals. Thus, the Task Force recommended that **government leaders implement restrictions on personal liberties deemed likely to be effective to limit illness and mortality in the context of a pandemic, but limit these measures to the least restrictive alternative reasonably necessary to protect the public.**

Every attempt should be made to ensure the public is aware of the need for pandemic-related restrictions of individual liberties. Informing the public about the reasoning behind these social distancing measures likely will improve compliance. The Task Force recommended that **the North Carolina Department of Health and Human Services partner with local health departments to develop a public outreach campaign, ensuring that the public is well-informed of the potential need to use community mitigation efforts or to prioritize the use of limited resources.** During a pandemic, it will be critically important that accurate health information be conveyed to the public in a timely manner to minimize the spread of misinformation or panic. Thus, the Task Force recommended that **the Governor's Office, in conjunction with the North Carolina Department of Health and Human Services and Crime Control and Public Safety, develop a coordinated communications plan to ensure that the public obtains timely, accurate, and continuous information about the influenza pandemic.**

Prioritization and Utilization of Limited Resources

In crisis situations, citizens often look to the government to manage the allocation of essential limited resources. Many essential resources are likely to be limited in the event of an influenza pandemic. In particular, there will be a sudden increase in demand for medical supplies, such as personal protective equipment, vaccines, antivirals, and hospital beds. These demands, as well as the large numbers of ill persons, will stretch the health care system's limits. Furthermore, large numbers of the population may be ill at any given time during the pandemic, making it difficult to maintain the normal functioning of many critical industries. As a result, there may be insufficient supplies of food, fewer essential services provided, and restrictions on certain utilities. Deciding who should have priority to receive limited resources during an influenza pandemic will be among the most difficult ethical dilemmas facing government officials, policy makers, and health care providers. These allocation decisions should be based on widely accepted, reasonable criteria. The Task Force also recognized the importance of individual responsibility for pandemic influenza planning, recommending that **individuals reserve supplies and have plans to care for family members during a pandemic.**

The priority given to the allocation of certain preventive resources (ie, primary prevention), such as vaccines, may not be the same as the priority that should be given to the allocation of limited health care resources needed for a patient who is already sick (ie, secondary treatment), such as ventilators or hospital beds. One way to conceptualize the allocation decisions is to classify medical resources as either *pharmaceutical* or *nonpharmaceutical.* Given this framework, the Task Force recommended a prioritization system recognizing different goals for different resources (Table 4). To the extent possible, individuals who do not make the priority list for life-sustaining care should be provided palliative care.

Nonpharmaceutical primary prevention resources will be critical in the early stages of a pandemic when vaccines are not yet available. Personal protective equipment and other nonpharmaceutical prevention resources may be the only way to minimize the likelihood of contracting the virus. As a result, the Task Force recommended that these limited resources be first allocated to health care workers or other critical workers who are at increased risk of contracting the disease and to private individuals who are at increased risk of spreading the disease. Once vaccines are available, the Task Force agreed that priority should be given to health care workers or other critical workers who are at increased risk of contracting the disease. The Task Force recommended that priority for antivirals be given to those at highest risk of dying if they get sick and to critical workers so they can recover and return to work. Priority for curative resources should be given to those most likely to benefit.

To avoid the appearance of nepotism or favoritism, the Task Force recommended that **disease control and medical decisions be based on clinical factors, the epidemiology of the spread of disease, and assuring the functioning of society.** Decisions about which people to treat and what services to provide during an influenza pandemic *should not be made* based on socio-economic or other factors unrelated to these criteria.

Table 4.
Goals to Guide the Allocation of Limited Health Care Resources

	Primary Prevention	Secondary Treatment
Nonpharmaceutical Intervention	Examples: personal protective equipment Goals: assuring functioning of society and minimizing the spread of disease	Examples: ventilators, hospital beds Primary goal: minimizing illness, hospitalizations, and deaths
Pharmaceutical Intervention	Examples: vaccines Primary goal: assuring the functioning of society Secondary goal: minimizing the spread of the disease	Examples: antivirals, antibiotics Priority goal: minimizing illness, hospitalizations, and deaths Secondary goal: assuring the functioning of society

Conclusion

In major emergencies, decisions have to be made in a timely manner under high stress conditions and often in the face of incomplete information. This is the situation the state will most likely confront in the event of an influenza pandemic. Decisions by the federal government, state agencies, health care professionals, emergency management responders, and other critical institutions will need to be coordinated and will directly affect large numbers of residents. Under such conditions it will be important to have a set of ethical principles that serve as the blueprint to the coordinated response.

The work of the NC IOM/DPH Task Force on Ethics and Pandemic Influenza Planning encouraged stakeholders from a variety of groups to consider and discuss the ethical dilemmas that are likely to arise in the event of an influenza pandemic. Advance notice of these dilemmas may help people adjust to and prepare for the difficult decisions that may affect them later. However, the unpredictable nature of influenza pandemics requires that individuals, industries, and governmental entities continue to examine and adapt their roles in influenza pandemic preparation. **NCMJ**

REFERENCES

1 North Carolina Pandemic Influenza Response Plan. Available at: http://www.epi.state.nc.us/epi/gcdc/pandemic.html. Accessed January 17, 2007.

2 The Department of Homeland Security identified seventeen critical infrastructure and key resource sectors that require protective actions for a terrorist attack or other hazards. Those sectors include: agriculture and food; energy; public health and health care; banking and finance; drinking waters and water treatment systems; information technology; telecommunications; postal and shipping; transportation systems including mass transit, aviation, maritime, ground or surface, and rail and pipeline systems; chemical; commercial facilities; government facilities; emergency services; dams; nuclear reactors, materials and waste; the defense industrial base; and national monuments and icons. National Infrastructure Protection Plan. Executive Summary. Available at: http://www.dhs.gov/xprevprot/programs/editorial_0827.shtm. Accessed January 17, 2007.

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