ecent human cases of the bird flu have heightened the public's awareness of the possibility of a flu pandemic in the near future. Many experts warn it is not a question of *if* but *when* the next flu pandemic will arrive. A severe pandemic influenza would most likely be widespread and last for six to eight weeks at a time. A pandemic could consist of one wave or multiple waves. During the height of an influenza pandemic, approximately 40% of workers will be out of the workforce due to their own illnesses or the need to care for a sick family member. This prediction is alarming, particularly as it impacts the healthcare industry, which may be overwhelmed by demands for services to treat the ill. Other critical industries, such as utilities, food, and transportation, also will require workers to provide the goods and services needed to maintain the basic functioning of society.

In addition to workforce shortages, a severe pandemic is likely to overwhelm our healthcare system, with shortages in providers, medications, hospital beds, and equipment. In North Carolina alone, a *severe* pandemic may result in 1.6 million outpatient visits to healthcare providers, 290,000 hospitalizations, and 65,000 deaths over an eight-week period. We, as a state, will confront many ethical challenges during a severe pandemic. Questions will arise such as who should get first priority for limited healthcare resources, how should we balance the rights of individuals versus the need to protect the public, and what responsibility do people have to work when working could place the individual or his or her family at heightened risk.

During an influenza pandemic, there will not be enough time to engage in a public discussion of the ethical trade-offs inherent in these critical decisions. Further, it is impossible to anticipate all the critical decisions that may need to be made during an outbreak. Therefore, it is important to develop an ethical blueprint that incorporates public input in advance of a pandemic and to follow this blueprint during the crisis. These efforts 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.

When an influenza pandemic arrives, it will be up to the North Carolina Department of Health and Human Services, Division of Public Health (DPH), other state and local agencies, and partner organizations to coordinate a public health response to help reduce morbidity, mortality, and social disruption. DPH determined the need to involve a larger group of stakeholders and the public to develop an ethical framework for implementation of its Pandemic Influenza Response Plan. DPH asked the North Carolina Institute of Medicine (NC IOM) to convene a task force with broad stakeholder representation to explore some of the ethical issues the state may face during an influenza pandemic.

The Task Force identified key ethical principles that should guide the state's response to any future influenza pandemic. The Task Force weighed different ethical considerations in developing its framework, including the need to ensure accountability, equitable treatment among similarly situated individuals,



proportionality of actions, and inclusiveness and timeliness in decision making. Government must act as the public's steward, operate in a transparent fashion, and make decisions that are reasonable and responsive in order to garner the public's trust. The Task Force recognized the importance of fostering cooperation and collaboration among different governmental agencies, the public and private sectors, and private citizens. Taking these ethical principles into account, the Task Force developed an ethical framework for guiding decision making in the following areas: responsibilities of healthcare workers and other critical workers to work during the pandemic and reciprocal obligations to these workers, the balance between the rights of individuals and protection of the public, and prioritization and utilization of limited resources.

Responsibilities of Healthcare Workers to Work and Reciprocal Obligations to Workers

An influenza pandemic in North Carolina would place unprecedented strains on the healthcare system. Public health and the broader healthcare system will face tremendous challenges trying to prevent people from becoming ill and providing appropriate care for thousands of patients who become ill with acute and/or life-threatening infections. In addition, the healthcare system will still need to provide care to others who are ill or injured unrelated to the flu.

North Carolina's healthcare organizations have experience maintaining essential functions during natural disasters such as hurricanes and ice storms. However, an influenza pandemic would place unparalleled stresses on the healthcare sector due to its duration, lack of workers, limited outside support, and risk of secondary infection. Most natural disasters affect limited geographic areas over short periods of time, allowing other communities to provide support to the affected area. In contrast, a pandemic likely will involve most, if not all, of the state and country, limiting the availability of outside support. Further, it may be difficult to find sufficient healthcare workers due to personal or family illnesses or fear of infection. Because the problems of staff shortages and lack of appropriate resources are likely to arise, healthcare professionals may be called upon to assume responsibilities outside their normal scope of work.

The Task Force believes that healthcare personnel have a duty to provide care during an influenza pandemic because of their professional and employment obligations, and a general human responsibility to care for others. In return, government and healthcare organizations have a responsibility to provide these workers with available protections and support. Front line healthcare workers who are at increased risk of infection should have priority in receiving personal protective equipment, vaccination, antiviral medications, and other nonmedical control measures. In addition, healthcare professionals and organizations should be provided qualified immunity from liability if they act in good faith to provide needed healthcare services during the emergency.

Duty of Workers in Critical Industries to Work and Reciprocal Obligations to Workers

Healthcare is not the only sector that will be critical to the basic functioning of society during a pandemic. Other sectors such as government, banking, utilities,

transportation, agriculture and food, telecommunications, and information technology also provide essential services. These industries will need to continue to operate throughout a pandemic and will need to develop contingency plans to account for the possibility of up to 40% employee absenteeism. Thus, the Task Force recommended that employers and contractors develop business continuity plans to prepare for events such as an influenza pandemic.

The business continuity plans should identify those positions that are critical to the continued operation of the industry and determine whether these jobs need to be performed on-site or can be adequately performed off-site. As with healthcare workers, the Task Force believes that workers in critical industries have a responsibility to work during a pandemic. By choosing to work in a critical industry, employees have accepted a heightened responsibility to work. However, employers and government have a reciprocal obligation to these workers to keep them as safe as possible and to provide them with the support needed to enable them to work.

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

Public health leaders are specifically charged with promoting and protecting the overall health and well-being of the population during emergencies. In a pandemic, public health officials may need to implement measures to limit the spread of disease. These community disease control measures, including isolation, quarantine, or other forms of social distancing, may interfere with personal liberties and individual privacy. Other social distancing measures may include, but are not limited to, closing schools and day care centers and asking churches to suspend their normal services. The goal of these measures is to reduce close contact with potentially infected individuals. For the individuals and families involved, restrictions on personal liberties can pose significant difficulties, such as loss of income and social support. Businesses may be affected by the loss of workers or other sources of income. Thus, it is important to limit these community disease control measures to the least restrictive alternatives reasonably necessary to protect the public and to ensure that the restrictions are equitably applied.

The Task Force recognized the importance of keeping the public informed and engaged as a partner to be successful at every stage of the pandemic. Every attempt should be made to ensure the public is aware of the need for epidemic-related restrictions of individual liberties. Public feedback should be sought and public education should be provided regarding the measures, ideally prior to implementation. Informing the public about the reasoning behind these social distancing measures likely will improve compliance. During a pandemic, public health officials and other state and local officials have an ethical obligation to ensure that the public is provided with timely, accurate health information in order to keep the public informed of the progress of the pandemic and the measures that people can take to protect themselves and their families. Government should disseminate information via the media and trusted community leaders to help ensure that information reaches people at risk. Providing timely and accurate information will help reduce the spread of misinformation and panic. Depending on the length and severity of the pandemic, there may be an unprecedented demand on government to help families meet their basic subsistence needs. Without some support, families may be unable to comply with isolation, quarantine, or other efforts needed to reduce interpersonal contact. This increased need for assistance will cause tremendous logistic challenges because of the need for agencies to engage in social distancing efforts to prevent the spread of disease. Government, social relief agencies, and other community groups will need to coordinate efforts to help families meet their needs for food, shelter, and healthcare during the pandemic. To prepare for this event, government, businesses, community groups, and individual families should engage in prepandemic planning.

Prioritization and Use of Limited Resources

In crisis situations, citizens often look to the government to manage the allocation of limited resources. During a pandemic, the demand for certain healthcare resources will exceed the supply. 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 healthcare providers. These difficult allocation decisions should be based on widely-accepted and reasoned criteria and applied equitably.

The Task Force considered multiple prioritization options and obtained feedback from the public on how limited resources should be allocated. The Task Force ultimately concluded that the priority given to the allocation of certain preventive resources (eg, vaccines or personal protective equipment) is not the same as the priority that should be given to the allocation of limited healthcare resources needed to treat a patient who is already sick (eg, ventilators or hospital beds). In general, priority for the allocation of preventive resources should be given to those critical workers who are at increased risk of contracting the disease and who are necessary to assure the functioning of society. These critical workers would include healthcare workers providing direct patient care with flu patients, care and public safety officers, or ambulance drivers who are working with infected people. The use of these limited resources also should be made with the goal of minimizing the spread of disease. In contrast, the primary goal in allocating treatment resources (eg, antiviral medications, hospital beds, and ventilators) should be to reduce illness, hospitalization, and death.

The Task Force recognized that it is just as important to articulate the criteria that should *not* be used in making allocation decisions. Medical decisions should be based on clinical and epidemiological factors only. Government and healthcare professionals should not make allocation decisions based on socioeconomic or political factors, or on other factors unrelated to controlling the spread of disease or reducing the impact of disease.

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 predicament is the situation the state will most likely confront in the event of an influenza pandemic. Decisions by the federal government, state agencies, healthcare professionals, emergency management responders, and other critical institutions should be coordinated and will directly affect large numbers of residents. Under

such conditions it is important to have a set of ethical principles that serve as a blueprint for the coordinated response.

The work of the NC IOM/DPH Task Force on Ethics and Pandemic Influenza Planning encouraged stakeholders from a variety of backgrounds and perspectives 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. The unpredictable nature of influenza pandemics requires that individuals, industries, and governmental entities continue to examine and adapt their roles in pandemic influenza preparation.