Five Thorny Questions to Ask When Planning for an Avian Flu Pandemic

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Public health experts project a strong possibility that an avian flu pandemic will occur in the next 4 years, and the federal government has already warned that states and localities must make their own plans for this event since such a broad scale public health crises would far outstrip federal capacity to respond. Colleges and universities are among those institutions that should be preparing now for an avian flu pandemic. This article suggests five thorny questions that higher education administrators must address as they prepare their avian flu plans.

This article presents information and considerations that have guided the preparation of a plan to respond to an expected avian flu pandemic at the authors' home institution, Bridgewater State College. This is a Master's/L-level public institution in southeastern Massachusetts, approximately 45 minutes south of Boston and 45 minutes north of Providence, RI. The college has 9,649 students, about 25% of whom live on campus. The campus health service is staffed by nurses and licensed nurse practitioners. The college's relationship with most employees is governed by union contracts. These facts – the teaching focus of the institution, its governance, geographic location, student enrollment, on-campus population, health service staff and facilities, and union status – affect the college's anticipated response to a pandemic. Readers should consider which elements presented in this article are relevant to their own campuses and which need amending to take into account their own institution's specific facts.

Fast Facts about Avian Flu

College and university administrators who are creating institutional plans to respond to an avian flu pandemic need basic information about this disease and what public health experts expect in a coming pandemic. These are the key points that have guided the Avian Flu Crisis Team at Bridgewater State College.

- The H5N1 avian flu virus is spreading throughout the world among birds, including migratory wild birds as well as fowl in domestic or farming

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conditions. The disease is primarily passed from bird to bird or inefficiently from bird to human. Suspected human-to-human transmission has been reported within several family clusters which included one person with direct contact with infected birds (Centers for Disease Control and Prevention [CDC], 2006b, 2006c).

- The avian flu in humans begins with typical influenza symptoms (fever, cough, muscle aches, sore throat, etc.) and progresses over 2 to 5 days toward pneumonia, which is the largest mortality risk factor. The incubation period averages 2 days from exposure. The primary means of infection for any flu is airborne droplets, spread by those infected through coughing or sneezing. Infected persons can transmit a typical flu virus to others beginning about a day before symptoms appear, and they will shed virus for 2 to 8 days after the onset of symptoms. Children can be contagious for weeks. Residence hall living and group activities such as college classes, sporting events, and other programs increase the risk of exposure to the virus (American College Health Association, 2006).

- A pandemic's severity depends on influenza's transmissibility (ability of a disease to spread), morbidity (the number of cases of a disease within a population) and mortality (number of deaths in a population). Bird-to-human transmission of H5N1 influenza appears to have a high human case fatality rate (over 50%). Given the propensity of this virus to mutate, future case fatality is uncertain (CDC 2006b; World Health Organization [WHO], 2005).

- When a flu pandemic starts, experts think it will spread quickly throughout the world and may appear in most places within days. Restrictions on international and other travel are expected, but at best such restrictions would only slow the spread of the disease (WHO, 2006b).

- A vaccine to prevent infection with H5N1 flu can only be developed after avian flu becomes contagious among humans. The CDC estimates this will take 6 months; so no preventive vaccinations will be available in a pandemic until well after the first wave of infections. Antiviral medications (Tamiflu, for example) are most effective if given within 48 hours of initial exposure. They do not prevent infection, but may shorten the period of symptoms and make the disease less severe (CDC, 2006a; U.S. Department of Health and Human Services, n.d.).

- Experts from the National Institutes of Health believe that an influenza pandemic could occur several months to several years from now. It is expected to hit in about two waves of 8-12 weeks each. Therefore, institutions must plan for disruption of activities for one or two periods of 2-3 months each (Trust for America's Health, n.d.).

- It is believed that when avian flu mutates to a human disease, it may be less deadly than the current bird flu. Projections are that up to 35% of the population will get sick over the course of the pandemic (over 2 million people in Massachusetts). About 4% of those who get sick will need hospitalization, which is 80,000 in Massachusetts, and there are not nearly that many hospital beds available (CDC, 2000).

- If surging need for hospital beds exceeds capacity in a pandemic, college and university residence halls may be used by government health agencies to meet part of this need (White House Homeland Security Council, 2006).

- Social distancing (any strategy that keeps individuals at a distance from others to limit exposure to the virus) is believed to be an important strategy to limit illness. Therefore, many people will stay home and will avoid group situations like work, communal living, and public events.

- Experts envision a reduction in the work force up to 40%, including those caring for children or ill relatives, and those staying home to avoid exposure.

- During a pandemic, groups who are not traditionally at risk of developing complications from annual influenza may be considered at high risk of complications from pandemic influenza infection. For example, during the 1918 pandemic, healthy people aged 20-45 years were particularly susceptible to the virus. This fact raises concern about the potential increased risk of college students to emerging pandemic influenza strains. At the time of a pandemic, early epidemiologic data may give clues as to who is at highest risk of complications from the pandemic strain (WHO, 2006a).

Assumptions Underlying an Avian Flu Plan

It is not possible to anticipate or plan for every scenario concerning an avian flu pandemic. The institution's planning team must first make some explicit assumptions about what will occur and plan for those. These assumptions should be informed by conversations with national, state, and local officials. As an example, the BSC planning team adopted the following assumptions:

- BSC assumes that the first pandemic flu outbreaks will occur outside the U.S., most likely in Southeast Asia. The pandemic's first impact on BSC will likely be to students and faculty who are traveling abroad, or who plan to do so. The World Health Organization (WHO), CDC, and BSC will impose travel restrictions. BSC may call some people back and cancel some planned travel. As was true with SARS, international travelers will be subject to restrictions and screening (U.S. Department of State, 2006).

- BSC assumes that the pandemic influenza wave will last approximately 10 weeks, during which multiple community outbreaks will occur across the country. It is acknowledged that there is a possibility of a second wave, 10 weeks after the end of the first, but at present we are planning for one 10-week epidemic only. The plan for a second wave would closely model the plan for the first wave (White House Homeland Security Council, 2006).
- For planning purposes, BSC assumes that the wave will occur during the academic year. Historically, the largest waves have occurred in the fall and winter, but the seasonality of a pandemic cannot be predicted with certainty (WHO, 2006).
- BSC assumes that the first U.S. outbreaks will occur in major metropolitan areas where there is a high rate of international travel. Bridgewater is in such an area.

Five Thorny Questions

Administrators who create an avian flu response plan need to answer many questions for their own institutions. Some are relatively simple – for example, who should be on the planning team or what the order of succession should be in case the president or other key leaders become ill. Other questions are much more difficult. This article presents five thorny questions that the Bridgewater State College team has faced, along with some of the relevant issues the team considered.

Under What Circumstances Should the Institution Be Closed?

The first consideration for any crisis plan is to prevent harm to students and employees, including preventing loss of life. Students are in high risk situations because they are grouped together in classes, residence halls, and events. They would be safer from infection if they were dispersed to their homes. The explicit value for preventing harm would therefore suggest closing an institution early in a pandemic to prevent spreading the disease on campus.

Most administrators would argue, however, that an institution should be closed only under the most extreme circumstances. A lengthy closure is both expensive and disruptive. If an entire semester must be cancelled, then the institution loses the tuition and fee income on which the budget is based, and employee furloughs might become financially necessary. Therefore, the natural administrative tendency might be to postpone closure until the last possible moment.

Much depends on the pathogenicity of the avian flu strain. Pathogenicity refers to the ability of an infectious agent to cause disease. The avian flu discussed here is a highly pathogenic avian influenza (HPAI), which is highly contagious

and lethal. Experts expect that if HPAI becomes highly transmissible human-to-human, cases will appear almost simultaneously in pockets worldwide. Because patients are contagious for several days before they exhibit symptoms, the appearance of the first confirmed case strongly suggests that many more people are already infected and the timeline for making an institutional decision will be extremely short (White House Homeland Security Council, 2006; WHO, 2006).

If the avian flu is both highly contagious and highly lethal and the institution remains open until a case appears nearby or even on campus, the institution will likely find itself confronted with untenable conditions that will challenge both the health and safety of students and employees and also the institution's financial stability. If the institution does not close before a case appears among its own students, for example, administrators may find that they are required to quarantine and care for those who are sick and others who have been exposed. Given the grouped living conditions of students on most campuses, the number who would be exposed and require care at this point could be very large. These considerations suggest, then, that administrators should opt for closing the institution earlier rather than later, to protect both the health and safety of students and employees and the institution's financial stability. If the avian flu is both highly contagious and highly lethal, prudence suggests convening the planning team to make a decision about whether or when to close the institution as soon as the first confirmed case appears in North America, even if that case occurs far from the institution.

If the Institution Is Closed, How Will Academic Operations Be Managed?

Decisions about academic operations depend on where the institution is in its academic calendar when a decision is made to close. If an entire term must be cancelled, the institution loses the revenue that supports the payroll, and employees may need to be furloughed. If the institution closes in the middle of a term or later, it may be possible to salvage the academic work for the term. In this case, administrators will need to answer several questions: Does the institution have the information technology infrastructure to support continuation of courses online to the end of the term? Do faculty members have the skills to use this technology? Would they be willing to revise their courses to complete them in this way? Would they be healthy enough to do so? At what point in a term does it make sense to try to finish academic work rather than abandon it? At what point is it reasonable to give grades based on work-to-date? These are all value judgments that must be made based on local conditions.

If the Institution Closes, What Will the Institution Do About Students Who Cannot Leave?

If an institution makes the decision to close, the purposes will be to reduce the transmission of the disease in residence halls and classes, and also to clear the campus so that the institution does not need to provide care beyond its means for those who are ill. The question arises, then, how to deal with students who simply cannot leave. Many of these students would be international students, who might be prevented from returning home by international travel restrictions in a pandemic, and who might have fewer local resources to assist them in finding alternate housing on short notice. International students might not be the only ones in this situation, however, and administrators should carefully consider during the planning stage which individuals and categories of students would be unable to assist themselves in a pandemic. An analogy would be those tourists, persons in nursing homes, and persons without cars who were stranded in New Orleans when the evacuation order was given as Hurricane Katrina approached. Administrators must decide to what extent the institution can and should assume responsibility for these students and to what extent they should be assisted in advance of a pandemic to assume responsibility for themselves.

Students remaining on campus after a closure must be housed and fed. This raises the question of who will deliver those services, especially if some of the remaining students are infected with avian flu and/or some are known to have been exposed but are currently asymptomatic. How will these groups of students be segregated from each other and from apparently healthy students to minimize further spread of the disease?

The housing facilities assigned for students who remain during a closure must be selected carefully. Since a pandemic is most likely to occur in the winter and in a worst case scenario public power supplies may be interrupted, the buildings selected should have the most secure source of heat. At the same time, they should have ventilation systems that will minimize or prevent spreading of the infectious agents through normal airflow within the structures.

If the Institution Closes, How Will Essential Functions Continue?

In the avian flu plan, administrators must identify which are the essential functions to be maintained after a closure and which employees are required to perform them. This list is likely to be different from the essential employee list that is maintained for weather emergencies on most campuses, and it will vary depending on whether some students continue to be housed on campus after a closure and whether there are on-going research activities that must be continued, perhaps to avoid public health and safety problems. Essential functions might include utilities, police or campus security, payroll, information

technology infrastructure, public communication, health services, housing and dining services, and executive leadership.

Essential employees who are required to work during an institutional closure may be at increased risk to their own health. Administrators should not wait until a pandemic strikes to consider the interactions of this increased risk with applicable employment laws and policies and union contracts. At a minimum, ethical considerations require institutions to take every possible precaution to safeguard the health of these employees, including providing anti-viral medications and any available immunizations that may be developed, as well as protective equipment such as masks, gloves, and disinfecting agents. These employees should also receive specific training in sanitation and minimizing the risk of contracting the disease.

Under the worst case scenario, where large percentages of workers in every department are at home or hospitalized, either because they are ill or because they are caring for others who are ill, there may be very few staff members to share the essential functions of the institution. To keep an essential power plant in operation under such circumstances, for example, an institution might anticipate providing food and housing on campus for a few workers who must trade off long shifts.

To What Extent Do Government Agencies Expect the Institution to Participate in a Broader Response to the Pandemic?

The thorny questions enumerated above relate solely to an institution's own functions in the event of an avian flu pandemic. Administrators may find that their own plans are complicated or trumped by the decisions of the local, state, or federal government. For example, local officials may expect to use the institution's staff and facilities to distribute available anti-viral medications to the local population; or health services staff may be pressed into duty at local hospitals. Additionally, when the number of seriously ill patients exceeds the number of available hospital beds in an area, state public health officials may commandeer college and university residence halls for spaces in which to quarantine the overflow of patients. In such a scenario, it is not clear to what extent the state officials would expect the institution to help manage and staff these facilities. At the very least, such a use of the institution's facilities would affect the need for security and physical plant employees. Administrators need to consider the expectations of officials and others outside the institution as they relate to institutional and community preparedness. Holding discussions with state and local officials well in advance of a pandemic can clarify the expectations, and these discussions would help to clear up any misunderstandings on the part of governmental officials about the capability of the institution to provide specific services.

Resources

This article has presented a few of the issues that administrators should consider as they prepare for a potential avian flu pandemic. Readers who want further information should consult the following resources:

General Resources

- Center for Disease Control (CDC) websites on pandemic and avian flu http://www.cdc.gov/flu/avian ; http://www.cdc.gov/flu/pandemic
- Federal government website for information on pandemic and avian flu http://pandemicflu.gov
- U.S. Department of Agriculture website on avian flu http://www.usda.gov/birdflu
- World Health Organization (WHO) website on avian flu www.who.int/csr/disease/avian_influenza/en/index.html

College Websites

- College and Universities Pandemic Influenza Planning Checklist http://pandemicflu.gov/plan/collegeschecklist.html
- University of Minnesota http://www.ahc.umn.edu/about/admin/oer/pandemic/home.html
- University of North Carolina http://ehs.unc.edu/healthy/pandemic_flu.shtml

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