

H5N1 planning concerns for local governments

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ABSTRACT

The objectives of this essay are two-fold. First, it will review the very real threat an avian influenza pandemic poses to local communities. Second, it will identify several unaddressed but critical concerns that require the attention of local governments as they refine their pandemic preparedness planning. It is concluded that greater coordination with the private sector, improved public health surveillance efforts, planning for public education, and greater attention to ethical issues are essential concerns that should be on the agenda of local governments as they proceed with their preparations.

Key words: avian flu, influenza pandemic, public health, emergency preparedness, mitigation, planning

INTRODUCTION

For over a decade, world health experts have been monitoring and warning about a new and severe influenza virus. This virus, the H5N1 strain, is known more commonly as avian influenza or the bird flu. Since 2003, this virus has caused the largest worldwide poultry outbreak ever recorded. It first infected humans in 1997 in Hong Kong and, as has been well-reported, holds the potential to mutate into a very deadly threat to humans once a fully contagious virus emerges and becomes transmittable from human to human.

Local governments will be on the front lines during an avian influenza pandemic just as they are with respect to regularly occurring natural disasters. The response of local governments to such a pandemic will be critical for the well-being of communities, businesses, and citizens. Comprehensive emergency response plans are being prepared across the nation for this potential national health emergency.

The purpose of this essay is two-fold. First, it will articulate the threat posed by an avian influenza pandemic to every community. Second, it will provide an overview of several major concerns that have emerged as state and local governments have worked to develop pandemic preparedness plans. An awareness of these important concerns will be of great importance as state and local officials, including public health and emergency management officials, refine their plans.

UNDERSTANDING THE AVIAN FLU PANDEMIC THREAT

The threat of an influenza pandemic has stirred governmental concern and action at all levels. The Department of Homeland Security has developed a national strategy to guide state and local governments, as well as the private sector and individual citizens, in preparing for the most serious flu pandemic in almost 100 years.¹ The national strategy calls for the implementation of over 300 actions by federal departments and agencies and communicates expectations for nonfederal entities (state and local governments, the private sector, critical infrastructure, and individual citizens, etc). An assessment of the threat posed by an avian flu pandemic makes it clear that such preparations are an urgent necessity.

Since December of 2003, the H5N1 virus has caused the largest worldwide poultry outbreak ever recorded. Sixty-five countries have experienced animal outbreaks, including 27 that were newly added in 2007. From 2003 to mid-2008, 14 countries have experienced confirmed human cases of H5N1 (382 with 241 deaths or a death rate of 63 percent). Human to human transmission may have already occurred in Indonesia which has experienced the largest number of human cases (133) and a death rate of 81 percent.²

Most experts believe that an avian flu pandemic is highly probable. This expert consensus is increasingly shared within the medical community at large. A majority of US doctors have now come to believe that a global influenza pandemic will arrive within the next several years.³ This is not to imply they believe we are prepared for such a pandemic. In a worst case scenario, it could result in anywhere between 5 and 500 million human deaths worldwide.³ The World Health Organization more conservatively estimates 1.9-7.5 million deaths.⁴ Fatality rates will vary according to the resources that national health institutions have in place, but the impact will be truly global. It is important to note that, in a full-fledged pandemic, the disease will spread rapidly effecting entire nations at once.

Some perspective on the looming avian influenza pandemic may be gained from the last major influenza pandemic of this magnitude, the Spanish flu of 1918. The 1918 pandemic resulted in 30 million deaths worldwide and more than half a million American deaths. It killed about 10 times more Americans than did World War I. This pandemic was said to have killed more people in less time than any disease before or after.⁵ By late August of 1918, the flu had mutated and an epidemic of unprecedented virulence exploded within a one week period effecting port cities around the world.⁶ The Spanish influenza moved swiftly across the United States following the railroads and propagated fastest in localities closest to them.⁶ With the frequency and ease of international air travel today, the avian flu will spread all the more rapidly and completely.

As our efforts across the United States to prepare for a pandemic are underway, there are doubters to be sure. This is, unfortunately, not unprecedented in pandemic situations. As the Spanish flu spread across the United States in 1918, public officials and health officials were cautious, skeptical, poorly informed, and unprepared.⁵ The *Journal of the American Medical Association*, for example, opined that the Spanish flu “should not cause greater importance to be attached to it, nor arouse any greater fear than would influenza without the new name.”⁷ Neither public health officials nor physicians were prepared and they had to undergo heavy doses of pandemic exposure before

they understood the nature and the impact of the Spanish influenza.⁵ The government and the American people ignored the Spanish flu to an alarming extent. Politicians were absorbed in a World War, as was the media, and the nation was ill-prepared to say the least. The good news is that the current pandemic threat has received governmental attention across the globe. But important concerns still persist.

Since 1918, despite many of its painful lessons, our capacity to anticipate and prepare for new and novel diseases has not improved to the extent that one might hope. Most recent new diseases, Hantavirus and West Nile fever to name just two, were well-established months or even decades before they appeared in numbers large enough to be identified.⁸ Part of the problem is that public health surveillance of the human and animal populations has not improved sufficiently to learn what is in fact knowable in advance. Consequently, we remain highly vulnerable to the inadvertent exposure to higher risk for serious new diseases, including and especially newly evolved strains of adapted avian influenza in humans.⁸

A pandemic today such as the one being anticipated for the H5N1 virus could actually be many times more serious than the Spanish influenza pandemic of 1918. In 1918, we were a more self-sufficient nation. In today's corporate and free trade environment, just in time inventory management and global supply chains are the norm.⁵ In light of this, economic analysts are predicting an unprecedented global economic collapse in the case of a full-blown worldwide pandemic of the sort being projected for H5N1. This could lead, in light of predicted 40 percent work absentee rates, to a complete breakdown of the supply chain, and unprecedented human suffering on a global scale.⁵

As the preparations for an avian influenza pandemic have begun in earnest in the United States, there have emerged several very important concerns or issues that state and local planning entities must confront as they move forward. Although progress has been made in preparing local communities, this progress has been uneven across the country.⁵ More importantly, as the planning process has unfolded, there are several unresolved challenges that have

been identified and that will need to be addressed. It is to a discussion of these critical concerns that we now turn our attention.

PLANNING SHORTFALLS: CONCERNS TO BE ADDRESSED

As states and local communities are preparing for a possible avian influenza pandemic, a close look at these preparations finds wide differences in how far along the planning has proceeded and little consensus about the best policies and strategies.⁹ Among businesses, the effectiveness of planning and the quality of the relationships necessary for the implementation of these plans remains an open question.¹⁰ A majority of the global corporations either have in place or are preparing detailed avian flu pandemic plans. Small businesses represent a special concern. A majority of these small businesses or companies have not yet begun to plan and, as such, are among the organizations most vulnerable in the event of a pandemic. Whether they have planned or not, one major concern that has arisen is that businesses of all sizes report a virtual absence of coordination with the public sector. More than 90 percent report that they have not had discussions with any level of government. Few have had some discussion about their organization's ability to provide essential services or access to facilities, equipment, or staff during a pandemic.¹⁰ It should certainly be a priority among local governmental emergency planners and public health officials to promote better coordination between the public and private sectors.

Agricultural communities may have particular needs in relation to animal husbandry practices (i.e. factory farming) that may increase the likelihood of a pandemic. The methods of mass production associated with the poultry industry, for example, and the practice of keeping large numbers of animals in close proximity only increases the opportunity for transmission of disease. The monitoring of bird and animal populations for signs of the H5N1 virus is a critical public health surveillance function that must be improved. Likewise, meat packing and poultry storage facilities should be more carefully monitored for signs of disease. Improved public coordination with these entities is essential.^{3,11} The best chance, any community has,

to control a pandemic consists of recognizing it as early as possible. To whatever extent possible, the collaboration of public health, the medical community, agriculture, and business must be geared to improved surveillance of the animal and human populations for signs of the H5N1 virus.

The collaboration necessary for improving the early warning system and containing or delaying the spread of the disease at its source will be difficult and local communities cannot really be expected to produce it on their own initiative. Animal disease surveillance, for example, is a state-based responsibility and most animal health professionals cite the need to improve surveillance for animal diseases. Most states have laws requiring the reporting or monitoring of animal diseases, and these must be certain to include the possibility of H5N1 outbreaks in the animal population. Animal health information systems exist and need to be improved. States must expand their capacity to provide more leadership for local communities.¹²

Public health surveillance of the human population, necessary to provide early warning and information to decision makers, requires the systematic collection, analysis, and interpretation of data. A global epidemic especially calls for an integrated worldwide network that brings health practitioners, researchers, governments together across national boundaries. Local communities cannot be responsible for that. But national and state entities can and should do more to bring local communities into an integrated disease surveillance and response strategy. Here too, states must expand their capacity to provide more leadership for local communities.¹³ Local communities can nevertheless benefit by incorporating into their planning an awareness of state and federal efforts in the surveillance of human and animal populations. Likewise, entities like the Center for Disease Control and the World Health Organization provide much useful information and analysis with respect to public health surveillance.

Proper vaccination of a population is the most reliable way to limit the impact of an H5N1 pandemic. Most local plans include the designation of public health treatment centers and the points of distribution for vaccines and antiviral medications. But the

bird flu pandemic will likely emerge and engulf communities before an effective vaccine is produced, and there will be inevitable shortages of vaccines when they are produced as well as shortages of antiviral medications.¹¹ In the short-term, available influenza medications such as Tamiflu will be recommended and will prove helpful in treating symptoms somewhat.² But that may offer little comfort in the end. The United States as recently as 2 years ago had only enough Tamiflu stockpiled to cover about 2 percent of the population.⁵ Serious efforts, at both the national and the state level, are underway to improve this situation. But even in a best case scenario, shortages of antiviral medications must be anticipated.⁵

The question of who will receive the available medications, and what will surely be a limited supply of new vaccine when it is available, is one addressed in most local plans. They have followed the suggestion of the World Health Organization that priority for the distribution of limited medications be first given to “essential personnel.”⁵ Most plans identify essential personnel. Medical personnel, public health and emergency responders, police, fire fighters, and critical infrastructure personnel are usually among their number. Many are suggesting the inclusion of workers in the transportation industry responsible for the delivery of foods and medicines. Interestingly, and perhaps ominously, Australia places funeral directors among those first in line.⁵ Most importantly, critical personnel aside, it is likely that the general American public is going to be left without much medical protection at the onset of a pandemic. This leads directly to another important concern that has received relative little consistent attention.

In the expected absence of sufficient medical protection (i.e. shortages of vaccines and antiviral medications as well as the overcrowding of hospitals etc.) for its citizens, local planners are expected to include and employ defensive strategies as the pandemic threat level rises. These include social distancing, respiratory etiquette, and other hygiene measures. School closures, public gathering bans, and travel restrictions may be required to slow the course of a full-fledged pandemic and are being anticipated by most local planners.⁵ But such measures may be of

limited utility in a pandemic wave that sweeps in quickly. It is possible that a community will be in the midst of a pandemic before such measures can be implemented and, given the expected shortages of medical interventions and vaccines, most individuals and families will be expected to arrange for their own safety. This makes risk communication and public education perhaps the most important ingredient in local planning activities across the country.

Communicating the risks associated with an H5N1 pandemic and educating the public about appropriate and necessary self-defense measures to mitigate these risks must be an essential component in all pandemic planning. The American Public Health Association conducted a recent survey. Its results show that too many Americans are generally unprepared for any public health emergency. Only about 14 percent have the three day supply of food, water, and emergency supplies recommended by the American Red Cross. Thirty-two percent have taken no action whatsoever to prepare for a public health emergency. Eighty-seven percent admit they have not done nearly enough to prepare for such an emergency.¹⁴ In another striking finding, only 37 percent of employers believed that a public health crisis would impact their business over the next several years. Regional food distribution centers reported spending considerable time and resources on preparedness planning, but local pantries and food shelves indicated that they had not prepared.¹⁴ These results seem to suggest that the task of preparing the public to take defensive measures and make preparations for an avian flu pandemic could be very daunting indeed.

Social scientists have been studying people's responses to risk and to risk communication for decades. The possibility for a scientifically sound pandemic risk communication and public education strategy exists but has, unfortunately, been largely underdeveloped.¹⁵ Recipes for failure in this area are plentiful, and local communities must create and implement a process that requires coordination among several types of experts. These include subject matter specialists (e.g. public health, social services, law, emergency management planners and responders,

and education), risk and decision analysts who can identify information critical to the decisions of various audiences, psychologists who can design messages and evaluate their success, and communications systems specialists who can ensure that tested messages get communicated within the emergency response system.¹⁵ It is probably safe to insist that we may not in any sense be considered to be prepared for a pandemic until the scientific base for creating and delivering such communication is incorporated and implemented in our local communities.

A final concern that has emerged as the planning process has evolved in local communities, one that is certainly alluded to in much of our preceding discussion, touches on the ethical dimension of the pandemic threat. The allocation of scarce medical supplies and resources, for example, or the application of control measures during a pandemic are perceived as ethical issues by most local planners. In a recent study, scholars conducted a content analysis of existing state influenza pandemic plans seeking to identify evidence of ethical guidance as measured by the presence of ethical language and ethical analysis or discussion.¹⁶ The most striking finding was the relative absence of ethical language and direction.

When a pandemic wave is spreading across communities around the nation, there will be little time to discuss or reflect on ethical concerns, much less to adjust public health, medical, and response systems to enable them to act ethically or make ethical decisions. Some ethical issues, such as those associated with the allocation of scarce resources or the constraints on civil liberties imposed by various control measures, are alluded to but hardly fleshed out. Most mentioned, but not resolved, is the ethical significance of shortages in supplies of antiviral agents and vaccines.¹⁶ Clearly needed, at a minimum, is the enumeration of ethical decisions that can be anticipated in advance, the devising of structures and systems for ethical deliberation and decision making, training for people who work in those systems, and a serious effort to address ethical issues that can (and should) be handled before a pandemic hits.¹⁶

The ethical dimensions of a pandemic scenario may speak of the need to include trained ethicists as

a part of state and local planning units in an effort to flesh out ethical issues, identify options, and decide in advance how to respond ethically to an unfolding pandemic. Such expertise may be difficult for some communities to access, but the utilization of such expertise available at regional and local universities may provide options for many if not most.

CONCLUSION

As state and local governments have begun planning for an avian influenza pandemic, their focus on specific and technical response measures has resulted in progress. In our discussion, four major concerns have been identified and should be more seriously engaged as planning moves forward. These concerns may be thought of as a guide for the completion and refinement of the planning process.

Concern number one: Coordination with the private sector

Among businesses or major corporations that have engaged in serious planning, we have seen that the vast majority have not interfaced with local governments. Most small businesses have not begun to plan at all. It is, therefore, imperative that local governments initiate coordinated efforts with the private sector. In the case of larger businesses, partnering with them to utilize their efforts and resources combined with public efforts and resources can provide essential additional services and facilities to communities and their citizens. Equally important, local planning groups need to reach out to small businesses and offer information and assistance to ignite their preparedness activity.

Concern number two: Monitoring

The best chance to control for the effects of an avian influenza pandemic is to recognize it as early as possible. Much room for improvement exists here. In addition to coordinating with the medical community to monitor human populations and identify avian influenza cases, agricultural communities especially will want to consider increased efforts to monitor bird and animal populations for signs of H5N1 outbreaks. Meat packing and poultry storage facilities will

require special monitoring as well. The planning process should include, to the extent possible, plans for the collaboration of the appropriate public and private sector actors to improve all public health surveillance efforts. This includes the development of joint strategy, the training of appropriate actors, and the processing and sharing of relevant information.

Concern number three: Risk communication and public education

The degree to which individuals, families, and communities will be left on their own during a pandemic, combined with the expected shortages of antiviral medication and vaccines at the onset of a pandemic, make risk communication and public education extremely important in relation to mitigation efforts that citizens will need to be prepared to take in self-defense. This public education function, as we have seen, will require the utilization of both scientific techniques in risk communication and of specialists who are able to employ them effectively. This should be a major priority for all local planning groups. It is critical that the public be properly educated with respect to precautions and defensive measures as well as with respect to treatment options. Equally important is the process for keeping the public informed through the course of a pandemic event or wave once it begins.

Concern number four: Anticipate ethical dilemmas

Given the earlier discussion of the ethical dimension of an avian influenza pandemic, and the sparse attention addressed to it in local planning to date, it is essential that ethical concerns be anticipated and explicitly addressed in the planning process. The inclusion of a trained ethicist in local planning units is strongly suggested. It is worth noting that ethical decision making is more likely to occur when it is decided in advance. During a pandemic wave, if ethical concerns

have not been anticipated and prepared for, response efforts may well be faced with a series of tragic choices in which ethical outcomes are difficult if not impossible to achieve.

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