Pandemic Influenza Planning in New York City

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INTRODUCTION

Planning for an outbreak of pandemic influenza is a complex undertaking because of the potential impact on not only health care and public health, but also because of the need for greater societal preparedness. Coping with a pandemic in a large city presents additional challenges. Close living conditions and reliance on crowded mass transportation systems may facilitate the spread of influenza virus. The potential tidal wave of ill persons seeking care may overwhelm already overcrowded fragile health care delivery systems in many cities. Finally, communication plans need to be more robust to reach the diverse ethnic populations of cities and must take into account vulnerable populations.

In New York City (NYC) much of our influenza preparedness activities build on the foundation of emergency preparedness accomplishments established in the last several years. These activities include: syndromic surveillance, enhanced relationships with the health care community, large scale immunization clinics, communication strategies, development of incident management systems, surge capacity for Health Department staff, and a new biosafety level three facility. However, because of the special challenges presented by a pandemic, new activities have been initiated as well. This article will describe some of our planning goals and challenges.

Several assumptions have influenced our planning. First, we need to prepare for any pandemic strain, not just for the current H5N1 strain. Given that New York City is a global destination, if any novel strain becomes easily transmissible from human to human, we will not be able to keep influenza from entering the City or prevent transmission once it arrives but will attempt to slow transmission. Our goal in reacting to a pandemic is to limit mortality and to maintain essential services. Once a pandemic strain vaccine becomes available, we will oversee distribution of the vaccine. Strategies need to be appropriate for the WHO phase of the pandemic, recognizing that certain activities that might be emphasized during Phase 5 (limited human-to-human transmission), may not be practical in Phase 6 (full pandemic).

During Phase 6, we will recommend that ill persons stay home. Cancellation of public gatherings and school closure decisions would be made when there is better understanding of the epidemiologic and clinical features of the illness caused by the pandemic strain. Some of the pandemic scenarios that have received much public attention actually play only a small role in our plans. For example, quarantine facilities for large groups or the cordoning off of neighborhoods is not anticipated.

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Once there is widespread community transmission, these measures will have no public health rationale.

PLANNING ACTIVITIES

A multi disciplinary team representing expertise in surveillance and epidemiology, mental health, law, laboratory sciences, communication and immunization have been meeting for the past year to devise the agency's plan. In addition, we have worked with New York City's Office of Emergency Management to guide other city entities in their flu pandemic planning activities. The following section highlights several aspects of our plan and challenges relevant to New York City.

Communication

We realize that our ability to provide the public with accurate, timely information will be strained during a pandemic yet will be critical to the effectiveness of our response. For example, our ability to explain to the public when and where to seek medical attention will greatly influence our ability to maintain hospital capacity during a time of crisis. Multiple media outlets and large non-English speaking populations residing in NYC make this task a challenge.

Much of our communication planning builds upon the work undertaken since September 11, 2001. We have focused on enhancing our relationships with the media and have taken care to reach out to ethnic media, which will be critical to reaching NYC's many non-English speaking populations. Rapid translational capacity has been developed to accommodate a potential need to reach these media outlets on a timely basis. In addition, we anticipate using our website as well as New York City Department of Health and Mental Hygiene spokespersons extensively to communicate with the public. We've trained large numbers of our staff in media and risk communications issues to accomplish this task. Finally, public education materials on respiratory hygiene have been created and translated into multiple languages.

Our Health Alert Network (HAN) will be instrumental in providing up to date information and clinical guidance to New York City's large health care community. At present, the HAN has about 15,000 subscribers who get frequent updates and alerts on public health issues in New York City. All licensed health care providers are eligible to sign up for the HAN and may do so at <http://www.nyc.gov/health/nycmed>. Signing up in advance will allow providers to get familiar with the HAN and be able to use it effectively during a crisis.

Furthermore, the influenza vaccine shortages experienced over the past two flu seasons have provided timely lessons to help us plan for vaccine distribution and for large scale immunization clinics that may be required in a pandemic or between waves of transmission. Although we still have work ahead of us to develop realistic operational plans for vaccine distribution, this has improved our strategies in working with both the public and provider communities.

Surveillance

Disease surveillance in New York City is complicated by our need to relate to 67 acute care hospitals as well as thousands of office based providers to obtain case reports. Similar to our communication plans, the pandemic plan for surveillance

rests upon the foundation of surveillance improvements instituted in NYC the last several years. Our provider and laboratory-based surveillance for influenza include: sentinel surveillance from physicians for flu isolates, monitoring of the number of specimens submitted to labs for flu, and most recently, requests to the provider community to report suspect cases of avian flu to us. Reported outbreaks, primarily in congregate settings, also help us gauge the extent of influenza activity in NYC. We also rely on a variety of syndromic surveillance systems to detect flu activity, including emergency medical service transports, emergency department visits, and sales from a large pharmaceutical company. Finally, we have recently added pandemic flu as a reportable condition under the New York City health code.

Our surveillance strategy will differ depending on the phase of the pandemic. In WHO Phase 5, we will collect detailed information on all cases and, if appropriate (isolated cases amongst travelers from endemic areas for example), recommend isolation for those cases. In WHO Phase 6, however, we are unlikely to count all cases and instead may rely on surrogate data reflecting pandemic flu activity, including hospital utilization and death certificate information.

Health Care

During a pandemic, health care resources, already limited by increasing financial constraints, will become severely strained. We calculate that during the peak of the first wave of a pandemic, there will be an additional 806 daily admissions to NYC hospitals, which would account for 24% of our current daily bed capacity. During a week, approximately 1,100 New Yorkers would require intensive care, which accounts for 67% of the city's current capacity. Maintaining other non-pandemic medical and intensive care services will further challenge the health care system.

We are working with the New York State Department of Health (who regulate hospitals in New York State) on these issues and will rely on their Health Emergency Resource database (HERDS) to help monitor hospital supplies, staffing, and bed capacity during any emergency. This information will be vital to help oversee the management of the hospital system during a citywide emergency. Increasing hospital bed surge capacity will be the important factor in treating an expected influx of seriously ill patients. Increasing this capacity principally centers on staffing issues and assuring that staff is well informed, have supplies for infection control, and will be prioritized for treatment if they become ill. Even so, because of illness and the need to care for relatives, hospitals know that staff absenteeism will be a major barrier to treating patients. This will remain a major challenge for pandemic flu planning in NYC and across the country. We are currently exploring if we can work with NYC hospitals to help them stockpile needed equipment to accommodate the surge of patients.

A tabletop with 67 NYC acute care hospitals on September 9, 2005, revealed a great deal of knowledge on the part of our hospitals about the need for creating surge capacity beds, as well as willingness to accept guidance on the use of limited anti-virals. Lessons learned included the need to extend planning to primary care centers, home health care, and long term facilities and to continue working to expand surge capacity and to drill these strategies.

SOCIETAL PREPAREDNESS

To meet societal needs for basic services in the largest city in the United States, continuity plans of critical governmental agencies need to be upgraded to meet

challenges posed by a pandemic. Accordingly, we've met with all New York City agencies and critical infrastructure partners in areas such as utilities, health care, and transportation to provide them with information on influenza pandemics. Each one was tasked with defining their essential functions and determining probable demand on these functions during a pandemic and how they would modify their plans to keep these activities viable assuming a 25% absenteeism rate (above their baseline) for the 8 weeks of a first wave of a pandemic. We also asked them to examine their human resource policies and to encourage "social distancing" policies where possible by allowing employees to telecommute. Sick leave policies also need to be examined to allow employees to follow instructions to stay home if they feel ill. All were asked to examine how they can slow transmission of influenza in the workplace for both employees and clients through adoption of strategies such as promotion of respiratory hygiene. Finally, all were asked to determine which of their critical supplies might be affected by a pandemic and to consider increasing their inventory of these supplies.

Above and beyond business continuity, there will be additional tasks for these societal partners to meet the needs imposed by the pandemic. These might include need for volunteer staff for hospitals or an increased need for home delivery of certain items such as meals. These tasks are currently being addressed.

The broader business community and the goods and services they manufacture and distribute will also be important during a pandemic. We've held several forums with leading NYC businesses to provide them with basic information on pandemic flu and to encourage their planning efforts. We've also met with NYC colleges and universities to help them identify and plan for some of the unique needs of their student populations. Because of the massive size and complexity of the NYC business community, these efforts will need to continue for the foreseeable future.

CONCLUSIONS

New York City's dense urban environment, reliance on mass transit, diverse populations, and fragile health care system present challenges to pandemic influenza planning. As discussed, our planning efforts focus on societal continuity and decreasing mortality during a first wave. We will need to modify our strategies as more information becomes available concerning the pandemic strain of the virus and as more data on anti-viral usage, community controls, and other issues becomes available. Much more needs to be done. Since 9/11, New York City has become a national leader in emergency preparedness, and we hope to build on these preparations to help guide the city through a pandemic when it comes.