

**City of Milwaukee Health Department
Disease Control and Prevention**

**Pandemic Influenza
Preparedness and Response
Plan**

Version IV

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PREFACE

Influenza A viruses periodically cause worldwide epidemics, or pandemics, with high rates of illness and death and considerable health care infrastructure disruption. Advanced planning for a large scale and widespread health emergency is required to optimize health care delivery through a pandemic. Unlike other public health emergencies, an influenza epidemic will impact the entire City. Milwaukee must be prepared to respond in the context of uncertain availability of external resources and support. Therefore, contingency planning is required to mitigate the impact of an influenza epidemic through planning and preparation by the coordinated efforts of all levels of government in collaboration with their stakeholders.

The ***City of Milwaukee Health Department Pandemic Influenza Preparedness and Response Plan*** is intended to be dynamic and iterative, consists of preparedness and response components that are consistent with the general principles of emergency response. Each section aims to assist and facilitate appropriate planning at all levels of City and County government for the next influenza pandemic.

The plan was developed to assist with surveillance, vaccine delivery, and use of antivirals, health services, emergency services, and communications. While the most effective public health intervention to mitigate the impact of a pandemic is immunization with an effective vaccine against the novel virus, and, to a lesser extent, the use of antiviral drugs, comprehensive planning requires that appropriate surveillance and laboratory testing capacity is in place. In addition, the health sector, including emergency services and the community as a whole, must be informed and equipped to deal with a pandemic.

During and after an influenza pandemic, the prevention and preparedness activities facilitate the response and recovery; components of the plan that will require close cooperation between all levels of government. The response and recovery sections of the plan, developed through collaboration with the Office of Emergency Management, address the operational activities for an effective citywide response, including essential public and private coordination. The recovery section provides guidance on coordinated post-event activities for both the health and emergency response sectors.

The overall goal of pandemic preparedness and response is first to minimize serious illness and overall deaths and secondly, to minimize societal and infrastructure disruption among City of Milwaukee residents as a result of an influenza pandemic.

SECTION 1: INTRODUCTION

1.1 GOAL OF THE PANDEMIC INFLUENZA RESPONSE PLAN

The goal of influenza pandemic preparedness and response is: 1) to minimize serious illness and overall deaths and 2) to minimize infrastructure disruption among citizens of Milwaukee as a result of an influenza pandemic. This plan establishes the protocols and policies for responding to all phases of an influenza pandemic.

1.2 POLICIES

To assist and facilitate appropriate planning and response at all levels of government, the following policies will be followed:

- MHD employees will have a working knowledge of this plan and identified roles.
- Appropriate information will be shared with the public.
- Information will be shared with other local health jurisdictions in Wisconsin, as well as physicians, hospitals and other health care professionals, and emergency management.
- MHD resources will be utilized before requesting assistance from other sources.
- MHD will adhere to appropriate medical ethics and practice when allocating scarce resources.

1.3 ASSUMPTIONS

For planning purposes, the worst-case scenario is being projected. If the situation does not fully develop, the response can be adjusted. The following assumptions are made:

- Pandemic influenza has occurred every 11 to 39 years in the 20th century. Based on history of the 20th century, we would expect an influenza pandemic within the next few years.
- A novel influenza virus strain will likely emerge in a country other than the United States, but a novel strain could emerge first in the U.S.
- With the emergence of a novel influenza virus strain, it is likely that all persons will need two doses of vaccine to achieve optimal antibody response.
- Although there may be isolated pockets, the pandemic could affect the entire city at one time, as well as multiple locations in the state/nation, limiting the availability of federal and state resources.
- Approximately 29% of the 1 million residents of Milwaukee County residents have had flu vaccinations, which will not necessarily provide the specific type of protection needed.
- Milwaukee's permanent residents, commuting workers and tourists combined will create a vaccination target population of nearly double that of the resident population.
- When the pandemic occurs, vaccines and antivirals will be in short supply and will have to be allocated on a priority basis.
- According to Centers for Disease Control and Prevention (CDC) guidelines, total vaccine supply will be under the control of the federal government, with states and large cities receiving an allotment.
- The federal government has assumed responsibility for devising a liability program for vaccine manufacturers and persons administering the vaccine.
- DHFS is responsible for redistribution of vaccine within the state, and the delivery of vaccine to dispensing sites specified by the city.
- Response to the surge in demand for hospital services will require non-standard approaches, including:
 - Discharge of all but critically ill hospital patients
 - Expansion of hospital "capacity" by using all available space and "less than code compliance beds"
 - Increase of patient ratio to hospital staff
 - Recruitment of volunteers who can provide custodial services under the general supervision

- of health and medical workers
- Relaxation of practitioner licensure requirements as deemed appropriate
- Utilization of general purpose and special needs shelters as temporary health facilities
- Utilization of large venues identified for SNS dispensing as mass vaccination sites
- The federal government has assumed responsibility for developing “generic” guidelines and information templates, including fact sheets, triage and treatment of influenza patients’ protocols, and guidelines for the distribution and use of antiviral agents that can be modified by DHFS and MHD. Until these national templates are developed and available, MHD has the responsibility to develop such guidelines for its citizens.
- Secondary bacterial infections following influenza illness may tax antibiotic supplies.

In addition to the above assumptions, it is felt that there may be as little as one to six months warning before outbreaks begin in the U.S., if the pandemic emerges outside this country. The pandemic may occur during time periods not normally associated with our usual influenza season, and the pandemic strain may attack categories of people at different rates than that which normally occurs during the influenza seasons. Vaccine development can take between six to nine months once the novel strain emerges and is identified, so if the pandemic strain emerges in the U.S., other measures of disease control will need to be used to slow the spread of disease until a sufficient number of residents have been vaccinated.

1.4 PANDEMIC PLANNING COMMITTEE

The Pandemic Planning Committee (PPC), chaired by the Division of Disease Control and Prevention Epidemiologist, first met in spring of 2005, and was charged with the development of this plan. The committee will meet to update this plan as new guidance becomes available and prior to the annual influenza season. The PPC will include at a minimum the following members:

- DCP Epidemiologist, PPC Chair
- DCP Manager
- DCP Emergency Planning Coordinator
- DCP Environmental and Disease Control Specialist
- DCP Immunizations PHN Coordinator(s)
- DCP Communicable Disease PHN Coordinator(s)
- MHD Labs Virologist
- MHD Medical Director

SECTION 2: ROLES AND RESPONSIBILITIES

2.1 INTRODUCTION

A coordinated response to pandemic influenza requires collective infrastructures and response capacities, as well as coordinated activities that will permit MHD to anticipate problems, monitor for adverse outcomes, and respond to effectively minimize the impact of a pandemic influenza event.

2.2 FEDERAL GOVERNMENT

The federal government holds responsibility for the nationwide coordination of the pandemic influenza response, including surveillance, international liaison, and coordination of the vaccine response (infrastructure procurement, vaccine allocation, management, and funding). Some of their responsibilities will include the following:

- Entering into agreements and arrangements with international organizations such as the WHO to support surveillance and coordination and investigation activities
- Producing, allocating, and overseeing the distribution of specialized diagnostic reagents and technical information to the state public health laboratories
- Identifying inter-pandemic and pandemic period manufacturers/suppliers of influenza vaccine and antiviral drugs
- Developing contracts with manufacturers/suppliers and coordinating and maintaining a secure supply of influenza vaccines and antiviral drugs
- Licensing establishments and influenza vaccines and antiviral drugs for sale
- Designing, organizing, and supporting special national studies required to better define burden of disease or evaluate pandemic influenza response capacity
- Declaring the activation of the pandemic phase of the epidemic
- Providing liaison with other countries and international organization
- Recommending vaccine composition, number of doses, priority groups to receive influenza vaccine and antiviral drugs, standards of acceptable rates for adverse vaccine and antiviral drug reactions, mechanisms and time frames for reporting, and modifications to surveillance and communication strategies
- Proposing or developing criteria that can be used to assist in the post-pandemic evaluation of recommendations concerning processes and outcomes during the pandemic
- Recommending the influenza pandemic is declared over
- Adding supplies of PPE, antivirals, and vaccines to the Strategic National Stockpile

2.3 STATE OF WISCONSIN

The State of Wisconsin, through the Division of Health and Family Services, Department of Health and other appropriate state agencies, hold responsibility for the statewide coordination of the pandemic influenza response including surveillance, coordination of health and other appropriate services, federal liaison, and coordination of the vaccine response (infrastructure procurement, vaccine allocation, management, and funding). A listing of state responsibilities are outlined in the state's pandemic flu plan which can be viewed at http://dhfs.wisconsin.gov/preparedness/pdf_files/WIPandemicInfluenzaPlan.pdf

2.4 CITY OF MILWAUKEE

The City of Milwaukee is responsible for local planning for an influenza pandemic. Some of MHD's responsibilities include the following:

- Ensuring that a pandemic influenza plan for the city is developed, is consistent with other emergency response plans and that the pandemic influenza plan is regularly updated
- Serving as a liaison with Milwaukee responders (e.g., emergency medical services, hospitals, and

mortuary services) in advance of a pandemic to facilitate a coordinated community response. It is likely that the MHD, through existing or enhanced surveillance, may be the first to detect influenza in Wisconsin. It is essential that the lines of communication within the city/county and on to the state and federal levels are clear and established in advance of a pandemic

- Assessing existing health care resources, coordinating responses with key stakeholders in the city/county/region, and developing contingency plans for anticipated shortages of essential services
- Promoting routine influenza and pneumococcal vaccination to designated high-risk groups
- Pre-developing educational materials to be distributed to the public and healthcare providers during a pandemic
- Participating in state/national surveillance activities by monitoring and reporting diseases caused by influenza virus and related diseases/conditions
- Investigating outbreaks and clusters of influenza-like illness, including sending or assuring influenza virus isolates are sent to the Wisconsin State Lab of Hygiene (WSLH)
- Develop protocols/procedures for influenza control including mass vaccination and community containment measures such as closing schools, businesses, and other public events

SECTION 3: EPIDEMIOLOGY OF PANDEMIC INFLUENZA

3.1 INTRODUCTION

Influenza viruses are unique in their ability to cause infection in all age groups on a global scale. In addition to the highly transmissible nature of influenza, the virus can change its antigenic structure, resulting in novel sub-types that have never before occurred in humans. Major shifts in the viral sub-types are associated with influenza pandemics. The 1918 influenza pandemic caused more than 20 million deaths worldwide while the pandemics of 1957 and 1968 resulted in lower mortality rates due in part to antibiotic therapy for secondary bacterial infections and more aggressive supportive care. However, both were associated with high rates of morbidity and social disruption.

Pandemic influenza is a unique public health emergency and community disaster. It is considered a highly probable if not inevitable event, but no one can predict when it will occur. There may be little warning, but most experts agree that there will be one to six months between identification of a novel virus and widespread outbreaks in the U.S. Outbreaks will occur simultaneously throughout the U.S., and each pandemic wave will affect communities from four to 12 weeks or more. It is anticipated that the pandemic could last for up to two years.

Certain conditions make an influenza pandemic more likely:

- A new influenza A virus arising from a major genetic change, i.e., an antigenic shift
- A susceptible population with little or no immunity
- A virus that is transmitted efficiently from person to person
- A virulent virus with the capacity to cause serious illness and death

Pandemic influenza has the potential of affecting all elements of society. A large number of cases will add burden to hospitals and other health care systems already stressed with the normal day-to-day crises. Mortality is usually markedly increased. Health and medical personnel as well as other critical infrastructure workers, such as law enforcement, fire, public works, will not be immune. The effects on our communities could be staggering.

Influenza is a viral illness of the respiratory tract characterized by rapid onset of high fever, chills, sore throat, runny nose, severe headache, nonproductive cough, and intense body aches followed by extreme fatigue. The virus is spread through respiratory droplets from an infected person. Influenza is highly contagious and is responsible for annual epidemics in the United States and other countries. In the U.S. influenza epidemics typically occur from December to April, resulting in 200,000 hospitalizations and 36,000 deaths annually from influenza infection or a secondary complication.

There are two types of influenza viruses which cause significant disease in humans: type A and type B. Influenza A viruses are composed of two major antigenic structures and are essential to the production of influenza vaccines and the induction of immunity: hemagglutinin (H) and neuraminidase (N). These two components define the virus subtype.

Both influenza A and B viruses can undergo the minor genetic variations known as antigenic drift. Antigenic drift is a gradual change caused by minor point mutations in the viral genes, and results in small changes to the surface proteins of the influenza virus. Antigenic drift occurs continuously, and is the reason that the make-up of the influenza vaccine is changed almost every year.

Influenza A virus is unique in that it can infect a variety of animals; wild birds are the natural reservoir for influenza A. It is also unique in that it can undergo the major genetic re-assortment known as antigenic shift. This sudden change happens infrequently and often occurs as a result of a recombination of human influenza A with an animal influenza A virus. This recombination results in a new subtype of influenza A to which the human population has little or no immunity. An antigenic shift is almost always followed by an influenza pandemic. A pandemic is a worldwide outbreak of disease usually affecting a large number of

people.

A novel influenza strain, therefore, is a new strain of influenza that is significantly different from what the public has been exposed to either through prior infection or vaccination and that is capable of causing increased morbidity and mortality. During the last century, three novel influenza A strains have evolved from animal strains from birds or pigs to cause pandemics:

- The "Spanish" influenza pandemic of 1918 killed over 500,000 people in the United States and had a worldwide mortality of 20 to 40 million
- In 1957, Asian influenza caused approximately 40,000 deaths in the United States
- During the Hong Kong pandemic in 1968-69, mortality in the United States was estimated at 30,000 deaths

3.2 ESTIMATED IMPACT OF AN INFLUENZA PANDEMIC ON MILWAUKEE

Predicting the impact of the next influenza pandemic is difficult at best, as many factors must be considered: the virulence of the virus, how rapidly it spreads, and the effectiveness of prevention and response efforts. Estimates of the health and economic impact are important to aid public health policy decisions and guide pandemic planning for health and emergency sectors.

During the normal influenza season, which occurs every winter in North America, an average of 5% to 20% of the population becomes ill, but during a severe pandemic as much as 30% to 50% of the population may become ill. Usually the highest rates of infection and clinical illness occur in children while serious complications and death occur mainly in the elderly. Historic data show that over 50% of a population may become infected with the novel virus during a pandemic, and the age-specific morbidity and mortality may be quite different from the normal annual influenza epidemic. During the 1918 pandemic, young adults had the highest mortality rates, with nearly one-half the influenza-related deaths occurring in persons 20-40 years of age. During the 1957 and 1968 pandemics in the U.S., persons under the age of 65 accounted for 36% and 48% of influenza-related deaths.

Based on observations from previous pandemics, the Centers for Disease Control and Prevention (CDC) has estimated that the economic losses in the United States associated with the next pandemic will range from approximately \$71 billion to \$166 billion. These estimates are based on the attack rate and associated morbidity and mortality. In the United States, between 40 and 100 million will become clinically ill; 18 to 45 million will require outpatient care; 300,000 to 800,000 persons will be hospitalized; and between 88,000 and 300,000 persons will die. The potential for high levels of morbidity and mortality, as well as the significant disruption to society, make planning for the next influenza pandemic imperative. The data presented in Tables 1a and 2 are based on an estimate obtained using CDC's FluAid software and describes the predicted outcome of an influenza pandemic in the United States, Wisconsin and the City of Milwaukee. Table 1b has been added to show outcomes that might happen if the virus associated with the pandemic has an impact similar to that of the 1958, 1968 or 1918 pandemic. The United States Department of Health and Human Services (HHS) has recently estimated the impact of an influenza pandemic using data from these 20th century influenza pandemics. Table 1b shows Milwaukee County, Wisconsin and United States estimates calculated using adjustment factors developed by HHS based on morbidity and mortality observed for those pandemics. The new HHS formula allows us to see what the upper end of the impact estimate or "worst case scenario" might look like for planning purposes, while the FluAid figures give us an idea of what may likely happen, and what should be planned for at a minimum. It should be remembered that the severity of the pandemic and impact on morbidity and mortality will be affected by strategic and successful dispensation of antivirals, availability of adequate medical care, the characteristics of the virus, and the cooperation of the general public in hygiene and social distancing efforts.

Table 1A Number of Persons Ill with Influenza in Milwaukee County if a Pandemic were to Occur (FluAid):

Table 1A			
Category	United States	Wisconsin	Milwaukee County
Clinically Ill	250 Million	1.9 million	325,156
Outpatients	50 million	1 million	257,516
Hospitalizations	2 million	22,000	4,868
Deaths	500,000	8,000	1,464

Table 1B Number of Persons Ill with Influenza in Milwaukee County if a Pandemic were to Occur (based on 1958, 1968 (moderate) and 1918 (severe) Pandemic data):

Table 1B			
Category	United States	Wisconsin	Milwaukee County
Clinically Ill	90,000,000	1,550,903	288,600
Outpatients	45,000,000	775,452	144,300
Hospitalizations	865,000 (moderate)- 9,900,000 (severe)	14,800-170,599	2,771-31,746
Deaths	209,000 (moderate)- 1,903,000 (severe)	3,102-32,724	670-6,102

Table 2 Distribution of Influenza Morbidity (Inpatient and Outpatient) and Mortality in Milwaukee County by Age Group:

Table 2				
	Age Group	Gross Attack Rates		
		15%	25%	35%
Deaths	0-18 years	53	88	124
	19-64 years	331	552	772
	65+ years	243	406	568
	Total	627	1,046	1,464
Hospitalizations	0-18 years	288	480	672
	19-64 years	1,137	1,895	2,652
	65+ years	662	1,103	1,544
	Total	2,087	3,478	4,868
Outpatient Visits	0-18 years	25,312	42,187	59,062
	19-64 years	66,341	110,568	154,795
	65+ years	14,425	24,042	33,659
	Total	106,078	176,797	247,516

It is important to remember that although the first wave of the pandemic may last from four to 12 weeks, the entire pandemic may last 2-3 years. Although antivirals will be available, there may not be adequate supply for all citizens during the entire pandemic period. Vaccine (other than possible experimental vaccines currently being tested) is not expected to be available until the pandemic is underway.

3.3 PANDEMIC PHASES

National pandemic planning is divided into several phases, from early identification of a novel virus to resolution of pandemic cycling. These phases are determined and announced by the CDC in collaboration with the World Health Organization (WHO) (*"Influenza Pandemic Preparedness Plan: The Role of WHO and Guidelines for National and Regional Planning,"* Geneva, Switzerland, April 1999). The MHD plan follows the same phase guidelines, prescribing necessary activities and identifying responsible

parties by pandemic phase. These declared and defined phases will help ensure a consistent and coordinated response by national, state, and local agencies in the event of an influenza pandemic event. The intent is for all activities listed in this document to be initiated during the assigned pandemic phase. Some activities will, of course, continue during subsequent phases.

Table 3 WHO pandemic phases:

Table 3	
Interpandemic	Phase 1: No novel virus subtypes in human; subtype that has caused human infection may be present in animals
	Phase 2: Circulating animal subtype poses substantial risk of human diseases
Pandemic Alert	Phase 3: Human infection with new subtype, no human-to-human spread, or rare spread to close contacts
	Phase 4: Small clusters with limited human-to-human transmission, highly localized spread (virus probably not well adapted to humans)
	Phase 5: Larger clusters, human to human spread still localized, virus increasingly better adapted to humans, not yet fully transmissible
Pandemic	Phase 6: Increased and sustained transmission in the general population

3.4 PANDEMIC STAGES

The WHO phases listed in section 3.3 provide an outline that can be used to interpret the global risk of a pandemic, and provide benchmarks on how the global community will respond during a pandemic. However, to describe HHS and other federal agencies' approach to a pandemic response, HHS has established a staged approach to determine the immediacy and specific threat a pandemic influenza virus poses to the United States.

Table 4 HHS pandemic stages:

Table 4	
Stage 0	New domestic animal outbreak in an at-risk country
Stage 1	Suspected human outbreak of pandemic influenza overseas
Stage 2	Confirmed human outbreak of pandemic influenza overseas
Stage 3	Widespread human outbreaks of pandemic influenza in multiple locations overseas
Stage 4	First human case of pandemic influenza in North America
Stage 5	Spread of pandemic influenza throughout the United States
Stage 6	Recovery and preparation for subsequent waves

3.5 COMPARISON OF GLOBAL PHASES TO U.S. GOVERNMENT STAGES

WHO Phases		Federal Government Response Stages	
Inter-Pandemic Period			
1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human disease is considered to be low.	0	No new domestic animal outbreak in at-risk country
2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.		
Pandemic Alert Period			
3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.	0	New domestic animal outbreak in at-risk country
		1	Suspected human outbreak overseas
4	Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.	2	Confirmed human outbreak overseas
5	Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk)		
Pandemic Period			
6	Pandemic phase: increased and sustained transmission in general population	3	Widespread human outbreaks in multiple locations overseas
		4	First human case in North America
		5	Spread throughout United States
		6	Recovery and preparation for subsequent waves

*Adapted from: U.S. Department of Health and Human Services Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States; U.S. Department of Health and Human Services, February 2007

3.6 PANDEMIC SEVERITY INDEX

The pandemic severity index has been created by HHS to appropriately match the intensity of public health interventions with the severity of a pandemic. This should enable MHD to maximize the benefit of using appropriate public health interventions in a timely manner in attempts to minimize the effects of a pandemic.

The pandemic severity index is primarily based on case fatality ratio. Pandemic severity is described within five discrete categories of increasing severity. Other epidemiologic features that are relevant in overall analysis of mitigation plans include total illness rate, age-specific illness and mortality rates, reproductive number, intergeneration time, and incubation period.

The pandemic severity index will be utilized by the MHD for contingency planning as well as when the

CDC's director designates the category of the emerging pandemic based on the severity index. Through its use, MHD will be in a better position to define which public health interventions will be most appropriate.

Table 5 HHS pandemic severity index by epidemiological characteristics

Table 5					
Characteristics	Pandemic Severity Index				
	Category 1	Category 2	Category 3	Category 4	Category 5
Case Fatality Ratio (%)	<0.1	0.1 to <0.5	0.5 to <1.0	1.0 to <2.0	≥2.0
Excess Death Rate (per 100K)	<30	30 to <150	150 to <300	300 to <600	≥600
Illness Rate (% of population)	20 – 40	20 – 40	20 – 40	20 – 40	20 – 40
Potential Number of Deaths (U.S. population)	<90,000	90K – 450K	450K – 900K	900K – 1.8M	≥1.8M
20 th Century United States Experience	Seasonal Influenza	1957,1968 Pandemic	None	None	1918 Pandemic

*Adapted from: U.S. Department of Health and Human Services Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States; U.S. Department of Health and Human Services, February 2007

SECTION 4: COMMAND AND CONTROL

4.1 CONCEPT OF OPERATIONS

The Commissioner of Health, or his designee, shall assume command for directing the response to the influenza pandemic. At the point where resources outside the health department are needed as a result of the pandemic, the assistance of the Milwaukee-Waukesha Consortium, the Wisconsin Department of Public Health, and Milwaukee County Emergency Management shall be sought. Activation of the Milwaukee County Emergency Operations Center may be requested through multiple channels, but in the case of an influenza pandemic, it will most likely occur from the request of the Emergency Public Health Director. The current Emergency Public Health Director is the City of Milwaukee Health Department's Commissioner of Health.

If emergency powers of the state are needed, the Division of Emergency Management, in consultation with the Emergency Public Health Director, shall draft a Governor's Executive Order declaring that a state of emergency exists and specifying the emergency powers that are necessary or appropriate to cope with the emergency. If it appears that significant expenditures will be required to respond to this emergency, the Division of Emergency Management may recommend, and the Governor may request, a presidential disaster declaration. If granted, this declaration will make federal funding available on a matching reimbursement basis.

In addition to public health, the general strategy of the plan is to protect the infrastructure to ensure that the health and medical community, as well as government and business, will continue to function. This decision will require allocation and redirection of scarce resources toward those who are needed to maintain optimal functioning and health of society.

4.2 STATUTORY AND OPERATIONAL AUTHORITY

The legal considerations linked to pandemic preparedness and response are complex and need to take into account the existing federal and state legislation. Provided below are several statute references that apply to influenza pandemic preparedness planning and a list of recommendations regarding quarantine and declarations of emergency.

4.2.1 City Ordinances

The City of Milwaukee Health Department has in place Milwaukee Code of Ordinance Chapter 62-9, which empowers the Commissioner of Health to protect the public from the spread of communicable disease through isolation, quarantine and placarding of buildings. In addition, the Health Commissioner has broad powers to investigate and preserve public health according to City Charter Chapter 17.

4.2.2 State Statute

The State of Wisconsin has in place legal authority necessary for preparedness and response to pandemic influenza. Wisconsin statutes and rules exist to support this component. Operational authority is also in place for public health and other health-related emergency response entities at the state and local levels of government. The federal government has been granted authority to support affected states or jurisdictions as necessary.

- Governor's Duties in an Emergency – WI State Statute 166
- Communicable Disease Reporting – WI State Statute 252
- Quarantine and Isolation – WI State Statute 252
- Investigation and Control Measures – HFS-145
- Board of Nursing – WI State Statute 441
- Medical Practices – WI State Statute 448

- Pharmacy Examining Board – WI State Statute 450
- Scope of Public Health Nursing – HFS-140

4.2.3 Federal Code

Title 42 United States Code Section 264 (Section 361 of the Public Health Service Act) gives the Secretary of Health and Human Services responsibility for preventing the introduction, transmission, and spread of communicable diseases from foreign countries into the United States and within the United States and its territories and possessions. This statute is implemented through regulations found at 42 CFR Parts 70 and 71. Under its delegated authority, the Centers for Disease Control and Prevention (CDC) is empowered to detain, medically examine, or conditionally release individuals reasonably believed to be carrying a communicable disease.

The federal government has primary responsibility for preventing the introduction of communicable diseases from foreign countries into the United States, and states and local jurisdictions have primary responsibility for isolation and quarantine within their borders. By statute, the Secretary for the Department of Health and Human Services (HHS) may accept state and local assistance in the enforcement of federal quarantine and other health regulations and may assist state and local officials in the control of communicable diseases. Public health officials at the federal, state, and local levels may occasionally seek the assistance of their respective law enforcement counterparts to enforce a public health order related to isolation and quarantine.

4.3 COMMAND AND CONTROL OVERVIEW OF OPERATIONS BY PANDEMIC PERIOD

4.3.1 Inter-Pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

During the Inter-pandemic Period, MHD activities will be focused on planning, preparing, responding to seasonal influenza activity and monitoring reports of progress of the disease and surveillance to detect a case of novel virus in the Milwaukee area. MHD will continue to post notices on WITrac and its own webpage, and distribute relevant guidance (for testing, isolation and quarantine, and specimen submission to WSLH) via WITrac, SurvNet and its website. State surveillance will be conducted by DHFS. International and national surveillance for a novel virus will be coordinated by WHO and CDC. MHD will monitor CDC reports of circulating Influenza A subtypes and antigens.

The Pandemic Planning Committee (PPC) will regularly review and revise pandemic influenza preparedness and response activities. MHD will work to identify mass dispensing sites and alternate care sites in the city. MHD will work with the community to ensure adequate planning takes place in both the public and private sector, and key stakeholders are aware of what those plans entail. MHD will work to pre-develop educational materials and exercise the pandemic plan to assure staff is adequately prepared.

4.3.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

In MHD, the DCP manager or designee, will monitor reports of disease spread and meet with surveillance partners to activate and augment surveillance systems. This will increase laboratory surveillance. MHD will enhance sentinel physician surveillance and monitor avian influenza in Asia.

- MHD will work with DHFS and Milwaukee County emergency management and representatives of the private medical sector to plan delivery and administration of vaccines when they are available.
- Technical information, public information, and press releases will be disseminated. Public information will include travel alerts, guidelines on limiting the spread of the disease, and information about when and where to obtain medical care.

4.3.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

Pandemic alert activities will continue at an intensified level. Surveillance efforts will be increased for both influenza illness and the circulation of the influenza virus. If vaccine is available, the distribution system will be implemented and security measures will be put in place to ensure that vaccine will be given first to groups with highest priority for receiving them. Information flow to community partners will be increased.

- MHD will advise local coroners and funeral directors to prepare for increases in the number of dead they will have to handle by following the Mass Fatality Plan.
- MHD will follow vaccination distribution guidelines defined by CDC. If vaccine is available, vaccine delivery and administration will be at the highest level, and the system to detect possible adverse reactions to the vaccine will be closely monitored. MHD will activate alternative treatment sites since hospitals will be overwhelmed. Currently, MHD has MOUs with 1 alternative treatment site, and is working on agreements with management from 2 additional sites.
- MHD will address shortfalls in supplies and personnel. Planning will include the ongoing need to continue vaccination after the first wave has ended. The vaccination campaign will include giving the second booster dose of vaccine to individuals who only received one dose of vaccine, and offering vaccine to the entire population if there is an adequate supply.
- MHD may utilize staff from different program areas to help manage the local response at the time of the pandemic, including the temporary redirection of personnel and financial resources. It is unlikely that medical resources and other assistance will be available from state and federal agencies.
- The Medical Director will provide guidance to the Incident Commander. The Incident Commander will assure that response and coordination occurs.
- The Medical Director may determine additional assistance is needed. If this occurs the Medical Director will advise the Health Officer so that assistance from other bureaus may be obtained.
- Within the City: MHD DCP Manager will serve as Incident Commander
Within the County: MHD Health Officer will serve as Incident Commander
Within the Metro-Milwaukee area: Unified Command.

SECTION 5: SURVEILLANCE

5.1 INTRODUCTION

Surveillance data will drive the pandemic response. It will be essential therefore those physicians and other health care professionals are educated and updated on an on-going basis regarding the importance of influenza-like illness (ILI) surveillance and their role in the system. Essential surveillance systems must be established in advance of a pandemic as there will be little time to augment capacity at the time of a pandemic, when surveillance and laboratory capacity will be reduced due to absenteeism and supply shortages.

The phase of the pandemic will determine the intensity and methods of virologic surveillance. Initially, efforts will be directed towards detecting the arrival of the novel virus into Milwaukee County and collecting epidemiologic data on infected persons. These data will be used to characterize virus activity and better target prevention and control measures. Surveillance efforts will continue throughout the pandemic, in order to track the intensity of virus activity and detect any changes in the virus, including antiviral drug resistance.

The MHD conducts influenza virus surveillance year-round, including during the “traditional” season, from the end of September (CDC Week 40) through the first week of May (Week 17) of each year. MHD DCP oversees most of the influenza surveillance activities. Influenza surveillance in Milwaukee also includes the investigation of outbreaks of influenza, influenza-like illness (ILI) monitoring in hospital emergency departments (EDs), and case investigations of severe illness and deaths associated with influenza. In the event of an influenza pandemic, routine surveillance systems will need to be rapidly adapted to respond to the challenges of a pandemic. In the early phases of a pandemic, after sustained human-to-human spread has been documented, surveillance will need to facilitate detection of the pandemic virus in Milwaukee County. In order to accomplish this, surveillance efforts will need to become more aggressive. In the later phases, surveillance will need to assimilate large amounts of data to determine age-specific attack rates, morbidity, and mortality, in addition to antiviral resistance.

5.2 HUMAN SURVEILLANCE OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

5.2.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

Surveillance must include virologic and disease surveillance in order to detect the earliest appearance of a novel influenza virus in the United States and Milwaukee in particular. International influenza surveillance is coordinated by WHO. National influenza surveillance is coordinated by the CDC, with state and county health departments assuming responsibility for virologic, mortality and morbidity components. These activities consist of:

- WHO’s global influenza network, includes approximately 110 national laboratories in over 80 countries and four international reference centers. The CDC maintains frequent communication with this network concerning the numbers and types/subtypes of influenza viruses isolated, including the extent of influenza-like disease occurring at the time of virus isolation
- WHO Collaborating Laboratory Surveillance –approximately 70 labs report the number and type of influenza viruses isolated each week, as well as submit representative and unusual viral specimens to CDC for antigenic analysis
- State and Territorial Epidemiologist Report – the level of influenza in their state each week as “no activity,” “sporadic,” “regional,” or “widespread” is reported based on incoming information from the field
- 121 Cities Influenza and Pneumonia Mortality System – Vital Statistics Offices of 121 U.S. cities report on a weekly basis the percentage of total deaths caused by influenza and pneumonia
- Sentinel Physicians ILI Surveillance System – a voluntary national network of physicians and clinics that report number of patients presenting with ILI and total number of patient visits by age

group each week

MHD monitors world-wide (WHO) national, state data, and local weekly data, and prepares the following reports:

- MHD Weekly Respiratory Update
 - Southeast WI sentinel physician Influenza Like Illness (ILI) data
 - MHD Labs Influenza A and B
 - Milwaukee Pneumonia and Influenza mortality
- MHD Weekly Influenza Antigen (United States) Report
 - Tracks trends in Influenza A antigens during flu season (graph and text) and reports emerging variants
- MHD Weekly Pediatric Mortality Tracking (United States) Report
- Review of ProMed, Epi-X, other media, and follow-up with CDC and WHO as needed
- RODS data (pharmacy data—cold and cough medicine sales)
- Biosense and ESSENCE data

5.2.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

During a Pandemic Alert period, activities listed in section 5.2.1 will be conducted, with the addition of

- MPS school absenteeism
- Local University Health Center weekly ILI reports
- WITrac will be used for drop in surveillance in emergency departments
- Hospital census
- Biosense and ESSENCE when available

5.2.2.1 Influenza in Humans exposed to Animals

MHD will collaborate with DPH/DATCP/USDA to identify persons exposed to animal influenza based on information from the traceback/traceforward conducted by DATCP and USDA

- Monitor exposed persons for influenza-like illness for 10 days
- Assure exposed persons receive antiviral medication
- Antivirals should be prescribed by personal clinician if at all possible. If large numbers of persons are exposed, antivirals can be obtained through DHFS and the Strategic National Stockpile (SNS)
- Work with emergency management to assure quarantine of a contaminated facility
- Collaborate with risk communication staff from DPH/DATCP/USDA to assure that accurate and timely information is shared with public officials, health care workers and local residents

5.2.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

During a pandemic, activities listed under the first three bullets of section 5.2.1 will occur, with

- Additional hospital surveillance with regard to resources available to hospitals

After the pandemic has reached Milwaukee and spread within the community has been documented, surveillance will continue only to monitor:

- Active surveillance of persons under isolation/quarantine, to include contact-tracing
- Further mutation of the virus (further antigenic shift or drift)
- Target limited antivirals, if available.

5.3 ANIMAL SURVEILLANCE OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

5.3.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

MHD maintains communication with Wisconsin DNR and DPH regarding avian influenza in animals and regularly reviews information about detection of avian flu in animals posted at

<http://www.who.int/csr/don/en/>. MHD will review the “State of Wisconsin Response to an Animal Influenza Emergency” plan

5.3.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

MHD will meet with local DNR representatives and discuss possible avian flu scenarios involving local animals, and plan for a coordinated response consistent with that described for local health in the “State of Wisconsin Response to an Animal Influenza Emergency” plan. MHD will forward guidance and other information from the DPH to regional human contacts that may need the information in their own planning and response.

5.3.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

If avian influenza is detected in wild birds in the Milwaukee area, there is a slight risk to captive (farm, zoo, wildlife rehabilitation facility) birds. There is a need to prevent public misconceptions and to provide good risk communication messages that warn the public against direct contact with birds, especially sick birds, and provide advice about hand washing and whom to call if a sick bird is observed. In the Milwaukee area, Wisconsin Humane Society works with the State in sick bird reporting and would be the local contact (414-264-6257). MHD will:

- Work with DATCP and WDNR to inform local farms, zoos and humane associations about avian flu detected in the area
- Assure accurate risk assessment information to the public to allay unnecessary public fear
- Facilitate posting of parks and ponds by WDNR (provide information about special populations)
- Monitor any quarantined facilities (with local emergency management and WDNR)
- Provide advice to poultry and other processing and food establishments

SECTION 6: VACCINE DISTRIBUTION AND USE

6.1 INTRODUCTION

Vaccination is the primary control measure to prevent influenza. However, it is expected that significant quantities of a vaccine effective against a novel strain of influenza will not be available from the first identified cases to as long as 6 months into the pandemic. When vaccine does become available, conceivably not until the second or third waves of flu cases occur, the demand for vaccine will significantly exceed supply. The purpose of this chapter is to outline guidelines for prioritization of vaccine distribution and delivery over the course of an influenza pandemic. Until sufficient vaccine becomes available, antiviral treatment and non-medical measures will be the primary measures to minimize the spread of disease.

Although the ultimate goal will be to vaccinate the entire community, it will need to be accomplished in stages. The CDC has recommended that priority groups be defined well in advance of a pandemic to ensure that vaccine may be administered in a manner that minimizes the morbidity and mortality of a pandemic influenza strain, as well as its impact on the community infrastructure. The U.S. Department of Health and Human Services has listed the following goals of vaccination in its *Pandemic Influenza Preparedness and Response Plan*:

- Goal 1: Maintain the ability to provide quality health care, implement pandemic response activities and maintain vital community services.
- Goal 2: Protect persons at highest risk for influenza mortality.
- Goal 3: Decrease transmission of infection to those at highest risk for influenza mortality.
- Goal 4: Maintain other important community services.
- Goal 5: Protect the susceptible population at large.

To help achieve these ends, broad priority groups have been designated to receive the limited amounts of vaccine. Priority groups include those essential personnel (e.g., healthcare workers, first responders, and public safety officers) as well as those at highest risk for influenza complications (high-risk groups defined by the Advisory Committee on Immunization Practices on an annual basis).

6.2 CURRENT INFLUENZA VACCINE PRODUCTION

The annual production and distribution of vaccine for the normal annual influenza strain is a time and labor-intensive process involving both the public and private sectors. Approximately 10 months before the anticipated influenza season, the antigen strains for inclusion in the vaccine are recommended by the Centers for Disease Control and Prevention (CDC). Two U.S.-based plants and one British manufacturer produce approximately 70 to 80 million doses over a six to eight month production period, with the vaccine supply ready for distribution by late September and continuing throughout the prime influenza immunization period of October through December. Except for children under 9 years of age, effective immunization is usually achieved with a single annual dose of vaccine. Approximately 90 percent of vaccine is administered by the private sector and is directed toward high-risk individuals as defined by ACIP.

The next pandemic will severely test the influenza vaccine production and delivery system as described. Public health agencies that are able to communicate a clear and reasonable process will demonstrate competence to the community and in turn foster public confidence during the crisis. Critical factors expected to affect the current system of vaccine distribution may include the following:

- Current worldwide influenza vaccine production is approximately 300 million doses annually. The volume of vaccine on a 2-dose schedule sufficient to vaccinate the entire U.S. population would necessitate approximately 600 million doses
- Using current production methods, vaccine plants can only produce one strain at a time
- Pandemic influenza could make its appearance concurrently in addition to the strains present in a normal flu season.

- Public pressure to shorten the time period for the identification, production, and distribution of vaccine to prevent influenza will place a considerable burden on all existing processes and procedures.
- Because it is likely that vaccine will be in demand simultaneously from all regions of the United States as well as foreign countries, significant shortages and delays in delivery of both can be expected.
- In all likelihood, the target population for vaccination coverage will be extended well beyond the typical high-risk populations as discussed above, with the ultimate goal of vaccinating the entire population as vaccine supply/availability dictates.
- The influenza virus encountered during a pandemic will represent a new strain (with new hemagglutinin (HA) and/or neuraminidase (NA) antigens), to which no human will have prior exposure and thus no immunity. Therefore, a second dose of vaccine given approximately 4 weeks after the initial administration is likely to be recommended, effectively decreasing the vaccinated population by one-half.

6.3 INFRASTRUCTURE AND DISTRIBUTION

6.3.1 Supply Needs versus Allocation

Milwaukee had approximately 596,000 residents in the year 2000. Faced with a novel influenza virus, estimates suggest that Milwaukee would need over 300,000 doses of vaccine to immunize its highest priority groups alone if two vaccinations are required to be effective. The Milwaukee population may swell considerably should a pandemic occur during the summer months due to individuals visiting Milwaukee. However, due to anticipated shortages and delays in acquiring vaccine, the actual distribution is likely to be substantially less than the amount needed to immunize the entire population. In addition, a shortage of vaccine-related supplies may also become a limiting factor in vaccinating the community.

6.3.2 Ordering and Distribution

Assuming that the need will exceed vaccine availability, Milwaukee will submit its order to DHFS for the maximum allocation of vaccine. DHFS will assume responsibility for ensuring that the manufacturer ships the vaccine to MHD Central Supply at Northwest Health Center. If the manufacturers and the CDC allow multiple shipping sites, MHD may be targeted for direct shipment from CDC.

6.3.3 MHD Storage Issues

In 2005 the City of Milwaukee Health Department administered a total of 22,767 vaccinations for multiple vaccine preventable diseases. An influenza pandemic scenario could require that MHD store a volume of vaccine and supplies for influenza alone, equal to or double that of all vaccines given in a normal year, in addition to that needed for necessary childhood vaccines. MHD estimates it would be able to store approximately [REDACTED] doses of influenza vaccine in 10-dose vials at any one time. This amount is in addition to all other vaccines and biologicals normally stored at MHD. Temporary relocation of the non-influenza vaccine inventory to the 3 health centers could double MHD vaccine storage capacity to approximately [REDACTED] doses if needed. Due to MHD's vaccine storage limitations, efforts are underway to identify local community partners that would be able to assist with short-term emergency storage needs. Each of the major provider organizations has refrigeration and dry storage capability to supply their primary facilities in addition to staging mass clinics. Currently, Aurora Healthcare has capacity to store [REDACTED] doses of flu vaccine and Wheaton Franciscan Healthcare Healthcare has the capacity to store [REDACTED] doses of flu vaccine. Lastly, MHD's immunization medical orders include a protocol for proper vaccine storage and handling.

6.3.4 Influenza Clinic-Related Supplies

- Supplies necessary for MHD immunization clinic operation can be found in MHD's immunization medical orders, "Off-Site Administration of Vaccine."

As alluded to in the preceding section, the potential for scarcity during a pandemic is not limited to vaccine, but also applies to clinical supplies and other materials necessary to administer the vaccine. While some items such as syringes are more critically important than others, substantial shortages of a number of the above materials could severely hamper vaccination efforts.

Currently, MHD utilizes 7,000 ft² for immunization clinic supplies such as those listed above. At any given time, MHD will maintain a vaccine inventory of approximately [REDACTED] doses and a volume of clinic supplies sufficient to administer about 1/2 of that number. The estimated volume of supplies needed to administer 20,000 doses of flu vaccine could be up to [REDACTED] times the current levels maintained in inventory. Nonetheless, additional storage space to accommodate increased volumes of supplies would likely need to be appropriated from current uses at MHD.

6.3.5 Clinic Coordination with Community Partners

MHD currently has 58 public health nurses on staff. Presumably in a pandemic, many if not most nursing staff would be directed toward vaccination efforts. However, considering the volume of vaccinations necessary within a short time frame to adequately protect the community, vaccination efforts could be multiplied through an unprecedented level of public-private cooperation between MHD, the Milwaukee-Waukesha Consortium and the established public flu clinic operators. Beginning with active cooperation in planning during the inter-pandemic period, through information-sharing, record-keeping, pooling of resources, facilities, and personnel during the pandemic, and continuing through the post-pandemic follow-up period, are examples of the levels of coordination that will be necessary between MHD and its community partners.

Aurora Healthcare/Visiting Nurse Association:

By a wide margin, the largest mass vaccinator in Wisconsin is the VNA, which administered over 100,000 influenza vaccinations during the 2005-06 flu season at more than 200 locations from Kenosha to Green Bay.

Contacts:

[REDACTED]

Wheaton Franciscan Healthcare:

Annually administers approximately 10,000 flu shots at clinics throughout Milwaukee County through Wheaton Franciscan Home Health. 12 RNs staff Wheaton Franciscan Healthcare public flu clinics, most of which are retired RNs without responsibilities elsewhere in the Wheaton Franciscan Healthcare system.

Contacts:

[REDACTED]

Other Partner Agencies:

- Columbia/St. Mary's Hospital
- Froedtert Hospital
- Children's Hospital
- Medical College of Wisconsin
- VA Hospital

Possible Additional Partners:

- Maxim Healthcare
- Osco Pharmacies
- Walgreens Pharmacies

- Identify the maximum amount of vaccine that can be accepted under emergency conditions for short-term storage.
- Define procedures to assure the biological safety and physical security of the vaccine within the health department.
- Identify the community partners who will work with the health department to administer vaccine to targeted populations.
- Define procedures to accurately document the receipt and re-distribution of vaccine. This documentation should, at a minimum, indicate the amount and date the vaccine is received, as well as the amount, date, and method of redistribution to the identified community partner.
- Develop a system for notifying those partners with as much advance notice as possible. Notice will include timing for the local availability of vaccine for delivery or pick-up.
- Assure that the redistribution of vaccine will occur prior to receiving the next capacity shipment so that no vaccine is lost because of storage shortages.
- Identify tertiary care centers with extensive outreach clinics and services.
- Identify large provider practices serving over 1,000 persons per month.
- Identify large residential facilities with over 500 beds serving elderly, disabled, or other dependent populations.

When developing a redistribution plan, MHD will also consider the following provider groups as potential partners for vaccine redistribution and administration:

- Federally funded health care centers and clinics
- Private medical providers, coordinated through the local medical society
- Urgent care centers, walk-in clinics, or managed care organizations
- Hospitals with outpatient services and clinics
- Hospital emergency facilities
- Nursing homes and assisted living facilities
- Paramedics and emergency management personnel
- School health clinics, including colleges and universities
- Commercial health care vendors (e.g., home health agencies)
- Local emergency response and support agencies, such as the Red Cross

The recruitment of community partners will depend on the resources available to the community. In addition, the actual coordination with community partners may be further refined based on the populations that are targeted for actual disease management during a pandemic.

In working with community partners that will administer vaccine during a pandemic, MHD must ensure that these partners understand their roles and the expectations associated with this partnership. Specifically, the community partner must be prepared to accept and store their allotment of vaccine and must ensure that vaccine administration is properly documented for accountability purposes, and in the event that reimbursement becomes available. Finally, the personnel resources devoted by community partners should be considered a public health contribution to the community, rather than a cost-reimbursable or profit-making activity.

6.4 VACCINE OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

6.4.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

1. Encourage annual influenza vaccinations regardless of pandemic influenza phase
2. Provide technical assistance to private healthcare providers and MHD health center staff for program planning and policy development such as:
 - Assessment of storage facilities
 - Vaccine storage and handling education
 - Identification of high-risk priorities
 - Estimation of influenza vaccine quantities needed (Appendix C-1 and C-2)
3. Research most up-to-date pandemic influenza vaccine information provided by CDC.

4. Communicate CDC pandemic vaccine updates to local health departments and regional healthcare providers.
5. Educate the public, health care system partners, businesses, community-based organizations, and elected officials about influenza pandemics, expected impact & consequences, and preventive measures.
6. Review and revise local vaccine distribution plan as recommended by CDC.
7. Review MHD Pandemic Influenza Vaccine Estimations for Priority Groups
8. Coordinate vaccination ordering process.
9. Work with mass vaccinators to ensure availability of clinics, compliance of priority groups
10. Purchase and stockpile basic hygiene and vaccination-related supplies.

6.4.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stage 0, 1, 2)

1. Encourage annual influenza vaccinations regardless of pandemic influenza phase status
2. Reinforce community-wide education of non-medical infection control measures to limit the spread of influenza.
3. Coordinate planning and implementation of disease containment strategies including:
 - Basic influenza hygiene (hand washing, hand sanitizers, cough and respiratory etiquette)
 - Voluntary isolation of ill persons
 - Social distancing
 - Preparation for quarantine
3. Cultivate the idea among providers, elected and community leaders, the media, and the general public that each individual in the community can and must help limit the spread of influenza in the coming crisis.
4. Collaborate with administration and DHFS to determine source for vaccine funding.
5. Collaborate with community & regional partners to finalize mass vaccination plans.
6. Prioritize vaccine order based on availability of vaccine for purchase.
7. Submit contract for quantities of vaccine to be purchased based on priority estimations.
8. Purchase vaccine and antiviral medications through state or multi-state contract.
9. Assure adequate personnel and resources are available to staff vaccination clinics.
10. Facilitate management of local antiviral medication stockpiles.
11. Encourage members of high-risk groups to be vaccinated against bacterial pneumonia in an effort to reduce the number of potential hospitalizations.

6.4.3 Pandemic Period (WHO Phase 6 and HHS Stage 3, 4, 5, 6)

1. Encourage annual influenza vaccinations regardless of pandemic influenza phase status
2. Institute antiviral treatment as available and community-wide non-medical measures.
3. Provide technical assistance to other local health jurisdictions to ensure readiness level for receipt of vaccine.
4. Submit vaccine orders to vendor.
5. Communicate with local health departments the expected vaccine delivery date.
6. Monitor vaccine effectiveness and safety following protocol for Vaccine Adverse Event Reporting System (VAERS).
7. Fully activate the vaccine delivery program.
8. Assure vaccine distribution vendor ships vaccine to all local health departments that submitted orders.
9. Review Vaccine Doses Administered Forms (Appendix C-3 and C-4) submitted weekly by local health departments to assess the need for reallocation and redistribution of vaccine.
10. Provide technical assistance to local health departments in need of redistributing vaccine to providers outside of their jurisdiction.
11. If available, continue to order vaccine through CDC.
12. Based on administration and redistribution of vaccine during the pandemic phase, assess health centers' need for additional vaccine.
13. Order vaccine through vaccine distribution vendor per health department request.

14. Assure vaccine orders were shipped and received.
15. Review Vaccines Administered Forms submitted weekly by local health departments to assess the need for reallocation and redistribution of vaccine.
16. Coordinate with other local health departments to assist in redistributing vaccine to providers outside of their jurisdiction.

6.4.4 Post Pandemic

1. Encourage annual influenza vaccinations regardless of pandemic influenza phase status
2. Determine total amounts of vaccine ordered, shipped, administered and wasted.
3. Review plan and process to determine effectiveness.
4. Revise plan based on evaluation findings.

6.5 TARGETED RECIPIENT GROUPS

Special consideration needs to be given to who will receive the limited supply of vaccine; a challenging task. This means that key locales would have to serve as distribution points. An effective communication system to maximize the use of vaccine is therefore an absolute necessity. If the supply could prove to be more generous than currently anticipated, the distribution may be considered for more numbers of people who would be at high risk for complications of influenza infection due to predisposing medical conditions.

6.5.1 Priority Groupings for Vaccine Distribution

Priority groupings for vaccine distribution set below were taken from the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC) recommendations set forth in Appendix D of the Health and Human Services' Pandemic Influenza Plan dated November, 2005.

Tier	Subtier	Population
1	A	Vaccine and Antiviral Manufacturers and other personnel essential to vaccine manufacturing
		Medical workers and public health workers who have direct contact or support flu vaccination
	B	Persons \geq 65 yrs. with 1 or more high-risk conditions (excluding essential hypertension)
		Persons 6 mos. – 64 yrs. with 2 or more high-risk conditions (excluding essential hypertension)
		Persons 6 mos. or older with history of hospitalization for pneumonia, flu, or other flu high-risk condition in the past year
	C	Pregnant women
		Household contacts of severely immunocompromised persons who are unable receive a flu shot
		Household contact of children < 6 mos. of age
	D	Public health emergency response workers critical to pandemic response (est. at 1/3 of force)
		Key Government Leaders
2	A	Healthy individuals \geq 65 and older
		Persons 6 mos.– 64 yrs. with 1 high-risk condition
		Healthy Children 6 mos.– 23 mos. of age
	B	Remaining public health workforce
		Public safety workers including police, fire and correctional facility staff
		Utility workers essential for maintenance of power, water, and sewage system function
		Transportation workers

		Telecommunications/IT for essential network operations
3		Other key government health decision makers
		Funeral directors/embalmers
4		Healthy individuals 2-64 yrs. (i.e.: remainder of population)

6.5.2 Rationale for Priority Groupings for Vaccine Distribution

Healthcare workers and essential healthcare support staff:

An influenza pandemic is expected to have substantial impact on the healthcare system with large increases in demand for healthcare services placed on top of existing demand. HCW will be treating influenza-infected patients and will be at risk of repeated exposures. Further, surge capacity in this sector is low. To encourage continued work in a high-exposure setting and to help lessen the risk of healthcare workers transmitting influenza to other patients and HCW family members, this group was highly prioritized. In addition, increases in bed/nurse ratios have been associated with increases in overall patient mortality. Thus, substantial absenteeism may affect overall patient care and outcomes.

Groups at high risk of influenza complications:

These groups were prioritized based on their risk of influenza-related hospitalization and death and also their likelihood of vaccine response. Information from prior pandemics was used whenever possible, but information from inter-pandemic years was also considered. Nursing home residents and severely immunocompromised persons would be prioritized for antiviral treatment and/or prophylaxis and vaccination of healthcare workers and household contacts that are most likely to transmit influenza to these high risk groups.

Critical Infrastructure:

Those critical infrastructure sectors that fulfill one or more of the following criteria: have increased demand placed on them during a pandemic, directly support reduction in deaths and hospitalization; function is critical to support the healthcare sector and other emergency services, and/or supply basic necessities and services critical to support of life and healthcare or emergency services. Groups included in critical infrastructure are needed to respond to a pandemic and to minimize morbidity and mortality.

Public health emergency response workers:

This group includes persons who do not have direct patient care duties, but who are essential for surveillance for influenza, assessment of the pandemic impact, allocation of public health resources for the pandemic response, development and implementation of public health policy as part of the response, and development of guidance as the pandemic progresses.

People in skilled nursing facilities:

This group was not prioritized for vaccine because of the medical literature finding poor response to vaccination and occurrence of outbreaks even in the setting of high vaccination rates. Other studies have suggested that vaccination of healthcare workers may be a more effective strategy to prevent influenza in this group. Further, surveillance for influenza can be conducted in this group and antiviral medications may be used widely for prophylaxis and treatment. Ill visitors and staff should also be restricted from visiting nursing home facilities during outbreaks of pandemic influenza. This strategy for pandemic influenza vaccine differs from the inter-pandemic vaccination strategy of aggressively vaccinating nursing home residents. The rationale considers several factors: 1) these populations are less likely to benefit from vaccine than other groups who are also at high risk; 2) other prevention strategies feasible for this group are not possible among other high-risk groups; 3) the overall morbidity and mortality from pandemic is likely to severely impact other groups of persons who would be expected to have a better response to the vaccine; and 4) a more severe shortage of vaccine is anticipated.

Severely immunocompromised persons:

These groups have a lower likelihood of responding to influenza vaccination. Thus, strategies to prevent severe influenza illness in this group should include vaccination of healthcare workers and household contacts of severely immunocompromised persons and use of antiviral medications. Consideration should be given to prophylaxis of severely immunocompromised persons with influenza antivirals and early antiviral treatment should they become infected.

Children <6 months of age:

Influenza vaccine is poorly immunogenic in children <6 months and the vaccine is currently not recommended for this group. In addition, influenza antiviral medications are not FDA-approved for use in children <1 year old. Thus, vaccination of household contacts and out-of-home caregivers of children <6 months is recommended to protect this high-risk group.

SECTION 7: ANTIVIRAL DISTRIBUTION AND USE

7.1 INTRODUCTION

The current antiviral armamentarium for chemoprophylaxis and treatment of influenza includes two main classes of antiviral agents, the adamantanes (Amantadine and Rimantadine) and the neuraminidase inhibitors (Zanamivir and Oseltamivir). The adamantanes have activity against only influenza A, while the neuraminidase inhibitors have activity against both influenza A and B. Recent evidence indicates that Amantadine has no, or only limited, activity against the H5N1avian influenza A strains currently emerging and circulating in Asia. While the adamantanes are much less expensive and in greater supply compared to the neuraminidase inhibitors, current evidence suggests that the neuraminidase inhibitor oseltamivir may be the best antiviral to stockpile for chemoprophylaxis and treatment during the next influenza pandemic. However, both adamantanes and neuraminidase inhibitors may play a role in chemoprophylaxis and treatment depending on the following factors:

- Susceptibility of the pandemic influenza strain to currently available antiviral medications
- Prophylactic and therapeutic efficacy of the respective antiviral agents against the strain
- Number of doses of the respective antiviral agents available via the public and private sectors
- Size of the target populations recommended to receive chemoprophylaxis or treatment
- Cost and reimbursement

The main goals of chemoprophylaxis and treatment are to reduce the human influenza infection rate and to reduce human morbidity and mortality associated with the pandemic strain. Reduction of the infection rate via chemoprophylaxis should be the last preventive option and should follow implementation of other recommended or indicated preventive efforts (e.g., restrictions on travel and communal events, isolation of ill persons, quarantine of exposed persons, implementation of infection control measures such as the use of masks, diligent hand washing, and vaccination).

If sufficient stockpiles of antivirals exist at the time the pandemic reaches the United States, chemoprophylaxis efforts in the City of Milwaukee should prioritize those persons deemed at high risk of exposure and indispensable to carrying out public health, clinical and public safety-related functions during the early stages of the pandemic while vaccine is being produced and vaccination clinics are being established and placed in operation. If there are insufficient stockpiles of antiviral agents for chemoprophylaxis, treatment should be directed toward those same groups and target groups at increased risk of morbidity and mortality, as prioritized by the CDC.

Although the early epidemiology of disease associated with the next pandemic strain may identify high risk groups that are somewhat different from those identified following the prior pandemics and outbreaks due to novel influenza viruses, our current knowledge indicates that infants and children 6 months to 5 years, adults over age 65, the immunocompromised, and adults and children with cardiopulmonary disease (such as asthma and other chronic lung diseases, congenital heart disease, congestive heart failure, etc.) are those primarily at risk for increased morbidity and mortality. These historical data can guide the estimation of specific target populations (at the both the state, county and city levels) presumed to be at increased risk for morbidity and mortality. Such estimates may be obtained by accessing state and county-specific demographic data and determining (from published references or other sources) the estimated prevalence of asthma, chronic lung disease, and other illnesses or conditions of concern in children, adults, or the general population.

7.2 ANTIVIRAL AGENTS

Vaccines, when available, will be the primary public health intervention during a pandemic. However, vaccine may not be available as soon as required at the start of the pandemic, and two doses of vaccine may be necessary to achieve an adequate immune response. Antivirals are effective for both treatment and prophylaxis and may have a role as an adjunctive strategy to vaccination for the management of the pandemic. Antivirals will likely be the only virus-specific intervention during the initial pandemic response.

7.2.1 Current Status

The current situation with antiviral agents presents numerous challenges to their effective use in the event of a pandemic. Currently there are four agents. The two standard antiviral agents for years have been amantadine and rimantadine. These drugs can be used for treatment if available early enough in the clinical course of a patient, or for prevention, but are effective against influenza type A only. These agents also have side effects, including effects on the central nervous system, which can make their long-term use a problem in people with key leadership or technical roles. The new classes of drugs are neuraminidase inhibitors that were originally approved for treatment use only, but one has recently received approval for prevention as well. These are effective against influenza types A and B. There may be other agents with varying recommended uses available in the future.

Certain conditions would have to change in order for these disease agents to become a reliable and consistent part of any pandemic influenza planning:

- A centralized supply of a sufficient amount of these agents would have to be available for controlled distribution in any kind of planned effort.
- Guidelines for effective use in a community setting for a pandemic situation would have to be further defined with accepted standards.
- Cost effectiveness of preventive versus therapeutic use should be analyzed for anticipated use in pandemic conditions.
- Currently none of these assurances are available. While these questions are being studied, the lack of definitive information or direction creates uncertainty surrounding the appropriate use of these agents in an influenza pandemic. Indeed it has been argued that these agents currently would play no effective role at all in an influenza pandemic flu response. While this extreme view is arguable, the burden is very much on those who would disagree to come up with a workable alternative.

7.2.2 Planning Principles and Assumptions

A sufficient quantity of these agents would have to be available to MHD in order for any planned effectual use of these medications to take place. An effective intervention with antivirals will require:

- A secure supply of antiviral medications
- A well planned distribution and monitoring system
- Ability to target priority groups successfully
- Availability of rapid diagnostic testing
- Clinical guidelines for appropriate use of antivirals are followed
- Ability to further assess the effectiveness of antivirals during a pandemic
- Communications and education materials on antivirals are effective to all partners including the media

7.2.3 Infrastructure and Distribution

A similar method to that described in the vaccine delivery part of this plan will be used to distribute antiviral medications. Key to any distribution plan is determining the exact ways the antivirals are recommended for use.

While the primary focus of MHD's plan is on the distribution of vaccine for the prevention of a novel influenza virus, the CDC anticipates that a limited amount of antivirals will be available for the treatment of the disease. Their estimates suggest that nationally, adequate antiviral stockpiles will be available to treat from 500,000 to 3 million persons per month. In addition to the anticipated limited supply, the administration of antivirals as treatment, post exposure prophylaxis or prophylaxis regimen is rigorous, requiring 10 doses for therapeutic treatment and post exposure prophylaxis and approximately 40 doses for therapeutic intervention. Therefore, DPH will most likely control distribution of federally allocated antivirals to MHD. MHD will work with DPH and the CDC to identify those individuals and groups of individuals who shall be eligible to receive these agents. In general, use of antivirals shall be reserved for

the highest priority groups with consideration given to maintaining the integrity of the healthcare community and the leadership and persons responsible for the safety and security of the communities most affected by the novel virus. In section 7.4.1 below, current recommendations suggest the following priority groups with the knowledge that as epidemiological information becomes available on the circulating pandemic virus, these priority groupings may change.

7.2.4 Other Considerations

Other considerations for antivirals include use in areas where there is a relative vaccine shortage and sufficient supplies of antivirals are available to ameliorate the shortage until adequate vaccine supplies become available. Antivirals could also serve to treat health care workers and other critical classes of personnel between vaccine doses. Again, these uses are predicated on adequate supply of antivirals. Because no assumption can be made of sumptuous resources in this regard, use of antivirals in a prophylactic way will be highly unlikely due to the amount of antivirals required. Even in the scenario of adequate supplies and the ability to provide these agents widely, there is the specter of emergence of viral resistance and the transmission of resistant strains. It cannot be over-emphasized that antivirals, no matter how well supplied and distributed, can never be assumed to be a substitute for proper vaccine protection.

7.3 ANTIVIRAL OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

7.3.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

1. Planning, education and policy development to include:
 - Review CDC's and DPH's assessment of high risk populations (morbidity and mortality) and target populations for chemoprophylaxis and treatment
 - Review CDC's and DPH's guidelines and recommendations for chemoprophylaxis and treatment, including prioritization of specific target populations/groups.
 - Calculate and review county-specific high risk target population data (e.g. infants 6-23 months; children less than 5 years, adults over 65 years, immunocompromised, cardiopulmonary-compromised, or other groups identified by CDC and DPH)
 - Calculate and review city-specific target populations that may be considered for chemoprophylaxis or treatment to ensure immunization of the public, maintenance of health care capacity and quality, and maintenance of public safety. These populations may include health care workers, front line hospital employees, first responders, law enforcement, public safety personnel, and others.
 - Calculate and review city-specific antiviral doses required for chemoprophylaxis or treatment of identified high-risk populations and other target populations identified to receive chemoprophylaxis or treatment.
 - Education and training on the receipt, handling and storage of antiviral medications.
 - Review and assess city plans for antiviral receipt and storage.
 - Review and assess city distribution plans for antivirals to hospitals, private health care providers and clinics.
 - Develop an antiviral allocation plan for MHD based on CDC and DPH guidelines and recommendations for antiviral chemoprophylaxis and treatment, number of doses of antivirals allocated or available to MHD, and city-specific target population calculations.
 - Review the current *draft* DPH Plan for Requesting, Receiving, and Distributing the Strategic National Stockpile and update it as necessary for receipt and distribution of influenza antivirals.
 - Maintain weekly/daily electronic and/or phone contact with DHFS, CDC, WHO and other organizations as necessary for updates on the epidemiology of emerging or re-emerging strains and antiviral efficacy against the strains.

7.3.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

1. Maintain weekly/daily electronic and/or phone contact with DHFS, CDC, WHO and other organizations as necessary for updates on the epidemiology of the pandemic strain, antiviral efficacy against the strain and vaccine development timetable.
2. Review updated international/national/state geographic distribution and determine, as best as possible, the estimated arrival date (or window) of the pandemic to the City of Milwaukee
3. Review the city-specific high-risk target population data, amending the list if analysis of early epidemiologic and morbidity and mortality data suggest other high-risk groups
4. Coordinate within DCP to assess preparedness and response capacity/readiness for vaccination of high-risk groups and the general public once vaccine is available.
5. Determine the estimated dates of vaccine availability and the amount available/allocated to MHD.
6. Determine the available supplies of indicated antiviral medication(s) in the public and private sectors.
7. Review and update preparedness for antiviral receipt and storage capacity
8. Review and update antiviral chemoprophylaxis and treatment plan based on information obtained from 1-5 above.
9. Coordinate antiviral chemoprophylaxis and MHD's treatment plan with DPH and CDC and communicate significant plan information to other local health departments, hospitals, private health care providers, other responding agencies and the general public.

7.3.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

1. [REDACTED] will be the main storage facility for antiviral medication received by DPH, additional MHD locations may be used if [REDACTED] reaches storage capacity. If that situation arises, locations of antiviral storage must be a secure location. [REDACTED] is located at:
[REDACTED]
2. Work with the Milwaukee Police Department to ensure security for transports of large volumes of antiviral medications
3. Provide technical assistance to hospitals, private health care providers to ensure readiness for receipt, storage and distribution of antivirals.
4. Request, according to DPH guidelines and the protocol set forth in the current HHS Plan for Requesting, Receiving and Distributing the Strategic National Stockpile, antiviral medication delivery to the Milwaukee area via the SNS.
5. Communicate with hospitals and other health care partners the expected delivery date(s) of antiviral medications
6. Assure antiviral distribution to the priority groups based on MHD, DPH and CDC established guidelines
7. Work with and assist other local health departments, hospitals, and other local health care providers in the redistribution of antiviral medications as needed and available.
8. Obtain and review available epidemiologic and clinical data on the efficacy of chemoprophylaxis and treatment.
9. Obtain and review the type and frequency of any reported adverse reactions and review epidemiologic evidence for causal association.
10. Update antiviral plan accordingly based on 3 and 4 above.
11. If available and epidemiologic and clinical data indicate antiviral medications were successful in reducing infection and/or reducing morbidity and mortality, re-order antiviral medications utilizing experience gained from the initial wave.
12. Redistribute antivirals according to plan and experience gained from the first wave.

7.3.4 Post Pandemic

1. Determine total amounts of antivirals ordered, shipped, administered and wasted (if possible).
2. Determine type and frequency of any reported adverse reactions and review epidemiologic evidence for causal association.
3. Review epidemiology of the pandemic and data on the efficacy of antiviral chemoprophylaxis and treatment.
4. Update antiviral plan accordingly based on 2 and 3 above.

7.4 TARGETED RECIPIENT GROUPS

Special consideration needs to be given on who will receive the limited supply of antivirals. The most appropriate use would result in combination of risk groups; those in greatest need of amelioration of their disease while at the same time most critical to continuation of health and community services. While this might be the most effective use of these limited supplies, it will be controversial because antivirals would only be available to key individuals who are seriously ill or have predisposing conditions and unavailable to other individuals who are similarly ill with comparable medical conditions. In addition, because of the anticipated limited supply, a formula for distribution is challenging in these terms because of special case considerations. This means that key locales would have to serve as distribution points. An effective communication system to maximize the use of these agents is therefore an absolute necessity. If the supply is more generous than currently anticipated, the distribution of these agents may be considered for more numbers of people who would be at high risk for complications of influenza infection due to predisposing medical conditions.

7.4.1 Priority Groupings for Antiviral Distribution

Priority groupings for antiviral distribution set below were taken from the National Vaccine Advisory Committee (NVAC) recommendations set forth in Appendix D of the Health and Human Services' Pandemic Influenza Plan dated November, 2005.

	Group	Strategy*
1	Patients admitted to hospital with suspected Influenza or viral infection (if supplies are limited, this group should be readdressed)	T
2	Health care workers (HCW) with direct patient contact and EMS providers	T
3	Highest risk outpatients- immunocompromised persons and pregnant women	T
4	Pandemic health responders, public safety and government decision makers	T
5	Increased risk outpatients – young children 12-23 mos., persons ≥ 65 yoa and persons with underlying health conditions	T
6	Outbreak response in nursing homes and other residential settings	PEP
7	HCWs in emergency departments, intensive care units, dialysis centers and EMS providers	P
8	Pandemic social responders and HCW without direct patient care	T
9	Other outpatients	T
10	Highest risk outpatients	P
11	Other HCWs with direct patient contact	P

*Strategy: Treatment (T) requires a total of 10 capsules and is defined as 1 course. Post exposure prophylaxis (PEP) also requires a single course. Prophylaxis (P) is assumed to require 4 courses though more may be needed if community outbreaks last for a longer period

7.4.2 Rationale for Priority Groupings for Antiviral Distribution

Persons admitted to hospital with suspected influenza or viral infection:

This group is at greatest risk for severe morbidity and mortality. Although there is no data to document the impacts of antiviral drug treatment among persons who already suffer more severe influenza illness, benefit is biologically plausible in persons with evidence of ongoing virally-mediated pathology. Providing treatment to those who are most ill is also consistent with standard medical practices and would be feasible to implement

Healthcare workers and EMS providers with direct patient contact:

Maintaining high quality patient care is critical to reduce health impacts of pandemic disease and to prevent adverse outcomes from other health conditions that will present for care during the pandemic period. Treatment of healthcare providers will decrease absenteeism due to influenza illness and may decrease absenteeism from fear of becoming ill, given the knowledge that treatment can prevent serious complications of influenza. Good data exists documenting the impacts of early treatment on duration of illness and time off work, and on the occurrence of complications such as lower respiratory infections. Treating healthcare providers is feasible to implement, especially for inpatient care providers who can be provided drugs through an occupational health clinic.

Outpatients at highest risk for severe morbidity or mortality from influenza infection:

Of the large group of persons who are at increased risk of severe disease or death from influenza, these groups represent the population at highest risk and who are least likely to be protected by vaccination. Studies show that neuraminidase inhibitor therapy decreases complications and hospitalizations from influenza in high-risk persons.

Pandemic health responders, public safety workers and key government decision-makers:

Preventing adverse health outcomes and social and economic impacts in a pandemic depend on the ability to implement an effective pandemic response. Early treatment of pandemic responders will minimize absenteeism and ensure that vaccination and other critical response activities can be maintained. Implementing early treatment for public health workers is feasible at workplace settings. Public safety workers prevent intentional and unintentional injuries and death, are critical to maintaining social functioning, and will contribute to a pandemic response.

Outpatients at increased risk of severe morbidity or mortality from influenza:

Early treatment has been shown to significantly decrease lower respiratory infections and to reduce the rate of hospitalization in elderly and high risk populations.

Outbreak control:

Influenza outbreaks in nursing homes are associated with substantial mortality and morbidity. Nursing home residents are also less likely to respond to vaccination. Post exposure prophylaxis has been shown to be effective in stopping influenza outbreaks in closed settings.

Healthcare workers in ER, ICU, EMS, and dialysis settings:

Optimally effective functioning of these units is particularly critical to reducing the health impacts of a pandemic. Prophylaxis will minimize absenteeism in these critical settings.

Pandemic societal responders and healthcare workers who have no direct patient contact:

Maintaining key functions is important to preserve life and decrease societal disruption. Heat, clean

water, waste disposal, and corpse management all contribute to public health. Ensuring functional transportation systems also protects health by making it possible for people to access medical care and by transporting food and other essential goods.

Other outpatients:

Treatment reduces the risk of complications and mortality, reduces duration of illness, shortens time off work, and decreases viral shedding and transmission.

SECTION 8: DISEASE CONTROL AND PREVENTION

8.1 INTRODUCTION

Pandemic influenza is a unique public health emergency and community disaster. It is considered a highly probable, if not inevitable event but no one can predict when it will occur. There may be little warning, but most experts agree that there will be one to six months between identification of a novel virus and widespread outbreaks in the U.S. Outbreaks will occur simultaneously throughout the U.S., and the effect on individual communities will last from six to eight weeks or more.

Pandemic influenza has the potential of affecting all elements of society. A large number of cases will add burden to hospitals and other health care systems already stressed with normal day-to-day crises. Mortality is usually markedly increased. Health and medical personnel as well as other infrastructure workers, such as law enforcement, fire, and public works, will not be immune. The effect on our communities could be staggering.

Immunization and respiratory hygiene are the best control measures available for influenza. Because vaccine against a novel influenza strain will not be available initially and when available, will be in limited supply, nonpharmaceutical interventions (NPI) or non-medical containment measures will be critical in responding to pandemic influenza.

NPI aim to reduce the risk of transmission by decreasing the probability of contact between infected and uninfected persons and decreasing the probability that contact will result in infection. Interventions can be applied at the individual or community level and can be directed towards persons who are ill and persons who are well. Individual measures include isolation of ill patients (those with symptoms), quarantine and symptom monitoring of persons exposed but not yet ill, hand hygiene and cough/respiratory etiquette, and use of personal protective equipment such as masks, respirators and gloves. Community measures include social distancing (such as restricting mass gatherings and closing schools), and limiting domestic and international travel.

The applicability of specific NPI will vary depending on the characteristics of the novel influenza virus, the risk assessment, available resources, and the level of compliance by the public. Guided by surveillance, laboratory, epidemiologic, and clinical data that are continuously reevaluated, MHD will identify and implement the most appropriate measures at each phase of the pandemic to maximize impact on disease transmission and minimize impact on individual freedom of movement.

8.2 ASSUMPTIONS AND PLANNING PRINCIPLES

- In the absence of adequate supplies of antivirals and vaccine, non-medical strategies are the primary means of mitigating the progression and impact of the pandemic
- The effectiveness of most non-medical containment measures depends on characteristics of the evolving virus including its pathogenicity (including infectious dose), principal mode of transmission, onset and duration of viral shedding, attack rate (or infectivity) in different risk groups (especially by age), proportion of asymptomatic infections, and clinical presentation. Because human influenza has a short incubation period, a short generation time (average time between infection of the case and infection of the contacts), a high proportion of asymptomatic infections, and a non-specific clinical presentation, the utility of classic containment measures may be limited
- In addition to effectiveness, the selection of non-medical containment strategies will depend upon feasibility (e.g., cost and availability of resources and supplies), ease of implementation within existing infrastructures, impact, and acceptance by the public
- Most non-medical containment measures will have their greatest impact in the early pandemic phases, while some may have a role after the pandemic has begun. Opportunities for averting a pandemic or appreciably slowing its spread will likely end once efficient and sustained human-to-human transmission is established

- Containment measures must be adapted to the epidemiologic context of each pandemic phase and recommendations regarding specific measures will change over the course of the pandemic. Once sustained human-to-human transmission is established, retiring those containment measures with decreased effectiveness is ethically justified to conserve resources for addressing the main public health objective of reducing the number of cases and deaths
- If the emergence of the pandemic does not follow the exact phases listed in this document, the applicability of activities from prior phases will be assessed and implemented if supported by existing information. All applicable activities from previous phases will be continued, as appropriate. Alternatively, measures that were appropriate in the early phases may be discontinued later in the pandemic
- Measures with limited effectiveness that the public chooses to adopt may be acceptable as long as they do not divert resources and supplies, are not discriminatory, and are clear and reasonable. For example, the benefit of wearing masks in community settings has not been established and may prove ineffective in limiting transmission. As long as this practice does not affect mask supplies needed for use in other settings, is not used in a discriminatory manner, and is not used as a substitute for other recommended measures, it will likely do no harm.

8.3 INFECTION CONTROL

8.3.1 Modes of Transmission

Despite the prevalence of influenza year after year, most information on the modes of influenza transmission from person to person is indirect and largely obtained through observations during outbreaks in healthcare facilities and other settings (e.g., cruise ships, airplanes, schools, and colleges); the amount of direct scientific information is very limited. However, the epidemiologic pattern observed is generally consistent with spread through close contact (i.e., exposure to large respiratory droplets, direct contact, or near-range exposure to aerosols). While some observational and animal studies support airborne transmission through small particle aerosols, there is little evidence of airborne transmission over long distances or prolonged periods of time (as is seen with *M. tuberculosis*). The relative contributions and clinical importance of the different modes of influenza transmission are currently unknown.

8.3.1.1 Contact Transmission

Direct-contact transmission involves skin-to-skin contact and physical transfer of microorganisms to a susceptible host from an infected or colonized person, such as occurs when personnel turn patients, bathe patients, or perform other patient-care activities that require physical contact. Direct-contact transmission also can occur between two patients (e.g., by hand contact), with one serving as the source of infectious microorganisms and the other as a susceptible host. Indirect-contact transmission involves contact of a susceptible host with a contaminated intermediate object, usually inanimate, in the patient's environment.

CDC guidelines for contact precautions in hospital can be found at:
www.cdc.gov/ncidod/hip/ISOLAT/contact_prec_excerpt_print.htm

8.3.1.2 Droplet Transmission

Droplet transmission involves contact of the conjunctivae or the mucous membranes of the nose or mouth of a susceptible person with large-particle droplets containing microorganisms generated from a person who has a clinical disease or who is a carrier of the microorganism. Droplets are generated from the source person primarily during coughing, sneezing, or talking and during the performance of certain procedures such as suctioning and bronchoscopy. Transmission via large-particle droplets requires close contact between source and recipient persons, because droplets do not remain suspended in the air and generally travel only short distances (about 3 feet) through the air. Because droplets do not remain suspended in the air, special air handling and ventilation are not required to prevent droplet transmission.

CDC guidelines for droplet precautions in hospitals can be found at:

8.3.1.3 Airborne Transmission

Airborne transmission occurs by dissemination of either airborne droplet nuclei or small particles in the respirable size range containing the infectious agent. Microorganisms carried in this manner—such as *M. tuberculosis*— may be dispersed over long distances by air currents and may be inhaled by susceptible individuals who have not had face-to-face contact with (or been in the same room with) the infectious individual. Organisms transmitted in this manner must be capable of sustaining infectivity, despite desiccation and environmental variation that generally limit survival in the airborne state. Preventing the spread of agents that are transmitted by the airborne route requires the use of special air handling and ventilation systems (e.g., negative pressure rooms).

The relative contribution of airborne transmission to influenza outbreaks is uncertain. Evidence is limited and is principally derived from laboratory studies in animals and some observational studies of influenza outbreaks in humans, particularly on cruise ships and airplanes, where other mechanisms of transmission were also present. Additional information suggesting airborne transmission was reported in a Veterans Administration Hospital study that found lower rates of influenza in wards exposed to ultraviolet radiation (which inactivates influenza viruses) than in wards without UV radiation. Another study indicated that humidity can play a role in the infectivity of aerosolized influenza, although the influence of humidity on the formation of droplet nuclei was not evaluated.

There is no evidence that influenza transmission can occur across long distances (e.g., through ventilation systems) or through prolonged residence in air, as seen with airborne diseases such as tuberculosis. However, transmission may occur at shorter distances through inhalation of small-particle aerosols (droplet nuclei), particularly in shared air spaces with poor air circulation. An experimental study involving human volunteers found that illness could be induced with substantially lower virus titers when influenza virus was administered as a small droplet aerosol rather than as nasal droplets, suggesting that infection is most efficiently induced when virus is deposited in the lower rather than the upper respiratory tract. While this study supports the possibility of droplet nuclei transmission of influenza, the proportion of infections acquired through droplet nuclei—as compared with large droplet or contact spread—is unknown.

It is likely that some aerosol-generating procedures (e.g., endotracheal intubation, suctioning, nebulizer treatment, and bronchoscopy) could increase the potential for dissemination of droplet nuclei in the immediate vicinity of the patient. (Although transmission of SARS-CoV was reported in a Canadian hospital during an aerosol-generating procedure [intubation], it occurred in a situation involving environmental contamination with respiratory secretions.) Although this mode of transmission has not been evaluated for influenza, additional precautions for healthcare personnel who perform aerosol-generating procedures on influenza patients may be warranted.

CDC Guidelines for airborne precautions in hospitals can be found at:
www.cdc.gov/ncidod/hip/ISOLAT/airborne_prec_excerpt_print.htm

8.3.2 Infection Control for Healthcare Settings

8.3.2.1 Personal Protective Equipment

1. N95 Respirator
 - Used during a pandemic alert or pandemic period, as a precaution in an effort to contain a possible outbreak
 - Managing pandemic influenza with increased transmissibility
 - Used during aerosol-generating procedures
 - If respirators are not available, surgical/procedural masks should be donned.
2. Surgical/Procedural Mask

- Should be worn at minimum, if no N95 respirators are available.
 - Used during a pandemic to protect healthcare personnel not involved in direct patient care
3. Gloves
 4. Gowns
 5. Goggles/Face Shields

8.3.2.2 Hand Hygiene

1. Antimicrobial or non-antimicrobial soap and water
 - Use when available and between all patient contacts
 - Use when hands are visibly soiled
2. Alcohol based hand sanitizers
 - Use when antimicrobial or non-antimicrobial soap and water is unavailable and use between all patient contacts

8.3.2.3 Patient Placement and Transport

1. When available, separate waiting areas in a healthcare facility should be designated for individuals with influenza-like symptoms prior to admission to the facility
2. When available, patients with either known or suspected pandemic influenza should be placed in single-patient rooms
3. When single-patient rooms are unavailable, patients with either known or suspected pandemic influenza should be cohorted
 - Designated areas or floors of a healthcare facility should be used for cohorting patients with pandemic influenza
 - Due to the possibility of other respiratory viruses circulating during a pandemic, in order to prevent cross-contamination of respiratory viruses, whenever possible only patients with confirmed pandemic influenza should be placed in the same room
 - Staff should not float between the pandemic influenza unit to other patient areas within the healthcare facility
4. Individuals being transported to healthcare facilities should be monitored for influenza-like illness prior to arrival at a healthcare facility
 - If the individual has influenza-like symptoms, medical personnel should follow droplet precautions
 - If tolerable, a surgical mask should be placed on the individual
5. Patients with pandemic influenza should have their movement and transport outside of a pandemic influenza unit limited
 - Designated portable medical equipment for a pandemic influenza unit should be used if available
 - If patient movement out of a pandemic influenza unit is necessary, the patient should wear a surgical mask if tolerable and should be instructed to perform hand hygiene before leaving

8.3.2.4 Other Infection Control Measures

1. Healthcare facility's operating procedures should outline how employees will be screened for influenza-like symptoms prior to their entrance into the facility
2. Use standard precautions outlined by the facility's operating procedures when disposing of solid wastes that may be contaminated with pandemic influenza
3. Use standard precautions outlined by the facility's operating procedures when handling linen and laundry that may be contaminated with pandemic influenza
4. Use standard precautions outlined by the facility's operating procedures when handling dishes and utensils that may have been used by a patient with known or suspected pandemic influenza
5. Use standard precautions outlined by the facility's operating procedures when handling and reprocessing patient care equipment after it has been used by a patient with known or suspected pandemic influenza
6. Use standard precautions outlined by the facility's operating procedures for handling the

- deceased
7. Use standard precautions outlined by the facility's operating procedures for the collection, handling, and processing of laboratory specimens that have come from a patient with known or suspected pandemic influenza
 8. Post visual alerts at the entrance to your facility instructing patients/visitors to:
 - Alert healthcare personnel of flu like symptoms
 - Practice good respiratory and hand hygiene
 - Promote the use of masks and spatial separation between persons with flu like symptoms
 9. Visitors to healthcare facilities should be screened for influenza-like symptoms
 - a. Household family members who accompany patients with influenza-like symptoms should be assumed to have been exposed to pandemic influenza and should be asked to wear a surgical mask

8.3.3 Infection Control for Schools and Workplaces

1. In schools and workplaces, infection control should focus on:
 - Notifying sick individuals to stay home
 - Promoting respiratory hygiene/cough etiquette
 - Promoting hand hygiene
2. Facilities should ensure that respiratory hygiene/cough etiquette and hand hygiene materials will be available
3. Facilities are NOT recommended to stockpile antiviral medications in anticipation of pandemic influenza
4. Currently the benefit of wearing masks in these settings has not been established, but the use of surgical masks in healthcare settings have demonstrated their ability to limit the spread of large respiratory droplets, which may help prevent pandemic influenza infection
5. N95 respirators are NOT recommended in these settings due to the need for proper fit testing and medical consultation prior to an individual wearing a N95 respirator

8.3.4 Infection Control for Households

1. Household individuals should not come into contact with the ill individual
 - One individual should be designated as the primary care giver and limit their contact
 - Non-essential visits to the household should not occur
2. All persons in the household should follow respiratory hygiene/cough etiquette and good hand hygiene habits
 - Currently the benefit of wearing masks/respirators in these settings has not been established, but the use of surgical masks in healthcare settings have demonstrated their ability to limit the spread of large respiratory droplets, which may help prevent pandemic influenza infection
 - N95 respirators are NOT recommended in these settings due to the need for proper fit testing and medical consultation prior to an individual wearing a N95 respirator
 - Tissues used by ill individuals should be placed in a trash bag (preferably next to the bedside) and disposed of with other household waste
3. Households are NOT recommended to stockpile antiviral medications in anticipation of pandemic influenza
4. Dishes and eating utensils should be washed either in a dishwasher or by hand with warm water and soap
5. Laundry can be washed in a standard washing machine with warm or cold water and detergent, with proper hand hygiene used before and after handling laundry
6. Normal cleaning of environmental surfaces in the home should be followed

8.4 NONPHARMACEUTICAL INTERVENTIONS

Influenza vaccination is the single best way to prevent influenza infection; however during a pandemic it is highly unlikely that influenza vaccine will be available until several months after the pandemic begins and when a vaccine becomes available, it will most likely be available in limited supply. As a result, nonpharmaceutical interventions will need to be implemented to help delay the transmission of the novel influenza virus prior to vaccine availability as well as during vaccination campaigns.

8.4.1 Individual Level Containment Measures

Measure	Definition
Individual-Level Containment Measures	Measure applied on the individual level as opposed to the group or community level
Isolation	The separation of infected persons from other persons for the period of communicability in such conditions as will prevent transmission of the agent. Strict isolation is confinement of the isolated individual to a room with a separate bed, with direct and room contact only with persons taking care of the individual. There must be appropriate disinfection and disposal of bodily excretions, secretion, garments, and objects in contact with the isolated individual. Persons caring for the isolated individual must take prescribed precautions to prevent the spread of infectious material from the individual's room. Modified isolation is any other type of isolation, as prescribed and ordered by the local health officer and dependent on the disease involved
Quarantine	The limitation of freedom of movement of persons that have been exposed to a communicable disease for a period of time equal to the longest usual incubation period of the disease, in such manner as to prevent effective contact with those not so exposed. Quarantine may be voluntary or mandatory
Quarantine of close contacts	The quarantine of individuals exposed to patients with communicable diseases; the contact remains separated from others for a specific period of time during which he or she is assessed on a regular basis for signs and symptoms of disease
Workplace Quarantining	Exposed employees are permitted to work but must observe activity restrictions while off duty. Monitoring for signs and symptoms before reporting to work and use of PPE while at work are required

*Adapted from: U.S. Department of Health and Human Services Pandemic Influenza Plan; U.S. Department of Health and Human Services, November 2005

8.4.2 Focused Measures to Increase Social Distance and Decrease Social Interactions

Measure	Definition
Focused measures to increase social distance and decrease social interactions	Interventions applied to specific groups, designed to reduce interactions and thereby transmission risk within the group. Focused measures apply to groups or persons in specific settings, most but not necessarily all of whom are at risk of exposure
Quarantine of groups of exposed persons	Quarantine of people who may have been exposed to the same source of illness; may be useful when there is limited transmission in an area and most cases can be traced to exposure to a known transmission setting
Restricting the use of specific sites or buildings or public events	A type of focused measure that may involve restricting entrance to a building or other site or requiring fever screening before entrance

*Adapted from: U.S. Department of Health and Human Services Pandemic Influenza Plan; U.S. Department of Health and Human Services, November 2005

8.4.3 Community-based Measures to Increase Social Distance

Measure	Definition
Community-based measures to increase social distance	Interventions applied to an entire community or region, designed to reduce personal interactions and thereby transmission risk. Includes measures applied to whole neighborhoods, towns, or cities
Coordinated community and business closures	Voluntary measures that coordinate simultaneous closure of offices, schools, transportation systems and other non-essential community activities, services and businesses for a specified period of time. All non-essential service personnel and community members are urged to stay at home
Community-wide Quarantine (including Cordon sanitaire)	Legally enforceable action that restricts movement into or out of the area of quarantine of a large group of people or community; designed to reduce the likelihood of transmission of influenza among persons in and to persons outside the affected area. Consists of closing community borders or the erection of a real or virtual barrier around a geographic area with prohibition of travel into or out of the area

*Adapted from: U.S. Department of Health and Human Services Pandemic Influenza Plan; U.S. Department of Health and Human Services, November 2005

8.4.4 Community-wide Infection Control Measures

Measure	Definition
Community-wide Infection control measures	Use of physical barriers and hygiene measures to limit the risk of transmission, such as surgical masks and hand sanitizers

*Adapted from: U.S. Department of Health and Human Services Pandemic Influenza Plan; U.S. Department of Health and Human Services, November 2005

8.4.5 Community Mitigation Strategy by Pandemic Severity

Interventions by Setting	Pandemic Severity Index		
	Category 1	Category 2 or 3	Category 4 or 5
Voluntary isolation of ill individuals along with appropriate antiviral treatment if available (see section 7.4.1)	Recommend	Recommend	Recommend
Voluntary quarantine of close contacts along with appropriate antiviral treatment if available (see section 7.4.1)	Generally Not Recommended	Consider	Recommend
Social distancing (child) <ul style="list-style-type: none"> ❖ Dismissal of students from schools and school based activities, and closure of child care programs ❖ Reduce out-of-school social contacts and community mixing 	Generally Not Recommended	Consider ≤4 weeks	Recommended ≤12 weeks
Social distancing (adult/community) <ul style="list-style-type: none"> ❖ Decrease the number of social contacts (e.g., encourage teleconferences, alternatives to face-to-face meetings) ❖ Increase the distance between persons (e.g., reduce the density in public transit, workplace) ❖ Modify, postpone or cancel selected public gatherings to promote social distance ❖ Modify workplace schedules and practices 	Generally Not Recommended	Consider	Recommended

*Adapted from: U.S. Department of Health and Human Services Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States; U.S. Department of Health and Human Services, February 2007

8.5 DISEASE CONTROL AND PREVENTION OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

8.5.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

1. Communicate the need for annual influenza vaccinations to the community
2. Communicate the need for good hygiene habits to the community
3. Provide the latest information on infection control, PPE and laboratory testing standards for seasonal and novel Influenza viruses to healthcare providers
4. Continue to review the MHD Pandemic Influenza Preparedness and Response Plan as needed with regards to disease control and prevention
5. Continue to work with the DPH and other local public health departments to ensure continuity of Public Health Pandemic Influenza plans with regards to disease control and prevention
6. Work with healthcare providers on establishing pandemic influenza plans for their healthcare facilities
7. Work with educational facilities on promoting the need to develop pandemic influenza plans for their facilities
8. Work with other community agencies/groups on promoting the need to develop pandemic influenza plans for their agencies/groups

8.5.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stage 0, 1, 2)

1. Continue to communicate the need for annual influenza vaccinations to the community
2. Continue to communicate the need for good hygiene habits to the community
3. Continue to communicate the need for the public to remain at home if they are feeling ill
4. Continue to update healthcare facilities on the latest pandemic influenza information
5. Maintain/Update MHD website with latest pandemic influenza information on a biweekly basis
 - Provide the latest pandemic influenza case definitions
 - Provide CDC travel advisories to the individuals planning on international or domestic travel to regions where novel Influenza viruses have been identified
 - Provide a FAQ section
6. Work with healthcare providers on the notification protocol for suspected pandemic influenza cases
 - Suspected novel Influenza viruses should be reported to SurvNet (414-286-3624) during regular business hours (Monday – Friday, 08:00 till 16:30 hours)
 - After hours, suspected novel influenza viruses should be reported as follows:
 1. Call either 414-286-3200 or 414-286-2150
 2. Notify the operator of an emergency and the need to speak to a public health official with regard to a communicable disease
 3. Provide contact information, so that a MHD employee can return the phone call
7. Aggressively conduct case follow-up investigations on individuals who meet suspect pandemic influenza case definitions
 - Obtain/educate healthcare facilities on the appropriate laboratory sampling procedures for pandemic influenza confirmation
 - Obtain list of close contacts
 - Obtain a travel history
8. MHD will initiate individual-level containment measures (section 8.4.1) for individuals who meet the suspect pandemic influenza case definition or their close contacts
 - Isolation of individuals will be mandatory during a pandemic alert
 - Quarantining of individuals may be mandatory, depending on the pandemic stage and pandemic severity category; if quarantine is voluntary, it will be strongly recommended by MHD
 - Appropriate antiviral therapy for individuals who are symptomatic with influenza-like illness should be initiated, if available

9. MHD may initiate focused measures to increase social distance and decrease social interactions (section 8.4.2), depending on pandemic severity and epidemiological factors and surveillance information
10. MHD may initiate community-based measures to increase social distance (section 8.4.3), depending on epidemiological factors of the pandemic and surveillance information

8.5.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

1. Continue to communicate the need for annual influenza vaccinations to the community
2. Continue to communicate the need for good hygiene habits to the community
3. Continue to communicate the need for the public to remain at home if they are feeling ill
4. Continue to update healthcare facilities on the latest pandemic influenza information
5. Continue to maintain/update MHD website with latest pandemic influenza information on a weekly basis
 - Provide the latest pandemic influenza case definitions
 - Provide CDC travel advisories to the individuals planning on international or domestic travel to regions where novel Influenza viruses have been identified
 - Provide a FAQ section
6. Coordinate the distribution of pandemic vaccines and antivirals to priority groups
 - a. During the pandemic, distribution of vaccines and antivirals will be provided to the priority groups outlined in section 6.5.1 for vaccines and section 7.4.1 for antivirals
7. Assist healthcare in coordinating a virtual clearing house for PPE and other necessary medical devices
8. MHD will discontinue aggressive case follow-up investigations on individuals who meet the suspect case definition for pandemic influenza
9. MHD will continue to recommend individual-level containment measures (section 8.4.1) for individuals who meet the suspect pandemic influenza case definition
 - Isolation and quarantine of individuals will be voluntary during a pandemic, but highly recommended by MHD
10. MHD may initiate focused measures to increase social distance and decrease social interactions (section 8.4.2), depending on epidemiological factors of the pandemic and surveillance information
11. MHD may initiate community-based measures to increase social distance (section 8.4.3), depending on epidemiological factors of the pandemic and surveillance information

8.5.4 Post Pandemic

1. Continue to communicate the need for annual Influenza vaccinations to the community
2. Continue to communicate the need for good hygiene habits to the community
3. Continue to communicate the need for the public to remain at home if they are feeling ill
4. Review disease control and preventions efforts initiated during the pandemic and address issues and problems that arose because of those efforts

SECTION 9: COMMUNICATIONS

9.1 INTRODUCTION

Strategic communications activities based on scientifically derived risk communications principles are an integral part of a comprehensive public health response before, during, and after an influenza pandemic. MHD will need to effectively communicate public health measures to the public, the news media, healthcare providers, and other groups in responding appropriately to outbreak situations. MHD will utilize strategic communications to instill and maintain healthcare's and the public's confidence in MHD and MHD's ability to respond to and manage a pandemic influenza outbreak. Additionally MHD will utilize strategic communications to maintain order, minimize public fear and facilitate public protection by rapidly providing accurate and complete information on a pandemic influenza outbreak. Finally MHD will utilize strategic communications to help prevent stigmatization and address rumors, inaccuracies and misconceptions that the public may have with regard to pandemic influenza in a timely manner.

9.2 COMMUNICATIONS PLANNING PRINCIPLES AND ASSUMPTIONS

All external communications to healthcare professionals and other public health partners will be coordinated through the MHD Division of Disease Control and Prevention (DCP). Prior to any communication materials being released to healthcare professionals and public health partners, the information must be dated and approved by the Manager of MHD DCP as well as reviewed by the associate medical director, the epidemiologist and the emergency response planning coordinator prior to dissemination.

Since there will be immediate and continuous demand from the media, public, and elected officials for information on the potential and actual impact, magnitude, transmission, treatment, and recovery resulting from the pandemic. All external communication to the media, public and elected officials will be coordinated by the MHD Public Information Officer (PIO), which has a responsibility to ensure the public is adequately and appropriately informed through each stage of the pandemic. The MHD PIO will work with MHD DCP to ensure that all communication materials that are released to the media, public and elected officials contain all the appropriate and accurate technical data on pandemic influenza. Additionally, when appropriate, the MHD PIO will coordinate with all other local and statewide partners on joint press releases on pandemic influenza.

9.3 CURRENT COMMUNICATION DEVICES

MHD currently uses multiple communication devices or tactics of communication to inform and update healthcare professionals, other public health partners, media, public and elected officials. Listed below are the different communication devices or tactics used to disseminate public health information.

9.3.1 Communication Devices for Healthcare Professionals or Public Health Partners

- WITrac
- SurvNet
- Wisconsin Health Alert Network (HAN)
- MHD Website (www.milwaukee.gov/flu)
- Milwaukee County Medical Society's Website (www.milwaukee-medical-society.org)
- Blastfax
- MHD Informational Hotline
- Teleconferencing

9.3.2 Communication Devices and Tactics for the Media, Public and Elected Officials

- MHD Informational Hotline (414-286-3616)
- 211 Impact
- Press Conferences
- Press Releases
- Television and/or Radio Interviews
- Printed Educational Materials
- Media Campaigns
- MHD Website (www.milwaukee.gov/flu)

9.4 SOUTHEASTERN WISCONSIN MEDIA SECURITY AND RELIABILITY COUNCIL

In 2002, the Federal Communications Commission created the national Media Security and Reliability Council (MSRC) to ensure the reliability and security of broadcast cable television, and news services in the event of an emergency. The Southeastern Wisconsin MSRC strives to create a public/private partnership that will ensure uninterrupted delivery of emergency information to the public to mitigate the impact of a major emergency or disaster, such as pandemic influenza.

9.5 COMMUNICATION OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

9.5.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

1. Communicate the need for annual influenza vaccinations utilizing communication devices and tactics listed in section 9.3 as needed
2. Communicate the need for good hygiene habits utilizing communication devices and tactics listed in section 9.3 as needed
3. Communicate with healthcare providers, public health partners, the business community, educational communities, media, public and elected officials on current pandemic influenza information and planning taking place by public health
4. Communicate with healthcare providers, public health partners, the business community, educational communities and the public on the need for pandemic influenza planning in their agencies, organizations or households
5. Maintain/update all internal and external contact lists for communication devices
6. Maintain/update contact lists for the local media outlets
7. Pre-develop bilingual informational messages on pandemic influenza for healthcare providers, public health partners and the public
8. Test communication devices and tactics on a regular basis
9. Work with other agencies' PIOs to understand the concepts of a Joint Information Center (JIC) and how messaging will be coordinated during an influenza pandemic

9.5.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

1. Continue to communicate the need for annual influenza vaccinations utilizing communication devices and tactics listed in section 9.3 as needed
2. Continue to communicate the need for good hygiene habits utilizing communication devices and tactics listed in section 9.3 as needed
3. Increase communications with healthcare providers, public health partners, the business community, educational communities, media, public and elected officials on current pandemic influenza information and planning taking place by public health
 - Provide presentations to outside agencies, businesses and public functions on pandemic influenza
4. Increase communications with healthcare providers, public health partners, the business community, educational communities and the public on the need for pandemic influenza planning

- in their agencies, organizations or households
5. Maintain/update all internal and external contact lists for communication devices
 6. Maintain/update contact lists for the local media outlets
 7. Maintain/update MHD website with latest pandemic influenza information on a biweekly basis
 - Provide CDC travel advisories to the individuals planning on international or domestic travel to regions where novel Influenza viruses have been identified
 - Monitor secured informational sites and open source informational sites for up-to-date pandemic influenza information
 8. Provide local first responding agencies, local businesses, educational facilities and the public with specific pandemic influenza information as requested
 9. Continue to develop bilingual informational messages on pandemic influenza for healthcare providers, public health partners and the public and test these messages through audience research
 10. Designate and review guidelines with the MHD lead for MHD Informational Hotline
 11. Contact and prepare general pandemic influenza information for 211 Impact
 12. Address rumors and misinformation that may be circulating in various media channels
 13. Update the Southeastern Wisconsin MSRC on pandemic influenza and expectations should a pandemic occur
 14. Test communication devices and tactics on a regular basis
 15. Continue to work with other agencies' PIOs to understand the concepts of a Joint Information Center (JIC) and how messaging will be coordinated during an influenza pandemic

9.5.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

1. Continue to communicate the need for annual influenza vaccinations utilizing communication devices and tactics listed in section 9.3 as needed
2. Continue to communicate the need for good hygiene habits utilizing communication devices and tactics listed in section 9.3 as needed
3. MHD PIO will work with the state and other public health agencies' PIOs, hospitals' PIOs to coordinate pandemic influenza messages to the public
4. Coordinate with other agencies' PIOs to initiate the concepts of a Joint Information Center (JIC)
5. Increase communications with healthcare providers, public health partners, the business community, educational communities, media, public and elected officials on current pandemic influenza information and current epidemiological information on pandemic influenza in the City of Milwaukee
 - Provide the City of Milwaukee Mayor with updates, the frequency of these updates will be set by the Mayor or his designee and the Commissioner of Health
6. Increase communications with healthcare providers, public health partners, the business community, educational communities and the public on the need for pandemic influenza planning in their agencies, organizations or households
7. Maintain/update all internal and external contact lists for communication devices
8. Maintain/update contact lists for the local media outlets
9. Provide bilingual informational messages on pandemic influenza for healthcare providers, public health partners and the public
10. Maintain/update MHD website with latest pandemic influenza information on a biweekly basis
 - Provide CDC travel advisories to the individuals planning on international or domestic travel to regions where novel Influenza viruses have been identified
 - Monitor secured informational sites and open source informational sites for up to date pandemic influenza information
11. Initiate the MHD Informational Hotline with pandemic influenza information
 - MHD employees will be accessible through the standard automated MHD Informational Hotline
12. Have 211 Impact to begin providing general pandemic influenza information
 - Update 211 Impact with latest general pandemic influenza information as needed
13. Announce mass clinic sites for high risk individuals to receive pandemic influenza vaccine, if vaccine becomes available

14. Address rumors and misinformation that may be circulating in various media channels
15. Update the Southeastern Wisconsin Media Security and Reliability Council (MSRC) on pandemic influenza

9.5.4 Post Pandemic

1. Continue to communicate the need for annual influenza vaccinations utilizing communication devices and tactics listed in section 9.3 as needed
2. Continue to communicate the need for good hygiene habits utilizing communication devices and tactics listed in section 9.3 as needed
3. Review and refine messaging methods to address gaps in message delivery
4. Review information that was provided and revise as new information becomes available or revise with frequently requested information that was not available on the original informational messages

SECTION 10: HEALTHCARE PLANNING

10.1 INTRODUCTION

Influenza pandemics have been recognized since the 1500's. Three major pandemics occurred in the 20th century in 1918, 1957, and 1968 causing widespread illness, death, and social disruption. In 1918-1919, the "Spanish Flu" caused more than 500,000 deaths in the United States and more than 20 million deaths worldwide. In 1957-1958, the "Asian Flu" killed 70,000 in the United States and in 1968-1969, the "Hong Kong Flu" killed 34,000.

Healthcare utilization in the United States has changed markedly in recent years. Improved care has led to trends in increased outpatient care and decreased hospital stays. Managed care has also led to changes in utilization of healthcare resources. These trends have resulted in fewer hospital beds and patients who tend to be sicker. It is expected that the demands on healthcare facilities and resources will be great during an influenza pandemic.

10.2 ISSUES

There is no simple answer to the question of how serious the next pandemic might be. It depends on how virulent and transmissible the virus is. Since the world today is vastly more populated than it was during previous pandemics, and people travel the globe with ease, the spread of a next pandemic could be more rapid than that of previous pandemics.

CDC estimates that the next pandemic could cause between 89,000 and 207,000 deaths, between 314,000 and 733,000 hospitalizations, and between 18 million and 42 million outpatient visits. Morbidity and mortality patterns during a pandemic differ from those seen during non-pandemic years when primarily the elderly and persons with a compromised immune system are most at risk for serious disease and death. During the three pandemics of the 20th century, a substantial amount of the total mortality occurred among persons less than 65 years of age who would not be considered high-risk during non-pandemic years. One of the great challenges of responding to an emerging pandemic will be to plan for the use of limited health care resources. For planning, communities should consider that the demand for healthcare resources would vary, depending on where the community is within the pandemic cycle.

10.3 TYPES OF HEALTHCARE FACILITIES

MHD views the following organizations/facilities as healthcare facilities:

1. Hospitals
2. Outpatient Clinics
3. Emergency Medical Clinics
4. Health Clinics
5. Nursing Homes
6. Federally Qualified Health Centers

10.4 MHD RECOMMENDED PANDEMIC INFLUENZA PLANNING

The following sections are planning considerations that MHD recommends for healthcare facilities. The list below is not exhaustive list. However, the recommendations are meant to be thought-provoking recommendations and will help lead healthcare organizations to address all areas of healthcare that will be affected by pandemic influenza. MHD is committed to preparing healthcare facilities for pandemic influenza and will assist healthcare facilities as a resource when they begin to draft their pandemic influenza emergency plans.

10.4.1 Institution-level Planning

These guidelines were created in order to assist health care institutions to maximize staffed beds and resources available during an influenza pandemic. The greatest challenge is expected to be the management of high census in the face of reduced professional, ancillary, and housekeeping staff. Many hospitals already have high census protocols and emergency preparedness plans that may be adapted to pandemic planning. Those plans should be updated with special consideration given to the following:

10.4.1.1 Staffing

1. Take steps to reduce staff absenteeism during a pandemic, such as defining how staff are to report illness and encouraging ill individuals to not report for work
 - Infection Control should monitor staff absenteeism as well as have information on the hospital's baseline absenteeism
2. When vaccine becomes available, sponsor local immunization programs for physicians, nurses and key staff members
 - Staff who are vaccinated should be noted in an immunization registry, such as the WIR
 - Infection Control should have immunization rate information for the hospital
3. Ensure that the facility's time-off policies and procedures adequately consider staffing needs in periods of clinical crisis. Facility policies and employee union contracts should incorporate language that allows flexibility to achieve adequate staffing during a pandemic. Unplanned staff or family member illness and previously granted vacation request may complicate adequate staffing
4. Consider or expand hospital-sponsored sick care services for hospital staff children
5. Within reasonable limits of clinical competency, consider use of registered nurses and other healthcare providers serving in administrative positions to provide patient care
6. Preferentially use immunized staff to care for those with suspected or confirmed influenza infection
7. Healthcare facilities should encourage all staff members to have household emergency plans in place, which address but are not limited to childcare needs, adult daycare needs and pet needs in an effort to reduce possible absenteeism

10.4.1.2 Discharge

1. Ensure expeditious patient discharge.
2. Consider appointment of a triage officer to manage patient flow. Utilization review activities have increased importance during a pandemic, when normal continuity of care may be disrupted because of staffing shortages and turnover due to illness.
3. Ensure that the facility has effective rules for expediting patient discharge during periods of anticipated high demand. These rules might include allocation of a sufficient number of triage physicians and nurses to the appropriate services and procedures for discharge and transfer of patients to home, a skilled nursing facility, or other facilities.
4. Review guidelines and policies allowing expeditious transfer of patients between units, especially from critical care units, when indicated.
5. Develop transportation plans and policies to expeditiously transport discharged patients home or to other facilities.
6. Consider creating a patient discharge holding area or discharge lounge to free up bed space.

10.4.1.3 Emergency Department

1. Ensure that the Emergency Department is prepared for high patient volume.
2. Pre-plan space needs for flexible use of alternative space. Urgent care or fast track areas in or adjacent to the ED may need to be converted to patient treatment areas.
3. Review policies and procedures addressing adequate physicians, nurses and ancillary staff in the ED and critical ancillary areas.
4. Consider appointment of a triage officer to manage patient flow, including appropriate patient

referral to other clinics within the facility or to local physicians' offices or nontraditional care settings when ED care is not required.

5. Consider spatial separation in waiting room of potentially influenza-infected patients.

10.4.1.4 Elective Procedures

1. Review policies for admitting and scheduling elective procedures and consider how and when to implement contingency plans such as limiting elective admissions and surgery.
2. Elective utilization of health care facilities should be limited as much as possible during a pandemic. In addition to allowing re-distribution of staff and equipment, reducing the number of elective visits to health care facilities may decrease a person's exposure to influenza infected patients receiving care in the facility and may also reduce the risk of influenza infection complications in these patients. Consideration should be given to performing any necessary surgeries in a surgical ambulatory care center to reduce the likelihood of patient exposure to influenza infected patients receiving treatment in facilities providing medical care.
3. The need for home health care visits may increase during a pandemic. When feasible, however, the number of visits to a patient's home and the number of homes visited should be limited to reduce the risk of introducing influenza to the home care patient who is likely to be at high risk of complications. Home health workers, home health patients, and care providers in the home should receive influenza vaccine annually and should receive the pandemic strain vaccine once it is available.
4. Many persons are dependent on certain health care procedures or treatments (e.g., dialysis) that must continue during a pandemic. It is especially important in these situations that both the health care worker and the patient receive annual influenza vaccine and that pandemic vaccine be administered when it is available.

10.4.1.5 Equipment and Supplies

Healthcare facilities need to plan for the limited availability and increased need of equipment and supplies such as respirators, gurneys and supply carts within the facility and for potential disruption in the normal delivery of supplies and repair services.

10.4.1.6 Patient Placement

Isolation plans for use during a pandemic should be developed in advance. Under ideal circumstances, patients with suspected or diagnosed influenza should be in a private room. Special ventilation has been recommended as well although efficacy studies for reducing influenza transmission is lacking. During a pandemic, private rooms and rooms with special ventilation are unlikely to be available and containment of infection is likely to be difficult. Consideration should be given to cohorting patients with active confirmed or suspected influenza infection. Isolation procedures for other pathogens, including use of a private room, should continue to be utilized.

The period of greatest communicability of inter-pandemic influenza is the first three days of illness but the virus can be shed before onset of symptoms and up to seven or more days after illness. It is possible that more prolonged shedding could occur with pandemic influenza since the immune system would have no prior experience with related strains. It is also possible that prolonged shedding can occur in young children and immunodeficient patients. Therefore, all influenza specific bed management measures should be maintained for at least seven days after onset of illness or longer if symptoms persist.

10.4.1.7 Mortuary Services

1. Due to increased number of deaths that will most likely overwhelm a healthcare mortuary, bereavement care may need to be expedited and moved from the patients room to another location
2. Healthcare facilities may have to inform survivors of the deceased, that there may be a waiver of the 48-hour hold before cremation can occur, and that cremation may be mandatory for the

appropriate disposition of the remains, per state statute 979.10 (1) (a)

10.4.1.8 Additional Emergency Response Considerations

1. Healthcare facilities and their staff need to be trained in NIMS and/or HICS
2. Healthcare facilities should look into stockpiling additional PPE for physicians, nurses and key staff members
3. Healthcare facilities should have plans in place on how to utilize airborne infection isolation rooms
4. Healthcare facilities should create and exercise their surge capacity plans

10.4.2 Community-level Healthcare Planning

A community-wide coordinated response will be essential. Communication with local physicians, physician's groups, urgent care centers, community clinics, and home health care agencies is essential to develop joint contingency plans and to determine their availability during peak periods. Planning should involve healthcare facilities, public health, EMS, and other first responders to ensure that there is coordinated distribution of scarce critical resources.

In order to effectively respond to an influenza pandemic, communities will need to coordinate many health care related activities. Because so many different perspectives will need to be considered during this process, it is recommended that a Community Health Care Task Force be created that engages all the necessary parties. The task force should include representatives from hospitals, infection control specialists, physician groups, public health, home health care, Milwaukee County paramedic base and emergency response groups.

10.4.2.1 Roles of the Task Force

1. The task force should be responsible for coordinating health care activities from a community perspective during a pandemic. The following are suggestions of activities the Task Force should consider :
2. Working with the local health department to issue public health advisories as needed regarding the pandemic crisis and the use of the emergency department (ED) vs. clinics and urgent care centers
3. Communication efforts should be coordinated through a JIC which public health as the lead
4. Research and define community regulations pertaining to crisis management, the responsibilities of hospitals and other health care facilities, the responsibilities of the public health sector, and any other regulations relevant to pandemic-type situations
5. Work with hospitals to ensure that adequate protocols for bed management across facilities. These protocols should address how and when the decision will be made to utilize alternative facilities for patient care
6. Initiate a tracking system for monitoring the impact of the pandemic on hospitals in the community. WITrac will ideally be used as the tracking system. WITrac should collect the following types of data:
 - Number of available ICU beds (adult and pediatric)
 - Number of available medical ward beds (adult and pediatric)
 - Number of available ED beds (total)
 - Number of available ED monitored beds;
 - Number of available ED non-monitored beds;
 - Number of patients in the ED waiting to be seen;
 - Number of patients waiting for inpatient beds (in ED, clinic, recovery I etc)
 - Average waiting time for non-ambulatory patients to be seen in ED
 - Average waiting time for ambulatory patients to be seen in ED
 - Number of hospitals on ED diversion
 - Morgue capacity
7. The task force is encouraged to consider the value of allowing ambulances to divert from their emergency departments when it is obvious that each hospital in the community is equally

impacted by the pandemic. It may be necessary to reevaluate this issue every 24 hours during the crisis

8. Work with hospitals that are experiencing unusually heavy patient volumes by giving transfer priority when:
 - Hospital is in danger of exceeding bed capacity
 - Hospital has already performed "in-patient triage" in order to free up as many ICU and ward beds as possible
 - Hospital is currently on emergency department diversion
 - Hospital has implemented procedures to obtain additional staff
 - Hospital is unable to provide/obtain needed medical equipment or services due to overwhelming conditions
8. Formulate a plan for expediting the patient transfer between hospitals
9. When a hospital has exhausted its medical supplies, a mechanism should be in place for allocating urgently needed equipment (e.g. ventilators) and pharmaceuticals (vaccines, antivirals, antibiotics, etc). Since several hospitals in the community are likely to concurrently experience this problem, it is recommended that one distribution center be responsible for coordinating requests for additional equipment and supplies
10. Formulate a plan to coordinate the transport of supplies from one hospital to another when appropriate
11. Permit ambulances to honor ED diversion and transport patients to the next closest facility provided that it is within 15 minutes of an open facility
12. Develop a plan for management of bodies when morgue capacity has been exceeded.
13. Develop a plan for continuity of home health care services and the delivery of medical supplies to home health care patients

10.5 HEALTHCARE PLANNING OPERATIONAL OVERVIEW BY PANDEMIC PERIOD FOR MHD

10.5.1 Inter-pandemic Period (WHO Phases 1, 2 and HHS Stage 0)

1. Communicate and encourage the need for annual Influenza vaccinations for healthcare workers
2. Act as a resource to healthcare facilities for pandemic influenza planning
3. Continue to test communication devices to healthcare facilities/professionals through current communication systems such as WITrac and SurvNet
4. Continue to develop passive surveillance systems with hospitals through Biosense and ESSENCE
5. Continue to plan for increased numbers of death certificates to be processed during a pandemic influenza
6. Continue to plan with Milwaukee County Emergency Management and the Milwaukee County Medical Examiner's Office for mass fatality management

10.5.2 Pandemic Alert Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

1. Communicate and encourage the need for annual Influenza vaccinations for healthcare workers
2. Act as a resource to healthcare facilities for pandemic influenza planning
3. Provide periodic updates to healthcare facilities/professionals on current novel strains of influenza viruses circulating in either human, avian and/or mammalian species
4. Provide healthcare facilities/professionals with the following information:
 - Current case definitions for influenza caused by a novel Influenza virus
 - How to report suspect cases of novel influenza virus infections through SurvNet
 - Proper safety precautions to be practiced when a novel influenza virus infection is suspected
 - Isolation Procedures
 - Sample and Testing Guidelines
5. When the WHO raises the phase to either level 4 or 5, MHD will initiate active surveillance in EDs
 - MHD will initiate active surveillance in EDs at phase level 4 when smaller clusters of cases of

novel influenza begin and the initial location of these clusters occur inside North America or in major metropolitan areas through the world, where it can logically assumed that frequent travel to the United States will occur

- MHD will initiate active surveillance in EDs at phase level 5 when larger clusters of cases of novel influenza begin, but the initial location of these clusters occurs in rural areas outside of North America

10.5.3 Pandemic Period (WHO Phase 6 and HHS Stages 3, 4, 5, 6)

1. Continue to communicate and encourage the need for annual influenza vaccinations for healthcare workers
2. Provide daily/weekly updates to healthcare facilities on pandemic influenza surveillance data in the community
3. Provide healthcare facilities with the latest guidance on pandemic influenza from federal and state resources as it becomes available
4. Assist in the coordination of healthcare facilities' response to managing pandemic influenza
 - Coordination will occur between the hospital representative at the county EOC or with the Region 7 WHEPP coordinator
[REDACTED]
 - Coordination may also occur with the Wisconsin Hospital Association (WHA)
[REDACTED]
5. MHD will discontinue active surveillance through WITrac and will instead rely on healthcare facilities' to report information found in section 10.4.2.1 on WITrac
6. Provide SNS antiviral medication to healthcare facilities for their staff who have direct patient contact since those individuals fall within group 2 of the antiviral priority groupings
 - MHD will continue to provide antiviral medications according to the antiviral priority groupings if antiviral supplies are adequate
7. Provide SNS pandemic influenza vaccine to healthcare facilities for their staff who have direct patient contact since those individuals fall within tier 1 subgroup A of the vaccine priority groupings
 - MHD will continue to provide pandemic vaccine according to the vaccine priority groupings if vaccine supplies are adequate

10.5.4 Post Pandemic

1. Continue to communicate and encourage the need for annual influenza vaccinations for healthcare workers
2. MHD in coordination with healthcare facilities through WHEPP Region 7 will provide a lessons learned for the initial wave of pandemic influenza and work to correct problem areas
3. MHD will reinstate passive influenza surveillance utilizing existing surveillance systems and methods

SECTION 11: PSYCHOLOGICAL, SOCIAL AND ECONOMIC ISSUES

11.1 INTRODUCTION

During an influenza pandemic, healthcare providers, public health officials, other emergency responders and essential service workers may be met with substantial physical, personal, social, and emotional challenges. Included with these challenges, these individuals may also experience high levels of sustained occupational stresses. Since a pandemic has the potential to last for more than a year, these individuals and their families will be at personal risk for a long duration of time.

11.2 PSYCHOLOGICAL AND SOCIAL ISSUES OPERATIONAL OVERVIEW BY PANDEMIC PERIOD

11.2.1 Interpandemic Period and Pandemic Alert Period (WHO Phases 1-5 and HHS Stages 0-2)

MHD will help support local and regional efforts to meet psychosocial and social needs of the City of Milwaukee and Milwaukee County. Special attention will be paid to assure workforce resilience, especially directed towards first responders, including essential service workers, and their family members. Although large efforts will be made to prepare first responders, the information provided to first responders will be available to the public which will benefit the public's preparedness.

MHD will continue to:

- Promote the development of family communication and preparedness plans for first responders and the citizens of the City of Milwaukee and Milwaukee County
- Encourage employers to plan for sick pay, staff rotation, family concerns and plan for contingency in counseling services with an emphasis on first responding agencies and medical care facilities
- As a first responding agency, MHD will plan for sick pay, staff rotation, family concerns and contingency in counseling services such as Employee Assistance Program for its own staff
- Share Local Plans with large businesses, health care, essential services

Employers of responders and laboratory staff should:

- Provide PPE Training or guidance as needed
- Maintain psychosocial support resource and contingency
- Plan for staffing and Union issues
- Train responders w/pt contact n PPE as needed
- Educate employees about behavioral health resources
- Train supervisors to support
- Monitor well-being of staff
 - Assure rest
 - Assure use of buddy-system
- Provide outreach and other help to "families" as needed
 - Define the organization's view on what is a "family"
- Adjust overall workload of staff to accommodate
- Anticipate stigmatization

11.2.2 Pandemic Period (WHO Phases 3, 4, 5 and HHS Stages 0, 1, 2)

- MHD will share appropriate Public Health messages
 - Maintain communication via website <http://www.milwaukee.gov/flu> and hotline-expert advice about disease control, self care
 - Information about social distancing
 - Information about infection control
 - Information about how the virus is NOT transmitted

- Information needed to reassure and to dispel rumors and myths
- Continue to encourage Family Communication Plans
- Contact emergency planners in schools, law enforcement and local business and share information about the response
- Provide PPE Training or guidance as needed
- Direct public towards support resources that may be available such as Red Cross, Salvation Army, faith based organizations and other resources

SECTION 12: ANIMALS

12.1 INTRODUCTION

Influenza A virus is unique in that it can infect a variety of animals; wild birds are the natural reservoir for influenza A. It is also unique in that it can undergo the major genetic re-assortment known as antigenic shift. This sudden change happens infrequently and often occurs as a result of a recombination of human influenza A with an animal influenza A virus. This recombination results in a new subtype of influenza A to which the human population has little or no immunity. An antigenic shift is almost always followed by an influenza pandemic. For this reason, response to Influenza outbreaks in animals is necessary.

12.2 ROLES AND RESPONSIBILITIES OF RESPONDING AGENCIES

State and Federal responsibilities are described in State of Wisconsin response to an Animal Influenza Emergency (http://dhfs.wisconsin.gov/preparedness/pdf_files/WIPandemicfluPlanforanimals.pdf).

12.2.1 City of Milwaukee Health Department

It is the responsibility of local agencies to collaborate with DPH/DATCP/USDA to identify persons exposed to animal influenza and prevent the spread to others. Duties include:

- Using DATCP/USDA traceback/traceforward information to identify humans that may have been exposed to avian influenza
- Monitoring exposed persons for ILI for 10 days
- Assuring that exposed persons receive antivirals
- Assuring accurate and timely information about risk, etc. is shared with the public and elected officials, working with area humane organizations as needed
- Participate in coordination of specimen testing

12.2.2 Milwaukee County Emergency Management

Emergency management will be responsible for logistics and resources during an animal influenza emergency. Emergency management will also coordinate with neighboring counties' Emergency Management offices and Wisconsin Emergency Management.

12.2.3 Local Animal Welfare organizations

Coordination of animal welfare organizations will occur according to the Regional Plan for Animals currently being drafted by the Animal Health and Agroterrorism Workgroup. The following is a summary of the specific response that might occur related to birds and other animals during an outbreak of avian influenza in the area. Further details of the response will depend on factors such as whether Influenza H5N1 has been found in wild birds in the area, extent of wild bird species affected, illness vs. disease carriage, and other factors.

According to WI-DNR, during an influenza pandemic it is not likely that there will be restrictions prohibiting rehabilitation of birds ill with avian influenza. In addition, there may be public interest in helping birds that are sick with avian influenza. Public panic may, however, occur if a public health threat exists, or if risk is perceived to exist. This panic may present a challenge to efforts of those who wish to respond to sick or injured birds, or to those birds that are ill, or those that may be carrying the virus but appear well. State and local agencies will need to work with local animal welfare organizations listed in the Regional Plan for Animals to provide the public with accurate information and assure that there is no additional spread of the virus from wildlife.

There may be specific guidelines issued to animal welfare organizations related to treating any birds and

other animals during a pandemic of avian influenza. It will be necessary for wildlife rehabilitators to follow occupational health guidance related to infection control, provide proper isolation areas for any sick birds, dispose properly of dead birds and prepare their own business for possible staffing shortages that may occur during a pandemic. MHD, as local public health, will use VetNet to distribute any guidance issued by the State or Federal Government. Local humane animal welfare organizations listed in the Regional Plan for Animals will work closely with WI-DNR and DATCP to identify, collect, isolate and treat sick birds and other animals according to their capacity to do so, and follow any guidance issued by WI-DNR, DATCP, DHFS, or MHD.

12.3 COMMAND AND CONTROL

Command and Control is described in State of Wisconsin response to an Animal Influenza Emergency (http://dhfs.wisconsin.gov/preparedness/pdf_files/WIPandemicfluPlanforanimals.pdf).

12.4 SURVEILLANCE

In addition to the surveillance efforts outlined in section 5.3, MHD is working with WI-DNR to assure that MHD is informed about any bird die-offs that may be due to avian influenza. MHD will also provide WI-DNR information on bird die-offs reported by citizens, so that WI-DNR may investigate.

Additional information on Wisconsin's animal surveillance efforts for pandemic influenza can be found in the State of Wisconsin response to an Animal Influenza Emergency (http://dhfs.wisconsin.gov/preparedness/pdf_files/WIPandemicfluPlanforanimals.pdf).

12.5 COMMUNITY DISEASE CONTROL

Community Disease Control is described in State of Wisconsin response to an Animal Influenza Emergency (http://dhfs.wisconsin.gov/preparedness/pdf_files/WIPandemicfluPlanforanimals.pdf).