

**LINCOLN AND LANCASTER COUNTY'S PUBLIC HEALTH
PANDEMIC INFLUENZA RESPONSE PLAN**



Revised Plan

February 2018

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I. INTRODUCTION

A. Significance of Influenza (Flu) Pandemics

Severe influenza (flu) pandemics represent one of the greatest potential threats to the public's health. Regular seasonal flu strains impact the population (especially the young and the old), but over time people develop some degree of immunity to the most common flu viruses, and vaccines are developed annually to match the most likely circulating flu strains (commonly two type A flus and one type B). Studies of mortality in the decade of the 1990s estimated that seasonal flu caused an average of 36,000 deaths annually in the United States even though many people were vaccinated. However, there have been many years where the death toll from seasonal flu was not as high and some where the toll was higher so the [CDC now discusses the burden](#) in terms of a range of hospitalizations and deaths from a few thousand up to hundreds of thousands.

As opposed to seasonal flu, pandemic influenza refers to a worldwide epidemic due to a new, dramatically different strain of influenza virus. A pandemic virus strain can spread rapidly from person to person and the most virulent strains can cause high levels of disease and mortality around the world such as the 1918 Spanish flu that sickened 500 million and killed 50 million people worldwide.

Pandemic viruses develop in two primary ways. First, wild ducks, geese and shorebirds are the reservoir for all influenza Type A viruses. They also have been known to have every subtype (determined by surface proteins) of influenza Type A viruses. New or novel human pandemic influenza viruses can arise when avian influenza viruses acquire the ability to infect and cause disease in humans, and then spread rapidly from person to person. Second, over time all influenza Type A viruses experience slight changes (antigenic drift) in their genetic structure. This necessitates a change in annual vaccines to protect against seasonal influenza strains. Occasionally influenza viruses undergo a major change in genetic composition or mutation (called reassortment) through the combination of an avian and human virus.

The creation of a novel virus means that the majority, if not all, people in the world will have never been exposed to the new strain and thus they have no immunity to the disease. It also means that a new vaccine specific to the pandemic virus must be developed and produced once we are in a pandemic. This means a vaccine will not be available for up to nine months after the initial cases, during which time many people could be infected and become seriously ill or die.

B. History and Purpose

During the 20th century, we experienced three pandemics globally. The influenza pandemic of 1918-1919 the so-called "Spanish Flu" was especially virulent, killing a large number of young, otherwise healthy adults. It is now known that this pandemic was

caused by an avian influenza virus that suddenly developed the ability to infect humans and easily spread from person to person. The 1918-1919 pandemic caused more than 500,000 deaths in the United States and more than 40 million deaths around the world. Subsequent pandemics in 1957-58 and 1968-69 caused far fewer fatalities in the U.S., 70,000 and 34,000 deaths respectively, but caused significant morbidity and mortality around the world. These two pandemics were caused by an influenza virus that arose from genetic reassortment between human and avian viruses.

The Centers for Disease Control and Prevention (CDC) estimates that in the U.S. alone, an influenza pandemic could infect up to 90 million people and cause between 200,000 and 1.9 million deaths. (www.pandemicflu.gov). The number of deaths and hospitalizations will depend greatly upon the virulence of the virus.

This plan serves as an annex to Lincoln-Lancaster County Health Department's all-hazards public health emergency response plan. The public health emergency response plan addresses the communication, notification, strategies, detection/surveillance, legal authority, command and control and delivery during a public health emergency.

The LLCHD Pandemic Influenza Plan adheres to the Nebraska Department of Health and Human Services guidelines.

II: KEY PANDEMIC PREPAREDNESS AND RESPONSE PRINCIPLES

A. Surveillance

Local

Lincoln-Lancaster County Health Department has city- and county-wide surveillance systems established. Using these existing systems LLCHD will be able to detect influenza strains throughout the county.

The surveillance measures are as follows:

1. School system
2. Laboratory testing (NHHS, Nebraska Game and Parks)
3. Hospitals
4. Health care providers

Local surveillance during a pandemic outbreak provides important information regarding the severity of disease, characteristics of the affected population, and impacts on the health care system in Lancaster County. LLCHD will coordinate surveillance with the surrounding local health departments and follow the guidelines set forth by the Nebraska public health laboratory and DHHS.

National

National surveillance will come from organizations such as the CDC, USDA, Department of Interior's U.S. Fish and Wildlife Service. They will provide an early warning system for potential pandemics. These surveillance systems are a critical component of pandemic response preparation.

Global

Global surveillance networks of the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), the United Nations' Food and Agriculture Organization (FAO) identify circulating influenza strains, including novel strains that have the potential for causing pandemic outbreaks among domestic animals and persons in several countries.

B. Antiviral and Vaccines

When a pandemic virus first emerges, antiviral medication will be in short supply and vaccines may not be available for mass clinics for six to nine months or longer.

During a pandemic the available supply of stockpiled antiviral medications (such as oseltamivir or Tamiflu® and zanamivir or Relenza®) will be utilized to treat patients in Lincoln and Lancaster County. For optimal impact, treatment needs to be started within 48 hours of the onset of illness. Medications will be delayed and in short supply during a pandemic. Even if a person receives antiviral medications, the treatment may only decrease the severity of illness and resulting complications of infection and not the duration of illness.

- Priority groups shall be established by the Lincoln-Lancaster County Health Department (LLCHD), based on national recommendations from the Department of Health and Human Services (HHS) that may be forthcoming in the event of a pandemic. With guidance regarding the use of antivirals and vaccine in Lancaster County supplies will be used accordingly, once available. During a pandemic, however, LLCHD will also consider national guidelines and local epidemiological data to adjust and finalize priority groups as necessary.
- LLCHD will work in collaboration with our partners to provide a pandemic flu vaccine to the entire county population when available.
- LLCHD will utilize the Mass Clinic Plan to assist in the distribution of antivirals and vaccines to the public. The use of private sector facilities is possible alongside triage tents and decontamination facilities.

C. Non-Medical Actions

The purpose of these measures is to help reduce the possible rapid spread of the virus across Lincoln and Lancaster County. Educating and emphasizing infection control measures in health care facilities, including hospitals, out-patient care settings and long-

term care facilities, as well as workplaces, other community settings and the home can limit the spread of the influenza virus.

Other measures that can be utilized early on are voluntary isolation, quarantine, implementation of social distancing.

- Voluntary isolation of ill persons either in a health care facility or at home is suggested.
- Quarantine of exposed individuals is a viable strategy for preventing the spread of the disease only during the initial stages of a pandemic.
- Social distancing measures such as limiting public gatherings and closing schools, colleges, universities, large child care centers, libraries, and houses of worship, stadiums, and recreational facilities are intended to decrease opportunities for close contact.

Decision makers must consider the scope of their legal [authorities](#), social and economic impacts, anticipated effectiveness and current epidemiology of the pandemic prior to implementing these measures.

D. Coordination of efforts

Coordination between local public and private sector agencies throughout Lincoln and Lancaster County is of the utmost importance in the event of a pandemic. An influenza pandemic will place a substantial burden on inpatient and outpatient health care services. Demands for medical supplies, equipment, and hospital beds are expected to exceed available resources for several weeks.

Strategies to increase hospital bed availability during a pandemic include deferring elective procedures, implementing more stringent criteria for hospital admission, earlier discharge of patients with follow-up by home health care personnel, and establishing alternate care facilities in nontraditional sites. Some of these strategies may not be possible since demands for health care resources and services will increase sharply and illness and absenteeism among health care workers will further strain the ability to provide quality care.

Absenteeism during a pandemic among critical infrastructure agencies, first response agencies, businesses, and community based organizations must be accounted for in [continuity of operations plans \(COOP\)](#) that all businesses and public agencies are recommended to prepare. Worksite infection control practices and recommendations and education of staff are important.

E. Outreach to local public and private sectors

LLCHD is addressing these issues through the Local Emergency Planning Committee to educate, inform and coordinate efforts in the preparation for a pandemic.

LLCHD is continuing its efforts to educate the community regarding basic infection control measures and behaviors such as hand washing, using alcohol hand gel, respiratory etiquette, staying home when sick, and avoiding unnecessary contact with other persons during a pandemic. All of these will be key factors in limiting the spread of influenza during a pandemic.

Communicating clear, concise and accurate information about influenza over the course of the pandemic; and response activities will increase awareness, limit public panic and speculation, and sustain confidence in the public health system.

LLCHD has provide presentations throughout the community about pandemic preparation and the possible impact a pandemic would have on the community and their organization. The Department has especially worked closely with the Lincoln Public Schools, UNL and Union College about their plans as the effect on the entire community of school closures is significant given the likely duration of a pandemic event with waves. The promotion of continuity of operations planning for businesses and educating the public about the need for individual and family planning in these presentations will enable individuals, families, businesses and organizations to be prepared for a pandemic.

III. PURPOSE OF THE PLAN

The Pandemic Influenza Response Plan for Lancaster County provides guidance to the Lincoln-Lancaster County Health Department (LLCHD) and local partners regarding detection, response and recovery from an influenza pandemic. The plan highlights unique challenges posed by a pandemic that may necessitate specific leadership decisions, response actions, and communications mechanisms. Specifically, the purpose of the plan is to:

- Define preparedness activities that should be undertaken before a pandemic occurs that will enhance the effectiveness of response measures.
- Determine the response, coordination and decision making structure that will incorporate LLCHD, the health care system in Lancaster County, other local response agencies, and state and federal agencies during a pandemic.
- Define roles and responsibilities for LLCHD, local health care partners and local response agencies during all phases of a pandemic.
- Describe public health interventions in a pandemic response and the timing of such interventions.
- Serve as a guide for local health care system partners, response agencies and businesses in the development of pandemic influenza response plans.
- Provide technical support and information on which preparedness and response actions are based.

During an influenza pandemic, LLCHD and our partners will utilize the plan to achieve the following goals:

- Limit the number of illnesses and deaths
- Preserve continuity of essential government functions
- Minimize social disruption
- Minimize economic losses

The Plan will be coordinated with other LLCHD preparedness plans and activities, and will be coordinated with the plans of community, state and federal partners.

IV. SCOPE OF THE PLAN

The Plan is considered to be an annex to Emergency Support Function 8 (Health and Medical Services) of the County's Disaster Plan. Emergency Support Function 8 and its annexes are referenced in the plan as they provide a broad description of the responsibilities, authorities, and actions associated with public health emergencies.

The plan primarily focuses on the roles, responsibilities, and activities of LLCHD. However, specific responsibilities for key response partners are included to highlight points of coordination between agencies during a pandemic. It is expected that health care facilities and health care professionals, essential service providers, local government officials, and business leaders will develop and incorporate procedures and protocols addressing influenza preparedness and response activities into their emergency response plans.

LLCHD will abide by USDA and NEDA guidelines and information regarding containment and outbreak of the avian flu virus in birds or other animal populations in Lancaster County.

V. PLANNING ASSUMPTIONS

The federal government assumes that a 30% attack rate and 2.1 percent mortality might be expected as a worse-case scenario. A pandemic like the 1918 "Spanish Flu" would result in higher mortality than some simulation models based on milder pandemics indicate. An attack rate of 30% means that an estimated 92,891 people in Lancaster County might be infected by a pandemic flu. Of those, it is expected that 50 percent (46,445) will seek medical treatment and 2.1 percent, or 1,951 people, might die from the flu under this scenario.

The potential economic losses are estimated to be enormous. Nebraska's potential economic loss is estimated at \$4.4 billion or more during a severe pandemic flu outbreak, representing a 6.22 percent drop in the state's economy. A 2007 [report](#) issued earlier this year indicated that Nebraska's Gross Domestic Product (GDP) could experience the 5th highest percentage loss out of the 50 U.S. states. The report found that nationally a severe

pandemic flu outbreak could result in the second worst recession in the U.S. since World War II. The U.S. Gross Domestic Product could drop over 5.5 percent, leading to an estimated \$683 billion loss in output and income.

Below are some assumptions that LLCHD has used in creating this response plan:

1. An influenza pandemic will result in the rapid spread of the infection with outbreaks throughout the world. Communities across the nation and Nebraska may be impacted simultaneously.
2. There will be a need for heightened global, national and local surveillance. LLCHD will rely on surveillance data collected from schools and hospitals in Lancaster County as well as labs. Business employee attendance data may also be gathered to enhance our surveillance efforts.
3. Birds with an avian influenza strain may arrive and cause avian outbreaks in Lancaster County prior to the onset of a pandemic, significantly impacting domestic poultry, wild and exotic birds, and other species.
4. Lancaster County will likely not be able to rely on mutual aid resources, State or Federal assistance to support local response efforts.
5. Antiviral medications such as Tamiflu® (oseltamivir) and Relenza® (zanamivir) may be in short supply, although there is an allocation to the local hospitals and LLCHD from the State's share of antivirals being added to the Strategic National Stockpile (SNS). Local supplies of antiviral medications will be prioritized by LLCHD for use on hospitalized influenza patients, health care workers providing care for patients, and other priority groups based on current national guidelines and in consultation with the Nebraska Department of Health and Human Services (NDHHS).
6. A vaccine for the pandemic influenza strain will likely not be available for 6 to 9 months following the emergence of a novel virus.
 - a. As vaccine becomes available, it will be distributed and administered by the LLCHD based on current national guidelines and in consultation with the Nebraska Department of Health and Human Services.
 - b. Insufficient supplies of vaccines and antiviral medicines will place greater emphasis on social distancing strategies and public education to control the spread of the disease in the county.
7. The number of ill people requiring outpatient medical care and hospitalization will likely overwhelm the local health care system.

- a. Hospitals and clinics will have to modify their operational structure to respond to high patient volumes and maintain the functionality of their critical systems.
 - b. The health care system may have to respond to increased demands for service while the medical workforce experiences 25-35% or greater absenteeism due to illness.
 - c. Demand for inpatient beds and assisted ventilators will increase by 25% or more, and prioritization criteria for access to limited services and resources may be needed.
 - d. There will be tremendous demand for urgent medical care services and clinics. These facilities may be overwhelmed or closed due to staff shortages.
 - e. Infection control measures specific to management of influenza patients need to be developed and implemented at health care facilities and in out-patient care settings and long-term care facilities.
 - f. The health care system may need to develop alternative care sites (designated “flu clinics”) to relieve demand on hospital emergency rooms and care for persons not ill enough to merit hospitalization but who cannot be cared for at home although staffing limitation may limit the use of alternatives.
 - g. Emergency Medical Service responders will face extremely high call volumes for several weeks, and may face 25% - 35% reductions in available staff.
 - h. The number of fatalities experienced during the first few weeks of a pandemic could overwhelm the resources of the hospital morgues and funeral homes.
 - i. The demand for home care and social services will increase dramatically.
8. There are likely to be significant disruptions of public and privately owned critical infrastructure including transportation, commerce, utilities, public safety, agriculture and communications.
 9. Social distancing strategies aimed at reducing the spread of infection such as closing schools, community centers, and other public gather points and canceling public events are likely to be implemented during a pandemic.
 10. Some persons will be unable or unwilling to comply with isolation directives. For others, social distancing strategies may be less feasible (homeless populations who live in congregate settings). It will be important to develop and disseminate strategies for infection control appropriate for these environments and populations.

11. It will be important to coordinate pandemic response strategies throughout counties in Eastern Nebraska and the state due to the regional mobility of the population.
12. The general public, health care system, response agencies, and elected leaders will need continuous updates on the status of the pandemic outbreak, impacts on critical services, the steps LLCHD is taking to address the incident, and steps response partners and the public can take to protect themselves.
13. It is important to inform and educate the community's minority, vulnerable and hard to reach populations.
14. The number of people hospitalized or dead will be determined by virulence of the virus.
15. The percentage of people absent from work could reach 40 percent or higher during the peak times.
16. Lincoln and Lancaster County should be prepared to take care of the local community and not rely on outside assistance.

VI. AUTHORITIES

NEW REGULATIONS AND POLICY FOR ISOLATION AND QUARANTINE

When a pandemic flu arises anywhere the plan is to slow its spread and contain it or lessen its impact. Isolation and quarantine will be one means of slowing the spread, and the authority to issue isolation and quarantine orders in such a situation is considered as a minimum steps/measure of preparation.

Title 42 United States Code Section 264 (Section 361 of the Public Health Service [PHS] Act) gives the Secretary of Health and Human Services (HHS) 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/possessions. This statute is implemented through regulations found in [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 President has issued an Executive Order including pandemic influenza as one of the diseases that the CDC has the authority to quarantine passengers on a plane or boat who may have been exposed to a passenger showing symptoms of pandemic flu. The CDC is establishing quarantine stations at the 12 largest airports to be ready in case a pandemic flu arises.

Should a Nebraskan be suspected of being infected with pandemic flu, the State has the authority to isolate the person and quarantine the individuals who may have been in

contact, and thus exposed to the virus. Nebraska's quarantine and isolation rules and regulations were approved earlier this year.

As for local regulations, the Health Director has broad powers under [City Ordinance Chapter 8.18](#): "The Health Director may quarantine or isolate any person with an infectious, contagious, or dangerous disease by establishing limits within which no person shall enter, except those necessarily in attendance upon such person." This ordinance was updated on June 25th, 2007. A resolution was passed by the Lancaster County Board of Commissioners on May 15th, 2007, to allow the Health Director to have authority to impose quarantine and isolation throughout Lancaster County.

VII. PHASES OF A PANDEMIC

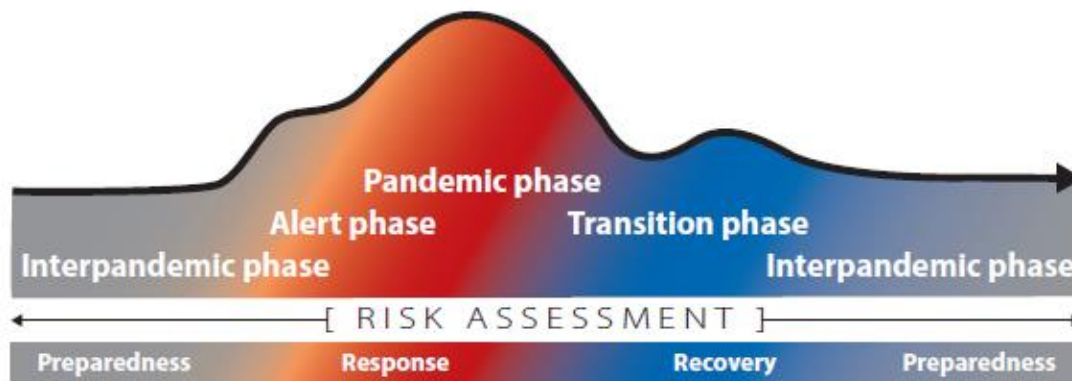
The World Health Organization (WHO) has developed a global influenza preparedness plan that includes a classification system for guiding planning and response activities for an influenza pandemic.

Pandemic Phases	Public Health Goals
<p><u>Interpandemic Period</u> Phase 1 – No new influenza virus subtypes 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 infection or disease is considered low.</p> <p>Phase 2 – No new influenza virus subtypes detected in humans. However, a circulating animal influenza virus subtype poses substantial risk of human disease.</p>	<p>Strengthen influenza pandemic preparedness at all levels. Closely monitor human and animal surveillance data.</p> <p>Minimize the risk of transmission of animal influenza virus to humans; detect and report such transmission rapidly if it occurs.</p>
<p><u>Pandemic Alert Period</u> Phase 3 – Human infection(s) are occurring with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.</p> <p>Phase 4 – Small cluster(s) of human infection with limited human-to-human transmission but spread is highly localized suggesting that the virus is not well adapted to humans.</p> <p>Phase 5 – Larger cluster(s) of human infection but human-to-human spread is localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).</p>	<p>Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.</p> <p>Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.</p> <p>Maximize efforts to contain or delay spread to possibly avert a pandemic, and to gain time to implement response measures.</p>
<p><u>Pandemic Period</u> Phase 6 – Pandemic is declared. Increased and sustained transmission in the general population.</p>	<p>Implement response measures including social distancing to minimize pandemic impacts.</p>

This classification system is comprised of six phases of increasing public health risk associated with the emergence and spread of a new influenza virus subtype that may lead to a pandemic. The Director General of WHO formally declares the current global pandemic phase and designates the phase level to correspond with pandemic conditions around the world. For each phase, the global influenza preparedness plan identifies response measures WHO will take, and recommends actions that countries around the world should implement.

A. The World Health Organization’s Pandemic Phases

Figure 1. The continuum of pandemic phases^a



^a This continuum is according to a "global average" of cases, over time, based on continued risk assessment and consistent with the broader emergency risk management continuum.

Three major surveillance components – verification and detection, risk and severity assessment and monitoring the pandemic – are used during a pandemic. Risk and severity assessments occur in both the alert and pandemic phases.

In accordance with the United States Department of Health and Human Services’ *Pandemic Influenza Strategic Plan*, DHHS will determine and communicate the pandemic phase level for the U.S. The determination will be based on the global pandemic phase and the extent of disease spread throughout the country.

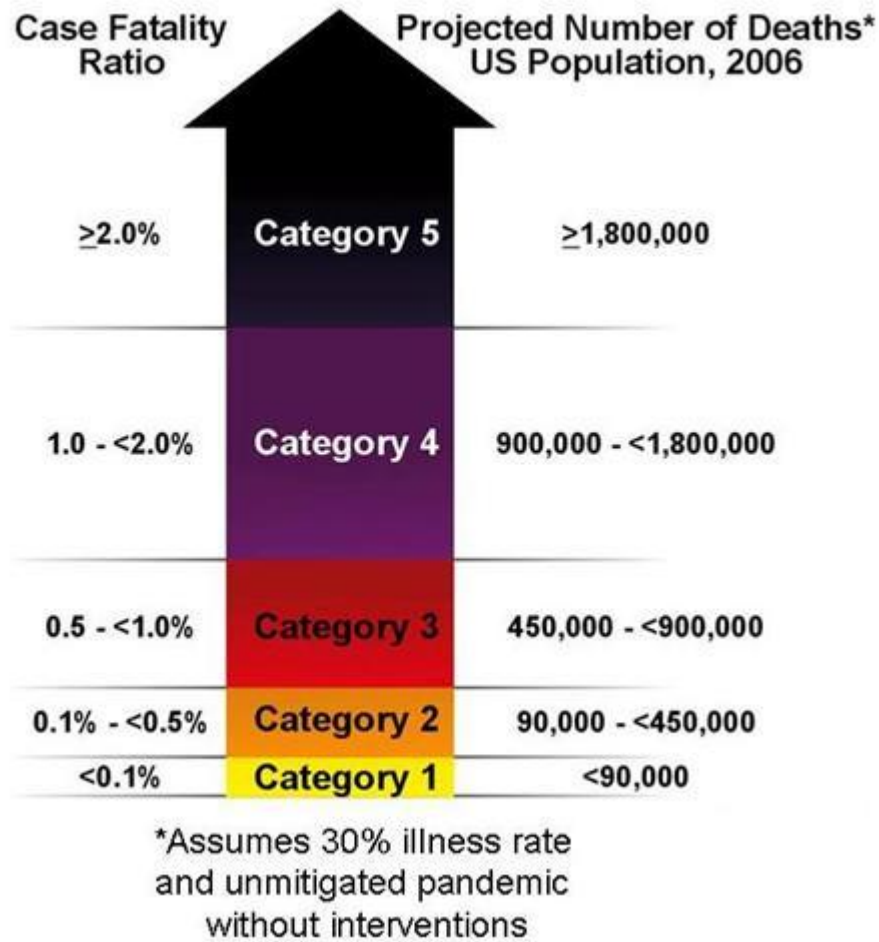
The Lancaster County Pandemic Influenza Response Plan (Pandemic Plan) corresponds to the WHO pandemic phases. Each phase within the Plan is subdivided into two components, “affected” and “not affected” depending upon whether human infection is occurring within the local region. Appropriate preparedness and response measures are identified for each phase, with implementation based in part on whether Lancaster County is affected.

B. Categories of A Pandemic and Local Impact

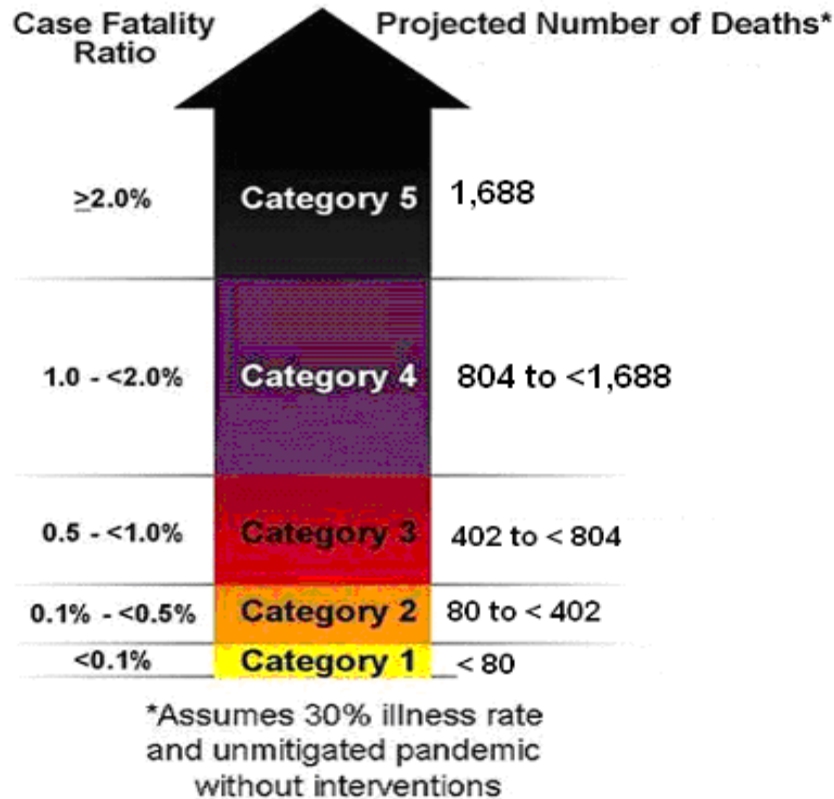
The following diagrams and numbers are based on 2006 population estimated for Lancaster County and therefore are lower than would occur in 2015. For the 2006

estimates the population was 268,000; in 2014 the estimated population is just over 300,000.

United States Pandemic Flu impact according to categorization



Lincoln and Lancaster County pandemic flu impact according to categorization (2014 Population 300,000) 30% infection rate (90,000)



VIII. RESPONSIBILITIES

Lincoln-Lancaster County Health Department (LLCHD)

1. Facilitate city and countywide pandemic planning and preparedness efforts, especially focused on maintaining the core and critical public infrastructure including medical and health services, emergency medical services, electric power generation, water pumping and wastewater treatment, public safety, public transit, and sanitation services.
2. Coordinate the community's emergency public health response through Emergency Support Function 8 and the Lancaster County Emergency Response Plan.
3. Educate the public, health care system partners, response partners, businesses, community based organizations and elected leaders about influenza pandemics, expected impacts and consequences, and preventive measures.
4. Conduct countywide surveillance to track the spread of the human disease and its impact on the community. Through liaison with agriculture and wildlife agencies, facilitate influenza surveillance in animals in Lancaster County and monitor surveillance data.

5. Identify and declare diseases of public health significance, and communicate such declarations to health system partners.
6. Coordinate planning for and implementation of disease containment strategies and authorities.
7. Provide ongoing technical support to the health care system including current surveillance guidelines, recommendations for clinical case management, infection control measures and laboratory testing.
8. Support the health care system's planning and response efforts for medical surge capacity including mass casualty and mass fatality incidents.
9. Develop and implement protocols for the use of limited supplies of antiviral medicines and vaccine consistent with national guidelines and in consultation with the Nebraska Department of Health and Human Services.
10. Direct distribution and administration of antiviral medications and vaccine such as Tamiflu and Relenza when they become available. Efforts will include mass vaccination once enough vaccine is available to offer mass clinics.
11. Provide effective communications to the public, the media, elected officials, health care providers, business and community leaders throughout public health emergencies.

LLCHD Health Director

1. Communicate and coordinate directly with the Mayor, City Council, Lancaster County Commissioners, executive heads of cities and towns within Lancaster County, the LLCHD Board of Health, and the Local Emergency Planning Committee regarding pandemic preparedness and response activities.
2. Coordinate directly with Local Emergency Planning Committee partners and make decisions regarding strategies, thresholds and methods for reallocating resources and temporary restructuring of health system operations in response to a pandemic.
3. Authorize and communicate public health directives regarding social distancing strategies and other protective actions to elected leaders, the business community, schools, the Local Emergency Planning Committee and other partners.
4. Assign responsibilities to LLCHD staff for planning and responding to the pandemic.

5. Ensure business continuity of critical LLCHD functions during all phases of the pandemic.
6. Direct isolation and quarantine of individuals and groups, as needed, based on recommendations from the Communicable Disease program and the Health Department's consultants.

Division Directors/Communicable Disease Program

1. Provide accurate, timely information to the public regarding preparations for a pandemic, the impacts of the outbreak, local response actions and disease control recommendations.
2. Educate the public on how they can protect themselves from becoming infected and infecting others.
3. Direct the management of public information call centers focused on providing health information to the public.

LLCHD's internal division policies and procedures during an event are explained within the confidential Continuity of Operations Plan (COOP).

Local Hospitals, Clinics, Providers and other Health System Partners

1. Health care system partners are members of local emergency planning committee (LEPC) which is facilitated by emergency management.
Responsibilities:
 - a. Identify and prioritize response issues affecting the countywide health system during a pandemic.
 - b. Develop mechanisms to efficiently share information and [resources](#) between health system partners, and to communicate with LLCHD and relevant emergency operations centers.
 - c. Coordinate with the Health Department's Director regarding policy level decisions concerning the operations of the local health system.
 - d. Communication in a timely manner to health care professionals.
2. Hospitals and other health care facilities are developing pandemic response plans consistent with the health care planning guidance contained in the U.S. Department of Health and Human Services Pandemic Influenza Plan. Health care facility pandemic response plans address medical surge capacity to sustain health care delivery capabilities when routine systems are overwhelmed.

3. Health care facilities and health care providers continue to participate in pandemic table top exercises involving influenza surveillance, surge capabilities and regional pandemic activities.
4. Hospitals are developing infection control plans to triage and isolate infectious patients and protect staff from disease transmission.

Key Partners

Lancaster County Emergency Management

- Facilitate pandemic planning and response activities with countywide EMS providers and 911 dispatch centers.
- Develop protocols for maintaining critical EMS response capability during a pandemic that both generates high call volumes and reduces available EMS resources.
- Lead mass fatality planning and response efforts.
- Coordinate with and support hospitals regarding mass fatalities planning and response.
- Incorporate funeral home directors into planning efforts for pandemic response.
- In conjunction with community partners, coordinate planning and development of victim assistance centers.
- Coordinate with economic development agencies and Lincoln Chamber of Commerce regarding the economic consequences of a pandemic.

IX. CONCEPT OF OPERATIONS

A. Overview

1. LLCHD is the lead agency in coordinating the local health and medical response to a pandemic in coordination with State and Federal agencies and officials. LLCHD will coordinate efforts to monitor and, if necessary, direct the use of health care system resources and restructuring of health care system operations in consultation with community healthcare facilities.
2. LLCHD will ask for the acquisition of state or federal medical resources in support of health care system partners.
3. LLCHD will coordinate response actions with the Nebraska Department of Health and Human Services and neighboring local health jurisdictions.

4. LLCHD will respond under the auspices of this plan as well as LLCHD's Emergency Operations Plan, Emergency Support Function 8 (Health and Medical Services).
5. LLCHD's response actions will emphasize disease surveillance and investigation, social distancing measures to reduce the spread of infection, and will provide ongoing communication and education to the public about the pandemic, the public health response, and steps the public can take to reduce the risks of infection.
6. Throughout a pandemic, the Department will follow an incident or uniform command structure to respond to the situation.
7. LLCHD has facilitated with the LEPC in Lancaster County. The LEPC will develop strategies for:
 - a. Coordinating the health care system's response to a pandemic influenza and other public health emergencies;
 - b. Assuring the most effective use of available health care system resources during health emergencies;
 - c. Advise the Director regarding the impacts of the pandemic on the health care system, on the need for changes in health care system operations to respond to the pandemic, and on strategies to implement necessary changes.

B. Direction and Control

1. LLCHD and all response partners will operate under the Incident Command System throughout the duration of the pandemic response.
2. LLCHD will activate the Health Action Center (HAC) to coordinate the county-wide public health and medical response during a pandemic.
3. Lancaster County and Lincoln will activate the Emergency Operations Center (EOC) during a pandemic to coordinate a response.
4. During Pandemic Phases 1, 2 and 3 where Lancaster County is not directly affected, LLCHD leads health system preparedness efforts and countywide education efforts for pandemic response.
5. Upon reaching Pandemic Phase 4 (global) LLCHD will:
 - a. Assess whether to activate the Pandemic Influenza Response Plan and ESF 8 to coordinate the health care system response.

- b. Provide regular briefings to the Mayor of Lincoln, the City Council, Lancaster County Commissioners, other local elected officials and local response partners. Briefings will address the nature of the disease, its communicability and virulence, availability of vaccines and antivirals, actions that are being taken to minimize the impact, actions that response partners should implement to protect critical functions, and health information being shared with the public and health care providers.
6. During Pandemic Phases 4, 5 and 6 LLCHD will communicate with health system partners by direct communication through the EOC to coordinate management of health care system resources and information.
 7. LLCHD will assess the viability of social distancing measures and establish criteria for their implementation.

C. Communication

- a. LLCHD serves as the lead agency in Lancaster County for risk communications messaging and public education regarding pandemic influenza. Coordinate with other Government entities (Mayor’s Office and the City’s Public Information Officer (PIO)) to ensure consistency in communication.
 - b. Communication with the public and health care providers will be a critical component of the pandemic response. This plan’s communication goals are to:
 1. Provide accurate, consistent, and comprehensive information about pandemic influenza including case definitions, treatment options, infection control measures, and reporting requirements.
 2. Instill and maintain public confidence in the County’s public health and health care systems and their ability to respond to and manage an influenza pandemic.
 3. Ensure an efficient mechanism for managing information exchanges between and among LLCHD, health system partners and response agencies.
 4. Contribute to maintaining order, minimizing public panic and fear, and facilitating public compliance by providing accurate, rapid, and complete information.
 5. Address rumors, inaccuracies, and misperceptions as quickly as possible, and prevent the stigmatization of affected groups.
3. Communication during Pandemic Phases 1, 2, 3
 - a. The LLCHD core pandemic planning group:

- i. Assess the information needs of health care providers.
 - ii. Assess the information needs of the general public.
 - iii. Identify any logistical constraints to effective communication, such as communication staffing and equipment needs, and public information call center staffing and capacity.
 - iv. Undertakes public education efforts about influenza pandemics, animal influenza and steps that can be taken to reduce exposure to infection.
 - v. LLCHD will coordinate with the CDC, the Nebraska Department of Health and Human Services, and health departments in adjacent jurisdictions to develop common health messages and education materials.
- b. The LLCHD Director will communication to the Minority, Vulnerable and Hard to Reach Populations. Identifying appropriate community partners for reaching and educating diverse communities.

4. Communication during Phases 4, 5, 6

- a. LLCHD's Communications group will evaluate the need to establish a Joint Information Center (JIC) in conjunction with appropriate health system and response partners. A JIC will be activated when the Incident Commander deems it necessary based on specific characteristics of the pandemic.
- b. The LLCHD Director will evaluate the need to establish a public information call center in conjunction with NE Health and Human Services to respond to public inquiries.
- c. The Communicable Disease program will initiate regular communication briefings with hospital emergency rooms, infection control practitioners, infectious disease specialists, and community provider's as necessary. The Communicable Disease program will also regularly communicate with experts at the CDC and the Nebraska Department of Health and Human Services.
- d. The Emergency Response Coordinator will conduct regular briefings with key response partners, business leaders, community based organizations, first response agencies and critical infrastructure agencies on the status of the pandemic and local response actions.
- e. As the pandemic expands, the LLCHD will provide daily updates on the pandemic and will organize regular media briefings. The LLCHD will keep the public informed about steps that should be taken to protect against infection, treatment options for individuals who are infected, the status of the

spread of the outbreak in the community, and the disease control and containment strategies that are being implemented. When activated this information will be distributed via the Joint Information Center (JIC).

D. Mitigation

Mitigation activities are taken in advance of an influenza pandemic to prevent or temper its impact. Mitigation efforts should occur primarily during pandemic phases 1-3.

LLCHD's pre-event mitigation activities include:

1. Planning, exercising, evaluating and revising the Pandemic Influenza Response Plan.
2. LLCHD is actively participating and coordinating tabletop exercises. With key response partners in the community.
3. Training and equipping partners and LLCHD staff to assure competencies and capacities needed to respond to a pandemic outbreak.
4. Developing strategic partnerships and facilitating capacity building with local hospitals, non-hospital-based health care providers and agencies, other health care system stakeholders, and local, state and federal response agencies and their staff.
5. Educating response partners, the media and public about the consequences of influenza pandemics and recommended preparedness measures.
6. Informing and updating local elected officials about the potential impacts of an influenza pandemic on essential services and infrastructure in Lancaster County.
7. Stockpiling necessary equipment that will be needed to respond to an influenza pandemic.

E. Surveillance

1. Confirmed cases of influenza that may pose a pandemic risk are immediately [reportable diseases](#) in Nebraska.
2. As a pandemic outbreak progresses, the Communicable Disease program will enhance existing surveillance efforts, including gathering relevant available clinical data (i.e. admission and discharge diagnosis) from hospitals in the county.
3. Surveillance during Pandemic Phases 1, 2, 3
 - a. The Communicable Disease program conducts weekly influenza tracking activities including school absenteeism, pneumonia and

influenza deaths submitted by Vital Statistics, nursing home reports, homeless shelter reports and sentinel providers.

- b. The Communicable Disease program coordinates surveillance activities with the disease control activities of the CDC, state agencies, and health departments in adjacent jurisdictions.
- c. Syndromic surveillance is health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response.
- d. LLCHD works with clinicians, hospitals, and infectious disease specialists to enhance case detection, according to CDC screening criteria, among persons who have recently traveled to outbreak areas and present with illnesses meeting the clinical criteria for influenza.
- e. LLCHD has developed and continues to develop partnerships with key employers to track absenteeism in the event of a pandemic flu.
- f. The Nebraska Department of Health and Human Services, and specifically the public health lab at UNMC, supports local laboratories in conducting influenza testing, as requested.

5. Surveillance during Pandemic Phases 4, 5, 6

- a. LLCHD may require health care providers and institutions to report influenza and to send specimens from these cases to the Nebraska Department of Health and Human Services' Public Health Laboratory (UNMC), as requested.
- b. LLCHD will inform community health care providers on recommendations for influenza laboratory testing based on consultation with Nebraska Department of Health and Human Services and CDC.
- c. The Communicable Disease program will comply with guidelines from the CDC and the Nebraska Department of Health and Human Services to facilitate monitoring of the influenza pandemic strain for antiviral resistance.
- d. The Communicable Disease program will activate tracking of absenteeism with certain sentinel employers, where feasible.
- e. Syndromic surveillance data is collected and assessed on a daily basis.

F. Public Education

1. Public education through all phases of a pandemic will involve any or all of the following elements:
 - a. Dissemination of printed and web-based information in multiple languages.
 - b. Active outreach to traditionally underserved populations, in cooperation with community organizations.
 - c. Frequent use of radio, television and print media.
 - d. Coordination with other healthcare providers and caregivers to ensure consistent messaging.
 - e. Utilization of businesses and organizations in preparing for a pandemic to educate and inform their employees.
 - f. Implementation of a public information call center.
2. Government agencies, businesses, schools, health care system partners, community-based organizations and other agencies within Lancaster County will promote and disseminate pandemic influenza educational messages to their staff.
3. LLCHD leads efforts to strengthen support, outreach and training for the Minority, Vulnerable and Hard to Reach Populations in Lancaster County. Specific actions include:
 - a. Communicate with Minority, Vulnerable and Hard to Reach Population to gain information on requirements during emergencies.
 - b. Coordinate with local Minority, Vulnerable and Hard to Reach Population leaders to educate and inform members of the community.
 - c. Partner with cultural leaders and medical interpreters across the county to build sustainable preparedness capabilities within communities.

G. Antiviral and Vaccine Medications

1. Vaccine serves as the most effective preventive strategy against outbreaks of influenza, including pandemics. However, dissemination of an effective influenza vaccine during a pandemic faces several challenges:

- a. A pandemic strain could be detected at any time, and production of vaccine could take six to nine months after entering a pandemic phase.
 - b. A prioritization system based on national guidelines and in consultation with the Nebraska Department of Health and Human Services will be expected.
 - c. Demand will likely exceed supply of the vaccine.
 - d. It is likely that two doses of vaccine occurring two to four weeks apart will be required against a novel strain of influenza.
 - e. Recall systems and logistical issues will need to be established to handle the large number of people.
2. Antiviral medications may be useful for treating prior to the availability of vaccines if received within the first 48 hours after symptoms arise. There is a limited supply of antiviral drugs effective against pandemic strains and no assurance that antivirals will continue to be effective.
3. Antiviral Medication Management during Phases 1, 2, 3
- a. The Communicable Disease program will identify priority groups and estimate the number of people in each priority group, based on CDC guidelines, to receive limited supplies of antiviral medications during a pandemic.
 - b. The Communicable Disease program and Emergency Response Coordinator have developed an antiviral medication distribution plan in conjunction with the Mass Clinic work group, and appropriate members of the LLHCC.
 - c. The Communicable Disease program will develop and distribute guidelines for medical providers regarding the use of antiviral medications.
4. Antiviral Medication Management during Phases 4, 5, 6
- a. LLCHD will ensure that staff and resources are in place to distribute antiviral medications, as supplies allow.
 - b. LLCHD will activate its plans for requesting medications from the Strategic National Stockpile (SNS).
 - c. LLCHD will fully activate antiviral medication distribution plans.

5. Vaccine Management during Phases 1, 2, 3

- a. The Communicable Disease Program, in consultation with Nebraska Department of Health and Human Services and based on national guidelines, will develop and refine recommendations for use of available vaccine based on local priority groups.
- b. LLCHD will develop plans for administration of vaccine to priority groups as designated by Nebraska Health and Human Services and the CDC, and eventually the entire county population, including activation of mass vaccination clinics.
- c. The Communicable Disease program will coordinate with the Nebraska Department of Health and Human Services to determine how adverse reactions to the vaccine will be tracked and reported.
- d. The Communicable Disease program will collaborate with key stakeholders to identify essential personnel to be included in priority groups for vaccinations.
- e. LLCHD will coordinate vaccination planning with private sector health care providers.

6. Vaccine Management during Phases 4, 5, 6

- a. In consultation with Nebraska Department of Health and Human Services, the Communicable Disease program will provide updated recommendations to the Director regarding priority groups to receive vaccination based on CDC guidelines.
- b. LLCHD will finalize mass vaccination plans with regional partners.
- c. The LLCHD Communicable Disease program, will prepare to receive, store and transport vaccine as needed.
- d. LLCHD will distribute and administer vaccine as soon as possible after receipt according to local priorities and CDC guidelines, including activation of mass vaccination plans as appropriate.

H. Isolation and Quarantine

1. During all phases of a pandemic, persons who are ill with influenza will be directed to remain in voluntary isolation in health care settings or at home, to the extent possible.
2. Hospitals will implement isolation protocols for all patients suspected of being infected with pandemic influenza.

3. Once person-to-person transmission is established locally, quarantine of individuals exposed to influenza cases will be of limited value in preventing further spread of the disease.
4. Quarantine of contacts of influenza cases may be beneficial during the earliest phases of a pandemic, and in response to an influenza virus that has not achieved the ability to spread easily from person-to-person.
5. LLCHD will work collaboratively with the CDC's Division of Global Migration and Quarantine, and especially with the Lincoln Airport Authority on management of passengers requiring isolation, quarantine or follow-up.
6. Isolation and Quarantine during Phases 1, 2, 3
 - a. The Communicable Disease program will coordinate planning efforts for isolation and quarantine with Nebraska Department of Health and Human Services, neighboring local health jurisdictions, community based organizations and local law enforcement.
 - b. LLCHD will follow CDC guidelines in developing and implementing isolation and quarantine procedures for individuals traveling from areas in which a novel influenza virus is present.
 - c. The Communicable Disease program has developed protocols for quarantine of close contacts of persons infected with a potential pandemic strain.
7. Isolation and Quarantine during Phases 4, 5, 6
 - a. The Communicable Disease program will coordinate with health care providers and local hospitals to ensure that influenza patients are isolated in appropriate facilities based on their medical needs.
 - b. The Communicable Disease program will provide technical assistance to health care providers and hospitals regarding options for management of health care workers who come in contact with influenza patients or who develop influenza.
 - c. The LLCHD Isolation and Quarantine Response Plan will be activated as needed to ensure availability of isolation and quarantine facilities and support systems for patients.

I. Social Distancing Strategies

1. Social distancing strategies are non-medical measures intended to reduce the spread of disease from person-to-person.
 - a. The effectiveness of social distancing strategies is not known with certainty, nor is the degree of public compliance with measures that is necessary for success.
 - b. Implementation of social distancing strategies in Lancaster County may create social disruption and significant, long-term economic impacts. It is unknown how the public will respond to these measures.
 - c. It is assumed that social distancing strategies must be applied on a countywide or statewide basis in order to maximize effectiveness.
2. The Health Director will consult with the Communicable Disease program, the Nebraska Department of Health and Human Services and local medical society throughout all phases of a pandemic regarding the epidemiology and impact of the pandemic in and around Lancaster County.
3. The Health Director will review social distancing strategies and current epidemiological data during each phase and coordinate with the Mayor of Lincoln, the City Council, the Lancaster County Board of Commissioners and executive heads of other cities and towns regarding social distancing actions that should be implemented to limit the spread of the disease.
4. Decisions regarding the implementation of social distancing measures will be made jointly and concurrently by the Health Director and the Lancaster County Emergency Management and local officials and coordinated with all executive heads of cities and towns in Lancaster County.
5. Decisions regarding the closing of all public and private schools, and minimizing social interaction at colleges, universities and libraries in Lancaster County will be a joint decision after consultation with local school superintendents, school presidents and elected officials.
6. The Health Director will coordinate in advance the timing and implementation of social distancing decisions in Lancaster County with surrounding counties as well as the Nebraska Department of Health and Human Services and the U.S. Department of Health and Human Services.
7. Social Distancing Strategies during Phases 1, 2, 3
 - a. The Director as well as the Communicable Disease Supervisor and other members of the Health Promotion Data and Evaluation Division are engaged in an effort to educate elected officials, government leaders, school officials, response partners and agencies, minority, vulnerable and

hard to reach populations, businesses, the media and the public regarding the consequences of pandemics, the use of social distancing strategies, the associated impacts they cause and the process for implementing these measures.

- b. The Communicable Disease program will provide guidance and instructions regarding infection control strategies to the Minority, Vulnerable and Hard to Reach service agencies that operate congregate care facilities.
- c. The Director will confirm the decision making process and criteria for recommending social distancing strategies with the Mayor, the City Council, the Lancaster County Commissioners and all other executive heads of cities and towns in Lancaster County.

8. Social Distancing Strategies during Phases 4, 5, 6

- a. The Director will coordinate with elected officials regarding decision making and implementation of social distancing strategies that are commensurate with the severity of illness and societal impact of the pandemic.
- b. Specific, county-wide strategies that may be identified by the Director include:
 - i. Encourage government agencies and the private sector to implement their continuity of operations plans to maintain critical business functions while maximizing the use of telecommuting, flex schedules, and alternate work site options.
 - ii. Advise Lancaster County residents to defer non-essential travel to other areas of the country and the world that may be affected by pandemic influenza outbreaks.
 - iii. Suspend public events where large numbers of people congregate including sporting events, concerts, and parades.
 - iv. Close public and private schools, nurseries and child care centers.
 - v. Implement measures to limit social interaction at libraries, colleges and universities.
 - vi. Close all churches, theaters, community centers, and other places where large groups gather.

- vii. Suspend those government functions not involved in pandemic response or the maintenance of critical continuity functions.
- c. The Director will participate in conference calls with neighboring counties, the Nebraska Department of Health and Human Services and the U.S. Department of Health and Human Services to coordinate the timing, public announcement, and impacts of social distancing measures in Eastern Nebraska.
- d. The Health Promotion Data and Evaluation Division will monitor the effectiveness of social distancing strategies in controlling the spread of disease and will advise appropriate decision-makers when social distancing strategies should be relaxed or ended.

X. Health and Medical Response

Health Care System Response

1. A severe influenza pandemic is expected to significantly increase the demand for health care services at a time when the availability of health care workers will be reduced due to illness. In a severe pandemic, the imbalance between supply and demand is likely to overwhelm current health care system capacity and necessitate implementation of alternate strategies to manage the demand on health system resources.
2. During a pandemic impacting Lancaster County, all efforts will be employed to sustain the functionality of the health care system while maintaining an acceptable level of medical care. In order to accomplish this, health care delivery system partners may need to:
 - a. limit the provision of health care services to patients with urgent, health problems requiring hospitalization;
 - b. take steps to increase hospital bed capacity to care for large numbers of influenza patients;
 - c. mobilize, reassign and deploy staff within and between health care facilities to address critical shortfalls;
 - d. implement pandemic-specific patient triage and management policy and procedures; and
 - e. provide alternative mechanisms for patients to address non-urgent health care needs such as telephone and internet-based consultation.

3. During a pandemic, alternative care facilities will be identified and activated to provide additional health care system medical surge capacity.
 - a. These facilities would add to the existing bed capacity in the county and provide supportive care to influenza patients, or could serve as triage facilities (flu clinics) to relieve the burden on hospital emergency departments.
 - b. Locating, staffing and supplying the alternative care sites will be accomplished through a coordinated effort between LLCHD, local partners such as Hospitals, VolunteerLinc and the Red Cross, and local emergency management.
4. Emergency Medical and Health Care System Response during Phases 1, 2, 3
 - a. LLCHD will educate health care providers about influenza pandemics and involving them in community pandemic response planning through the Local Emergency Planning Committee.
 - b. LLCHD will incorporate existing groups into pandemic planning efforts through the Local Emergency Planning Committee.
 - c. Hospitals and health care organizations have developed and continue to edit pandemic influenza response plans addressing, at a minimum, medical surge capacity, triage, infection control, communication and staffing issues.
 - d. LLCHD continues to provide technical assistance to health system partners regarding development of strategies to expand staffing resources.
 - e. LLCHD has facilitated development of protocols for reprioritizing LLCHD functions during a pandemic and mobilizing staff to support maintenance of critical public health and medical needs.
 - f. LLCHD will stage annual briefings to Local Emergency Planning Committee members regarding the status of a novel virus and its potential for causing a pandemic.
 - g. LLCHD is coordinating with the local hospitals to ensure systems are in place to track the following items during a pandemic outbreak:
 - i. Number of available Intensive Care Unit and medical beds (adults and pediatrics).
 - ii. Number of available emergency department beds

- iii. Number of patients waiting for inpatient beds.
- iv. Shortages of medical supplies or equipment.
- v. Staff absenteeism at hospitals, clinics and morgues.

5. Emergency Medical and Health Care System Response During Phases 4, 5, 6

- a. The LLCHD will work with the Local Emergency Planning Committee to heighten preparedness activities and monitor the impact of a pandemic on health care facilities and systems.
- b. The Communicable Disease program will provide case identification criteria, laboratory testing and treatment protocols, and other case management resources to health care providers in the region.
- c. The Communicable Disease program will coordinate with health care system members to assure appropriate use of antiviral medicines.
- d. The LLCHD will develop and disseminate instructions for the care of patients who can be treated at home.
- e. The Local Emergency Planning Committee will evaluate the need for and feasibility of establishing a system separate from hospital emergency departments for patient triage and clinical evaluation. The coalition will develop criteria for activating and deactivating such facilities. Specific tasks will include:
 - i. Hospitals will establish separate triage areas for 1) persons presenting with possible influenza, fever or respiratory disease, and 2) persons at high risk for severe complications such as pregnant immunocompromised people and women.
 - ii. The Local Emergency Planning Committee will, through coordination between LLCHD, hospitals, the large medical group practices and the community health centers, identify specific facilities in different geographic areas within Lancaster County to serve as “flu clinics”.
 - iii. LLCHD will work in conjunction with the LEPC to establish and promote a 24-hour telephone consulting nurse service to provide information and advice to ill persons on management of illness and accessing health care.

- f. The LLCHD and Local Emergency Planning Committee will develop standardized criteria for implementing the following strategies countywide, and will recommend implementation of any or all of these strategies to the Director when pandemic conditions warrant:
 - i. Requiring all hospitals in the county to receive and treat any patient whose condition warrants hospitalization, regardless of medical insurance coverage.
 - ii. Canceling elective admissions and surgeries.
 - iii. Implementing protocols to expand internal hospital bed capacity.
 - iv. Implementing early discharge protocols for those patients not requiring inpatient care.
 - v. Activating alternate care facilities to conduct triage of flu patients or to provide expanded bed capacity.
 - vi. Implementing protocols for enhanced infection control in all medical facilities.
 - vii. Monitoring and reporting of hospital-acquired influenza infections.
- g. LLCHD will work with the Local Emergency Planning Committee to identify and prioritize staff to receive antiviral medications and influenza vaccine according to the protocols.
- h. The Director may recommend the compliance of health care providers with LLCHD protocols for use of antiviral medications and influenza vaccine.
- i. LLCHD will coordinate with the Local Emergency Planning Committee in acquiring additional medical supplies and equipment in support of medical facilities throughout the county.
- j. Requests for State and Federal resource support, including resources from the Strategic National Stockpile, will be managed by LLCHD through the local Emergency Operations Center.

Public Health Services

- 1. During a pandemic, LLCHD may suspend routine Department operations to provide staff for flu clinics, triage centers, and telephone triage services.

2. The Director will assess the need to reprioritize Department functions and will direct the mobilization of staff to meet emerging needs of the pandemic.
3. LLCHD staff with clinical training and licensure may be reassigned by the Director to support the Department's critical clinical functions during a pandemic, or to alleviate staffing shortages among health care partners.
4. Public Health Services during Phases 1, 2, 3
 - a. All LLCHD Divisions and programs will:
 - i. Participate in continuity of operations planning to identify core and critical systems and functions that must remain operational during a pandemic.
 - ii. Identify LLCHD services and functions that can be suspended during a pandemic thereby freeing up staff members for reassignment.
 - iii. Participate in ongoing planning efforts to assess skills needed during public health emergencies and identify staff training needs to fill critical positions.
 - b. The Community Health Services Division Manager and Director will identify sites and functions within the Department's clinical services that will remain operational during a pandemic and specify the minimum level of resources needed to remain operational.
 - c. The Lancaster County Emergency Management in conjunction with LLCHD will coordinating mass fatality planning efforts with hospitals and funeral homes.
6. Public Health Services during Phases 4, 5, 6
 - a. The Director will determine the need to suspend routine Department operations in order to reassign staff to critical duties. The timing of this decision will be coordinated with similar actions taken by other clinical facilities in the health care system.
 - b. Critical functions activated within LLCHD are identified in the LLCHD COOP.
 - c. The Lancaster County Emergency Management may activate the Mass Fatalities Plan. Activation of the plan will be coordinated with hospitals and funeral homes throughout the county.

- d. Based on the numbers of actual or anticipated fatalities during a pandemic, the Director and Lancaster County Emergency Management may implement emergency protocols regarding:
 - i. Identification and documentation of victims
 - ii. Activation and management of temporary temperature-controlled holding facilities
 - iii. Release of remains to family members
 - iv. Temporary internment of mass fatalities
 - v. Cremation and burial of mass fatalities

XI. MAINTENANCE OF ESSENTIAL SERVICES

1. One of the critical needs during a flu pandemic will be to maintain essential community services.
 - a. With the possibility that 25-35% of the workforce being absent from work due to illness, it may be difficult to maintain adequate staffing for certain critical functions.
 - b. There is the possibility that services could be disrupted if significant numbers of public health, law enforcement, fire and emergency response, medical care, transportation, communications, and public utility personnel are unable to carry out critical functions due to illness.
2. Government agencies and private businesses, particularly those that provide essential services to the public, must develop and maintain continuity of operations plans and protocols that address the unique consequences of a pandemic.
3. Local Emergency Planning Committee members in Lancaster County will lead continuity of government planning and preparedness within their facilities/agencies with technical support provided by LLCHD.
4. Local emergency medical services in Lancaster County have been active participants and continue to support logistical and non-medical infrastructure planning with hospital facilities.
5. LLCHD has developed a continuity of operations plan that address:
 - a. Line of Succession for the agency.
 - b. Identification of mission essential services and priorities.

- c. Procedures for the reassignment of employees to support public health functions essential during a public health emergency.
 - d. Redundancy of mission critical communication and information systems.
 - e. Physical relocation of critical LLCHD functions including the Health Action Center.
6. Maintenance of Essential Services during Phases 1, 2, 3
- a. HPDE works with all divisions and programs in LLCHD to develop plans for maintaining essential departmental services during a pandemic.
 - b. The LLCHD will educate government agencies, non-profit organizations and businesses that provide essential community services about the need for continuity planning in advance of a pandemic.
7. Maintenance of Essential Services during Phases 4, 5, 6
- a. LLCHD will update its essential services plans and will request that its community partners update their plans.
 - b. The Director will determine the appropriate time to implement the Department's continuity of operations plans and protocols and will advise community partners to implement their plans as needed.

XII. Recovery

The extent of the recovery efforts and needs will be dictated by the severity of the pandemic and the impact that it has on the community of Lincoln and Lancaster County will dictate to us.

Depending on the severity of the pandemic the recovery process will go along the lines of the following;

LLCHD will:

Assessment:

- a. Assessing the impact of the pandemic will be the initial recovery response.
- b. Adjust recovery action based on actual impacts and circumstances.
- c. Implement all planned and adjusted actions.
- d. Monitor international and national health information sources for any updates on the next pandemic wave.
- e. Assess shortage impacts with critical response partners.
- f. Assess actual impact on the businesses, organizations, minority, vulnerable and hard to reach populations and other members of the community.

- g. Re-affirm contacts.
- h. Assess projected potential support needs.

Actions:

- a. Share information with the public regarding the community's situation.
- b. Test communication with all core and critical personnel and partners.
- c. Address misinformation and rumors.
- d. Determine actions needed to restore essential functions for the next wave.
- e. Utilize media to relay information to the public.
- f. Mitigate delays in international and national supply chain recovery.
- g. Coordinate actions with surround local health departments.

Assessment and actions will take place periodically throughout the extent of the pandemic. This will ensure that the best preparation and plans are in place.

XIII: Dictionary/Glossary of Terms and Acronyms

Adjuvant: A substance added to a vaccine to improve the immune response so that less vaccine is needed to provide protection.

Amantidine: One of a class of antivirals, along with remantidine, called M2 inhibitors. Recent information has indicated that seasonal flu viruses have become resistant to these older antivirals so they are not expected to be of use in the treatment of either seasonal or pandemic flu.

Antibiotic: A substance produced by bacteria or fungi that destroys or prevents the growth of other bacteria and fungi. Antibiotics do not have any effect on viruses such as influenza.

Antibody: A protein produced by the body's immune system in response to a foreign substance (antigen). Our bodies fight off an infection by producing antibodies. An antibody reacts specifically with the antigen that triggered its formation and its function is to inactivate the antigen.

Antigen: Any foreign substance, usually a protein that stimulates the body's immune system to produce antibodies. (The name antigen reflects its role in stimulating an immune response - antibody generating.)

Antiviral: Drug that are used to prevent or cure a disease caused by a virus, by interfering with the ability of the virus to multiply in number or spread from cell to cell.

Asymptomatic: Presenting no symptoms of disease. Individuals may be contagious for, and be infecting others, for up to a day before becoming symptomatic.

Avian flu: A highly contagious viral disease with up to 100% mortality in domestic fowl caused by influenza a virus subtypes H5 and H7. All types of birds are susceptible to the virus but outbreaks occur most often in chickens and turkeys. The infection may be carried by migratory wild birds, which can carry the virus but show no signs of disease.

Humans are only rarely affected, but there have been over 230 human cases of H5N1 in humans since 2003.

Bryan Health: One of Lincoln's larger hospital systems with both East and West campuses.

Carrier: A bearer and transmitter of an agent capable of causing infectious disease. An asymptomatic carrier shows no symptoms of carrying an infectious agent.

Centers for Disease Control and Prevention (CDC): The U.S. government agency at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. CDC is one of 13 major operating components of the U.S. Department of Health and Human Services.

Community Health Services (CHS): The division within the Lincoln-Lancaster County Health Department that provides a range of nursing services including clinical services, home visitation and case management.

Contagious: A contagious disease is easily spread from one person to another by contact with the infectious agent that causes the disease. The agent may be in droplets of liquid particles made by coughing or sneezing, contaminated food utensils, water or food.

Department of Interior (DOI): The federal agency that protects and provides access to our Nation's natural resources, including the Fish and Wildlife Service that monitors avian flu in wild birds.

Drift (antigenic drift): One process in which influenza virus undergoes mutation. The amount of change can be subtle or dramatic, but eventually as drift occurs, a new variant strain will become dominant. This process allows influenza viruses to change and re-infect people repeatedly through their lifetime and is the reason influenza virus strains in vaccine must be updated each year. See shift.

EMS: Emergency Medical Services

EPH: Division of Environmental Public Health

Emergency Management Coordinator/Director: The individual within each subdivision that has coordination responsibility for jurisdictional emergency management. See the entry for Lancaster County Emergency Management.

Emergency Operations Centers (EOCs): The physical location at which the coordination of information and resources to support domestic incident management activities normally takes place.

Emergency Operations Plan (EOP): The plan that each jurisdiction has and maintains for responding to appropriate hazards.

Enzyme: A substance that speeds up chemical reaction. Every chemical reaction in living organisms is facilitated by an enzyme.

Epidemic: A disease occurring suddenly in a community, region or country in numbers clearly in excess of normal. See pandemic.

FDA: U.S. Food and Drug Administration, the government agency responsible for protecting the public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation. FDA is one of 13 major operating components of the Department of Health and Human Services.

H5N1: A variant of avian influenza, which is a type of influenza virulent in birds. It was first identified in Italy in the early 1900s and is now known to exist worldwide.

HPDE: Division of Health Promotion Data and Evaluation

HPAI: Highly Pathogenic form of Avian Influenza. Avian flu viruses are classified based upon the severity of the illness and HPAI is extremely infectious among humans. The rapid spread of HPAI, with outbreaks occurring at the same time, is of growing concern for human health as well as for animal health. See LPAI.

Host: An organism on or in which a parasite lives. Viruses can only survive by replicating within human and animal cells, which serve as hosts to the viruses. Influenza viruses attack cells in the respiratory system and replicate within the cell.

Hemagglutinin: An important surface structure protein of the influenza virus that is an essential gene for the spread of the virus throughout the respiratory tract. This enables the virus to attach itself to a cell in the respiratory system and penetrate it. Hemagglutinin is referred to as the “H” in influenza viruses. See neuraminidase.

Incident: An occurrence or event, natural or human-caused, which requires an emergency response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, wild land and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, war-related disasters, public health and medical emergencies, and other occurrences requiring and emergency response.

Incident Commander (IC): The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Incident Command System (ICS): A standardized On-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid the management of resources during incidents.

Immune system: The cells, tissues and organs that help the body to resist infection and disease by producing antibodies and/or altered cells that inhibit the multiplication of the infectious agent.

Infectious agent: Any organism, such as a pathogenic virus, parasite, or bacterium, that is capable of invading body tissues, multiplying, and causing disease.

Influenza (flu): A serious disease caused by viruses that infect the respiratory tract.

Isolation: Persons with a communicable disease are placed in isolation (separated physically from other patients generally in a negative pressure environment) in order to prevent the spread of the disease to others.

Joint Information Center (JIC): A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.

LES: Lincoln Electric System.

LPS: Lincoln Public Schools

LWS: Lincoln Water System.

Lancaster County Emergency Management: In the event of a natural or manmade disaster in Lancaster County the agency that sets up incident command and the Emergency Operations Center (EOC) is Lancaster County Emergency Management. If a pandemic occurs the LLCHD will work with other agencies in the EOC to respond to the impact on the community.

Lancaster County Emergency Planning Committee (LEPC): A committee made up of public health, hospitals, emergency response agencies, long-term care and assisted care facilities that plan, train/exercise and prepare for all-hazard events that the community is likely to face.

Lincoln-Lancaster County Department (LLCHD): The public health agency serving Lincoln and Lancaster County. LLCDH will serve as the lead health agency in responding to a pandemic event.

Lancaster County Medical Society: The Lancaster County Medical Society represents almost all of the county's medical providers and the Medical Society is a local partner in addressing both public health and medical emergencies we may face in the community.

LPAI: Low Pathogenic form of Avian Influenza. Most avian flu strains are classified as LPAI and typically cause little or no clinical signs in infected birds. However, some LPAI virus strains are capable of mutating under field conditions into HPAI viruses. See HPAI.

Madonna Rehabilitation Hospital: One of Lincoln's hospitals. Madonna has a long history of addressing the needs of persons in need of therapy and rehab following an acute episode.

Medical Reserve Corps (MRC): The Medical Reserve Corps establishes teams of local volunteer medical and public health professionals who can contribute their skills and expertise throughout the year and during times of community need.

Metropolitan Medical Response System (MMRS): Lincoln's MMRS addresses the needs of providers and agencies in Southeast Nebraska who are expected to respond to medical emergencies and terrorist attacks.

Mutation: Any alteration in a gene from its natural state. This change may be disease causing or a benign, normal variant. Specific mutations and evolution in influenza viruses cannot be predicted, making it difficult if not impossible to know if or when a virus such as H5N1 might acquire the properties needed to spread easily among humans.

Nebraska Department of Health and Human Services (NDHHS or NHHS or NHHSS): The Nebraska Department of Health and Human Services, among other things, is responsible for responding to public health and medical emergencies in the state.

Nebraska Heart Hospital: A specialty hospital in Lincoln whose beds may be utilized for non-cardiac cases during a pandemic.

Neuraminidase: An important surface structure protein of the influenza virus that is an essential enzyme for the spread of the virus throughout the respiratory tract. It enables the virus to escape the host cell and infect new cells. Neuraminidase is referred to as the “N” in influenza viruses. See hemagglutinin.

OIE (Office International des Epizooties): World Organisation for Animal Health, an international organization including 167 member countries that collects, analyses, and reports information on global animal disease situations.

Oseltamivir: The pharmaceutical name for Tamiflu®, which is a neuraminidase inhibitor that is thought to be an effective treatment option against a new or novel influenza virus that represents the next pandemic influenza.

Pandemic: The worldwide outbreak of a disease in numbers clearly in excess of normal. See epidemic.

Parasite: An organism living in, with, or on another organism.

Pathogenic: Causing disease or capable of doing so.

Prophylactic: A medical procedure or practice that prevents or protects against a disease or condition (e.g., vaccines, antibiotics, drugs).

Quarantine: As opposed to isolating individuals with a known disease, quarantine refers to separating individuals who may have been exposed to a communicable disease for a period of time to see whether they have contracted the disease. The person may be quarantined in their home or a hospital room or in other quarters such as an airport terminal. The purpose of the quarantine is to prevent further spread of a communicable disease.

Reassortment: The rearrangement of genes from two distinct influenza strains to produce a novel viral strain.

St. Elizabeth CHI: One of Lincoln’s larger general acute care hospitals that specializes in burn care and neonatal intensive care.

Strategic National Stockpile (SNS): A cache of medical supplies and equipment that may be called on in the event of a local health emergency. The governor could ask the CDC to send a push package from the SNS to counter a pandemic or another event (e.g., anthrax or plague used as a weapon).

Seasonal flu: A respiratory illness that can be transmitted person to person. Most people have some immunity, and a vaccine is available. This is also known as the common flu or winter flu.

Shift: The process in which the existing surface proteins, H (hemagglutinin) and N (neuraminidase), are replaced by significantly different H and Ns. These new H or H/N combinations are perceived by human immune systems as new, so most people do not have pre-existing antibody protection to these novel viruses. This is one of the reasons that pandemic viruses can have such a severe impact on the health of populations. See drift.

Social distancing: This term refers to a number of policies set in place to reduce the spread of disease from group interactions at large gatherings, at work or in school. If a pandemic occurs, social distancing policies such as closing schools and nursing homes, canceling public meetings and events, suggesting that people work from home if possible will be utilized along with isolation and quarantine. In extreme situations, companies may be asked to close, churches will be asked to forego services and funerals may be put off in order to prevent more chances for the disease to spread.

Species: A class of plants or animals having common attributes and designated by a common name. Theoretically, plants or animals of different species cannot interbreed. However, occasionally this does not hold true.

Strain: A group of organisms within a species or variety.

Syndromic Surveillance: The term “syndromic surveillance” applies to surveillance using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response.

USDA: U.S. Department of Agriculture, the government agency responsible for regulating the safety and development of food, agriculture, and natural resources.

Vaccine: A preparation consisting of antigens of a disease-causing organism which, when introduced into the body, stimulates the production of specific antibodies or altered cells. This produces immunity to the disease-causing organism. The antigen in the preparation can be whole disease-causing organisms (killed or weakened) or parts of these organisms.

Virulent: Highly lethal; causing severe illness or death.

Virus: Any of various simple submicroscopic parasites of plants, animals, and bacteria that often cause disease and that consist essentially of a core of RNA or DNA surrounded by a protein coat. Unable to replicate without a host cell, viruses are typically not considered living organisms.

Waterfowl: Birds that swim and live near water, including ducks, geese, and swans.

WHO: World Health Organization, an agency of the United Nations established in 1948 to further international cooperation in improving health conditions.

Zanamivir: The pharmaceutical name for Relenza®, another antiviral drug that is in the Strategic National Stockpile to use in treating a pandemic influenza.

Zoonoses: Diseases that are transferable from animals to humans. Included in this category are West Nile virus, malaria, SARS and influenza.

Sources: Many of the terms and definitions come from CDC with some minor modifications. Other terms and definitions were added to the dictionary from various sources.

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