

Nebraska Pandemic Influenza Prevention and Control Guidelines



Please note: This is an “evergreen” document and is constantly being revised to be consistent with national directives, changing priorities, new technologies and developing medical science. These guidelines may be changed at any time but especially when changes in influenza surveillance and viral technology occur.

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The Pandemic Influenza Advisory Committee Members were appointed by Governor Johanns to serve a one year commitment from March 2005 until March 2006. They include the following:

Nebraska Governor's Pandemic Influenza Advisory Committee

CHAIR – Deputy Chief Medical Officer – Nebraska Health and Human Services System, Lincoln, NE	Douglas County Health Department, Omaha, NE
Nebraska Hospital Association, Lincoln, NE	Southeast District Health Department, Auburn, NE
Public Health Association of Nebraska, Lincoln, NE	Superintendent of Schools, Kearney, NE
Nebraska State Senator, Lincoln, NE	Superintendent of Schools, Henderson, NE
Two (2) US Senators or Legislative Health Aides, Washington, DC	Nebraska Sheriffs Association, West Point, NE
Three (3) US Congressman or Legislative Health Aides, Washington, DC	Independent Counseling Services, Ainsworth, NE
Nebraska Pharmacist's Association, Lincoln, NE	Omaha Tribe of Nebraska, Macy, NE
Voices for Children, Omaha, NE	Bethel Baptist Church, Omaha, NE
Interchurch Ministries of Nebraska, Lincoln, NE	Nebraska Minority Public Health Association, Lincoln, NE
University of Nebraska Public Policy Center, Lincoln, NE	Nebraska Association of County Officials, Yutan, NE
American Red Cross, Lincoln, NE	Nebraska Association of County Officials, Madison, NE
Two Infectious Disease Specialists – University of Nebraska Medical Center, Omaha, NE	Private physician, Hastings, NE
VA Medical Center, Omaha, NE	Nebraska Retailers Association, Lincoln, NE
Pediatric, Pathology and Microbiology Specialist - University of Nebraska Medical Center, Omaha, NE	Nebraska Restaurant Association, Lincoln, NE
Creighton University, Omaha, NE	Nebraska Emergency Management Agency, Lincoln, NE
	South Heartland District Health Department, Hastings, NE
	Nebraska Health Care Association, Lincoln, NE

Definition of Terms and Acronyms

ACIP	Advisory Committee on Immunization Practices; the nationally recognized group of public health and private medical experts who advise the U.S. Department of Health and Human Services on immunization practices
Antigenic Drift	A gradual change in the influenza virus, over time, resulting in higher than normal morbidity
Antigenic Shift	A significant, abrupt change in the influenza virus
CDC	The Centers for Disease Control and Prevention
DCHD	Douglas County Health Department
ED	Emergency Department
EMS	Emergency Medical Services
HAN	Health Alert Network
ICP	Infection Control Practitioner
ILI	Influenza-Like Illness
IM Group	Influenza Management Group; a core public health group, designated by the NE HHSS Chief Medical Officer, that coordinates and oversees pandemic prevention and control activities across Nebraska
LLCHD	Lincoln-Lancaster County Health Department
NE HHSS	Nebraska Health and Human Services System, Department of Services
NE HHSS R&L	Nebraska Health and Human Services System, Department of Regulation and Licensure
NE HHSS	Nebraska Health and Human Services System
NE SEOP	Nebraska State Emergency Operations Plan
NEDSS	National Electronic Disease Surveillance System
NEMA	Nebraska Emergency Management Agency
NETSS	National Electronic Telecommunications System for Surveillance
NPHL	Nebraska Public Health Laboratory
NSP	Nebraska State Patrol
NOVEL VIRUS	A new influenza virus, resulting from a viral antigenic shift
PANDEMIC	World wide epidemic, caused by a novel virus
PHAN	Public Health Association of Nebraska
VACMAN	VACcine MANagement System. A vaccine purchasing and distribution database management system used by government-funded state and territorial immunization projects.
VAERS	Vaccine Adverse Event Reporting System; a national system that tracks adverse events following vaccinations
VPAG	Vaccine Priority Advisory Group; an advisory group to HHSS that will identify priority populations for vaccination and receipt of antiviral medications

Nebraska Pandemic Influenza Prevention and Control Guidelines

Introduction

Influenza viruses are unique in their ability to cause sudden infection in all age groups on a global scale. The infamous “Spanish flu” of 1918-19 was responsible for more than 20 million deaths worldwide, primarily among young adults. Mortality rates associated with the more recent pandemics of 1957 and 1968 were reduced, in part, by antibiotic therapy for secondary bacterial infections and more aggressive supportive care. However, both of these later pandemics were associated with high rates of morbidity and social disruption.

The Nebraska Department of Health and Human Services System (NEHHSS) in cooperation with the *Governor’s Pandemic Influenza Committee*, and public, private, federal, state and local partners, has developed the Nebraska Pandemic Influenza Prevention and Control Guidelines to outline strategies by which pandemic influenza-related morbidity, mortality, and social disruption may be reduced. The Guidelines should be read and understood prior to an influenza pandemic. This is a dynamic document that will be updated to reflect new developments in the understanding of the influenza virus, its spread, treatment and prevention.

The guidelines address:

1. Coordination and management of resources and responsibilities;
2. Surveillance activities, designed to detect and monitor influenza activity;
3. Vaccine and antiviral medication distribution and delivery; and
4. Communications and public information.

Influenza Outbreaks and Impact

Yearly influenza epidemics

Influenza is an infection of the respiratory tract caused by the influenza virus and is spread by coughing and sneezing. The time period between exposure and illness is usually one to three days and the onset of symptoms is sudden. Typical symptoms include fever, cough, sore throat, runny or stuffy nose, as well as headache, muscle aches and often, extreme fatigue. Most people who get influenza recover completely in one to two weeks, but some people develop serious and potentially life-threatening medical complications, such as pneumonia.

In an average year, influenza is associated with more than 20,000 deaths nationwide and more than 100,000 hospitalizations. Because influenza is not a reportable disease, and health care providers don’t always test for influenza, these numbers cannot be accurately estimated for the State of Nebraska. Flu-related complications can occur at any age; however, the elderly and people with chronic health problems are much more likely to develop serious complications.

Seasonal influenza occurs every year for several reasons. First, influenza vaccine is a “killed” virus vaccine and is effective for only a short period of time (3-6 months). Second, many people do not receive the influenza vaccine. Third, and most importantly, people are susceptible to influenza virus infection throughout life because influenza viruses continually change. A person infected with influenza virus develops antibodies against the “current” virus. As the virus changes, the person’s “older” antibodies no longer recognize the “new” virus. When the viral changes are minor, the “older” antibodies can provide some limited protection. When the changes are significant, the “older” antibodies provide little if any protection.

Risk of pandemic influenza

Gradual change in the virus, over time, is called an antigenic drift. A drift will cause greater than normal morbidity and mortality, resulting in significant disruptions to communities and health care systems, such as higher numbers of absenteeism, shortages of influenza vaccines and antiviral medications and higher rates of pneumonia and pneumonia-related deaths.

Rarely, a significant, abrupt viral change occurs, known as an antigenic shift. When a shift occurs, large numbers of people, and sometimes the entire population, have no antibody protection against the new virus. If the new, novel virus is easily spread, it has the ability to cause sudden infection in all age groups on a global scale, resulting in a worldwide epidemic, called a pandemic. During the Twentieth Century, pandemics occurred in 1918, 1957 and 1968.

Since its development more than 50 years ago, influenza vaccination has been the cornerstone of influenza prevention and control. Every year, between 70 and 80 million doses of vaccine are manufactured and administered in the United States. Pandemic influenza is a unique public health emergency and, in spite of ongoing improvements in the manufacturing and delivery of vaccines, it will present a number of challenges.

The entire population will have little or no immunity and therefore, the targeted populations will expand far beyond the usual "high risk" groups. The Centers for Disease Control and Prevention (CDC) estimates that, in the United States alone, up to 200 million people will be infected, 50 million people will require outpatient care; two million people will be hospitalized, and between 100,000 and 500,000 persons will die. The "warning period", preceding spread of the pandemic strain in the U.S., is likely to be relatively short, so vaccine will have to be manufactured, distributed and administered as quickly as possible.

A severe or moderate vaccine shortage is likely, especially early in the pandemic; it is possible that when a pandemic begins, no vaccine will be available.

When vaccine becomes available, it will arrive over an extended period of time. A two-dose schedule is likely because a pandemic strain will be new to the population (as opposed to the yearly strains, to which many people may have some immunity).

Outbreaks are expected to occur simultaneously throughout much of the U.S., preventing relocation of human and material resources. Health-care workers and other first responders will likely be at even higher risk of exposure and illness than the general population, further impeding the care of victims.

Widespread illness in the community will also increase the likelihood of sudden and potentially significant shortages of personnel who provide other essential community services. The effect of pandemic influenza on individual communities will be relatively prolonged, lasting six to eight weeks with repetitive cycles that could phase in over 18 months, compared to the minutes, hours, and days observed in most other natural disasters.

Planning Assumptions

Morbidity, Mortality, and Healthcare Utilization Projections

PandemicFlu.gov

Based on extrapolation from past pandemics in the United States, the U.S. Department of Health and Human Services (US DHHS) has estimated the number of people who may become ill and require various levels of health care. The estimates are based on a 30% attack rate (percentage of the population that becomes ill) and an assumption that 50% of people with illness will seek care. Table 1 is reproduced from the PandemicFlu.gov website (<http://pandemicflu.gov/plan/pandplan.html>).

The number of hospitalizations and deaths will depend on the virulence of the pandemic virus. Estimates differ about 10-fold between more and less severe scenarios. Planning should include the more severe scenario.

Risk groups for severe and fatal infection cannot be predicted with certainty but are likely to include infants, the elderly, pregnant women, and persons with chronic medical conditions.

Table 1. Number of Episodes of Illness, Healthcare Utilization, and Death Associated with Moderate and Severe Pandemic Influenza Scenarios (U.S.A.)

Characteristic	Moderate (1958/68-like)	Percentage of illness	Severe (1918-like)	Percentage of illness
Total population (U.S.)	300,000,000	...	300,000,000	...
Illness (30% attack rate)	90,000,000	...	90,000,000	...
Outpatient medical care	45,000,000	50.0%	45,000,000	50.0%
Hospitalization	865,000	0.96%	9,900,000	11.00%
ICU care	128,750	0.14%	1,485,000	1.65%
Mechanical ventilation	64,875	0.07%	745,500	0.83%
Deaths	209,000	0.23%	1,903,000	2.11%

*Estimates based on extrapolation from past pandemics in the United States. Note that these estimates do not include the potential impact of interventions not available during the 20th century pandemics.

The percentages used for the national estimates were applied directly to the Nebraska population to estimate the impact on Nebraska (Table 2). This method is limited by the fact that the population profile of Nebraska is not exactly the same as for the entire country. However because of the many uncertainties and assumptions that factor into these estimates, they will provide a sense of what could possibly happen during a pandemic. These are not meant to attempt to predict what will happen. Rather, they are intended to be taken into consideration by pandemic influenza planners.

Table 2. Number of Episodes of Illness, Healthcare Utilization, and Death Associated with Moderate and Severe Pandemic Influenza Scenarios (**Nebraska**)

Characteristic	Moderate (1958/68-like)	Percentage of illness	Severe (1918-like)	Percentage of illness
Total population (NE)	1,711,263	...	1,711,263	...
Illness (30% attack rate)	513,379	...	513,379	...
Outpatient medical care	256,689	50.00%	256,690	50.00%
Hospitalization	4,928	0.96%	56,472	11.00%
ICU care	719	0.14%	8,471	1.65%
Mechanical ventilation	359	0.07%	4,261	0.83%
Deaths	1,181	0.23%	10,832	2.11%

*Estimates based on extrapolation from past pandemics in the United States. Note that these estimates do not include the potential impact of interventions not available during the 20th century pandemics.

CDC FluAid

The CDC has developed a model (“FluAid”) for predicting estimates of the impact of deaths, hospitalizations, and outpatient visits due to pandemic influenza.¹

The model was used to assist state and local planners to develop estimates of morbidity and mortality from pandemic influenza. The model is based on data from the pandemic of 1968.

The estimates for Nebraska are presented as a range because of the uncertainties of the assumptions used in the model. Many factors, such as severity of disease and communicability, will be dependent upon the characteristics of the virus that emerges as a pandemic virus. It is impossible to accurately predict these factors. These numbers are intended to provide a range of possible estimates and to reflect the degree of uncertainty that is inherent in these projections.

It is important to remember that during an actual pandemic, high risk populations, influenza death rates, and outpatient/hospitalization rates could vary significantly from the rates and percentages assumed in these projections. These estimates are intended to assist healthcare and public health planners in planning for surge capacity requirements.

FluAid Assumptions

- An attack rate of 30% was used to be consistent with the DHHS model above. Attack rate is defined as the percentage of the population that becomes clinically ill.
- The lower number presented reflects the “most likely” scenario as calculated using the FluAid model of the 1968 pandemic. The higher number simply multiplies these estimates by six to reflect a severe pandemic.

¹ Meltzer MI, Shoemaker HA, Kohnanski M, Crosby R, 2000. FluAid 2.0: A manual to aid state and local-level public health officials plan, prepare and practice for the next influenza pandemic (Beta test version). Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. (Available at <http://www2.cdc.gov/od/fluaid>, accessed February 7, 2006)

This factor is mentioned by the Trust for America’s Health² as the possible severity of a pandemic similar to 1918.)

- The model takes into consideration differences in people of different ages, as well as those at “high-risk” due to pre-existing medical conditions. Individuals at “high-risk” are those who have a pre-existing medical condition such as asthma, diabetes mellitus, and cardiovascular disease, as defined by the National Advisory Committee on Immunization Practices, which makes them more susceptible to having secondary complications and adverse health outcomes.
- The 2000 U.S. Census was used for population estimates. The default population distribution in FluAid for Nebraska is based on 1999 estimates from the U.S. Census. The actual population in 2000 was substituted for the default 1999 estimates.
- The default percentages of high-risk individuals in each age group were retained. These estimates are based on national data.³
- A pandemic can be expected to occur in waves, with waves possibly lasting many weeks. These estimates cover a time period of approximately 8 weeks.

Table 3 shows the estimated number of Nebraskans who would be considered to be at high risk for complications due to influenza because of a health condition based on this model.

Table 3. Estimated Population at High Risk³ for Complications by Age Group

Age Group	NE population (2000 U.S. Census)	Percentage of Population at High Risk ²	Estimated high risk population
0 –18	450,062	6.4%	28,803
19 – 64	1,028,469	14.4%	148,099
65+	232,732	40.0%	93,093
Total	1,711,263		269,995

Projected outpatient visits are shown in Table 4. The chart shows, for example, that in a severe pandemic scenario, 200,000 individuals in the 0-18 year age group might seek outpatient care over eight weeks.

² Trust for America’s Health. June 2005. “A Killer Flu?” Available at <http://healthyamericans.org/reports/flu/Flu2005.pdf> Accessed February 13, 2006

³ High-risk percentages are based on the Advisory Committee on Immunization Practices definition of groups at high-risk for complication of influenza infection. Meltzer MI, Cox NJ, Fukuda K. Modeling the Economic Impact of Pandemic Influenza in the United States: Implications for Setting Priorities for Intervention. Background Paper, April 30, 1999 Available at: http://www.cdc.gov/ncidod/EID/vol5no5/melt_back.htm

Table 4. Projected Outpatient Visits

Age Groups (years)	Number of Outpatient Visits	
	1968-like Pandemic FluAid Default	Severe (assumed to be similar to less severe pandemic)
0 – 18	79,855	79,855
19 – 64	158,710	158,710
65+	36,132	36,132
Total	274,697	274,697

Groups at high-risk for complications of influenza infection were considered as a factor in the projections.⁴ Table 5 outlines the number of projected hospitalizations by age group and pandemic severity. It is important to note that during an actual pandemic, both hospitalization rates and the percentage of the population at high-risk for influenza complications could vary significantly from the rates and percentages used to develop these projections.

Table 5. Projected Hospitalizations

Age Groups (years)	Number of Hospitalizations	
	1968-like Pandemic FluAid Default	Severe (6 times 1968) Six times FluAid
0 – 18	252	1,512
19 – 64	3,802	22,812
65+	2,035	12,210
Total	6,089	36,534

Estimates of possible deaths are shown in Table 6. During an actual pandemic, both influenza death rates and the high-risk populations could vary significantly from the rates and percentages assumed in the projections.

Table 6. Projected Deaths (numbers not rounded)

Age Groups (years)	Number of Deaths	
	1968-like Pandemic FluAid Default	Severe (6 times 1968) Six times FluAid
0 – 18	14	84
19 – 64	644	3,864
65+	763	4,578
Total	1,421	8,526

⁴ Meltzer MI, Cox NJ, Fukuda K. The Economic Impact of Pandemic Influenza in the United States: Priorities for Intervention. Emerging Infectious Diseases. Vol 5, No 5, September-October 1999.

Federal, State, and Local Response

A strong, coordinated effort among federal, state, local, public and private entities will be essential to deal with the challenges presented by pandemic influenza. The following assumptions guide Nebraska's response to a pandemic event.

National Level Response

The Federal government has primary responsibility for coordination of activities on a national level and assumes responsibility for:

1. Vaccine research and development;
2. Coordinating national and international surveillance;
3. Assessing and potentially enhancing vaccine and antiviral capacity and coordinating public-sector procurement;
4. Devising a suitable liability program for vaccine manufacturers and persons administering the vaccine;
5. Developing a national "clearinghouse" for vaccine availability information, vaccine distribution and redistribution;
6. Developing a national adverse events surveillance system;
7. Developing a national information database/exchange/clearinghouse on the Internet;
8. Developing "generic" guidelines and/or "information templates" that can be modified and/or adapted as needed at the State and local levels, including:
9. Fact sheets on influenza, the influenza vaccine, and antiviral agents.
10. Strategies and guidelines for interacting with the media and communicating effectively with public health, medical communities and the general public.
11. Guidelines for triage and treatment of influenza patients in outpatient, inpatient and non-traditional medical care settings.
12. Guidelines for setting up and operating mass vaccination programs.
13. Guidelines for distribution and use of antiviral agents.
14. The Federal government is currently pursuing mechanisms by which influenza vaccine can be made available more rapidly and in much larger quantities prior to and during the next pandemic.
15. Liability protection for vaccine manufacturers and persons who administer influenza vaccine will likely be made available through Congressional legislation.
16. Although antiviral agents are available that can theoretically be used for both treatment and prophylaxis during the next pandemic, these agents will likely be available only for limited distribution.
17. Resources can be expected from the national level for plan implementation.

State Level

The State of Nebraska Health and Human Services will be the lead state agency and coordinate statewide surveillance, response and control activities. Those activities include:

1. Distribution of limited antiviral medications or vaccines according to recommendations from HHS/CDC, the Governor's Pandemic Advisory Committee and the Pandemic Expert Panel, the IM group.
2. Activation of mass vaccination clinics as indicated by developing surveillance and epidemiology.
3. Administration of vaccine supplies in accordance with federal guidelines and state recommendations;
4. Activation of local pandemic response plans and support of local public health departments in activation of plans and establishing interventions.
5. Communication to and support of healthcare and public health partners throughout the state for purposes of developing local pandemic response plans,
6. Communications to and support of development of pandemic plans for communities and businesses,
7. Continuous, detailed and comprehensive communication with Nebraska Citizens.

Local Level

Local and district public health departments will be the lead local agency. Local health departments will work in coordination with local and county emergency managers to activate local pandemic influenza plans as directed by and in coordination with state public health officials.

Local and district public health departments will work collaboratively with State public health officials to:

1. Complete pandemic response plans for the local or district health department
2. Ensure provision of surveillance and control activities at the local level,
3. Provide surveillance and case management activities to track and manage pandemic influenza outbreaks,
4. Provide Isolation and quarantine activities as needed and directed by epidemiology,
5. Support local volunteer services, emergency response and health care resource management,
6. Manage local vaccination centers when vaccine or anti-viral medications become available,

Local public health officials, local emergency management directors and the community (i.e. hospitals and medical clinics, community action agencies, schools and employers) will:

1. Develop plans for individual businesses and community agencies
2. Encourage development of pandemic response plans for families and other elements of the social infrastructure
3. Develop local plans for suspension of civic events and application of isolation and quarantine measures
4. Assume local responsibilities to the extent possible and appropriate,
5. Maintain local critical infrastructure to assure continued communication, transportation and delivery of essential services and goods,
6. Establish local business and community policies to minimize disease transmission,
7. Care for ill and dead, and
8. Take steps to minimize social disruption.

Coordination and management

Key Collaborative Agencies

Lead State Agency and Sections

Nebraska Health and Human Services System, Department of Regulation and Licensure, Bioterrorism Preparedness and Response Section; Public Health Assurance, Disease Surveillance Section

Additional Key State Government Support Agencies and Programs

- NE HHSS R&L Office of Public Health (Coordination with local health districts)
- NE HHSS R&L Office of Public Health Communications and Legislative Services Department of Regulation and Licensure (Risk communication)
- Nebraska Public Health Laboratory (NPHL)
- NE HHSS R&L Emergency Medical Services Program
- NE HHSS Department of Finance and Support, Credentialing
- NE HHSS R&L Legal Services
- NE HHSS Department of Services, Information Systems and Technology
- NE HHSS Department of Services, Immunization Program
- NE Department of Administrative Services
- NE Department of Agriculture
- NE Department of Natural Resources
- NE Department of Environmental Quality
- Nebraska Emergency Management Agency (NEMA)

Key Federal Support Agencies

- Health and Human Services (HHS)
- Centers for Disease Control and Prevention (CDC)
- Health Resources and Services Administration (HRSA)
- Federal Emergency Management Agency (FEMA)

Other Key Support Departments, Agencies and Organizations*

- Local and County Emergency Management Directors

- Public Health Association of Nebraska
- Local public health departments
- Community Action Agencies
- Nebraska Hospital Association
- Nebraska Medical Association
- Nebraska Pharmacists Association
- The Nebraska Medical Center
- University of Nebraska Medical Center
- University of Nebraska, Lincoln Veterinary Lab
- Creighton University Medical Center
- Association of State and Territorial Health Officers

*Other potential collaborative partners are listed in Attachment A, "State and Community Resources and Potential Collaborative Partners"

Operations Philosophy

The resources available to handle a severe influenza season or pandemic influenza event will vary considerably across the state. It is the responsibility of the lead agencies to make the best possible use of existing state, local, public, private and volunteer resources.

Each local government is under the jurisdiction of and served by the Nebraska Emergency Management Agency (NEMA) and participates with a local emergency management organization that has either a full-time director or deputy director. Nebraska's counties are served by twenty local public health departments. All local health departments are working with community partners to develop, implement and exercise coordinated community emergency response plans that include plans specific to the identification, response, control and recovery activities related to pandemic influenza. All local health departments have identified mass dispensing sites and key personnel necessary to set up and run the sites. That information is located in local and state data bases and is updated on an ongoing basis. Local and regional response plans are required to be linked to other regional and state response plans to ensure coordination of efforts and maximize use of limited resources. Nebraska is a partner state with the ten-state Mid-America Alliance (MAA). Collaborative and sharing agreements are being developed and expanded with all states bordering Nebraska.

NE HHSS and NEMA must work closely with the federal government, local public health officials and local emergency management directors to identify resources, determine the areas' service delivery capacities, identify gaps in service delivery, secure and provide the additional resources necessary to address the area threats. State and local public health officials, local emergency management directors and communities work in a coordinated, organized manner when dealing with the serious issues presented by an influenza pandemic.

The Nebraska Emergency Management Act grants the Governor authority to provide state-level support to local governments in times of extreme emergency or disaster. The Nebraska State Emergency Operations Plan describes how State Government responds to occurrences of disasters and emergencies throughout the State. Pandemic planning requires special emphasis on certain functions not specifically addressed in the Nebraska State Emergency Operations Plan (NE SEOP). The Nebraska Pandemic Influenza Prevention and Control Guidelines is an appendix to the NE SEOP and provide specific guidance related to pandemic influenza. An official emergency does not have to be declared for any or all of the Nebraska Influenza Prevention and Control Guidelines to be implemented by NE HHSS.

Governor's Pandemic Influenza Advisory Committee

The Governor appointed a *Pandemic Influenza Advisory Committee* to advise NE HHSS and the Governor on the identification of priority groups, distribution and allocation of vaccine supplies and antiviral agents, and creation of the Nebraska Pandemic Influenza Prevention and Control Guidelines. Specific advice was requested to assist in preparations for workplace, schools, and communities.

Key stakeholders on the Pandemic Influenza Advisory Committee include:

- State and Local Public Health, including state legal counsel.

- Public and private health sector, specifically including behavioral health
- Medical ethicists
- Emergency Response
- Law enforcement
- State and county officials
- Clergy
- Public School representatives

Pandemic Response	Key Decisions for Advisory Committee
Vaccine	<ul style="list-style-type: none"> • Identify key priority groups for vaccine (i.e. health care providers, community infrastructure, high risk groups, anyone involved in culling influenza-infected animals). • Identify assumptions (such as various levels of vaccine availability, phases of pandemic).
Antiviral therapy and prophylaxis	<ul style="list-style-type: none"> • Suggest guidelines for use of limited antiviral supplies. • Recommend alternate use of adamantanes vs. neuraminidase inhibitors depending on the epidemiology of the disease. • Suggest prioritization guidelines for both prophylaxis and treatment. ? • Advise HHSS on purchase and use of antiviral and vaccine stockpiles.
Actions to decrease spread of a pandemic	<ul style="list-style-type: none"> • Recommend guidelines for isolation and quarantine. • Recommend how and when the Governor or local agent should restrict public gatherings and closing of schools.

Influenza Management Group (IM Group)

When CDC identifies an influenza shift or emergence of a “novel” virus, the NE HHSS Director will designate an Influenza Management Group (IM Group) to coordinate and oversee prevention and control activities as recommended by the Governor’s committee and CDC, including the identification and assignment of specific state and local tasks.

- A. The Influenza Management Group will be convened by the Director of NEHHSS and may include any of the following. Situations and disease epidemiology will direct the composition of the IMG, and it may change as a pandemic season progresses.
1. NE HHSS
 - a. HHSS Director or Chief Medical Officer or designee, serving as Chair
 - b. State Medical Epidemiologist;
 - c. BT Medical Epidemiologist
 - d. BT Surveillance Coordinator
 - e. Health Surveillance Coordinator
 - f. Public Health Laboratory Director or Designee
 - g. Safety/Emergency Response Coordinator
 - h. Immunization Program Coordinator or Designee
 - i. Public Information Officer
 2. Douglas County Health Department (DCHD) Surveillance Chief
 3. Lincoln-Lancaster County Health Department (LLCHD) Communicable Disease Chief
 4. Representative(s) of additional local health department;
 5. Representatives of additional public and private agencies and organizations will be added to the IM Group as necessary to ensure working relationships with health, medical, pharmacy and community partners.
- B. The IM Group’s responsibilities will include, but not necessarily be limited to:
1. Ongoing assessment of the pandemic, including projections of case numbers and likely patterns of disease transmission across the state;

2. Oversight of pandemic-related control activities and coordination of activities with local and regional resources;
 3. Ongoing determination of the areas' service delivery capacities and identification of needs and gaps;
 4. Ongoing identification, prioritization and distribution of available federal, state and local resources (See Appendix ; B. Pandemic Response Checklist) *(note: Checklist will include list of things to consider and include space to add local information; i.e. potential clinic sites; local & regional public service providers, including emergency responders, law enforcement, public services; area hospitals and medical providers; manpower needs/numbers and location of personnel; medical supplies – items, numbers available, sources; acute beds – locations, availability; population estimates; available inventories may not be listed, but sources of up-to-date information can be recorded);*
 5. Securing and providing additional resources to prevent or control the pandemic.
 6. Ongoing communications regarding the pandemic and associated activities with appropriate state, local and federal officials; including the HHSS Chief Medical Officer, members of the HHSS Policy Cabinet, the Governor's Office, the NE Emergency Management Agency and CDC.
 7. Communication with public and private health care providers and the public regarding the situation and recommendations. (See VII. COMMUNICATIONS)
- C. Oversight
1. NE HHSS staff will be responsible for coordination and oversight of statewide activities.
 2. Local health departments will be responsible for coordination and oversight of activities in their jurisdictions.
- D. The IM Group will meet as frequently as necessary to assure effective coordination and oversight of pandemic response activities, including timely and appropriate communications.
- E. Nebraska Chief Medical Officer may change the membership of the IM Group as indicated by the ongoing epidemiology of the disease.

Surveillance

Overview

The Nebraska Pandemic Influenza Prevention and Control Guidelines address the basic elements that are critical to Nebraska's pandemic response. One of the most important elements is the Laboratory and Disease-Based Surveillance System.

Surveillance is the cornerstone of planning for the next influenza pandemic. Influenza viruses' antigenic properties constantly change. Therefore, both virology surveillance, in which influenza viruses are isolated for antigenic and genetic analysis, and disease surveillance, in which the epidemiological features and clinical impact of new variants are assessed, should be viewed as equally critical for pandemic preparedness.

NE HHSS will coordinate surveillance activities with local health departments. NE HHSS will gather and maintain statewide surveillance data, working collaboratively with local health departments.

Key surveillance components for influenza and influenza-like illness (ILI) include:

- Sentinel Physicians - The NE HHSS will coordinate pandemic surveillance activities through the use of influenza sentinel physicians at 8 to 10 sentinel sites. Sentinel physicians are selected across the state at a proportion of one per 250,000 population. Specimens submitted to the Nebraska Public Health Laboratory (NPHL) will be tested to determine the presence and/or type of influenza virus.
- Laboratory Resources - There are several licensed laboratories in Nebraska, including NPHL, that perform virology at some level (see Attachment 1). **These laboratories are capable of isolating an influenza virus** in cell culture from nasopharyngeal and pharyngeal swabs and will be enlisted to evaluate cultures during a pandemic.
- Reporting – Electronic Laboratory reporting between the NPHL, NE HHSS and CDC occurs weekly using available and approved CDC and state information and communication systems. The National Electronic Telecommunications System for Surveillance (NETSS) is currently utilized to transmit notifiable disease information from county health offices to Lincoln and the CDC Epidemiology Program Office. Some laboratories are reporting directly to NE HHSS NEDSS system using automated electronic reporting systems. Still others fax or send paper laboratory reports. Significant efforts are in place in

Nebraska to encourage electronic laboratory reporting consistent with national guidelines and anticipated national electronic health record standards.

- Hospital Reporting – Local health departments contact hospitals in their districts on a regular basis (at least weekly) to determine the number of patients admitted with influenza like illness (ILI). Each local health department will send these reports to NE HHSS to be put into a data base. This will help determine the rate of increase/decrease of ILI admissions.

Current Influenza Surveillance

Sentinel physicians call in influenza data weekly to the CDC Influenza Branch, and the Nebraska data are entered on a designated website weekly so it may be viewed as desired. Positive influenza culture specimen results, which are collected from Nebraska influenza sentinel physicians early in the season and during peak periods of influenza activity, are transmitted from NPHL each week to the CDC Influenza Branch located in Atlanta. These results are also collected by the Nebraska NEDSS program.

State and Territorial Epidemiologist's Report

The State and Territorial Epidemiologist's Report consists of a weekly report from each state epidemiologist (or their designee) of the overall level of influenza activity in the state. This system provides the only state level influenza data that CDC makes publicly available and these data are widely used by the media, the public, and public health officials. All 50 states, New York City, and Washington DC, report the level of influenza activity for their state/city to CDC each week between October and mid-May. Disease activity is classified into one of five categories based on specific definitions (see Table 2.)

Table 5: Influenza Activity Levels

Activity Level	ILI activity*/Outbreaks	Laboratory data	
No activity	Low	And	No lab confirmed cases†
Sporadic	Not increased	And	Isolated lab-confirmed cases
	Not increased	-- OR -- And	Lab confirmed outbreak in one institution‡
Local	Increased ILI in 1 region**; ILI activity in other regions is not increased	And	Recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI
	2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased	-- OR -- And	Recent (within the past 3 weeks) lab evidence of influenza in region with the outbreaks; virus activity is no greater than sporadic in other regions
Regional (doesn't apply to states with ≤4 regions)	Increased ILI in ≥2 but less than half of the regions	And	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
	Institutional outbreaks (ILI or lab confirmed) in ≥2 & less than half of the regions	-- OR -- And	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
Widespread	Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least half of the regions	And	Recent (within the past 3 weeks) lab confirmed influenza in the state.

* ILI activity is assessed using a variety of data sources including sentinel providers, school/workplace absenteeism, and other syndromic surveillance systems that monitor influenza-like illness.

† Lab confirmed case = case confirmed by rapid diagnostic test, antigen detection, culture, or PCR. Care should be given when relying on results of point of care rapid diagnostic test kits during times when influenza is not circulating widely. The sensitivity and specificity of these tests vary and the predictive value positive may be low outside the time of peak influenza activity. Therefore, a state may wish to obtain laboratory confirmation of influenza by testing methods other than point of care rapid tests for reporting the first laboratory confirmed case of influenza of the season.

‡ Institution includes nursing home, hospital, prison, school, etc.

**Region: population under surveillance in a defined geographical subdivision of a state. A region could be comprised of 1 or more counties and would be based on each state's specific circumstances. Depending on the size of the state, the number of regions could range from 2 to approximately 12. The definition of regions would be left to the state but existing state health districts could be used in many states. Allowing states to define regions would avoid somewhat arbitrary county lines and allow states to make divisions that make sense based on geographic population clusters. Focusing on regions larger than counties would also improve the likelihood that data needed for estimating activity would be available.

Current surveillance activities include:

1. Voluntary reporting of laboratory-confirmed influenza;
2. Voluntary submission of influenza isolates to the NPHL for strain sub-typing;
3. Voluntary reporting of ILI outbreaks in long-term care facilities;
4. Voluntary reporting of ILI admissions to hospitals;
5. Voluntary reporting of ILI outbreaks in schools;
6. Voluntary reporting of school absenteeism;
7. A voluntary, state network of sentinel physicians reporting the number of patients presenting with ILI and the total number of patient visits by age group each week;
8. Investigations of unexplained deaths in Nebraska.

Enhanced Influenza Surveillance

The following enhanced surveillance system will be used in Nebraska to detect and characterize circulating strains of influenza virus and generate epidemiological information. This information will be used to guide the actions of public health officials before, during, and after a pandemic of influenza. The NE HHSS Disease Surveillance Section will maintain and continue to enhance and refine the existing influenza surveillance infrastructure of the NE HHSS.

- During the inter-pandemic period:
 1. Provide epidemiological information during the annual influenza season; and
 2. Monitor antigenic changes in circulating viruses in order to provide information for the formulation of vaccine for the subsequent season.
- During a potential or actual pandemic:
 1. Provide epidemiological information regarding the presence of pandemic strains and the magnitude of influenza illness in the state of Nebraska.
 2. Utilize epidemiological information to guide the actions of public health officials in Nebraska.

Sentinel Sites in Nebraska – Core Functions

1. Laboratory Component: The sentinel sites submit throat swab specimens from 2 –3 patients with influenza-like illness (ILI) to the Nebraska Public Health Laboratory (NPHL) for influenza testing, at each of the following stages during the influenza season:
 - a. At the beginning of the season (usually late October or November), when ILI first presents at a health care facility;
 - b. Midway through the season (usually late December and January); and
 - c. Toward the end of the season (usually March or early April).
 2. Morbidity Reporting Component: The sentinel sites report influenza morbidity data directly to the CDC via telephone or fax on a weekly basis from the second week in October through the last week of May. The weekly transmission consists of:
 - a. The number of patients seen for ILI during a given week in each of four age categories: 0–4 years; 5–24 years; 25–64 years; and > 65 years; and
 - b. The total number of patients seen for any reason at the sentinel site during that week.
 3. Reports of ILI above Baseline
The CDC compiles morbidity data submitted by the sentinel sites and provides weekly reports on the percent of visits that are due to ILI on the national, regional and state level. This percent is compared to a baseline of 0–3%. The weekly reports also include morbidity as assessed by state and territorial epidemiologists as “sporadic”, “regional” or “widespread”. These reports are available from a CDC site on the Internet.
- B. Enhanced Surveillance at Sentinel Sites**
- a. When enhanced surveillance is needed, the NE Disease Surveillance Section enlists the assistance of sentinel sites and other health care facilities to rapidly identify any possible importation of a specific influenza virus. The current sentinel surveillance system will be expanded and diversified as

determined to be necessary, in order to ensure that surveillance provides population-based information.

- b. Select sites that will also allow identification of influenza in specific subpopulations (e.g., high-risk groups, hospital and emergency rooms, children, and healthy adults).

1. A designated staff person will contact sites on a regular basis to ensure they are both reporting ILI and submitting specimens for testing appropriately.
2. Improve the timeliness and viability of the viral specimens collected and submitted for isolation:
 - a. Specimen collection kits will be sent from the NPHL to sites at the beginning of the season (and as needed) via an overnight mail delivery service, and will be submitted via regular mail on Monday through Wednesday for free testing.
 - b. Increase the number of viable specimens submitted for arrival on Thursday and Friday by use of a free overnight mail delivery service.
 - c. Specimen collection kits will be rapidly deployed to sites on an as-needed basis via courier or an overnight mail delivery service to facilitate diagnosis and outbreak control.
3. Reporting of virology isolates will differentiate specimens submitted by sentinel and non-sentinel physicians.
4. Historical laboratory morbidity data in Nebraska will be reviewed and baselines/thresholds determined.

C. Laboratory Testing for Influenza

1. The NPHL provides viral isolation (for typing and sub-typing) and serologic testing for influenza on specimens submitted by both sentinel and non-sentinel sites. The NPHL tests hundreds of influenza specimens annually. Approximately three hospitals in Nebraska routinely isolate influenza virus and send isolates to the NPHL for subtyping.
 - a. Increase laboratory capacity for surveillance of influenza during the season (October through March) and for the differential diagnostic testing of other respiratory pathogens that also cause ILI (e.g., adenovirus, respiratory syncytial virus (RSV), parainfluenza virus types 1-3, *Legionella* species and *M. pneumoniae*) will be expanded.
 - b. The influenza-responsible epidemiologist will actively solicit submission of clinical specimens from the expanded number of sentinel sites at regular intervals throughout the influenza season (October through March).
 - c. The influenza-responsible epidemiologist will actively solicit the submission of secondary isolates, and the results of any rapid testing being done, at regular intervals from all work-based populations, those likely to travel or who have international visitors, particularly from Asia.
 - d. Laboratory staff will perform rapid influenza antigen testing for influenza A and B on select specimens to facilitate outbreak investigation and control, as well as to limit the spread of imported influenza.
 - 1) The number of clinical specimens tested for influenza will increase by 10%.
 - e. All positive specimens will be subtyped for surveillance and diagnostic purposes.
 - 1) The number of secondary isolates confirmed and subtyped from other laboratories will increase by 10%.
 - f. Laboratory staff will perform differential diagnostic testing for other respiratory pathogens.
 - g. The NPHL will provide weekly cumulative reports of submissions for viral isolation. The Influenza Surveillance Coordinator will maintain two databases that will have the following information:
 - 1) The number of specimens submitted, whether by sentinel or non-sentinel sites;
 - 2) Positive cultures and virus types and subtypes; and
 - 3) Demographic and epidemiological information on each positive case.

D. Investigation of Clusters

NE HHS R&L Disease Surveillance Section staff will coordinate efforts with local health department staff to investigate reported clusters of ILI at long-term care facilities and other institutions in their assigned geographical areas.

E. Investigation of Non-Season Influenza Cases

The NE Influenza Surveillance Coordinator will work with local health departments to investigate any cases of influenza that occur outside of the regular influenza season.

F. Deaths from Influenza and Pneumonia

Two cities in Nebraska report weekly to CDC on deaths from pneumonia and influenza, which is reported in the MMWR. These cities are Omaha and Lincoln.

G. Syndromic Surveillance

NE HHSS will use the Health Alert Network for communications between providers and HHSS for rapid identification and response to ILI and ILI clusters in conjunction with other laboratory and clinical indicators. The online survey tool, or other adjunct technologies can be used for providers and other public health partners to report cases and hospital status.

- H. Develop a system for year-round surveillance of influenza.
1. A subset (25%) of regular sentinel sites will be selected to submit specimens during the 'inter-season' (April through September). Selection criteria for these sites will include patient populations likely to travel or have visitors from other countries, particularly Asia and the Southern Hemisphere; staff willing to collect and submit specimens; capacity to perform rapid influenza screening test and geographic/population diversity.
 - a. Epidemiology staff will actively solicit submission of specimens from patients at these sites with a high likelihood of importing influenza into Nebraska. Selection criteria for patients will include meeting the case definition for ILI, and some epidemiological indicators (e.g., recent travel or visitors from Asia, the Southern Hemisphere, Alaska, cruises or other setting identified as having outbreaks of influenza).
 2. Isolates will be reported to CDC via National Respiratory and Enteric Virus Surveillance System (NRVSS).
 3. Demographics on cases will be reported electronically to the Epidemiology Section of the Influenza Branch at CDC electronically or by telephone.
 4. The NPHL Virus Isolation Laboratory has cross-trained staff to ensure adequate personnel for influenza viral testing.
 5. During influenza season or an outbreak, local health departments survey hospitals in their district weekly for ILI admissions and send the information to NE HHSS
 6. NE HHSS is exploring additional surveillance systems to enhance existing influenza surveillance. These include hospital admission data, hospital discharge data, HMO influenza data and ambulance diversions
 7. NE HHSS exploring contingency plans for enhancing State and local virology and disease-based surveillance systems in the event of a novel virus alert or pandemic alert. These enhancements might include surveillance of severe respiratory illness and unexplained deaths at local hospitals; surveillance at clinics catering to international travelers; and surveillance of persons traveling from geographic areas in which the novel strains have been isolated.
 8. NE HHSS will maintain a list of Influenza Coordinators and Immunization Program Coordinators for the six states bordering Nebraska and will update this list annually.
 9. NE HHSS is enhancing electronic and telecommunications capability with local communities, neighboring states and CDC through the Nebraska Health Alert Network.
 10. The NE HHSS Disease Surveillance Section will ask the influenza sentinel surveillance sites to submit two specimens a month for the duration of the pandemic.
 11. The NE HHSS Disease Surveillance Section, in collaboration with CDC, local health officials, clinicians and academicians, and using protocols developed the CDC, will implement and pilot-test final modifications in enhanced surveillance system, which may include:
 - a. Documentation of outbreaks of influenza in different population groups;
 - b. Determination of age-specific attack rates, morbidity and mortality;
 - c. Description of unusual clinical syndromes (as well as risk factors for those syndromes and appropriate treatment);
 - d. Description of unusual pathologic features associated with fatal cases;
 - e. Efficacy studies of vaccination or chemoprophylaxis;
 - f. Monitoring of ability of hospitals and outpatient clinics to cope with increased patient loads;
 - g. Assessment of the effectiveness of control measures such as school and business closings.
 12. Assess the medical, social and economic impact of the pandemic.

Surveillance Activities by Stages of Pandemic Influenza

The goal of pandemic surveillance is to describe the epidemiology of pandemic influenza in Nebraska. This information will assist in developing preventive action recommendations, allocating medical resources, and responding to public questions and concerns. Influenza activity can be described by stage, as follows:

Table 6: Pandemic Influenza Phases and Levels

Phase	Level	Definition
0 Inter-pandemic Phase	0	Epidemic influenza viruses circulate in human populations causing yearly outbreaks; no evidence that a novel influenza virus has infected humans
	1	Novel Virus Alert: Identification of a novel influenza virus in a person.
	2	Confirmation that the novel influenza virus has infected two or more people, but the ability of the virus to spread rapidly person-to-person and cause multiple outbreaks of disease leading to epidemics remains questionable.
	3	Pandemic Alert: Confirmation of person-to-person spread in the general population with at least one outbreak lasting for more than 2 weeks in one country
1		Confirmation that the novel influenza virus is causing several outbreaks in one country and has spread to other countries, with consistent disease patterns indicating serious morbidity and mortality is likely in at least one segment of the population
2		Outbreaks and epidemics are occurring in multiple countries and spreading across the world
3		End of the first wave of the pandemic
4		Confirmation of a second or later wave caused by the same novel virus strain
5		Confirmation that the pandemic has ended

Pre-pandemic (on-going planning)

1. National and international surveillance

In the United States, international influenza surveillance activities are coordinated by the World Health Organization (WHO), in collaboration with the Center for Influenza Reference and Research at the CDC. National surveillance is coordinated by CDC, with state and local health departments assuming primary responsibility for carrying out virology, morbidity, and mortality surveillance components. Current U.S. surveillance activities include:

- a. Approximately 70 laboratories which report the number and type of influenza viruses isolated each week, and send representative and unusual viral specimens to CDC for comparative antigenic and genetic analysis;
- b. State and territorial epidemiologists report the level of influenza activity in their State each week as “widespread,” “regional,” “sporadic” or “no activity”;
- c. A voluntary, national network of sentinel physicians report the number of patients presenting with influenza-like illness (ILI) and the total number of patient visits by age group each week;
- d. Vital Statistics Offices of 122 U.S. cities report, on a weekly basis, the percentage of total deaths caused by influenza and pneumonia;
- e. A variety of other sources which spontaneously report influenza.

Novel Virus Alert

1. International identification

Continue influenza surveillance as during the Pre-pandemic Stage.

2. North American identification

- a. Notify laboratory directors, infection control practitioners (ICPs), physicians, emergency rooms, and urgent care centers; request that patients presenting with ILI submit a specimen for viral culture, especially those with a recent travel history to region where the pandemic strain of influenza is circulating or persons with unusually severe symptoms.
- b. A split specimen should be obtained. One specimen should be submitted to the usual laboratory provider for testing (i.e., identifying influenza A or B) and one specimen should be submitted directly to the NPHL for novel virus testing.
- c. Specimens will be tested by the NPHL for the following reasons:

- 1) NPHL is currently the only Nebraska laboratory capable of subtyping influenza isolates, providing faster turn-around time for subtyping;
 - 2) Antigens used in testing for the novel virus will likely only be available at state public health laboratories
 - 3) Specimens may require testing at CDC; fertilized eggs may be required to grow the virus; and
 - 4) Rapid molecular subtyping methods are available; currently the CDC has supplied specific real-time PCR protocols for influenza subtyping to the NPHL.
- d. NEMA, NSP and others will coordinate assistance for specimen transport, as appropriate.

Pandemic Alert

1. International circulation

Once pandemic influenza has been identified circulating internationally, the goal of pandemic alert surveillance is to identify the novel influenza virus circulating in Nebraska. The NE HHSS Disease Surveillance Section will initiate enhanced surveillance including:

 - a. Notify laboratory directors, ICPs, physicians, emergency rooms, and urgent care centers; request that patients presenting with ILI symptoms submit a specimen for viral culture, especially those with a recent travel history to regions where the pandemic strain of influenza is circulating or persons with unusually severe symptoms.
 - b. A split specimen should be obtained. One specimen should be submitted to the usual laboratory provider for testing (i.e., influenza A or B) and one specimen should be submitted directly to the NPHL for novel virus testing. Specimens will be tested by the NPHL for the following reasons:
 - 1) NPHL is currently the only Nebraska laboratory capable of subtyping influenza isolates, providing faster turn-around time for subtyping;
 - 2) Antigens used in testing for the novel virus will likely only be available at state public health laboratories;
 - 3) Specimens may require testing at CDC; fertilized eggs may be required to grow the virus;
 - 4) Rapid molecular subtyping methods are available; currently the CDC has supplied specific real-time PCR protocols for influenza subtyping to the NPHL
 - c. NEMA, NSP and others will coordinate assistance for specimen transport, as appropriate.
2. North America circulation
 - a. Notify laboratory directors, ICPs, physicians, emergency rooms, and urgent care centers; request that patients presenting with ILI submit a specimen for viral culture, especially those with a recent travel history to region where the pandemic strain of influenza is circulating or persons with unusually severe symptoms.
 - b. A split specimen should be obtained. One specimen should be submitted to the usual laboratory provider for testing (i.e., influenza A or B) and one specimen should be submitted directly to the NPHL for novel virus testing. Specimens will be tested by the NPHL for the following reasons:
 - 1) NPHL is currently the only Nebraska laboratory capable of strain typing influenza isolates, providing faster turn-around time for strain typing;
 - 2) Antigens used in testing for the novel virus will likely only be available at state public health laboratories;
 - 3) Specimens may require testing at CDC; and fertilized eggs may be required to grow the virus.
 - 4) Rapid molecular subtyping methods are available; currently the CDC has supplied specific real-time PCR protocols for influenza subtyping to the NPHL

Pandemic Imminent

1. International circulation
 - a. Notify ICPs, physicians, emergency rooms, and urgent care enters; request that patients presenting with ILI symptoms submit a specimen for viral culture, especially those with a recent travel history to regions where the pandemic strain of influenza is circulating or persons with unusually severe symptoms.
 - b. A split specimen should be obtained. One specimen should be submitted to the usual laboratory provider for testing (i.e., influenza A or B) and one specimen should be submitted directly to the NPHL for novel virus testing. Specimens will be tested by the NPHL for the following reasons:
 - 1) NPHL is currently the only Nebraska laboratory capable of subtyping influenza isolates, providing faster turn-around time for subtyping;

- 2) Antigens used in testing for the novel virus will likely only be available at state public health laboratories;
 - 3) Specimens may require testing at CDC; fertilized eggs may be required to grow the virus.
 - 4) Rapid molecular subtyping methods are available; currently the CDC has supplied specific real-time PCR protocols for influenza subtyping to the NPHL.
 - c. NEMA will coordinate assistance for specimen transport, as appropriate.
2. North America circulation
- a. Nebraska surveillance of pandemic influenza will rely primarily on sentinel physician sites. The number of sentinel sites may be increased to better describe pandemic influenza activity. Sentinel sites will be distributed throughout the state to represent the population distribution of Nebraska. NE HHSS will request that providers obtain and submit a specimen for viral culture and a Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form from a proportion of patients (i.e., 1:10) presenting with ILI.
 - b. The Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form will collect the following:
 - 1) Demographics
 - 2) Date of birth
 - 3) Symptoms
 - 4) Symptom onset date
 - 5) Specimen collection
 - 6) Vaccination history
 - 7) Severity of illness
 - 8) Travel history

Pandemic (first wave)

1. Nebraska's surveillance of pandemic influenza will rely primarily on sentinel physician sites. Sentinel sites will be distributed throughout the state to represent the population distribution of the state. NHHSS will request that providers obtain and submit a specimen for viral culture and a Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form from a proportion of patients (i.e., 1:10) presenting with ILI.
2. The Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form will collect the following information:
 - a. Demographics
 - b. Date of birth
 - c. Symptoms
 - d. Symptom onset date
 - e. Specimen collection
 - f. Vaccination history
 - g. Severity of illness
 - h. Travel history

Second Wave

1. Nebraska's surveillance of pandemic influenza will rely primarily on sentinel physician sites. Sentinel sites will be distributed throughout the state to represent the population distribution of the state. NHHSS will request that providers obtain and submit a specimen for viral culture and a Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form from a proportion of patients (i.e., 1:10) presenting with ILI.
2. The Pandemic Influenza-like Illness Enhanced Disease Report Card and Laboratory Submission Form will collect the following information:
 - a. Demographics
 - b. Date of birth
 - c. Symptoms
 - d. Symptom onset date
 - e. Specimen collection
 - f. Vaccination history
 - g. Severity of illness

h. Travel history

B. Pandemic over (Recovery)

The goals of “pandemic over” surveillance are to provide a detailed retrospective characterization of the pandemic and to evaluate the efficacy of protective action recommendations and emergency management strategies. These surveillance activities may include:

1. Review death certificates statewide for pneumonia and influenza deaths.
2. Review hospital admissions for ILI.
3. Conduct retrospective studies of vaccine efficacy.
4. Conduct validation studies of influenza illness reporting.
5. Conduct retrospective studies of protective action recommendations.

Vaccine Allocation

Vaccine Priority Advisory Group

It is assumed that influenza vaccine containing the novel strain of virus will be available for administration. Antiviral medications will also provide some protection and may be distributed when vaccine is unavailable or in short supply (See VI. VACCINE AND ANTIVIRAL MEDICATION). In a pandemic situation, it will be essential that there is an equitable distribution of vaccine and antiviral medications to priority groups regardless of income or access to care. The Governor has appointed a *Pandemic Influenza Advisory Committee* to advise NE HHSS regarding prevention and control activities in the work place and community, and to identify priority populations for vaccine and antiviral medications, based on:

- Federal guidelines and published research,
- Availability of vaccine and antiviral medications,
- Morbidity and mortality data (international, national, state and local).

The Immunization Management Group will communicate regularly with the Governor’s committee and the rank order of the priority groups may be modified as resources and morbidity change.

The Governor’s Pandemic Flu Committee is broadly based including representatives from the public and private health care sector, special populations, employers, ethicists, and others as deemed appropriate. The members acknowledge that their decisions center around potentially conflicting values and that a key question to address is, “What are we intending to prevent?” (i.e. death, serious illness, overall burden of illness, economic and productivity loss).

Special attention will be paid to educating the medical community and general public about influenza prevention, treatment, and control, priority vaccination groups, including the rationale for the rank order and how the decisions were made. A critical focus of public communication is on prevention measures people can take to protect themselves, their families and their community until influenza vaccine is available or the pandemic has ended.

Vaccine and Antiviral Medications

Purchase of Vaccine

Pandemic influenza will pose a number of challenges for vaccine delivery. Private providers and public health officials will have to work together to immunize persons across the state. In all likelihood, CDC will nationalize the vaccine distribution; federal authorities will purchase and distribute the vaccine to the states. The states will then manage distribution to their residents. It is anticipated that the vast majority of vaccine will be distributed through the public health sector, administered in public locations and through mass clinics, according to the Priority Group list. If private medical providers are able to purchase vaccine, they will be encouraged to do so and to prioritize its administration to populations as defined by the Governor’s committee.

NE HHSS will purchase influenza vaccine through the CDC or multi-state purchasing agreements, as appropriate. Additionally, NE HHSS will receive and distribute federally purchased vaccines, as available. If the vaccine is delivered directly from the manufacturers, it will be recorded electronically into VACMAN from the manufacturers to the central office and processed through the State Immunization Information System (SIIS).

Storage and Delivery of Vaccines and Supplies

Vaccine will be stored in secured facilities that have back-up power sources. For security reasons locations will not be made public. HHSS has identified locations for local and regional storage of vaccine and antiviral inventories,

HHSS and NEMA in cooperation with SNS plans have identified facilities to store vaccination-related supplies and inventories for further distribution across the state. As needed, HHSS will also identify and form contractual agreements with warehouses or similar facilities in Lincoln and regional sites. Supplies will most likely include syringes, coolers and reusable "cold packs", consent forms, providers' informational packets (i.e. information of vaccine storage, administration, usage and adverse reaction reporting forms), educational literature and other materials needed to conduct mass vaccinations. If possible, HHSS will have vaccine and supplies shipped directly to regional storage sites. Department staff, NSP, National Guard resources and potentially commercial carriers will be used to deliver vaccine and supplies to local communities.

Use of Antiviral Agents

The antiviral agents, amantadine and rimantadine, interfere with the replication of type A influenza viruses. Many studies have shown the drugs to be 70%-90% effective in preventing illnesses caused by a wide variety of naturally occurring strains; it is unclear if similar levels of efficacy can be achieved with pandemic strains. Amantadine and rimantadine can reduce the severity and duration of signs and symptoms of influenza A illness when administered within 48 hours of illness onset. Because of their "generic" usefulness against all known influenza A viruses, amantadine and rimantadine may play an important role in prevention and treatment in a pandemic, especially when sufficient supplies of vaccine are not available. Oseltamivir has been shown to be very effective however expense and availability may limit its use. These issues will continue to be resolved as the Federal recommendation become clearer and the strategic ordering for stockpiles is accomplished. Other issues associated with widespread use of these antiviral medications:

- Quantities will be limited;
- Priorities have not been established regarding target groups and use of limited supplies for chemoprophylaxis versus therapy.
- Widespread use of amantadine and rimantadine may lead to emergence of drug-resistant viral strains.

The potential for adverse drug reactions associated with amantadine, and to a lesser extent rimantadine, and potential adverse interactions with other drugs have raised concerns about safety and liability in a scenario of large scale distribution and use.

Until these issues can be resolved at the national level, priority planning activities for allocation and distribution of antiviral agents should be relatively limited. In the event that antiviral use is determined to be a feasible part of a pandemic strategy, the IM Group and VPAG will determine how use of such medication can best be integrated into the State's Guidelines and strategies.

Provision of Vaccine

Pandemic influenza will require administration of vaccine to a large number of people in a fairly short time.

1. General Coordination and Oversight
 - a. The State will work with the local Emergency Management Directors in counties other than Lancaster and Douglas to coordinate and oversee vaccination activities including:
 - 1) Mass clinic activities, and
 - 2) Vaccinating or ensuring the vaccination of targeted staff and/or residents in large agencies or institutions.
 - a) Agencies include government and law enforcement; public safety/service personnel (i.e. key government officials, NE State Patrol, police, fire fighters, emergency medical responders, utility workers, public health employees).
 - b) Institutions include state and local correctional facilities; hospitals; long-term care facilities; developmental centers; HHSS regional centers; colleges and universities.

- c) The State will vaccinate or ensure the vaccination of staff and students at the University of Nebraska – Lincoln and staff and inmates at the Nebraska Correctional Facilities in Lincoln and Omaha.
- b. Local health departments have developed and are exercising mass administration plans and will oversee vaccination activities in their respective counties, including:
 - 1) Mass clinic activities, and
 - 2) Vaccinating or ensuring the vaccination of targeted staff and/or residents in large agencies or institutions located in their counties, with the exception of those listed above as being the State's responsibility.
 - a) Agencies include government and law enforcement; public safety/service personnel (i.e. key government officials, police, fire fighters, emergency medical responders, utility workers, public health employees)
 - b) Institutions include local correctional facilities; hospitals; long-term care facilities; colleges and universities, except as specified above, under the State's responsibilities.

2. Mass Clinics

The vast majority of vaccine will be administered in mass public clinics. Many Nebraska communities are already familiar with the concept of mass clinics because of the state's public childhood immunization clinic network that has been in place for over 25 years. The established policies and procedures, currently followed in the public childhood immunization clinics, will be used as the template for mass influenza clinic operations. These policies and procedures address:

- Clinic flow;
- Staff training and responsibilities;
- Patient education/informed consent;
- Vaccine storage, preparation and administration;
- Standing physician orders related to vaccine administration and emergency protocol;
- Vaccine accountability;
- Patient record keeping;
- Reporting usage; and
- Monitoring/reporting adverse events.

a. Clinic Staff:

The State and local communities will need to make personnel available to staff the mass clinics. Depending on availability, 'alternate' vaccine providers, such as health profession students and trained lay people may be utilized. Volunteer recruitment and training plans may need modifications for the special circumstances of a pandemic. For example, orientation or training activities may need to be more focused (i.e. task specific versus providing a broader overview of clinic activities). Non-essential activities, as defined by the community, may need to be canceled or rescheduled and personnel diverted into vaccine administration and record keeping. The disruption of normal services could last for a significant period of time (4-8-weeks). Available personnel, including administrators, could be used for registration and data entry, if they are not certified to provide immunizations. Community volunteers can also be recruited.

Vaccine teams will staff the clinics. A team will consist of one person to register and hand out educational materials, one person to draw up vaccine in single dose syringes, one licensed health care provider to administer the vaccine and one person to enter data and complete any other paper work. It is estimated that one team will be able to administer 50 doses per hour, with a maximum of 400 doses per day.

b. Clinic Sites:

Local health departments have identified public clinic sites. Sites include locations where large numbers of target populations are likely to be present (i.e. senior citizen centers); other possible locations include

armories, schools, churches, civic auditoriums and other facilities that are conveniently located and able to handle large scale clinic operations.

c. Transportation:

Transportation to and from clinics may be an issue for some communities. Cooperative agreements may be needed with public transportation providers to ensure target populations are able to get to public clinic sites. Volunteers may be recruited to provide transportation. The National Guard also has the personnel, expertise and equipment to assist in transporting large numbers of persons, if necessary.

d. Other Requirements:

Local health departments are also addressing security needs, the needs of special populations, stockpiles of clinic supplies, coordination with emergency response and the health care communities, in their plans.

Tracking and Assessment of Vaccine Utilization

The State will track vaccine inventories, distribution to sites and demographics of persons immunized. Continued assessment of this information will be used to monitor equitable and appropriate distribution of vaccine to high morbidity areas and target populations. The State will enlist the assistance of local health departments and public immunization clinic personnel to assist in tracking vaccine use.

Ideally, the vaccine administration database will track adverse reactions and provide a reminder/recall system for second dose administration. The national VAERS (Vaccine Adverse Event Reporting System) system is already in place for reporting adverse vaccine-associated events and will be used in a pandemic situation.

A printed vaccine information sheet will be prepared with information relating to the vaccine and its contraindications, expected benefits, risks, side effects, and treatment measures. The authorization portion of this form will be in a tear-off format and will include a section for the patient's name and certain vital information. The State, DCHD, LLCHD or other providers will retain the signed consent portion, and the vaccine recipient will keep the informational/cautionary portion. This form will be prepared in other languages, as appropriate (e.g., Spanish).

Electronic recording and transfer of data from the local to state level should be used whenever possible. When this is not technically feasible, a written protocol regarding vaccine distribution should be in place which specifies responsible sending and receiving parties, information to be shared routinely and mode of transmission of information.

The feasibility of tracking doses given in the private sector, should that happen, is uncertain; however, private sector administration data would help provide a more complete picture of vaccination coverage.

Tracking and utilization databases will be key components, when conducting post-pandemic evaluation of disease prevention efforts.

1. NE HHSS responsibilities:

- a. Coordinate the distribution of all vaccine coming into Nebraska through CDC and/or from pharmaceutical companies;
- b. Work with local health departments and health care providers to track vaccine availability and monitor distribution.
- c. If "VACMAN" is not available, the State will track vaccine distribution as follows:
 - 1) For each shipment received from the state and each shipment out to a public clinic site, the log will record:
 - a) Date received or redistributed;
 - b) Manufacturer;
 - c) Lot number and expiration date;
 - d) Quantity of vaccine received or redistributed;
 - e) Local clinic site receiving vaccine.

- 2) A separate entry will be used with each shipment received or redistributed; each date of activity; each manufacturer; each lot number and/or each site receiving vaccine.
- d. Receive and assess vaccine utilization reports from local mass clinics in all counties except Douglas and Lancaster;
 - 1) Work with local public health to roster records on individuals receiving vaccine in mass clinics.
 - 2) If electronic or software programs are not available to track vaccine distribution or maintain rosters records on individuals vaccinated, a paper system will be used, documenting the same information.
- 2. Local health department responsibilities:
 - a. Coordinate vaccine distribution and monitor utilization in their respective counties; except as indicated above, under the State's responsibilities;
 - b. Forward distribution and utilization reports to the State for inclusion in state-wide analyses;
 - c. Maintain roster records on individuals receiving vaccine in mass clinics. The vaccine information statement could be modified to include a section for the patient's name and certain vital information.
 - d. If electronic or software programs are not available to track vaccine distribution or maintain rosters records on individuals vaccinated, a paper system will be used, documenting the same information.
- 2. Non-public sites
 - a. Records on individuals vaccinated by non-health department agencies will be archived at the institution or agency that administered the vaccine.
- 3. Regional and local distribution
 - a. Regional and local sites will track any further distribution to local public clinics.
 - b. For each shipment received from the state and each shipment out to a public clinic site, the log will record:
 - 1) Date received or redistributed;
 - 2) Manufacturer;
 - 3) Lot number and expiration date;
 - 4) Quantity of vaccine received or redistributed;
 - 5) Local clinic site receiving vaccine.
 - c. A separate entry will be used with each shipment received or redistributed; each date of activity; each manufacturer; each lot number and/or each site receiving vaccine.

Communications

The availability and dissemination of timely, accurate and appropriate information among public health officials, medical care providers, the media and the general public will be one of the most important facets of the pandemic response. NE HHSS will work in partnership with the CDC, local health departments and professional organizations and agencies to ensure the availability of accurate information and the dissemination of that information to professionals and the general public before, during and after a pandemic flu emergency.

- A. Development and Dissemination of Information
 - 1. NE HHSS Communications and Legislative Services Division has a crisis and emergency risk communication (CERC) plan that outlines the responsibilities and activities of the communications staff during public health emergencies. HHSS CERC plan is available to the local health departments through a secure web site.
 - a. In order to keep information consistent, HHSS Communications and Legislative Services Division will oversee communications with the media.
 - b. To raise awareness and help educate the public health and medical communities and the general public, HHSS will share responsibilities across programs, agencies and organizations. Some examples of education include: advance preparation for pandemic flu; caring for the ill at home; proper self-care practices.
 - 2. Publications and Guidance Information

The following are currently being developed at a national level and will be provided to states. A team of NE HHSS professionals (including health care providers and other medical professionals, public information officers, and behavioral health specialists) will review the documents and distribute them as appropriate to the local health departments through the secure web site.

- a. Generic “fact sheets” (i.e. “Questions and Answers”) on influenza, vaccine and antiviral agents;
 - b. General prevention messages, including “do’s and don’ts” for the general public;
 - c. Training modules (Web-based, video, printed, etc.)
 - d. “Canned” presentations, slide sets, videos and documentaries;
 - e. Strategies and guidelines for interacting and communicating effectively with the media, public health and medical providers, and the general public.
 - f. Guidelines for triage and treatment of influenza patients in outpatient, inpatient and non-traditional health care settings;
 - g. Guidelines for setting up and operating mass clinics;
 - h. Guidelines for the distribution and use of antiviral medications;
 - i. Guidelines for the use and potential effectiveness (or non-effectiveness) of “traditional” (“generic”) disease control measures, such as the use of masks and other hygienic barriers, as well as strategies to curtail community transmission, such as the cancellation of large community events and temporary closure of schools and large, “non-essential” businesses. (It should be noted that the value of these measures is largely uncertain at this time.)
3. Public Health Network and Medical Community
- a. The NE HHSS website, the HAN system, and collaborative partners (i.e. NE Hospital Assoc., NE Medical Association, and Public Health Association of NE) will be used to disseminate information to a variety of appropriate public health and medical providers.
 - b. The HAN will be used for rapid dissemination of information whenever possible.
 - c. Videoconferencing will be used when needed to disseminate information to public health and medical providers.
 - d. In the event of pandemic flu, public health and the medical community will receive, at a minimum:
 - 1) Appropriate medical information and updates (i.e. vaccine administration recommendations, contraindications and adverse events associated with influenza activities and other information/updates published in the MMWR);
 - 2) Information on surveillance activities including diagnosing disease and laboratory confirmation;
 - 3) The locations of outbreaks and predicted spread;
 - 4) Information on priority/targeted populations, vaccine availability and clinic locations;
 - 5) Updates on appropriate and current control activities.
 - e. Media: The NE HHSS Communications and Legislative Services Division maintain a database of media statewide and some from surrounding states. This data base that includes newspapers, television and radio stations, is currently used to communicate information to Nebraskans and will be used in the event of a pandemic emergency. Through news releases, news conferences, the HHSS web site, etc., the media will receive and be able to distribute to the general public regular updates regarding the event that include:
 - 1) Appropriate contact information;
 - 2) Principles of risk communication to the affected population that explains and informs the public in simple terms about the risk;
 - 3) Emergency courses of action (i.e. vaccine administration recommendations including contra- indications and adverse affects, the locations of outbreaks and predicted spread, vaccine availability, clinic locations, etc.);
 - 4) A commitment to continued communications; and
 - 5) Notice of where the public can get more information.

HHSS Office Coverage

In May of 2005 a new 24/7/365 number was activated. That number is staffed by health care professionals at the NE Poison Control Center. This number is available for health professionals and public health partners.

Information on outbreaks usually comes via telephone, e-mail or fax to NE HHSS R&L Environmental or Disease Surveillance. Normal business hours are Monday through Friday, 8 a.m. to 5 p.m. During non-business hours, callers are directed by voice recording to leave a message or call the Nebraska State Security Office. The Security office has been provided a list of personnel and numbers for staffs’ pagers, cell telephones and home telephones. DCHD and LLCHD have business hours, 8 p.m. until 4:30 p.m., Monday through Friday, and have established protocol for after-hour emergencies.

Training

- A. This plan and the resources identified in the plan will be utilized to train public health and emergency services staff throughout Nebraska concerning influenza pandemic preparedness and response.
- B. NE HHSS will work in partnership with PHAN, local health departments and professional organizations and agencies to train professionals and volunteers who will be participating with NE HHSS in responding to a pandemic.
- C. NE HHSS will collaborate with the NE Center for Biopreparedness Education to identify training needs and provide education for public and private health care professionals regarding influenza, mass response, incident command, and other identified topics.

Nebraska Pandemic Influenza Prevention and Control Guidelines

ATTACHMENTS

- A. State and Community Resources and Collaborative Partners
- B. Pandemic Response Checklist
- C. State of Nebraska Statutes, Regulations, Plans and Procedures that Apply to Epidemics
- D. Emergency Response Roster (Names and Telephone Numbers of Key Responders)
- E. Surveillance Activities
 - 1. Surveillance Summary of Influenza and Influenza-like Illness
 - 2. Pandemic Influenza-like Illness Enhanced Disease Report Card
 - 3. Nebraska Public Health Laboratory Submission Form
- F. Vaccination Activities
 - 1. Influenza Information Form
 - 2. Patient demographics (form completed by recipient, providing name, age, race, address, etc.)
 - 3. VAERS Form
 - 4. Vaccination Documentation for Recipient
 - 5. Vaccine Usage Summary (Summary of doses administered)
 - 6. Standing Orders for Administration of Influenza Vaccine (Draft)
 - 7. Standing Orders for Emergency Response (Allergic Reaction or Other Emergencies)
 - 8. Clinic Flow Chart (Suggested)
 - 9. Vaccine Inventory (Record of doses received and distributed)
 - 10. Shipping Notification ('packing slip')
- G. Differential Diagnosis of Influenza and Agents of Bioterrorism
- H. Outpatient Visit Rates, Hospitalization Rates, Death Rates and High-Risk Percentages Used for Pandemic Influenza Morbidity and Mortality Projections
- I. Symptoms of Influenza vs. Common Cold vs. Pertussis

Attachment A: State and Community Resources and Collaborative Partners

The following list is intended to provide an overview of the vast number of excellent resources and potential collaborative partners across the state. NE HHSS recognizes this list is not complete; it is impossible to identify all resources and potential collaborative partners. Communities will be able to identify resources in their areas and form appropriate partnerships to carry out pandemic response activities.

State Agencies and Offices

- NE Attorney General's Office
- NE Health and Human Services System
- NE Emergency Management Agency
- NE State Patrol

County, City and Regional Government Agencies and Offices

- Emergency response agencies
- Law Enforcement
- Public health departments
- School systems

Community Based Agencies

- Community Action agencies
- Home health agencies
- Community based health clinics
- NAF Multicultural Human Development Corporation

Professional Organizations and Associations

- American Lung Association – Nebraska Chapter
- American Red Cross – Nebraska chapters
- Greater Omaha Area Chapter of the Association for Professionals in Infection Control and Epidemiology
- NE Assisted Living Association
- NE Association of County Officials
- NE Association of Home and Community Health Agencies
- NE Association of Hospitals and Health Systems
- NE Health Care Association
- NE Hospital Association
- NE Medical Association
- NE Minority Public Health Association
- NE Nurses Association
- NE Pharmacists Association
- NE Press Association
- NE Public Health Association
- NE Rural Health Association
- West Central Nebraska APIC Chapter

Others

- Hospitals
- Medical clinics
- Schools and colleges
- Local media

Attachment B: Pandemic Response Checklist

Planning for pandemic influenza is critical. The Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) developed the following checklist. It identifies important, specific activities you can do now to prepare. Many are specific to pandemic influenza, but a number also pertain to any public health emergency.

This checklist is based on the HHS Pandemic Influenza Plan, Public Health Guidance for State and Local Partners. It is not intended to set forth mandatory requirements. Each state and local jurisdiction should determine for itself whether it is adequately prepared for disease outbreaks in accordance with its own laws and procedures.

Community Preparedness Leadership and Networking

Preparedness Goal 1—Increase the use and development of interventions known to prevent human illness from chemical, biological, radiological agents, and naturally occurring health threats.

- Establish a Pandemic Preparedness Coordinating Committee that represents all relevant stakeholders in the jurisdiction (including governmental, public health, healthcare, emergency response, agriculture, education, business, communication, community based, and faith-based sectors, as well as private citizens) and that is accountable for articulating strategic priorities and overseeing the development and execution of the jurisdiction's operational pandemic plan.
- Delineate accountability and responsibility, capabilities, and resources for key stakeholders engaged in planning and executing specific components of the operational plan. Assure that the plan includes timelines, deliverables, and performance measures.
- Within every state, clarify which activities will be performed at a state, local, or coordinated level, and indicate what role the state will have in providing guidance and assistance.
- Assure that the operational plan for pandemic influenza response is an integral element of the overall state and local emergency response plan established under Federal Emergency Support Function 8 (ESF8): Health and medical service and compliant with National Incident Management System.
- Address integration of state, local, tribal, territorial, and regional plans across jurisdictional boundaries in the plan.
- Formalize agreements with neighboring jurisdictions and address communication, mutual aid, and other cross-jurisdictional needs.
- Ensure existence of a demographic profile of the community (including special needs populations and language minorities) and ensure that the needs of these populations are addressed in the operation plan.
- Address provision of psychosocial support services for the community, including patients and their families, and those affected by community containment procedures in the plan.
- Conduct year-round traditional surveillance for seasonal influenza (e.g., virologic, outpatient visits, hospitalization, and mortality data), including electronic reporting.
- Improve capacity for rapid identification of unusual influenza strains by working with federal partners to enhance laboratory-based monitoring of seasonal influenza subtypes, as described in Supplement 1 (Surveillance).
- Develop and be prepared to implement enhanced surveillance once a pandemic is detected to ensure recognition of the first cases of pandemic virus infection in time to initiate appropriate containment protocols, and exercise regularly.
- Link and routinely share influenza data from animal and human health surveillance systems.
- Obtain and track information daily during a pandemic (coordinating with epidemiologic and medical personnel) on the numbers and location of newly hospitalized cases, newly quarantined persons, and hospitals with pandemic influenza cases. Use these reports to determine priorities among community outreach and education efforts.

- Test the communication operational plan that addresses the needs of targeted public, private sector, governmental, public health, medical, and emergency response audiences; identifies priority channels of communication; delineates the network of communication personnel, including lead spokespersons and persons trained in emergency risk communication; and links to other communication networks (see Supplement 10).
- Identify for all stakeholders the legal authorities responsible for executing the operational plan, especially those authorities responsible for case identification, isolation, quarantine, movement restriction, healthcare services, emergency care, and mutual aid.
- Make clear to all stakeholders the process for requesting, coordinating, and approving requests for resources to state and federal agencies.
- Create an Incident Command System for the pandemic plan based on the National Incident Management System and exercise this system along with other operational elements of the plan.
- Assist in establishing and promoting community-based task forces that support healthcare institutions on a local or regional basis.
- Identify the authority responsible for declaring a public health emergency at the state and local levels and for officially activating the pandemic influenza response plan.
- Identify the state and local law enforcement personnel who will maintain public order and help implement control measures. Determine in advance what will constitute a “law enforcement” emergency and educate law enforcement officials so that they can pre-plan for their families to sustain themselves during the emergency.
- Ensure that the plans are scalable, to the magnitude and severity of the pandemic and available resources. Revise as necessary.

Surveillance (HHS Supplement 1)

Preparedness Goal 3—Decrease the time needed to detect and report chemical, biological, or radiological agents in tissue, food, or environmental agents that cause threats to the public’s health.

Preparedness Goal 5—Decrease the time to identify causes, risk factors, and appropriate interventions for those affected by threats to the public’s health.

Public Health and Clinical Laboratories (HHS Supplement 2)

Preparedness Goal 3—Decrease the time needed to detect and report chemical, biological, and radiological agents in tissue, food, or environmental agents that cause threats to the public’s health.

- Institute surveillance for influenza-like illnesses (ILI) among laboratory personnel working with novel influenza viruses.
- Develop and test a plan for surge capacity of public health and clinical laboratories to meet the needs of the jurisdiction during a pandemic.
- Assess regularly the influenza diagnostic testing proficiency and adherence to biosafety containment and biomonitoring protocols.
- Inform frontline clinicians and laboratory personnel of protocols for safe specimen collection and testing, how and to whom a potential case of novel influenza should be reported, and the indications and mechanism for submitting specimens to referral laboratories (see Supplements 3, 4, 5).

Healthcare and Public Health Partners (HHS Supplement 3)

Preparedness Goal 6—Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public’s health.

- Test the operational plan for the healthcare sector (as part of the overall plan) that addresses 1) safe and effective healthcare of persons with influenza during a pandemic, 2) legal issues that can affect staffing and patient care, 3) continuity of services for other patients, 4) protection of the healthcare workforce, and 5) medical supply contingency plans.
- Ensure all components of the healthcare delivery network (e.g., hospitals, long-term care, home care, emergency care) are included in the operational plan and that the special needs of vulnerable and hard-to-reach patients are addressed.
- Ensure that plan provides for real-time situational awareness of patient visits, hospital bed and intensive care needs, medical supply needs, and medical staffing needs during a pandemic.
- Test the operational plan for surge capacity of healthcare services, workforce, and supplies to meet the needs of the jurisdiction during a pandemic.
- Test the plan provisions for mortuary services during a pandemic.
- Maintain a current roster of all active and formerly active healthcare personnel available for emergency healthcare services.
- Determine what constitutes a medical staffing emergency and exercise the operational plan to obtain appropriate credentials of volunteer healthcare personnel (including in-state, out-of-state, international, returning retired and non-medical volunteers) to meet staffing needs during a pandemic.
- Ensure healthcare facilities in the jurisdiction have tested a plan for isolating and cohorting patients with known or suspected influenza, for training clinicians, and for supporting the needs for personal protective equipment.
- Ensure the healthcare facilities in the jurisdiction have tested an operational plan to initiate, support, and implement quarantine of potentially exposed healthcare personnel (see Supplements 4 and 5).

Infection Control and Clinical Guidelines (HHS Supplements 4 and 5)

Preparedness Goal 6—Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

- Ensure the Health Alert Network in the jurisdiction reaches at least 80% of all practicing, licensed, frontline healthcare personnel and links via the communication network to other pandemic responders (see Supplements 3, 10).
- Craft messages to help educate healthcare providers about novel and pandemic influenza, and infection control and clinical guidelines, and the public about personal preparedness methods.
- Develop and test a plan (as part of the communication plan) to regularly update providers as the influenza pandemic unfolds.
- Ensure appropriate local health authorities have access to EPI-X and are trained in its use.

Vaccine Distribution and Use (HHS Supplement 6)

Preparedness Goal 6—Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

- Work with healthcare partners and other stakeholders to develop state-based plans for vaccine distribution, use, and monitoring; and for communication of vaccine status.
- Exercise an operational plan that addresses the procurement, storage, security, distribution, and monitoring actions necessary (including vaccine safety) to ensure access to this product during a pandemic.
- Ensure the operational plan delineates procedures for tracking the number and priority of vaccine recipients, where and by whom vaccinations will be given, a distribution plan for ensuring that vaccine and necessary equipment and supplies are available at all points of distribution in the community, the security and logistical support for the points of distribution, and the training requirements for involved personnel.

- Address vaccine security issues, cold chain requirements, transport and storage issues, and biohazardous waste issues in the operational plan.
- Address the needs of vulnerable and hard-to-reach populations in the operational plan.
- Document with written agreements the commitments of participating personnel and organizations in the vaccination operational plan.
- Inform citizens in advance about where they will be vaccinated.

Antiviral Drug Distribution and Use (HHS Supplement 7)

Preparedness Goal 6—Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

- Develop state-based plans for distribution and use of antiviral drugs during a pandemic via the Strategic National Stockpile (SNS), as appropriate, to healthcare facilities that will administer them to priority groups. Establish methods for monitoring and investigating adverse events.
- Test the operational plan that addresses the procurement, storage, security, distribution, and monitoring actions necessary to assure access to these treatments during a pandemic.
- Ensure the jurisdiction has a contingency plan if unlicensed antiviral drugs administered under Investigational New Drug or Emergency Use Authorization provisions are needed.

Community Disease Control and Prevention (including managing travel-related risk of disease transmission) (HHS Supplements 8 and 9)

Preparedness Goal 6—Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

- Exercise the jurisdiction's operational plan to investigate and contain potential cases or local outbreaks of influenza potentially caused by a novel or pandemic strain.
- Exercise the jurisdiction's containment operational plan that delineates procedures for isolation and quarantine, the procedures and legal authorities for implementing and enforcing these containment measures (such as school closures, canceling public transportation, and other movement restrictions within, to, and from the jurisdiction) and the methods that will be used to support, service, and monitor those affected by these containment measures in healthcare facilities, other residential facilities, homes, community facilities, and other settings.
- Ensure the jurisdiction has exercised the operational plan to implement various levels of movement restrictions within, to, and from the jurisdiction.
- Inform citizens in advance about what containment procedures may be used in the community.

Public Health Communications (HHS Supplement 10)

Preparedness Goal 4—Improve the timeliness and accuracy of communications regarding threats to the public's health.

- Assess readiness to meet communications needs in preparation for an influenza pandemic, including regular review, exercise, and update of communications plans.
- Plan and coordinate emergency communication activities with private industry, education, and non-profit partners (e.g., local Red Cross chapters).
- Identify and train lead subject-specific spokespersons.

- Provide public health communications staff with training on risk communications for use during an influenza pandemic.
- Develop and maintain up-to-date communications contacts of key stakeholders and exercise the plan to provide regular updates as the influenza pandemic unfolds.
- Implement and maintain, as appropriate, community resources, such as hotlines and Web site, to respond to local questions from the public and professional groups.
- Ensure the provision of redundant communication systems/channels that allow for the expedited transmission and receipt of information.

Workforce Support: Psychosocial Considerations and Information Needs (HHS Supplement 11)

Preparedness Goal 6— Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

- Develop a continuity of operations plan for essential health department services, including contingency planning for increasing the public health workforce in response to absenteeism among health department staff and stakeholder groups that have key responsibilities under a community's response plan.
- Ensure availability of psychosocial support services (including educational and training materials) for employees who participate in or provide support for the response to public health emergencies such as influenza pandemics.
- Develop workforce resilience programs and ensure readiness to deploy to maximize responders' performance and personal resilience during a public health emergency.
- Assure the development of public health messages has included the expertise of behavioral health experts (see Supplement 10).

Attachment C: Nebraska Statutes and Administrative Rules Which May Apply in a Pandemic Situation⁵

Statute	Description
<p>Reporting of Disease 71-502.04: Laboratory; test results; notification required 71-503: Contagious, infectious, or other disease or illness; duty of attending physician 71-503.01: Reports required; confidentiality; limitations on use; immunity 71-505: DHHS; public health; duties; fees 71-1630: Local boards of health; duties</p>	<p>§ 71-503.01 discusses the uses of information provided through state reporting requirements, including privacy considerations and aspects of subsequent investigations. § 71-502.04 requires clinical laboratories to report positive test results that indicate a contagious or communicable disease § 71-503 requires physicians to report the existence of a contagious or communicable disease. These reports are required to be made to local health departments or DHHS § 71-505 requires DHHS to maintain an official record of such reports. § 71-1630 holds local boards of health responsible for monitoring, reporting and communicable disease investigations.</p>
<p>Investigation of Disease, 71-503.01: Reports required; confidentiality; limitations on use; immunity 71-1630: Local boards of health; duties 71-3407: Team; purposes; duties</p>	<p>Investigations of potential communicable disease outbreaks are required in § 71-1630 of local boards of health.</p>
<p>Authority to Examine Records, 186-5: Release of medical records and health information</p>	<p>186-5 pertains specifically to medical records, and classifies medical records into 4 categories that determine levels of confidentiality and requirements for release. It also details the release of medical records to others under specific conditions, including to medical researchers and to government agencies.</p>
<p>Emergency Orders and Regulations 81-829.39: Terms, defined 81-829.40: Governor; powers and duties 81-829.69: State of emergency; proclaimed by Governor; powers</p>	<p>§ 81-829.40 authorizes the Governor to declare a state of emergency, and § 81-829.69 details the powers granted the Governor once a state of emergency has been declared. § 81-829.39 defines "emergency" and "disaster" according to the statewide emergency management act.</p>
<p>Disease Control Measures 71-1628.04: Core public health functions 71-501: Contagious diseases; county board of health; powers and duties 71-502: Communicable diseases; rules and regulations; control; powers of DHHS 71-3613: DHHS; powers and duties 71-7617: Contracts to provide educational and public health services; DHHS; duties</p>	<p>§ 71-1628.04 lists core public health functions, including the identification of community health problems and laws and rules protecting the public's health. § 71-501 and § 71-502 require DHHS and state and county boards of health to make and enforce regulations to prevent the spread of contagious and communicable diseases. § 71-3613 assigns DHHS specific powers and duties related to the detection, prevention, and control of tuberculosis. § 71-7617 requires DHHS to work with tribal health clinics to provide education and other public health services with the goal of preventing disease outbreaks and other conditions.</p>

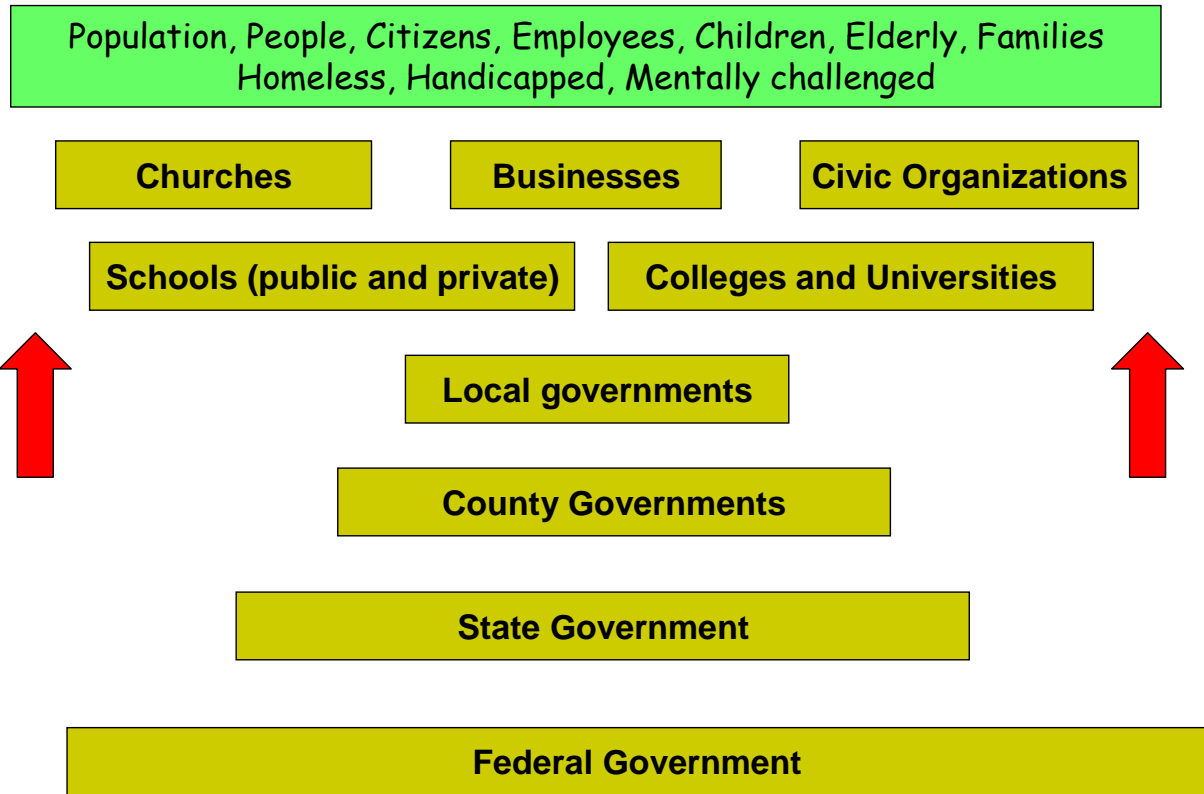
⁵ Adapted from: *The Turning Point Model Public Health Act: Nebraska Code and Administrative Rules Comparison Table*. James G. Hodge, Jr., J.D., LL.M., August 2, 2004

Statute	Description
<p>Isolation of Certain Persons with Communicable Diseases 71-501: Contagious diseases; county board of health; powers and duties 81-601: Department of health and human services regulation and licensure; powers Chapter 71, Article 36: Isolation of Tuberculosis persons</p>	<p>§ 71-501 requires county boards of health to appoint a quarantine officer and to prevent the spread of contagious and infectious diseases. § 81-601 grants DHHS control over all matters related to quarantine. Chapter 71, Article 36 discusses the isolation of individuals infected with tuberculosis.</p>

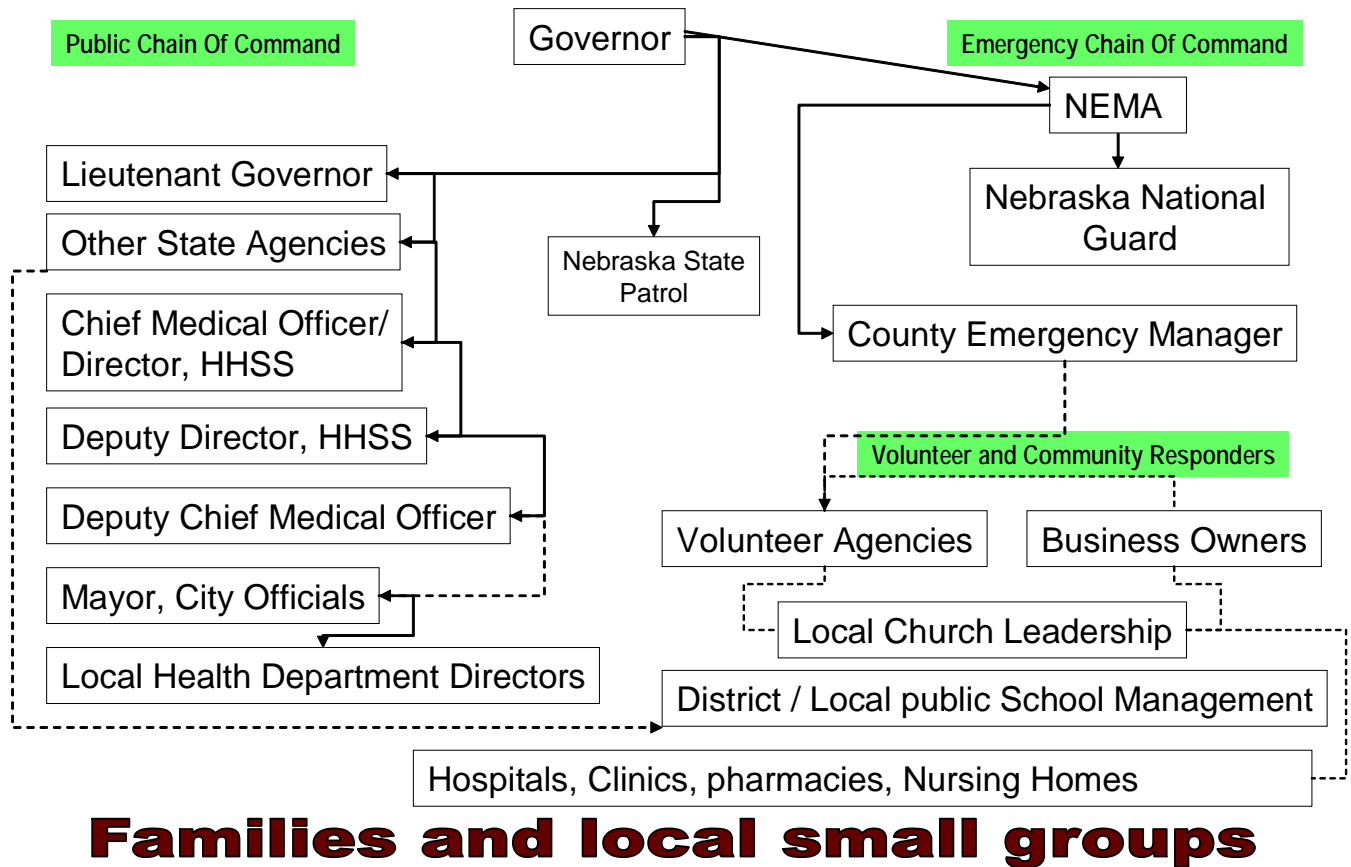
Administrative Rules	Description
<p>Reporting 173-1-002: Who Reports 173-1-003: Reportable Diseases, Poisonings and Organisms 173-1-004: Methods of Reporting 173-1-005: Where to Report 173-3-003: Reporting</p>	<p>Title 173 of the NAC deals with communicable disease control. 173-1-002 lists who is required to report communicable diseases and poisonings, and 173-1-003 lists various diseases, poisonings and organisms and respective time requirements for reporting. 173-1-004 and 173-1-005 describe methods of reporting required of health care providers and health laboratories, and delineate to whom reports should be submitted. 173-3-003 requires school officials to report potential cases of communicable disease to the board of health.</p>
<p>Isolation and Quarantine 173-1-006.01: Isolation 173-3: School health, communicable disease control, and physical examination and immunization standards</p>	<p>173-1-006.01 details isolation measures to be taken for certain communicable diseases. 173-3 details isolation and control measures to be taken for specific communicable diseases when students are infected.</p>

Attachment D: Emergency Response Line of Authority

Basic Public Health Planning and Response Structure



Nebraska Pandemic Influenza Plan Organizational Flow Sheet



Attachment E: Surveillance Activities

Surveillance Summary of Influenza and Influenza-like Illness
Pandemic Influenza-like Illness Enhanced Disease Report Card
Nebraska Public Health Laboratory Submission Form

Reports and summaries available on Line at:

<http://www.hhs.state.ne.us/flu/report.htm>

Attachment F: Vaccination Activities

Please see the Nebraska Mass Clinic Guidelines for general information on the setup and operation of mass clinics for vaccinations and medications distribution.

1. Influenza Information Form
2. Patient demographics (form completed by recipient, providing name, age, race, address, etc.)
3. VAERS Form
4. Vaccination Documentation for Recipient
5. Vaccine Usage Summary (Summary of doses administered)
6. Standing Orders for Administration of Influenza Vaccine (Draft)
7. Standing Orders for Emergency Response (Allergic Reaction or Other Emergencies)
8. Clinic Flow Chart (Suggested)
9. Vaccine Inventory (Record of doses received and distributed)
10. Shipping Notification ('packing slip')

Attachment G. Differential Diagnosis of Influenza and Agents of Bioterrorism

Table. Planning for pandemic influenza and bioterrorism: similarities and differences^{a,b}

Issue	Bioterrorist event	Pandemic influenza
Likelihood	High	High
Warning	None to days	Days to months
Occurrence	Focal or multifocal	Nationwide
Transmission/duration of exposure	Point source; limited; person-to-person	Person-to-person, 6–8 wks
Casualties	Hundreds to thousands	Hundreds of thousands to millions
First responders susceptible?	Yes	Yes
Disaster medical team support/response	Yes	No (too widespread)
Main site for preparedness, response, recovery, and mitigation	State and local areas	State and local areas
Essential preparedness components		
Surveillance	Yes	Yes
Law enforcement intelligence	Yes	No
Investigation	Yes	Yes
Research	Yes	Yes
Liability programs	Yes	Yes
Communication systems	Yes	Yes
Medical triage and treatment plans	Yes	Yes
Vaccine supply issues	Yes (for most likely threats)	Yes
Drug supply issues	Yes	Yes
Training/tabletop exercises	Yes	Yes
Maintenance of essential community services	Yes	Yes
Essential response components		
Rapid deployment teams	Yes	No
Effective communications/media relations strategy	Yes	Yes
Vaccine delivery	Yes (for some)	Yes
Drug delivery	Yes (for most)	Yes
Hospital/public health coordination	Yes	Yes
Global assistance	Possibly	Yes
Medical care	Yes	Yes
Mental health support	Yes	Yes
Mortuary services	Yes	Yes
Supplies and equipment	Yes	Yes
Essential mitigation components		
Enhanced surveillance	Yes	Yes
Enhanced law enforcement intelligence	Yes	No
Vaccine stockpile	Yes (selected agents)	Prototype vaccines only
Drug stockpile	Yes	Yes
Pre-event vaccination	Vaccination of selected groups ^c	Vaccination of groups at medical high risk with pneumococcal vaccine ^d

^aDuring a catastrophic infectious disease event, such as an influenza pandemic, there may be critical shortages of vaccines and drugs. Thus, clinics set up to administer vaccines and distribute antimicrobial drugs may require the services of a range of personnel whose fields of expertise are nonclinical. Examples of additional personnel that may be needed include law enforcement, translators, social workers,

psychologists, and legal experts.

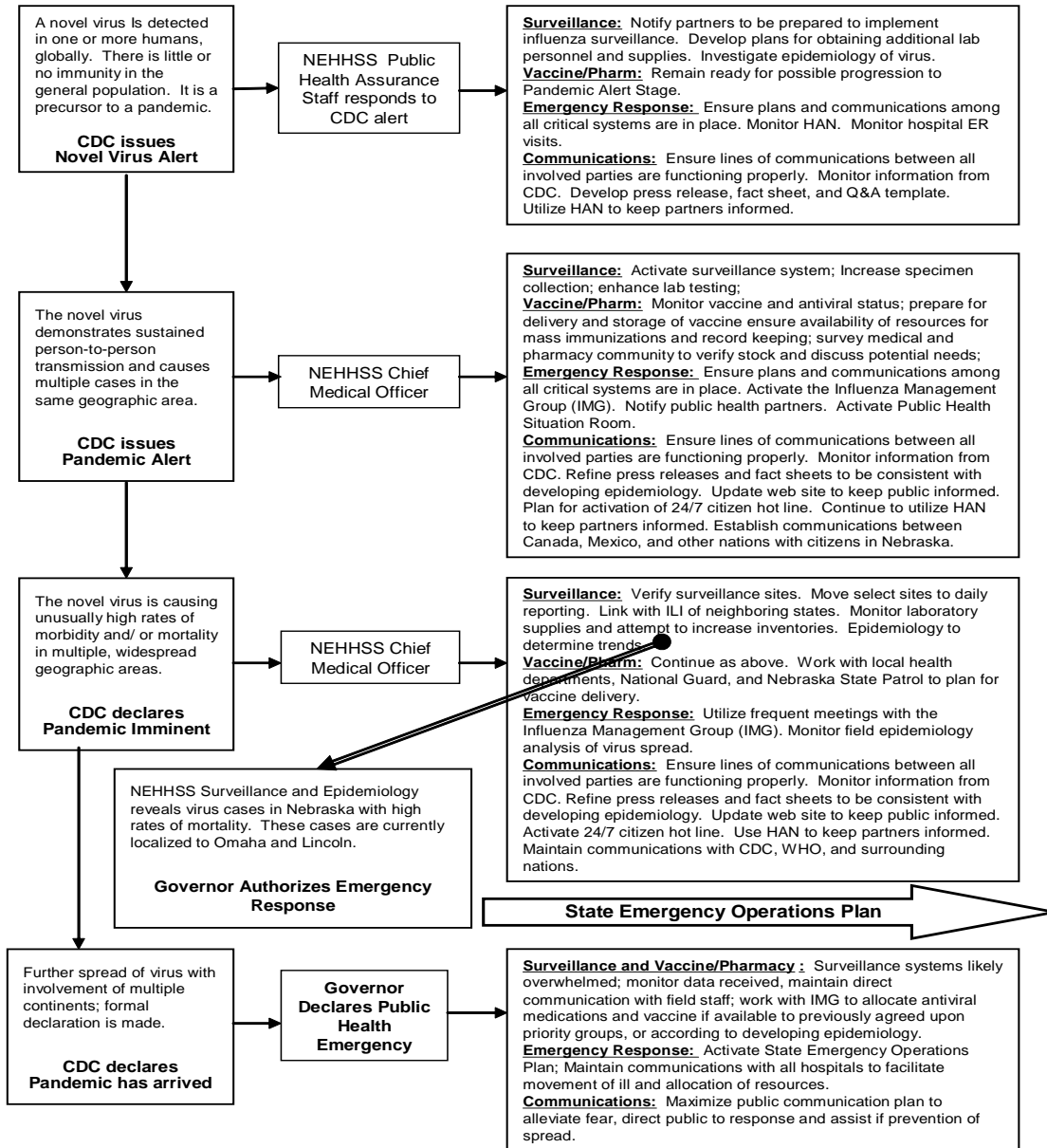
^bSource: Adapted from: National Vaccine Program Office. Pandemic influenza: a planning guide for state and local officials (Draft 2.1). Atlanta: Centers for Disease Control and Prevention; 2000.

^cAt the time of writing, the smallpox vaccination program was just beginning. For other bioterrorist agents for which vaccines are available (e.g., anthrax), limited supplies and concerns about safety profiles have, up to this point, effectively prevented the widespread use of these vaccines.

^dIt may eventually be possible to vaccinate high-priority groups and the general population with a yet-to-be-developed “common epitope” vaccine, which might provide for a broader spectrum of protection against a variety of influenza A subtypes.

Appendix H. Nebraska Health and Human Services Generic Response Algorithm

Nebraska Generic Response Algorithm



Nebraska Generic Response Algorithm

Pandemic Alert Period Phase 3

A novel virus is detected in one or more humans, globally. There is little or no immunity in the general population. It is a precursor to a pandemic.

CDC issues Novel Virus Alert

NEHSS Public Health Assurance Staff responds to CDC alert

State Government Responsibilities

Surveillance:

- Notify partners to be prepared to implement influenza surveillance.
- Maintain baseline surveillance activities, (ILI, school absenteeism, over the counter medications, laboratory data, sentinel physicians).
- Develop plans for obtaining additional lab personnel and supplies.
- Investigate the epidemiology of virus.

Vaccine and Pharmaceutical Response:

- Remain ready for possible progression to Pandemic Alert Stage.
- Survey pharmacies and wholesalers to determine statewide supply.
- Survey providers to determine populations and locate particular areas of need.

Emergency Response:

- Ensure plans and communications among all critical systems are in place.
- Monitor HAN and developments in neighboring states.
- Activate LHD resources

Communications:

- Ensure functioning lines of communications between all state public health partners
- Monitor information from CDC, WHO, and other federal public health partners.
- Modify press release, fact sheet, talking points and Q&A template.
- Inform public health partners through HAN, Web portal, and telehealth network.

Local Responsibilities

Surveillance:

- Maintain Local lab, physician, hospital and nursing home surveillance.
- Increase surveillance for mobile populations if appropriate, travelers to and from endemic areas.
- Increase ILI surveillance

Emergency Response:

- Ensure local plans are updated
- Ensure local hospitals and nursing homes are aware of alert phase
- Activate LHD response plans

Communications:

- Maintain communications
- Expand redundant communications, Tac Pacs and Radios
- Retrieve latest press releases, fact sheets, talking points and Q&A templates from the Guardian site.
- Inform local volunteer partners of status
- Notify schools and churches

Pandemic Alert Period Phase 4

The novel virus demonstrates sustained person-to-person transmission and causes multiple cases in the same geographic area.

**CDC issues
Pandemic Alert**

NEHSS Chief
Medical Officer
Orders increased
level of response

Surveillance:

- Ramp up surveillance.
- Communicate with practitioners to increase surveillance, monitor travel histories, and collect specimens for testing.
- Continue all other surveillance activities.
- Make plans to increase laboratory capacity.

Vaccine and Pharmaceutical Response:

- Monitor vaccine and antiviral supply and availability
- Prepare for delivery, storage and security of vaccine
- Ensure availability of resources for mass immunizations and record keeping
- Update survey medical and pharmacy community to verify stock and discuss potential needs

Emergency Response:

- Ensure plans and communications among all critical systems are in place.
- Activate the Influenza Management Group (IMG).
- Issue HAN to inform state public health partners.
- Activate Public Health Situation Room.

Communications:

- Ensure lines of communications between all involved parties are functioning properly.
- Monitor information from CDC.
- Refine press releases and fact sheets to be consistent with developing epidemiology.
- Update web site to keep public informed.
- Update secure website to keep public health partners informed and provide essential forms and resource materials.
- Plan for activation of 24/7 citizen hot line.
- Use Telehealth Network to educate providers
- Establish communications between Canada, Mexico, and other nations with citizens in Nebraska.
- Strengthen communications with border states.

Local Responsibilities

Surveillance:

- Maintain Local lab, physician, hospital and nursing home surveillance.
- Increase surveillance for mobile populations if appropriate, travelers to and from endemic areas.
- Increase ILI surveillance

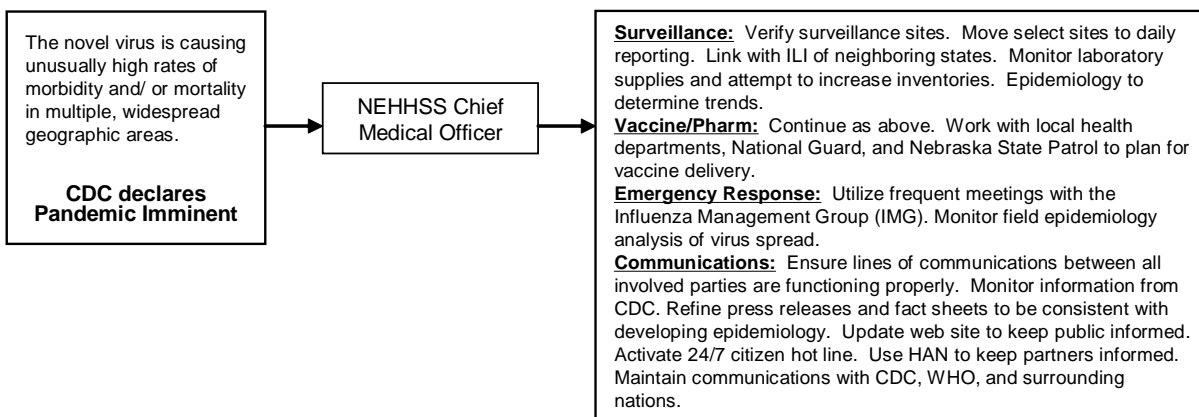
Emergency Response:

- Ensure local plans are updated
- Ensure local hospitals and nursing homes are aware of alert phase
- Activate LHD response plans

Communications:

- Maintain communications
- Expand redundant communications, Tac Pacs and Radios
- Retrieve latest press releases, fact sheets, talking points and Q&A templates from the Guardian site.
- Inform local volunteer partners of status
- Notify schools and churches

Pandemic Alert Period Phase 5 - 6



Local Responsibilities

Surveillance:

- Maintain Local lab, physician, hospital and nursing home surveillance.
- Increase ILI surveillance

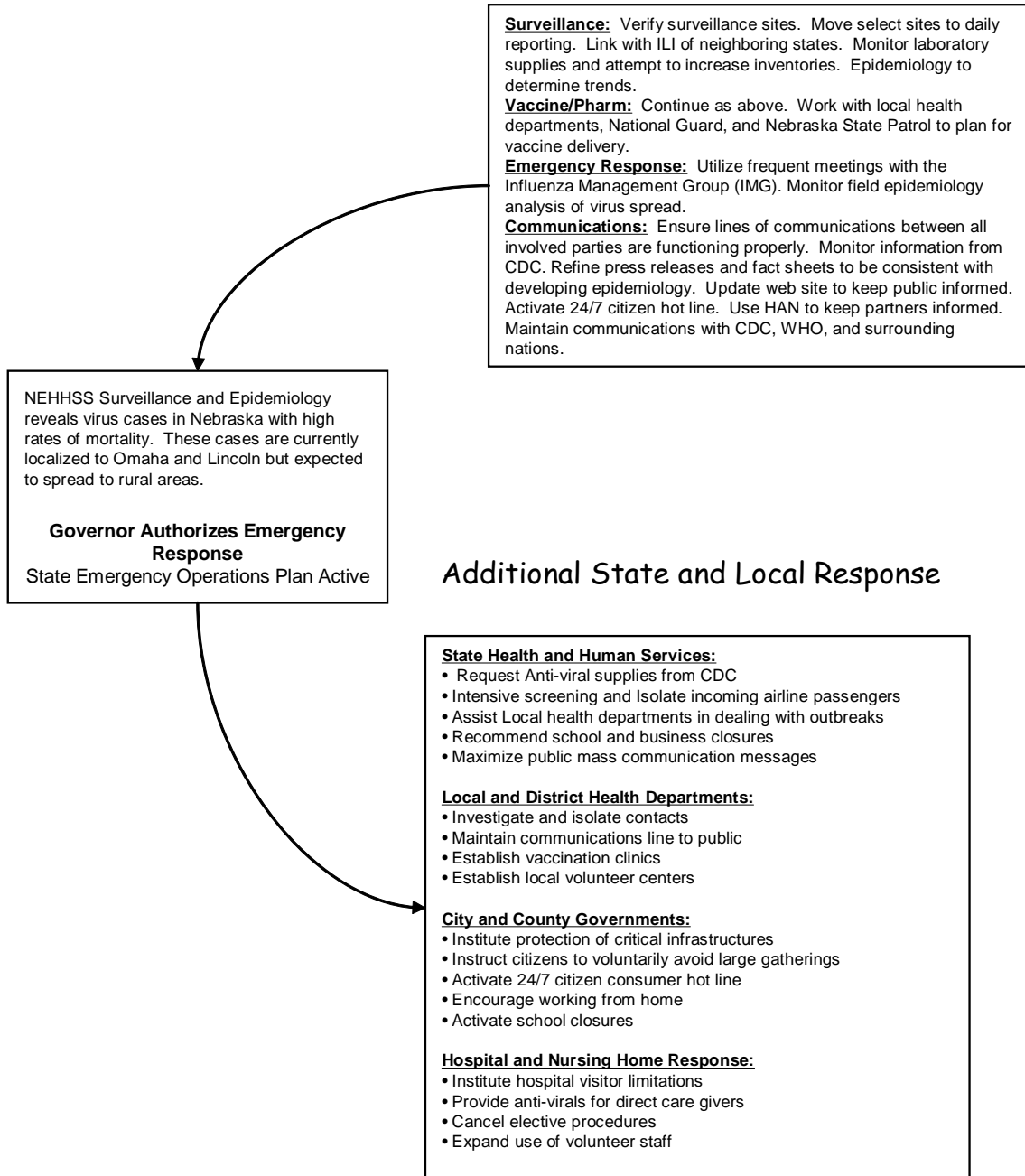
Emergency Response:

- Ensure local plans are updated
- Ensure local hospitals and nursing homes are aware of alert phase
- Activate LHD response plans

Communications:

- Maintain communications
- Expand redundant communications, Tac Pacs and Radios
- Retrieve latest press releases, fact sheets, talking points and Q&A templates from the Guardian site.
- Inform local volunteer partners of status
- Notify schools and churches

Trigger State Declaration Of Health Emergency



Surveillance: Verify surveillance sites. Move select sites to daily reporting. Link with ILI of neighboring states. Monitor laboratory supplies and attempt to increase inventories. Epidemiology to determine trends.

Vaccine/Pharm: Continue as above. Work with local health departments, National Guard, and Nebraska State Patrol to plan for vaccine delivery.

Emergency Response: Utilize frequent meetings with the Influenza Management Group (IMG). Monitor field epidemiology analysis of virus spread.

Communications: Ensure lines of communications between all involved parties are functioning properly. Monitor information from CDC. Refine press releases and fact sheets to be consistent with developing epidemiology. Update web site to keep public informed. Activate 24/7 citizen hot line. Use HAN to keep partners informed. Maintain communications with CDC, WHO, and surrounding nations.

NEHHSS Surveillance and Epidemiology reveals virus cases in Nebraska with high rates of mortality. These cases are currently localized to Omaha and Lincoln but expected to spread to rural areas.

Governor Authorizes Emergency Response
State Emergency Operations Plan Active

Additional State and Local Response

- State Health and Human Services:**
- Request Anti-viral supplies from CDC
 - Intensive screening and Isolate incoming airline passengers
 - Assist Local health departments in dealing with outbreaks
 - Recommend school and business closures
 - Maximize public mass communication messages
- Local and District Health Departments:**
- Investigate and isolate contacts
 - Maintain communications line to public
 - Establish vaccination clinics
 - Establish local volunteer centers
- City and County Governments:**
- Institute protection of critical infrastructures
 - Instruct citizens to voluntarily avoid large gatherings
 - Activate 24/7 citizen consumer hot line
 - Encourage working from home
 - Activate school closures
- Hospital and Nursing Home Response:**
- Institute hospital visitor limitations
 - Provide anti-virals for direct care givers
 - Cancel elective procedures
 - Expand use of volunteer staff

Appendix I: Influenza vs. Cold vs. Pertussis

Symptom		Influenza ("Flu")	Colds (Viral URI)	Pertussis
Fever		Usually present & high (102-104°F or 39-40°C); typically lasts 3-4 days	Uncommon If present, typically low-grade	Uncommon If present, typically low-grade
Chills		Common	Uncommon	Rare
Headache		Very common	Uncommon	Uncommon
Aches and pains, muscle aches, chest discomfort		Very common Often severe	Slight to Moderate	Uncommon
Fatigue and weakness		Moderate - severe; can last up to 14-21 days	Mild	Mild; Usually appears well between coughing attacks
Extreme exhaustion		Very common early in illness	Extremely Rare	Rare
Stuffy or runny nose		Common	Very common	Common, early in the disease
Sneezing		Sometimes	Common	Common, early in the disease
Sore throat		Common	Common	Uncommon
Cough	Character	Non-productive ("dry") cough is typical	Hacking cough, often productive; usually responds to cough medications	Variable character; fits / paroxysms and nocturnal cough are common; generally not responsive to cough medications; "whooping" may or may not occur
	Severity	Moderate	Mild to Moderate	Variable; mild to severe; infants appear quite ill and may present with cough or apnea
	Duration	Typically 3-7 days; occasionally to 14 days	Typically 3-7 days	Persistent cough, almost always >1 week, usually 2-6 weeks, sometimes 10+ weeks
	Paroxysms (coughing fits)	Uncommon	Rare	Common; often leads to vomiting or gagging
Infectious Period		1 day before Symptom onset and 3-7 days after	Variable; typically 4-7 days after symptom onset; can be longer	From start of catarrhal phase (before cough) to 21 days after cough onset* Most efficient spreading after cough onset

*or until taking 5 days of appropriate anti-pertussis antibiotics