



**Lake County Public Health Agency
Pandemic Flu Annex**

Record of Revisions

Date	Revision No.	Description of Change	Pages Affected	Reviewed or Changed by
9 Dec 2015	1	Added appendix A	Appendix A	Libby Nelson
9 Dec 2015	2	Made Risk Communication more comprehensive and specific	15, 17-21	Libby Nelson
30 May 2019	3	Changed logo, added language on Regional Epidemiologist and HCC	1, 12	Colleen Nielsen

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Section I: General Considerations and Planning Guidelines

Introduction

Although remarkable advances have been made in science and medicine during the past century, we are constantly reminded that we live in a universe of microbes that are forever changing and adapting themselves to the human host and the defenses that humans create. While science has been able to develop highly effective vaccines and treatments for many infectious diseases that threaten public health, the United States faces a burden of influenza that results in as many as 49,000¹ deaths and more than 200,000 hospitalizations each year. In addition to this human toll, influenza is annually responsible for an average cost of up to 10 billion dollars each year in the United States².

A pandemic could dwarf this impact and has the potential to cause more death and illness than any other public health threat³. Influenza pandemics in 1918, 1957 and 1968 killed approximately 40 million, 2 million and 1 million people worldwide, respectively. If a pandemic influenza virus with similar virulence to the 1918 strain emerged today, in the absence of intervention, it is estimated that 1.9 million Americans could die and almost 10 million could be hospitalized over the course of the pandemic, which may evolve over a year or more.⁴

Lake County leadership recognizes the threat of a pandemic on the county's population, critical infrastructure, the private sector, the economy and the community's way of life. Lake County Public Health Agency has already been planning, based on guidance from the Colorado Department of Public Health and Environment (CDPHE), the Center for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services (HHS).

This Annex outlines Lake County's strategy in preparing for, responding to, and recovering from a pandemic in a collective, multi-agency approach.

Purpose

The purpose of the Pandemic Annex is to reduce mortality and morbidity and minimize social disruption in Lake County by providing a guide for planning and response to pandemic influenza. The pandemic annex may also be applied to any novel virus that spreads easily, causes severe illness, has a short incubation period and has no existing vaccine or treatment available.

The Pandemic Annex describes how Lake County will undertake:

- Coordination
- Surveillance, investigation and protective health measures
- Vaccines and antiviral drugs
- Healthcare emergency response
- Communications, outreach and recovery

Scope

The Pandemic Annex will be used to support the Lake County Public Health and Medical Services Annex and will only include information that involves a pandemic. The annex will also

¹ Center for Disease Control and Prevention – [Key Facts About Influenza \(Flu\) and Flu Vaccine](#).

² [National Strategy for Pandemic Influenza, Homeland Security Council](#); November, 2005.

³ [U.S. Department of Health and Human Services Plan for Pandemic Influenza](#); December, 2005.

⁴ Center for Disease Control and Prevention – [Key Facts About Influenza \(Flu\) and Flu Vaccine](#).

be supplemented with the Mass Vaccination/ Point of Dispensing (POD) Plan, the Medical Surge Plan, and the Mass Fatality Plan.

Situation Overview

Influenza is a highly contagious respiratory illness that occurs every year and is referred to as the seasonal flu. Every year, flu vaccines are reformulated to combat anticipated changes in the seasonal flu virus. Despite having vaccines available, there are an estimated 3,000 to 49,000 deaths caused each year by influenza in the United States.⁵

Pandemics usually occur three to four times during a century, caused by a major genetic shift in an influenza virus. This shift usually occurs when a human virus combines with an animal virus creating a novel influenza. The most common animal reservoirs for influenza are birds and pigs. If the novel influenza virus can be easily transmitted from human-to-human, it is possible that it will cause a pandemic.

Because the virulence of the novel influenza virus that causes a pandemic cannot be predicted, two scenarios are presented based on estimates from past novel influenza outbreaks in the United States, using Colorado-specific census data in the Centers for Disease Control and Prevention’s (CDC) Flu Aid software program.

Illness, Healthcare Utilization and Death, During a Pandemic

Estimated Number of Illness, Healthcare Utilization and Death Associated with Moderate and Severe Pandemic Influenza Scenarios in Colorado and Lake County					
2013 Estimated Colorado Population = 5,268,367					
2013 Estimated Lake County Population = 7,306					
Characteristic	Moderate (1958/68)		Severe (1918)		Assumptions
	Colorado	Lake County	Colorado	Lake County	
Illness	1,580,510	2,192	1,580,510	2,192	30% of the population becomes ill
Outpatient Medical Care	790,255	1,096	790,255	1,096	50% of ill persons seek outpatient care
Hospitalization	15,805	22	173,856	242	1 – 11% of ill patients require hospitalization
ICU Care	1,581	2	25,288	35	0.1 – 1.6% of ill persons require ICU care
Mechanical Ventilation	1,106	1	12,644	18	0.07-0.8% of ill persons require ventilation

⁵ Center for Disease Control and Prevention – [Key Facts About Influenza \(Flu\) and Flu Vaccine](#).

Deaths	3,161	4	33,191	46	0.2 - 2.1% of ill persons die
<p>Estimates based on extrapolation from past pandemics in the United States. Please note the estimates do not include the potential impact of interventions not available during the 20th century. Population numbers come from the U.S. Census Bureau http://quikfacts.census.gov.</p>					

Legal Authority

CDPHE and Lake County Public Health Agency have statutory authority to investigate and control causes of epidemic and communicable diseases affecting the public health.

Governor of Colorado

The Governor has broad powers to meet the response needs of an emergency, including suspension of any regulatory statute provisions, state agency orders, or rules and regulations that would prevent, hinder or delay emergency response efforts.

Board of Health

The Colorado Board of Health has the authority to require reports of diseases to public health officials; and public health officials have access to medical records relating to these diseases. Additionally, CDPHE and LPHAs have statutory authority to establish, maintain and enforce isolation and quarantine and to exercise physical control over property and people within Colorado, when necessary to protect the public’s health and safety.

Governor’s Expert Emergency Epidemic Response Committee (GEEERC)

The Governor’s Expert Emergency Epidemic Response Committee (GEEERC) was established by statute in 2000 to develop a public health response to acts of bioterrorism, pandemic influenza and epidemics caused by novel and highly fatal infectious diseases and agents.

The CDPHE Executive Director Chairs the GEEERC, which consists of 18 statutorily designated representatives from state agencies, public health departments, various health care professions and the Attorney General. The basic function of the GEEERC is to provide recommendations to the Governor of Colorado on reasonable and appropriate measures to reduce or prevent the spreading of disease.

Planning Assumptions

- The Governor of Colorado may declare a State of Emergency, resulting from a Public Health Emergency, in order to provide effective command and control for response to an influenza pandemic.
- Response to a pandemic will require swift and coordinated action by all levels of government.
- During a pandemic, CDPHE will take the role of Lead State Agency for ESF #8 and will coordinate with Colorado Emergency Management, within the Division of Homeland Security and Emergency Management and other state and local agencies, as part of a unified command structure.

- Support from mutual aid agreements may not be available.
- Effective prevention and therapeutic measures, including vaccine and antiviral medications, could be delayed, in short supply or not available.
- Substantial public education regarding the need to target priority groups for vaccination and antiviral medication and rationing of limited supplies, is crucial in averting public panic.
- Specific social interventions and/or containment measures such as snow days, travel restrictions, cancellation of public events, isolation and/or quarantine may be required to slow the spread of a pandemic.
- Secondary bacterial infections, following influenza illness, may result in shortages in antibiotic supplies.
- Lake County will work with healthcare providers to coordinate the distribution of vaccines, antivirals and other medications from the strategic national stockpiles (SNS).
- There may be a need for alternate care sites as temporary health facilities. (Refer to Medical Surge Annex).
- Healthcare workers, public health workers and other responders (i.e., law enforcement and firefighters) may be at higher risk of exposure and illness than the general population, further straining the pandemic response.
- Widespread illness could increase the likelihood of sudden and potentially significant shortages of personnel in other sectors that provide critical public safety and necessary services.
- It may be necessary to expand mortuary service capacity including, if available, activation of Colorado State Mortuary assets followed by national Disaster Mortuary Operational Response Teams (DMORT) through CDPHE.
- Pandemic influenza will probably occur in waves, with each lasting six or more weeks, with a period between waves of up to two months with little or no flu activity.

Influenza Specific Information

Influenza viruses⁶ are grouped into three types designated A, B, and C. Type C viruses are common but usually cause no symptoms or mild respiratory illness. Type B viruses cause sporadic illness and outbreaks of respiratory disease, particularly among young children in school settings. Type A viruses are unique because they can infect both humans and animals and are usually associated with more severe illnesses and are the cause of global pandemics.

The typical incubation period (interval between infection and onset of symptoms) for influenza is two days. This would be the same for a novel strain, transmitted person-to-person by respiratory secretions.

Persons who become ill may shed virus and can transmit infection one day before the onset of illness. Viral shedding and the risk of transmission will be greatest during the first two days of illness. Children usually shed the greatest amount of virus and therefore are likely to pose the greatest risk for transmission.

⁶ Please note that influenza is not the same as “stomach flu”, even though some influenza patients may have gastro- intestinal symptoms along with respiratory symptoms. Influenza is primarily a respiratory illness.

Pandemic Specific Information

Influenza pandemics are unpredictable and may arrive with very little warning. Certain conditions make pandemic influenza more likely.

- A novel influenza A virus emerges as a result of a process called antigenic shift.
- The population is susceptible with little or no immunity to the new virus.
- The virus is highly contagious from person-to-person.
- The virus is virulent with the capacity to cause serious illness and death.

On average, infected persons will transmit the infection to approximately two other people. Some estimates from past pandemics have been higher, with up to about three secondary infections per primary case.

The clinical disease attack rate is estimated at about 30% in the overall population. Illness rates will be highest among school-age children (about 40%) and decline with age if there is some previous immunity to the influenza strain; otherwise, attack rates may be similar among all age groups.

Among working adults, an average of 20% will become ill during a community outbreak. In a severe influenza pandemic, it is expected that absenteeism may reach 40% due to illness because of the need to care for ill family members and fear of infection during the peak weeks of a community outbreak. The rate of absenteeism will be lower during the weeks before and after the peak. Certain public health measures (closing schools, quarantining household contacts of infected individuals, school cancellation and "snow days") are likely to increase rates of absenteeism.

Of those who become ill with the novel strain of influenza, approximately 50% will seek outpatient medical care. The number of hospitalizations and deaths will depend on the virulence of the novel influenza virus.

Historic evidence suggests that pandemics occurred three to four times per century. During the 20th century, the emergence of several novel influenza A virus subtypes caused four pandemics, all of which spread around the world within a year of being detected.

- 1918-19, "Spanish flu," A (H1N1), caused the highest number of known influenza deaths. More than 675,000 people died in the United States, and up to 50 million people may have died worldwide. Many people died within the first few days after infection, and others died of secondary complications. Nearly half of those who died were young, healthy adults. Influenza A (H1N1) viruses still circulate today after being introduced again into the human population in 1977.
- 1957-58, "Asian flu," A (H2N2), caused about 70,000 deaths in the United States. The Asian flu was identified in China in late February 1957, and spread to the United States by June 1957.
- 1968-69, "Hong Kong flu," A (H3N2), caused about 34,000 deaths in the United States. This virus was first detected in Hong Kong in early 1968 and spread to the United States later that year. Influenza A (H3N2) viruses still circulate today.
- 2009-10, Influenza A (H1N1) pdm09, caused 8,870 to 18,300 deaths in the United States, between 195,000 and 403,000 hospitalizations, and between 43 million and 89 million cases of illness (CDC estimates). The virus was first detected in the U.S. in the

spring of 2009, followed by a second wave of activity in the fall of 2009. People younger than 65 years of age were more severely affected than people 65 and older.

Risk groups for severe and fatal infections are not predictable. During annual fall and winter influenza season, infants, elderly, persons with chronic illnesses and pregnant women are usually at higher risk of complications from influenza infections. In the 1918 pandemic, most deaths occurred among young, previously healthy adults. In the 2009 pandemic, most deaths occurred among children and young adults, as well as pregnant women and people with chronic illnesses.

Local jurisdictions must be prepared to rely on their own resources to respond. Influenza pandemics will have a prolonged effect on individual communities (weeks to months) in comparison to other types of disasters.

Recent Novel Influenza

Although it is unpredictable when the next pandemic will occur and what strain may cause it, the continued and expanded spread of a highly pathogenic and now endemic, avian H5N1 virus across much of eastern Asia, Russia and Eastern Europe represents a significant pandemic threat. Human infection from the H5N1 influenza virus was first recognized in 1997 when it infected 18 people in Hong Kong, causing six deaths.

While H5N1 is the greatest current pandemic threat, other avian influenza subtypes have also infected people in recent years. In 1999, H9N2 infections were identified in Hong Kong; in 2003, H7N7 infections occurred in the Netherlands; and in 2004, H7N3 infections occurred in Canada. Such outbreaks have the potential to give rise to the next pandemic, reinforcing the need for continued surveillance and ongoing vaccine development efforts against these strains. Most recently, novel avian influenza H7N9 has appeared in China. Though sustained transmission has not occurred, there is concern that this strain could develop that capability.

Section II: Concept of Operations

General

The national response to a pandemic influenza outbreak will largely reflect the ability of states and local communities to respond. Because of the potential impact of a novel influenza outbreak, and the need to coordinate a number of partners, planning for such an event will be ongoing in Colorado. Lake County will accomplish this through Emergency Support Function #8 (Public Health and Medical Services) as outlined in the [National Response Framework](#), and the Lake County Public Health and Medical Services Annex of which this is a supporting document.

Planning and coordination between Lake County Public Health Agency, the Colorado Department of Public Health and Environment, and the local health care system is critical to assure effective response and quality health care during an increased demand for services that would occur in a pandemic flu situation.

Response to a novel influenza will trigger expansion of ongoing disease control activities and functions within the public health and medical communities. Enhancement of these services may require activation of the Lake County Emergency Operations Center (EOC) and contact with other state and local agencies as part of ESF #8.

Roles and Responsibilities

U.S. Department of Health & Human Services (HHS)

HHS is responsible for nationwide coordination of a pandemic influenza response. During a pandemic HHS will:

- Coordinate response activities with the World Health Organization (WHO) and the international community.
- Provide communication of information related to pandemic influenza.
- Lead national and domestic efforts in surveillance and detection of influenza outbreaks.
- Ensure the provision of essential human services.
- Provide recommendations related to the use, distribution and allocation of countermeasures and to the provision of care in mass casualty settings.
- Support rapid containment of localized outbreaks domestically, and provide guidance to State, local and tribal public health authorities on the use and timing of community infection control measures.
- HHS also supports biomedical research and development of new vaccines and medical countermeasures.⁷

Colorado Department of Public Health and Environment (CDPHE)

CDPHE is responsible to take the role of Lead State Agency for ESF #8 and is responsible for coordination of the novel influenza response statewide and between regional jurisdictions.

During a pandemic CDPHE will:

- Activate the CDPHE Department Operations Center (DOC), and notify the Governor, the Governor's Expert Emergency Epidemic Response Committee (GEEERC), and the Colorado Division of Homeland Security and Emergency Management. CDPHE will collaborate with response agencies in the State Emergency Operations Center to coordinate response activities.
- Maintain situational awareness by monitoring the influenza surveillance data and assessing the public health/medical needs of Colorado.
- Provide data to federal, state, bordering states and LPHAs regarding the influenza status in Colorado.
- Provide guidance, resources and technical assistance to LPHAs, nursing services, Tribal Nations, healthcare entities, and other agencies and organizations on pandemic influenza response, the use of antivirals, and recommendations for the use of limited vaccines.
- Coordinate with the public and private healthcare systems to ensure a cohesive healthcare response network statewide to handle inpatient and outpatient care.
- Provide guidance to healthcare providers, emergency medical services, health facilities, etc., regarding influenza-specific protocols such as decontamination of surfaces and transport vehicles, personal protective equipment (PPE), disease transmission and infection control procedures.
- Develop prioritization and utilization systems for vaccines, antivirals and other scarce resources.

⁷ [National Strategy for Pandemic Influenza Implementation Plan](#), May 2006 Page 114.

- In consultation with the GEEERC, provide guidance for, and coordinate recommendations of, non-pharmaceutical containment measures such as social distancing, quarantine, isolation, “snow days” and limiting or closure of public gatherings.
- Coordinate epidemiologic activities statewide including: data collection, surveillance, detection and management of suspect cases and contact tracing.
- Determine when a request needs to be made for supplies from the Strategic National Stockpile (SNS) and receive, secure, manage, apportion, transport and distribute influenza vaccine and antiviral medications and other needed supplies through Colorado’s SNS program or the immunization program as designated by HHS.
- Coordinate mass fatality management and response including guidance for retrieval, storage and disposition of bodies, death certificates and next of kin notification.
- Coordinate and manage statewide public health and medical volunteers needed to maintain effective pandemic response through the Colorado Volunteer Mobilizer (CVM).
- CDPHE will coordinate timely, accurate and consistent messages to the media, the public and response partners about pandemic influenza planning, response, and recovery.
- Activate a joint information system or center (JIS/JIC) for public health and medical messages, as needed.
- Identify spokesperson(s) responsible for addressing the novel influenza-related public information and media requests.
- Maintain data management systems for tracking resources and information, as well as surveillance activities.
- Document and track all state public health response expenses in real time.
- Coordinate and support resource requests, as appropriate, for equipment, supplies and volunteers with the Colorado Division of Homeland Security and Emergency Management (DHSEM) and CDC.
- Offer public health testing services (such as influenza strain typing) at the CDPHE Laboratory Services Division.

Lake County Public Health Agency (LCPHA)

Lake County Public Health Agency is responsible for coordination of the pandemic influenza response within the county. Specific areas of responsibility include the following:

- Identify and coordinate public and private partners to assist with preparedness activities (planning, training, and exercises) as well as local or regional response to an outbreak.
- Participate in the Lake County EOC to coordinate ESF #8 – Health and Medical activities in response to progressing intervals of the pandemic, as appropriate. Coordinate with the CDPHE DOC and state EOC ESF #8.
- Receive, secure, manage, transport and dispense influenza vaccine and antiviral medications to residents through the SNS program or the immunization program as designated by HHS.
- In conjunction with the county coroner, initiate, coordinate, and support mass fatality response for Lake County. Refer to mass fatality plan if necessary.

- Provide data to CDPHE regarding current status of situation through situation reports, including resource and volunteer requests.
- Identify, train, and equip staff and volunteers to activate a pandemic response upon notification.
- In conjunction with the county public information officer (PIO), coordinate timely, accurate and consistent messages to media, public, and response partners about pandemic influenza planning and response and recovery activities. Participate in a joint information center (JIS/JIC), as appropriate.
- Manage all resources and document/track all expenses in real time.
- Coordinate epidemiologic activities, not handled by CDPHE or Regional Epidemiologist. This may include data collection, surveillance, detection and management of suspect/confirmed cases, detection and management of outbreaks, and contact tracing.
- Request support from the South Central Health Care Coalition (SCHCC) as appropriate.

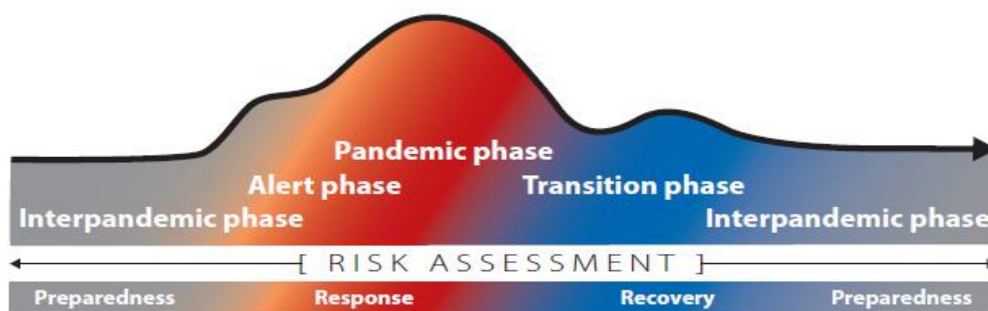
World Health Organization (WHO) Pandemic Phases⁸

The new pandemic influenza phases reflect WHO's risk assessment of the global situation regarding each influenza virus with pandemic potential. These assessments are made initially when new viruses are identified and updated based on evolving virological, epidemiological and clinical data. These phases provide a high-level, global view of the evolving picture. The global phases – interpandemic, alert, pandemic and transition describe the spread of the new influenza subtype, taking account of the disease it causes, around the world. WHO has clearly requested that countries and local jurisdictions develop pandemic risk assessments that are not tied to the WHO phases.

- Interpandemic phase: The period between influenza pandemics.
- Alert phase: Influenza caused by a new subtype has been identified in humans. Increased vigilance and careful risk assessment, at local, national and global levels, are characteristic of this phase. If the risk assessments indicate that the new virus is not developing into a pandemic strain, de-escalation to interpandemic phase may occur.
- Pandemic phase: The spread of human influenza caused by a new subtype is spreading on a global level. Movement between the interpandemic, alert and pandemic phases may occur quickly or gradually as indicated by the global risk assessment.
- Transition phase: As the assessed global risk reduces, de-escalation of global actions may occur, and reduction in response activities or movement towards recovery actions by countries may be appropriate, according to their own risk assessments.

⁸[Pandemic Risk Management, WHO Interim Guidance](#)

Figure 1. The continuum of pandemic phases^a



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

CDC Novel Influenza A Virus Pandemic Intervals⁹

The CDC based its novel influenza intervals on past pandemic transmission and experience from recent events where a novel virus caused limited outbreaks. In the summer months of 2011 to 2013 A (H3N2v) caused outbreaks associated with agricultural fairs and A (H5N1) and A (H7N9) viruses continue to cause limited animal-to-human transmission of virus, in the United States.

The new intervals will allow the United States, state and local governments to determine when to mobilize for a pandemic and when to accept that a virus is locally limited.

Pre-Pandemic Interval Definitions for Lake County

1. Investigation Interval

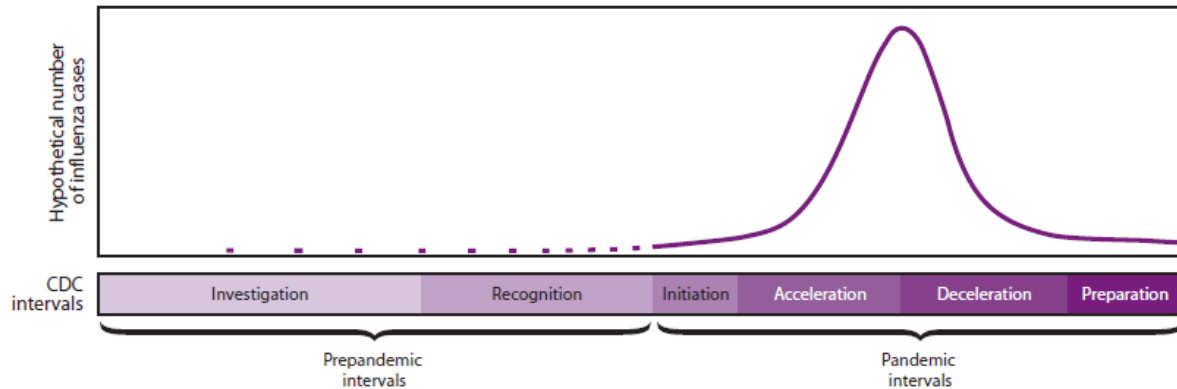
The investigation interval is triggered when a novel influenza A virus is identified in humans or animals anywhere in Lake County. The county actions will focus on targeted surveillance and epidemiologic investigations to identify infections and assess the potential for the virus to cause severe disease in humans. Lake County Public Health will consider isolation of infected humans and animals and possible use of antivirals for ill individuals.

2. Recognition Interval

The recognition interval is indicated when the numbers of human novel influenza A cases increase or appear in clusters anywhere in the county with increased potential for ongoing human-to-human transmission. Actions will continue to focus on case-based control measures including isolation and treatment of ill individuals and voluntary quarantine of contacts.

FIGURE 2: Preparedness and response framework for novel influenza A virus pandemics - CDC intervals.

⁹ The following interval information, figures and tables are a summary of the [CDC Updated Preparedness and Response Framework for Influenza Pandemics](#) and has been modified to pertain to a local response.



Pandemic Interval Definitions

3. Initiation Interval – The beginning of a Pandemic Wave

The initiation interval begins when human cases of a novel virus are confirmed in Lake County with demonstrated efficient and sustained human-to-human transmission. Actions in this interval will focus on increased surveillance for detecting additional cases of the novel virus and continued implementation of case-based control measures and routine personal protective measures. Actions taken will be proportional to the severity of the disease caused by the virus.

4. Acceleration Interval – Acceleration of a Pandemic Wave

This interval indicates that there is a consistently increasing rate of pandemic influenza cases identified and establishes county transmission. Lake County will consider immediate community mitigation measures such as school and child-care facility closures, social distancing, cancelation of events at public venues and use of available medical countermeasures. Isolation and treatment of ill patients and voluntary quarantine of contacts continue to be key mitigation measures.

5. Deceleration Interval – Deceleration of the Pandemic Wave

Deceleration occurs when the number of pandemic influenza cases steadily decreases. During this interval, Lake County will begin planning appropriate suspension of community mitigation measures.

6. Preparation Interval – Preparation for a Subsequent Pandemic Wave

During the preparation interval, there is low pandemic influenza activity, although outbreaks might continue to occur in certain locations. During this interval, Lake County will prepare for another wave of the pandemic.

Section III Activities and Actions

Novel Virus in another Country- Not an Immediate Threat to the United States

When a novel influenza virus is suspected anywhere in the world, Lake County Public Health will monitor the situation through CDPHE and CDC and provide relevant education materials, news releases, information for specific target audiences to educate the community. A medium like the Lake County Office of Emergency Management (OEM) Facebook page is a great method to educate a large portion of the community. Should an influenza message need dissemination, LCPHA should contact the Lake County PIO and or OEM for dissemination on the Facebook page. Other methods of communication include, but are not limited to local news paper, flyers, and community events.

Activities and Actions for Pandemic Influenza in the United States by Interval

For the purposes of this annex, the steps below will start when Lake County is impacted.

Investigation Interval (Table 1)

Investigation interval - Investigation of Novel Influenza A virus in Humans or Animals

Local indicator: Identification of novel influenza A infection in humans or animals in Lake County with potential implications for human health.

Domain	Activities/Actions
Incident Management	Review response plans.
	Coordinate activities and response plans with animal health officials as appropriate.
	Review influenza response with community partners whenever possible, update and adjust as necessary for the situation.
Surveillance and Epidemiology	Maintain and enhance influenza and respiratory virus surveillance systems as needed.
	Coordinate activities with CDPHE surveillance and epidemiology.
Surveillance and Epidemiology (cont.)	Implement case-based investigation of novel influenza infections in humans and animals.
	Assess contacts of ill persons to determine human-to-human transmission and risk factors for infection.
	Report cases to CDPHE, as appropriate.
	If only animal cases are identified, assess human exposures and risks for infection.
	If needed, request support of surveillance systems, field investigation, laboratory, animal control and other resources from CDPHE.
	If needed request laboratory support from CDPHE.
Laboratory	Emphasize the importance of personal protective measures (e.g., voluntary isolation by staying home when ill, respiratory etiquette, and hand hygiene) to limit the spread of the virus. Leverage the county PIO for messaging.
Community Mitigation	If human-to-human transmission is suspected, consider recommending isolation of ill individuals and voluntary quarantine of close contacts (e.g., household members).
	Enhance all influenza pandemic preparedness activities with schools and businesses.
	Based on current recommendations, implement infection-control practices; distribute health advisory notices with information on case definitions and infection-control measures to hospitals and outpatient care centers.
	See Appendix A for World Health Organization recommended actions.

Medical Care and Countermeasures	If human-to-human transmission is suspected, monitor and assist with early access to antivirals for case contacts per current recommendations.
Vaccine	Conduct pandemic preparedness activities with health-care facilities.
	Evaluate and update vaccine distribution and administration plans, the process for rapid contract negotiation and staffing, mechanisms to identify and provide vaccine and document vaccination for critical infrastructure personnel and other possible priority groups for vaccination and plans and staffing for mass vaccination clinics and points of dispensing.
Risk Communication	Frequently update clinicians and veterinarians.
	Share information with key partners, such as animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many members of the community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.
	Disseminate timely and relevant messages to the public as appropriate.
	Work with CDPHE, CDC, USDA and the Food and Drug Administration (FDA) to disseminate messages regarding food safety concerns as appropriate.
Local Coordination	Provide technical assistance as appropriate to regional and local partners for reviewing plans, guidance and communication channels.

Recognition Interval (Table 2)

Recognition Interval – Increased Potential for Ongoing Transmission of Novel Virus

Local indicator: Increasing number of human cases or clusters of novel influenza in Lake County with virus characteristics indicating increased potential for ongoing human-to-human transmission.

Domain	Activities/Actions
Incident Management	Continue or initiate actions described for the investigation interval for all domains.
	Through OEM, consider activation of the EOC, notify CDPHE if activated.
	Forecast future resource needs for a potential response.
Surveillance and Epidemiology	Conduct enhanced novel influenza A surveillance.
	Continue case-based investigation and control using standard methods.
	Report cases as appropriate.
	If animal cases are identified, expand implementation of joint investigation plan with animal officials.
Laboratory	Arrange to confirm all suspected cases at a public health laboratory.
	Prepare specimen triage plans and implement surge plans if needed.

Community Mitigation	Prepare for implementation of community mitigation measures, in addition to voluntary home isolation of ill persons, respiratory etiquette, hand hygiene and infection control. These might include voluntary home quarantine of contacts, use of facemasks, temporary closure of childcare facilities and schools and social distancing measures. See Appendix A for World Health Organization recommended actions.
Medical Care and Countermeasures	Consider implementation of voluntary contact prophylaxis based on current recommendations.
	Educate clinicians about recommended treatment, prophylaxis and infection-control guidelines.
	Initiate contact with CDPHE regarding the potential receipt and distribution of Strategic National Stockpile (SNS) medical countermeasures and supplies, as appropriate.
	Assess impact on medical care facilities; Identify whether medical resources are sufficient to manage ill persons and conduct case-based control efforts; request assistance through CDPHE if needed.
Vaccine	Prepare for vaccine availability and vaccine campaign; refine vaccine distribution and administration plans, including mass vaccination initiatives and coordination with pharmacies and other groups, as appropriate.
	Consider enrolling health-care providers and pharmacies, to promote vaccine access to persons in all indicated age and risk groups, and identify and vaccinate critical infrastructure personnel.
	Ensure that all identified vaccinators are authorized, and review policies and procedures regarding identification, authorization and training of nontraditional vaccinators.
Vaccine (cont.)	Confirm vaccine providers have access to the Colorado immunization information system (CIIS) or alternative systems.
	Review capacity and capabilities of CIIS for use by vaccine providers and in mass vaccination clinics for the required dosing schedule anticipated (1 or 2 doses with or without adjuvant).
Risk Communication	Update a media relations and outreach plan.
	Disseminate risk communication messages, including what is known, what is not known and what is being done by public health officials.
	Disseminate messages for travelers, as well as community mitigation messages, when to seek care and how to care for ill persons at home, as appropriate.
	Conduct briefings with local/regional response partners, businesses, tribes and health-care facilities on the potential for escalation, response actions underway and preparedness steps that partners should consider.
	Work with CDPHE to disseminate messages to address food safety concerns as appropriate.
	Share information with key partners, such as animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many members of the

	community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.
Local Coordination	Continue to coordinate with all partners.

Initiation Interval (Table 3)
Initiation Interval - Initiation of Pandemic Wave

Local Indicator: Confirmation of human cases of a pandemic influenza virus in Lake County with demonstrated efficient and sustained human-to-human transmission.

Domain	Activities/Actions
Incident management	Continue or initiate actions described for the recognition interval.
	If not done so already through OEM, consider activation of the EOC, notify CDPHE if activated.
	Consider declaring a public health emergency.
	Continue to communicate situational awareness and needs to CDPHE.
Surveillance and Epidemiology	If affected, continue enhanced surveillance; conduct case investigation and response.
Community Mitigation	Consider implementing appropriate community mitigation measures in selected affected locations or institutions as indicated by the results of the Pandemic Severity Assessment Framework. ¹⁰ See Appendix A for World Health Organization recommended actions.
Medical Care and Countermeasures	Monitor the surge in health-care needs and assess whether assistance is needed to mitigate the surge.
	Review and prepare to execute a mass fatality plan.
	Request supplies from CDPHE if needed.
Medical Care and Countermeasures (cont.)	Consider implementation of voluntary quarantine of contacts and use of antivirals for exposed persons based on current recommendations.
Vaccine	Update the distribution plan based on CDC and CDPHE prioritization guidelines, estimated local allocation of vaccine, and epidemiology of pandemic influenza.
Risk Communication	Disseminate updated risk messages, including providing anticipatory guidance or information on what might be expected.
	Share information regarding antivirals and the possibility of implementation of community mitigation measures as appropriate.
	Continue to provide regular updates to key partners, stakeholders, elected officials and the media. Key partners include animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many

¹⁰ For additional information, refer to Interim Pre-pandemic Planning Guidance: Community [Strategy for Pandemic Influenza Mitigation in the United States - Early, Targeted, Layered Use of Nonpharmaceutical Interventions](#).

	members of the community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.
Local Coordination	Continue to coordinate with CDPHE and other partners.
	Prepare to receive funds to support response, if available.

Acceleration Interval (Table 4)
Acceleration Interval - Acceleration of Pandemic Wave

Local indicator: Consistently increasing rate of pandemic influenza cases identified, indicating established transmission in Lake County.

Domain	Activities/Actions
Incident Management	Continue or initiate actions described for the initiation interval.
	Maintain processes to monitor effectiveness of response.
Surveillance and Epidemiology	Transition surveillance from individual case identification to severe disease and syndromic/aggregate surveillance as appropriate.
	Monitor for changes in epidemiology.
Laboratory	Send only a sample of cases to the CDPHE laboratory for confirmation as required for virologic surveillance.
	Implement revised specimen submission protocol per CDC guidance as appropriate.
Community Mitigation	Consider activating (if not already implemented) or expanding (if already implemented) appropriate community mitigation measures for affected communities (such as temporary closure of childcare facilities and schools, workplace social distancing measures and postponement or cancellation of mass gatherings). See Appendix A for World Health Organization recommended actions.
	Monitor effectiveness of community mitigation measures.
	Monitor adverse impact of community mitigation measures on society, and coordinate with local response agencies to address the impact, if possible.
Medical Care and Countermeasures	Monitor and respond to surge in health-care needs, including the possible set-up of alternative care sites.
	Educate clinicians and the public about the need for prompt treatment of ill persons.
Medical Care and Countermeasures (cont.)	Review and prepare to execute mass fatality plan.
	Monitor antiviral use to identify possible shortages and report to CDPHE.
	Continue to request needed supplies from CDPHE.
Vaccine	Implement vaccination campaigns if newly developed antigen-specific pandemic vaccine is available.
	Monitor vaccination coverage levels and adverse events.
	Disseminate updated risk messages.

Risk Communication	Share updated information regarding vaccine.
	Continue to provide regular updates to CDPHE, partners, stakeholders, elected officials and the media. Key partners include animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many members of the community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.
Local Coordination	Continue to coordinate with all partners.
	Support maintenance of critical infrastructure and key resources as appropriate.

Deceleration Interval (Table 5)
Deceleration Interval - Deceleration of Pandemic Wave

Local indicator: Consistently decreasing rate of pandemic influenza cases in Lake County.

Domain	Activities/Actions
Incident Management	Continue actions described for the acceleration interval as appropriate.
	Review plans, and evaluate whether response activities are proportionate to the situation.
Surveillance and Epidemiology	Continue severe disease and syndromic/aggregate surveillance.
	Monitor for changes in epidemiology.
Laboratory	Provide laboratory confirmation of only a sample of cases as required for virologic surveillance.
	Submit a sample of viruses or specimens to CDC per CDC guidance on revised specimen submission.
Community Mitigation	Assess, plan for and implement targeted cessation of community mitigation measures if appropriate. See Appendix A for World Health Organization recommended actions.
Medical Care and Countermeasures	Initiate targeted cessation of surge capacity strategies as appropriate.
	Maintain aggressive infection-control measures in the community.
Vaccine	Continue vaccination response as appropriate.
Risk Communication	Disseminate updated risk messages.
	Provide information on measures to prepare for and respond to possible additional pandemic waves.
	Continue to inform key partners. Key partners include animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many members of the community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.

Local Coordination	Continue to coordinate with all partners.
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Preparation Interval (Table 6)
Preparation Interval - Preparation for Future Pandemic Waves

Local indicator: Low pandemic influenza activity with possible continued outbreaks in Lake County.

Domain	Activities/Actions
Incident Management	Continue actions described for the deceleration interval as appropriate.
	Prepare for subsequent waves.
	Create an after action report to document lessons learned.
Surveillance and Epidemiology	Continue case confirmation of selected cases to monitor progress of the pandemic and to detect acceleration to the next wave.
	Begin conducting routine interpandemic surveillance.
Laboratory	Return to routine interpandemic virologic surveillance.
	Assess and optimize laboratory capacity.
Community Mitigation	Modify community mitigation measures as necessary. See Appendix A for World Health Organization recommended actions.
	Continue to promote community mitigation preparedness activities on standby for a subsequent wave.
Medical Care and Countermeasures	Replenish stockpiles or caches as able.
	Monitor antiviral dispensing and usage trends.
	Monitor medical surge trends.
Vaccine	Continue to vaccinate, with a focus on hard-to-reach populations.
	Participate in vaccine recovery as appropriate.
Risk Communication	Disseminate updated risk messages, including information on measures to prepare for and respond to possible additional pandemic waves.
	Continue to disseminate information to key partners. Key partners include animal and human health, public information officers, school district and colleges, OEM, and other agencies or organizations who have contact with many members of the community (Climax mine, Ski Cooper, etc.). Frequency of communication should be at a frequency commensurate with seriousness of sickness within the community.
Local Coordination	Continue to coordinate with all partners.

Section IV: Recovery

Recovery will include getting back to normal while still planning for another wave of the virus. Lake County Public Health Agency will work with partners to determine when restrictions should be lifted and when to suspend the public health emergency declaration. Lake County Public Health Agency will continue to support vaccinations in the community to mitigate the possibility of a second wave and to prepare the community for the next seasonal influenza that may include part of the novel pandemic virus. If SNS assets were requested, PODs and transfer points should be demobilized. Lake County Public Health Agency will inventory supplies and make decisions on what will be returned and what will be used to restock caches. Lake County will begin the process of writing the after action report to compile lessons learned and acknowledge the organizations and individuals that were key to the pandemic operation. Recovery from a novel virus pandemic will require the gathering of all financial information on the costs of the pandemic and for replacing supplies and equipment. Lake County will apply for FEMA reimbursement funds and for any other funding available to aid with recovery.

Resources

Lake County Public Health and Medical Services Annex

Lake County Public Health Mass Immunization Plan

Lake County Public Health Mass Fatality Plan

Lake County Public Health Medical Surge Plan

CDC - Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States - Early, Targeted, Layered Use of Nonpharmaceutical Interventions - <http://stacks.cdc.gov/view/cdc/11425>.

CDC - Pandemic Flu Preparedness Tools - <http://www.cdc.gov/flu/pandemic-resources/tools/>.
FluAid 2.0
FluSurge 2.0
FluLabSurge 1.0
FluWorkLoss 1.0

CDC - Updated Preparedness and Response Framework for Influenza Pandemics 2014 - <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6306a1.htm>.

CDC Updated Preparedness and Response Framework for Influenza Pandemics – May 2006 - <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6306a1.htm>.

CDC – Key Facts About Influenza (Flu) and Flu Vaccine - <http://www.cdc.gov/flu/keyfacts.htm>.

CDC Resources for Pandemic Flu - <http://www.cdc.gov/flu/pandemic>

Center for Infectious Disease Research and Policy (CIDRAP) - <http://www.cidrap.umn.edu/infectious-disease-topics/pandemic-influenza>.

Homeland Security Council National Strategy for Pandemic Influenza; Nov. 2005 - <http://www.flu.gov/planning-preparedness/federal/hhspandemicinfluenzaplan.pdf>.

[Pandemic Risk Management, WHO Interim Guidance 2013 -
http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf?ua=1.](http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf?ua=1)

U.S. Department of Health and Human Services Plan for Pandemic Influenza; Dec. 2005 - <http://www.flu.gov/planning-preparedness/federal/hhspandemicinfluenzoplan.pdf>.

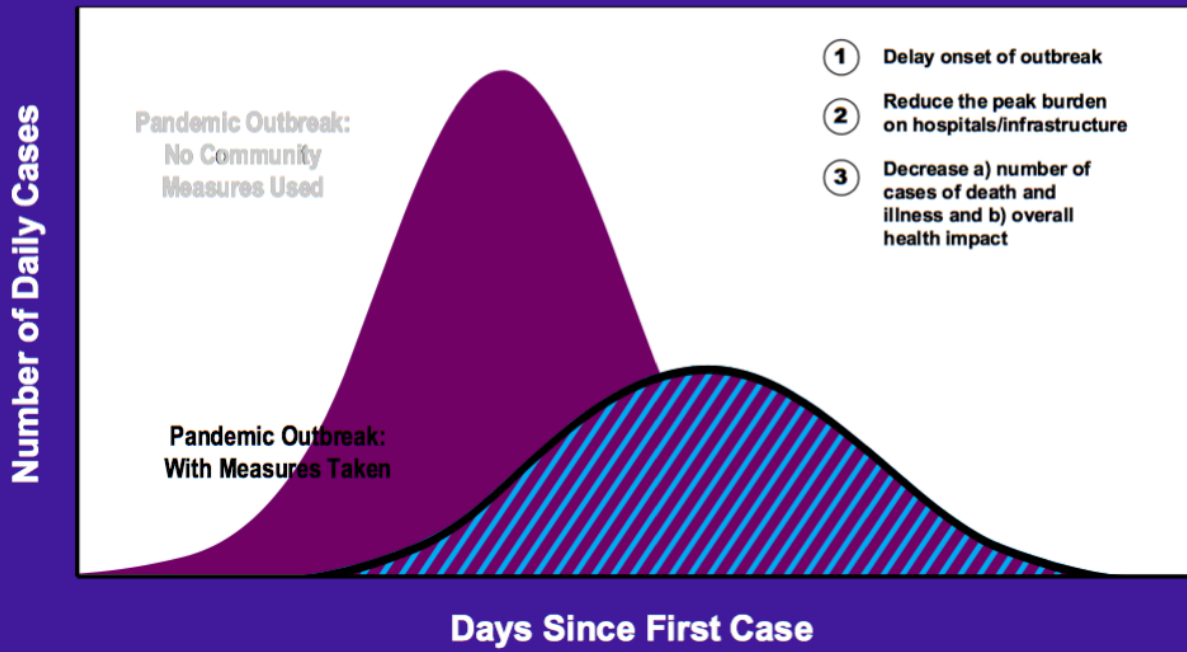
US census estimates for 2013; <http://quickfacts.census.gov>

Pandemic Awareness - <http://www.flu.gov/>.

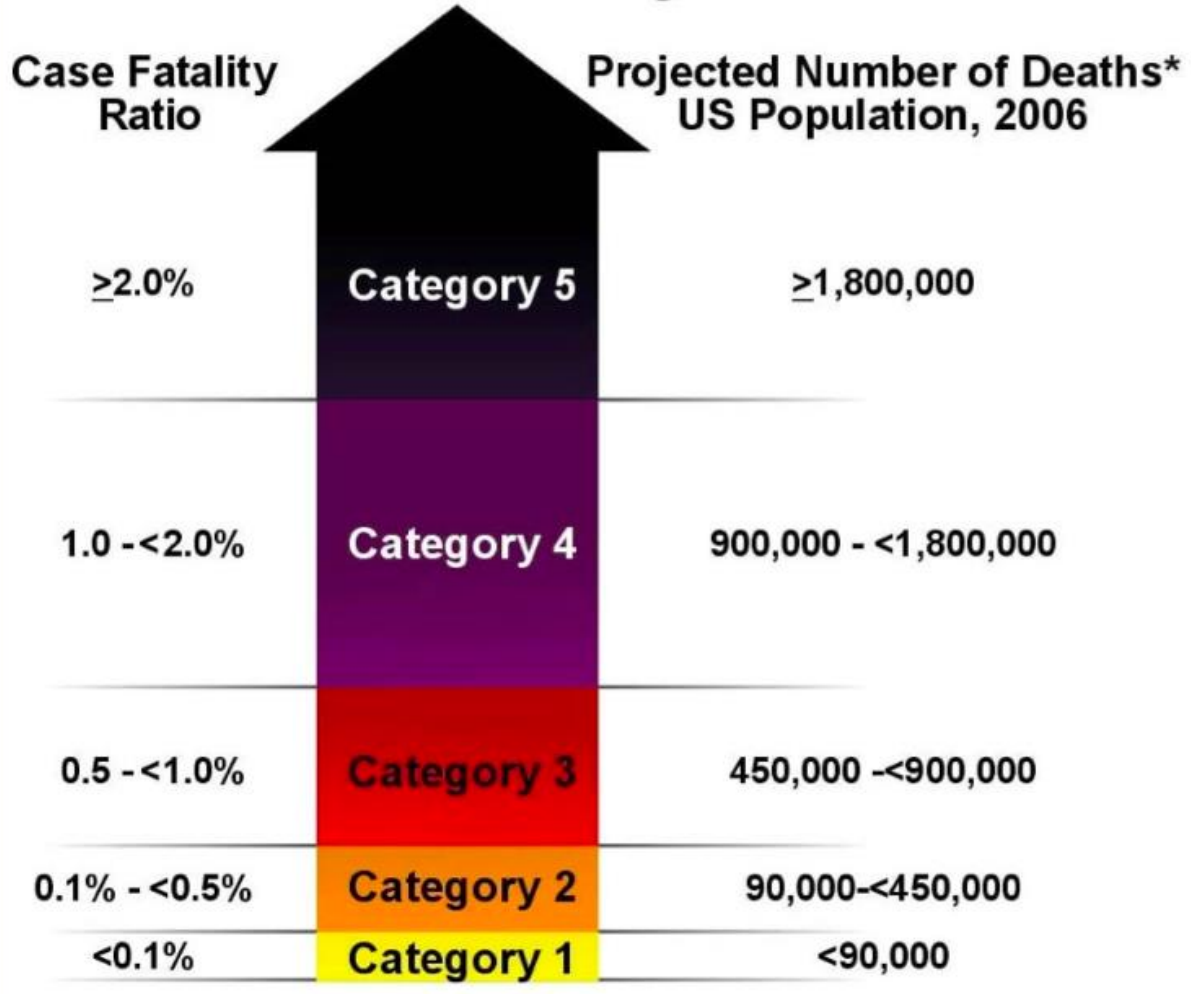
WHO Global Pandemic Phases and the Stages for Federal Government Response

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

Goals of Community Measures



Pandemic Severity Index



* Assumes 30% Illness Rate

