

Arkansas Responds

Arkansas Influenza Pandemic Response Plan

25 July 2014



Arkansas Department of Health

Approvals

This Arkansas Influenza Pandemic Response Plan was prepared by the Arkansas Department of Health (ADH) to develop, implement and maintain a viable Influenza Pandemic Response capability. This Arkansas Influenza Pandemic Response Plan complies with applicable internal department policy, local and state regulations, and supports recommendations provided in the Federal Emergency Management Agency's Federal Preparedness Circular 65. This Arkansas Influenza Pandemic Response Plan has been distributed internally within the ADH.



Approved

N. Smith

Date:

8-11-2014

Nathaniel Smith, M.D., MPH
Director, Arkansas Department of Health

**Influenza Pandemic Response Plan
Arkansas Department of Health**

Table of Contents

Influenza Pandemic Response Plan Arkansas Department of Health..... 3

Introduction..... 7

World Health Organization Phases for Pandemic Influenza 9
 WHO Pandemic Phases 9

Situation and Assumptions 11
 Assumptions..... 11

Concept of Operations 13
 Federal..... 13
 State..... 13
 Local 13

Direction and Control 14

Authority and References 15
 References..... 15
 Control of Infectious Diseases 15
 Volunteers 16

Surveillance and Epidemiology 19
 Human Surveillance 19
 Case Identification 19
 Avian Influenza Surveillance..... 21
 Activities by WHO Pandemic Period 22

Laboratory Diagnostics 23
 Laboratory Reporting..... 23
 Current Capacity 23
 Surge Capacity 24

Health Care Coordination and Surge Capacity 25
 Rationale 25
 Planning 25
 Activities by WHO Pandemic Period 26

Infection Control..... 27
 Modes of Transmission..... 27
 Pathogenesis of Influenza and Implications for Infection Control 29

Control of Transmission in Healthcare Facilities	29
Summary of Recommendations for Expanded Precautions.....	29
Source: http://www.cdc.gov/sars/guidance/I-infection/app2.pdf	29
Infection Control in Healthcare Settings	30
Recommendations for Infection Control in Healthcare Settings	30
Component	30
Recommendations	30
Recommendations for Infection Control in Schools and Workplaces	47
Recommendations for Infection Control in Community Settings	48
Healthcare Providers Play an Essential Role	54
Rationale	54
Overview	54
Clinical Guidelines for the Interpandemic and Pandemic Alert Periods	55
Clinical Guidelines for the Pandemic Period.....	60
Complications of Illnesses Associated with Avian Influenza A (H5N1) and Previous Pandemic Influenza Viruses.....	77
Vaccine Distribution and Use	82
Assumptions.....	82
Annual Vaccinations	82
Vaccine Priority Groups	82
Vaccine Distribution	84
Adverse Reactions and Investigational New Drugs (INDs).....	85
Communication.....	85
Border Issues.....	86
Activities by WHO Pandemic Period	86
Appendix 1: Vaccine Adverse Event Reporting System	87
Vaccine Distribution and Use	87
Appendix 2Estimated Number of Essential Workers in Arkansas.....	90
Vaccine Distribution and Use Appendix 2.....	90
Antiviral Drug Distribution and Use.....	91
Use of Antivirals.....	91
Antiviral Drug Priority Groups.....	92
Distribution	93
Activities by WHO Pandemic Period	93
Community Disease Control and Prevention.....	94
Rationale	94
Definitions.....	94
Non-Medical Containment Measures	95
Isolation.....	95
Contact Tracing and Management	95
Quarantine.....	97

Other	98
Determinants for the Use of Community Containment Measures	99
Scaling Back Containment Measures	100
Non-medical Containment Measures.....	102
Roles and Responsibilities	106
Community Disease Control and Prevention.....	101
Evaluation Factors for Quarantine Facilities: Appendix 1	101
Home Quarantine	101
Community-based Facility Quarantine	101
Community Disease Control and Prevention Appendix 2.....	102
Community Disease Control and Prevention Appendix 3.....	103
Community Disease Control and Prevention Appendix 4.....	104
Community Disease Control and Prevention Appendix 5.....	106
Community Disease Control and Prevention Appendix 6.....	107
Community Disease Control and Prevention Appendix 7.....	108
Community Disease Control and Prevention Appendix 8.....	110
Therefore, the Department is placing you under a home quarantine order. While this order is in effect, you are required to remain in your home and comply with the following provisions:.....	110
I have read and understand the above Quarantine Order.....	112
Community Disease Control and Prevention Appendix 9.....	113
Therefore, the Department is placing you under a quarantine order. While this order is in effect, you are required to remain in the place designated by the Department and comply with the following provisions:	113
I have read and understand the above Quarantine Order.....	115
Community Disease Control and Prevention Appendix 10.....	116
Management of Travel-related Risk of Disease Transmission	119
Rationale	119
Preparing for Travel-related Containment Measures.....	119
Managing Ill Travelers at Airports	120
Communication.....	121
Introduction.....	121
Communication Goals and Concepts.....	121
Rules Governing Disclosure of Patient Information during a Pandemic.....	122
Roles and Responsibilities for the Arkansas DHHS Office of Communications during a Pandemic.....	123
Communication Tools/Resources	131
Communications Plan Exercise	134
Activities by WHO Pandemic Period	134
Workforce Support and Psychosocial Considerations.....	136
Rationale	136
Psychosocial, Behavioral, and Cognitive Issues	136

Animals and Their Care:..... 139
Communication and Training:..... 141
Activities by WHO Pandemic Period 141
Workforce Support and Psychosocial Consideration Appendix 1..... 142
Workforce Support and Psychosocial Consideration Appendix 2..... 143
Workforce Support and Psychosocial Consideration Appendix 3..... 144

Acronyms 146

Introduction

It is likely that another influenza pandemic will occur sometime in the future. Influenza pandemics struck three times in the 20th century causing varying degrees of illness and death over annual influenza outbreaks. Globally, the 1918 Pandemic, often referred to as the Spanish Flu, killed 20-40 million people worldwide, causing catastrophic social disruption. This figure is more than the number killed on the battlefields of Europe during World War I. It has been cited as the most devastating epidemic in recorded world history.

In the United States alone the next pandemic could cause an estimated 89,000–207,000 deaths, 314,000–734,000 hospitalizations, 8,870–18,300 deaths, 18–42 million outpatient visits, and 20–47 million subclinical illnesses.

Arkansas: 2010 US Census data for Arkansas population Number of Episodes of Illness

Arkansas: Number of Episodes of Illness, Healthcare Utilization, and Death Associated with Moderate and Severe Pandemic Influenza Scenarios (1, 2, and 3)

Characteristic	Moderate (1957/68-like)	Severe (1918-like)
Illness	874,775 (30% of population)	874,775 (30% of population)
Outpatient medical care	437,388 (50% of ill)	437,388 (50% of ill)
Hospitalization	4,374 (1% of ill)	48,113 (11% of ill)
ICU care	656 (15% of hospitalized)	7,217 (15% of hospitalized)
Mechanical ventilation	328 (50% of ICU)	3,609 (50% of ICU)
Deaths	2,012 (0.23% of ill)	18,370 (2.1% of ill)

- 1 These data are derived from the November 2005 HHS Pandemic Influenza Plan. Estimates were based on extrapolation from past pandemics in the United States. These estimates do not include the potential impact of interventions not available during the 20th century pandemics. Using 2010 US Census data for Arkansas population (2,915,918), categorical data was scaled to the HHS data to provide state data.
- 2 Column totals do not necessarily equal the sum for the total population because numbers have been rounded.
- 3 A pandemic outbreak may last about 6 to 8 weeks. The above data reflect the number of persons affected during this time frame.

According to the World Health Organization (WHO), “An influenza pandemic occurs when a new influenza virus subtype appears, against which no one is immune.” Previous pandemics have spread worldwide within months, and, today, the influenza virus is able to spread even more quickly because of modern travel.

The Arkansas Influenza Pandemic Response Plan, thereafter referred to as (the Plan) was developed to promote an effective coordinated response to the numerous cases of influenza expected in Arkansas in the event of a pandemic. The goals of the Plan include limiting illness and death, preserving continuity of operations in government/business, and minimizing social disruption and economic loss.

The Plan gives general information and guidance about public health policies, concepts, and activities employed in the event of an influenza pandemic. The Plan is dynamic and will be updated in response to changes in planning assumptions, response capacities, or information on

potential pandemic strains and disease. The Plan gives consideration to the following:

- Influenza Surveillance and Epidemiology
- Laboratory Diagnostics
- Planning for Health Care Coordination and Surge Capacity
- Guidance on Infection Control and Clinical Guidelines for Patient Management
- Vaccine Distribution and Use
- Antiviral Drug Distribution and Use
- Community Disease Control and Prevention
- Management of Travel-related Risk of Disease Transmission
- Public Health Communication
- Workforce Support and Psychosocial Considerations

World Health Organization Phases for Pandemic Influenza

The World Health Organization (WHO) has developed a staged plan, based on its surveillance program, for responding to a pandemic threat. Recognition of a novel influenza strain in humans triggers a series of responses identified as phases that can ultimately lead to the declaration of a pandemic.

Interpandemic activities are designated as Phases 1 and 2 in which an animal influenza virus is circulating and could pose a substantial risk of human disease. Phases 3, 4, and 5 are considered the pandemic alert period. These phases describe difficult to spread human-to-human transmission. Phase 6 is the onset of the pandemic. More than one wave of infection can occur in a pandemic, possibly due to seasonal influences and the existence of a large pool of susceptible individuals in the population.

WHO Pandemic Phases

Phase	Definition
<i>Interpandemic Period</i>	
Phase 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 infection or disease is considered to be low.
Phase 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.
The distinction between <i>Phase 1</i> and <i>Phase 2</i> is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction is based on various factors and their relative importance according to current scientific knowledge. Factors may include pathogenicity in animals and humans, occurrence in domesticated animals and	
<i>Pandemic Alert Period</i>	
Phase 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.
Phase 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.
Phase 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).
The distinction between <i>Phase 3</i> , <i>Phase 4</i> and <i>Phase 5</i> is based on an assessment of the risk of a pandemic. Various factors and their relative importance according to current scientific knowledge may be considered. Factors may include rate of transmission, geographical location and spread, severity of illness, presence of genes from human strains (if derived	
<i>Pandemic Period</i>	
Phase 6	There is increased and sustained transmission in general population. While the increase in outbreak activity in the initially affected countries or regions has stopped or reversed, outbreaks and epidemics of the new virus are still occurring elsewhere.

Phase	Definition
Second or Later Waves	<p>Based on past experiences, at least a second severe wave of outbreaks caused by the new virus would be expected to occur within 3-9 months of the initial epidemic in many countries.</p> <p>According to the Centers for Disease Control and Prevention (CDC), the influenza virus sweeps through the population once, infecting roughly 30% of the population, then circulates again among those not infected the first time. This may occur because of the relatively lower level of population immunity. Influenza viruses are circulating year-round in tropical regions with low levels of circulation during the summer in the U.S. This may permit evolution of the virus' H and N proteins (antigenic drift) to better adapt to infecting more people.</p>
End of the Pandemic	<p>WHO will report when the Pandemic Period has ended, which is likely to be after 2-3 years. The indications for this will be that indices of influenza activity have returned to essentially normal interpandemic levels and that immunity to the new virus subtype is widespread in the general population.</p>

Situation and Assumptions

Situation

Influenza pandemics are expected, but unpredictable. Outbreaks can be expected to occur simultaneously throughout much of the U.S., preventing shifts in human and material resources that usually occur in the response to other disasters. Many geographic areas within the state, or the entire state, may be affected simultaneously.

Assumptions

The following assumptions were adapted from those developed by the U.S. Department of Health and Human Services, based largely on the 1918 influenza epidemic, for use throughout federal government as a severe case scenario. The Arkansas Plan also uses the same assumptions in the planning scenarios

1. Susceptibility to the pandemic influenza virus will be universal.
2. Efficient and sustained person-to-person transmission signals an imminent pandemic.
3. The clinical disease attack rate will likely be 30% or higher in the overall population during the pandemic. Illness rates will be highest among school-aged children (about 40%) and decline with age. Among working adults, an average of 20% will become ill during a community outbreak.
 - 3.1 Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection and develop immunity to subsequent infection.
4. Effective preventive and therapeutic pharmaceuticals (vaccines and antiviral medications) may be in short supply or arrive in phases if available at all.
5. Of those who become ill with influenza, 50% will seek outpatient medical care.
 - 5.1 With the availability of effective antiviral drugs for treatment, this proportion may be higher in the next pandemic.
6. 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 suggesting that 11% of those who become ill will require hospitalization and 2% of the ill will die.
 - 6.1 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.
7. Rates of absenteeism will depend on the severity of the pandemic.

- 7.1 In a severe pandemic, absenteeism attributable to illness, the need to care for ill family members and fear of infection may reach 40% during the peak weeks of a community outbreak, with lower rates of absenteeism during the weeks before and after the peak.
- 7.2 Certain public health measures (closing schools, quarantining direct contacts of infected individuals, “snow days”) are likely to increase rates of absenteeism.
8. The typical incubation period (interval between infection and onset of symptoms) for influenza is approximately 2 days.
9. Persons who become ill may shed virus and can transmit infection for up to two days before the onset of illness. Viral shedding and the risk of transmission will be greatest during the first 2 days of illness. Children usually shed the greatest amount of virus and therefore are likely to pose the greatest risk for transmission.
10. On average, infected persons will transmit infection to approximately 2 other people
11. In an affected community, a pandemic outbreak will last about 6 to 8 weeks.
12. Multiple waves (periods during which community outbreaks occur across the country) of illness could occur with each wave lasting 2-3 months. Historically, the largest waves have occurred in the fall and winter, but the seasonality of a pandemic cannot be predicted with certainty.

Concept of Operations

The Arkansas Department of Health is the state government entity responsible for containing and controlling disease outbreaks via power conferred by the State Board of Health (Arkansas Code 20-7-109, 2000).

Federal, state, and local responses to an influenza pandemic include:

Federal

As the pandemic develops, the World Health Organization (WHO) will notify the Centers for Disease Control and Prevention (CDC) and other national health agencies on the progress of the pandemic. CDC will communicate with ADH and other state and territorial health departments about pandemic status, information about the virus, vaccine availability, recommendations for prioritizing vaccine and antivirals/antibiotics, national response coordination and other recommended strategies for pandemic detection, control and response.

State

The Governor may declare a state of emergency and activate the Emergency Operation Center (EOC) at the Arkansas Department of Emergency Management (ADEM).

State Government responsibilities are described in the Arkansas Emergency Operations Basic Plan.

ADH is the lead agency in the event of an influenza pandemic and has the power to contain and control disease outbreaks (Arkansas Code 20-7-109, 2000). The State Health Officer may choose to initiate the Arkansas Influenza Pandemic Response Plan and the ADH EOC and/or to request the Strategic National Stockpile.

ADH will receive support in performing functions related to the influenza pandemic from other state agencies and organizations as outlined in the State Agency Emergency Function and Responsibility Chart of the Arkansas Emergency Operations Plan (EOP).

Local

Local government responsibilities are described in the State Emergency Operations Basic Plan and local EOPs. If the situation warrants, local officials will activate a local EOC.

Direction and Control

The Infectious Disease Branch (IDB) of the Arkansas Department of Health (ADH) maintains situational awareness of reports of pandemic influenza internationally and nationally as well as conducts surveillance within Arkansas. IDB provides guidance and direction in the management of communicable disease outbreaks. At the outset of a pandemic, the information and guidance provided by IDB will enable the State Health Officer to make a determination on activation of the ADH Emergency Operations Center (EOC) for enhancing a coordinated response to the pandemic. Information and guidance from IDB will also serve to advise Arkansas Department of Emergency Management (ADEM) and the Governor and may result in the Governor declaring a public health emergency.

Such an action may lead to the activation of the EOC at ADEM. The State Health Officer may choose to initiate the Influenza Pandemic Response Plan and activate the Arkansas Department of Health EOC.

The ADH incident management structure is compliant with the National Incident Management Systems (NIMS). In the event of an emergency, the Incident Commander will coordinate ADH responsibilities and activities as outlined in the ADH Major Disaster and Incident Response Plan (MDIRP).

ADEM will coordinate requests for resources. After the primary wave of influenza has passed, they will be the lead agency for the recovery effort.

Authority and References

Authority

- Act 96 of 1913, Arkansas Code Title 20, Arkansas Public Health Act
- Arkansas Code 20-7-109 and 110, Authority to Regulate Public Health and to Prevent Disease
- Arkansas Code 12-75-109, Emergency Management Personnel Immunity
- Arkansas Code 16-6-105, Volunteer Immunity
- Arkansas Code 17-95-101(a), Good Samaritan Law
- Arkansas Code 19-10-305(a), State Employee Immunity

References

- Arkansas State Board of Health Rules and Regulations
- Major Disaster and Incident Response Plan (MDIRP)
- United States Department of Health and Human Services Pandemic Influenza Plan (November 2005)

Control of Infectious Diseases

Ark. Code Ann. §20-7-109 and 110 as well as Rules and Regulations Pertaining to Communicable Disease (http://www.healthylarkansas.com/rules_regs/rules_regs.htm) define authority to control infectious diseases.

Section VII of the Rules and Regulations Pertaining to Communicable Disease permits the Director of Health to require forced inoculation to quell or contain an epidemic.

Rules and Regulations Pertaining to Communicable Disease define a complete or modified quarantine as well as surveillance and isolation.

The Governor has the statutory authority in the declaration of an emergency to close businesses and schools (Ark. Code Ann. §12-75-103).

There are separate laws granting immunity to volunteers (Ark. Code Ann. §12-75-109). 20-7-109. Authority to regulate public health -- Exceptions

- (a) (1) Power is conferred on the State Board of Health to make all necessary and reasonable rules and regulations of a general nature for the protection of the public health and safety; for the general amelioration of the sanitary and hygienic conditions within the state; for the suppression and prevention of infectious, contagious, and communicable diseases; for the proper enforcement of quarantine, isolation, and control of such diseases; and for the proper control of chemical exposures that may result in adverse health effects to the public.
- (2) All rules and regulations promulgated pursuant to this subsection (a) shall be reviewed by the House and Senate Interim Committees on Public Health, Welfare, and Labor or appropriate subcommittees thereof.
- (b) However, if a patient can be treated with reasonable safety to the public health, he shall not be removed from his home without his consent, or the consent of the parents or guardian in the case of a minor, and the rules and regulations, when made, shall be printed in pamphlet form, with such numbers of copies as may be necessary for the

distribution of the information to health bodies, health and sanitary officers, and the public generally.

- (c) The board shall not regulate the practice of medicine or healing nor interfere with the right of any citizen to employ the practitioner of his choice.

20-7-110. Study and prevention of diseases

- (a) (1) The State Board of Health shall have general supervision and control of all matters pertaining to the health of the citizens of this state.
- (2) The board shall make a study of the causes and prevention of infectious, contagious, and communicable diseases, and except as otherwise provided for in this act, it shall have direction and control of all matters of quarantine regulations and enforcement. It shall have full power and authority to prevent the entrance of such diseases from points outside the state.
- (3) The board shall also have direction and control over all sanitary and quarantine measures for dealing with all infectious, contagious, and communicable diseases within the state and direction and control to suppress them and prevent their spread.
- (b) Whenever the health of the citizens of this state is threatened by the prevalence of any epidemic or contagious disease in this or any adjoining state and, in the judgment of the Governor of this state, the public safety demands action on the part of the board, then the Governor shall call the attention of the board to the facts and order it to take such action as the public safety of the citizens demands to prevent the spread of the epidemic or contagious disease.

Volunteers

Each layer of State and Local governments has the option of hiring, deploying or contracting for additional emergency personnel to help in the event of a declaration under the Stafford Act for emergency work. *Robert T. Stafford Relief and Emergency Assistance Act*, as amended 42 USC

§5121-5206, implementing regulations are found at 44 CFR Part 206. Under the Stafford Act both an Emergency and Major Disaster were declared by the Secretary of HHS and the President as a result of the aftermath of the Hurricanes.

Ark. Code Ann. 12-75-109

- (4)(A) Such persons shall only be called to active duty upon declaration of a disaster emergency as stipulated in §[12-75-101](#) et seq. or the Disaster Relief Act of 1973, Pub. L. No. 93-288, or both, or by executive order of the Governor upon recommendation by the director for due cause or pending emergency needs and shall remain on active duty no longer than sixty (60) days after a declaration or declarations unless such declaration or declarations are extended by the Governor or the President of the United States, in which case they shall be continued for no more than sixty (60) days after the final declaration issued for that disaster emergency event.
- (B) Based on the size, impact, and magnitude of the disaster event, the director shall determine the minimum number of reserve personnel required to effectively supplement regular state emergency management personnel and report these numbers to the Governor for approval.

- (5) While in such service, the individuals so employed shall have the same immunities as regular state employees for good faith performance of their designated and assigned official duties under state sovereignty laws and practices.
- (A) Regular State employees are entitled to immunity under Art. 5 Section 20 of the Arkansas Constitution and Ark. Code Ann. §19-10-305(a). Officers and employees of the State of Arkansas are immune from liability and from suit, except to the extent that they may be covered by liability insurance, for damages for acts or omissions, other than malicious acts or omissions, occurring within the course and scope of their employment.

Federal Declaration of a Public Health Emergency

The Secretary of Health and Human Services (HHS) has the authority to declare a public health emergency under section 319 of the Public Health Act (42 USCA 247d). On August 31, 2005, Secretary Leavitt declared a public health emergency pursuant to this section in response to the aftermath of Hurricane Katrina. This declaration vests the Secretary with certain spending powers to issue grants and provide response assistance.

Relevant statutory language is as follows:

“If the Secretary determines, after consultation with such public health officials as may be necessary, that-

- (1) A disease or disorder presents a public health emergency; or
- (2) A public health emergency, including significant outbreaks of infectious diseases or bioterrorist attacks, otherwise exists; the Secretary may take such action as may be appropriate to respond to the public health emergency.”

Liability Protections

Intermittent disaster-response personnel benefit from the same immunity from civil liability granted to employees of the U.S. Public Health Service. This effectively means that the only remedy for damages for personal injury, including death, resulting from the performance of medical, surgical, dental, or related functions by any commissioned officer or employee of the Public Health Service (acting within the scope of office or employment) is against the United States, and not against the officer or employee (or her estate) whose act or omission gave rise to the claim. The U.S. Attorney General is also required to defend these individuals (42 USC 233(a)).

Volunteer Protection Act of 1977:

§14502 preempts state law to the extent that state law does not provide additional protection.

There is no liability for “volunteer” of any non-governmental organization if:

- Work performed is within volunteer’s scope of duties
- Volunteer is properly licensed
- Volunteer had no criminal or willful misconduct

Ark. Code Ann. §16-6-105 (with some exceptions)

A qualified volunteer shall not be liable in damages for personal injury or property damage sustained by one, who is a participant in, or a recipient, consumer, or user of, the services or benefits of a volunteer by reason of any act or omission of a qualified volunteer in connection with the volunteer

Good Samaritan Laws in Arkansas

Ark. Code Ann. 17-95-101(a)

Any person licensed as a physician or surgeon under the laws of the State of Arkansas or any other person, who, in good faith, lends emergency care or assistance without compensation at the place of an emergency or accident, and who was acting as a reasonable and prudent person would have acted under the circumstances present at the scene at the time the services were rendered, shall not be liable for any civil damages for acts or omissions performed in good faith.

Emergency Management Assistance Compact “EMAC”

- Triggered by State declaration of an Emergency:
- Forty-eight states have joined the compact, including Arkansas
- The requesting state is required to pay any workers comp for injuries and also the volunteers are protected by immunity under the compact.

Surveillance and Epidemiology

Human Surveillance

Currently, human surveillance has three separate components:

1. The first component consists of a weekly report of Medicaid Claims for influenza-like-illness that is reported to the Arkansas Department of Health (ADH). ADH then prepares a weekly report and creates a geographic information system (GIS) map to monitor all claims variables.
2. The second component consists of sentinel site surveillance in each of the five Arkansas public health regions.
3. The third component includes routine influenza case reporting from private physicians and hospitals throughout the state.

Following early indication of an epidemic:

- All hospitals and physicians in the state will be notified and kept up to date on influenza activity.
- Each of Arkansas' 75 counties has a County Health Officer, and this physician will be incorporated in surveillance and communication activities.
- In addition, the ADH will initiate short-term surveillance of the larger hospitals in the state assessing ER respiratory visits, ICU bed census, pediatric and adult deaths from respiratory illness, and hospital admissions for respiratory illness. This will be reported to ADH daily via a secure site on ADH web site or by fax. The infection control personnel at each hospital are the most appropriate persons to perform this task.
- Viral culture kits will be distributed to all the local health units and nurses will be prepared to obtain nasopharyngeal (NP) cultures if requested.
- Other surveillance could include the national pharmaceutical product reporting data case that is available in order to keep up with increased over-the-counter product purchases.

Case Identification

During the Pandemic Alert Period, human infections with novel influenza A viruses will be an uncommon cause of influenza-like illness; therefore, both clinical and epidemiologic criteria should be met. The criteria will be updated when needed as the situation is better understood.

Clinical Criteria

Healthcare providers play an essential role in the detection of an initial case of novel or pandemic influenza in a community. If implemented early, identification and isolation of cases may help slow the spread of influenza within a community. Clinical awareness of novel or pandemic influenza disease can also benefit the individual patient, as rapid diagnosis and initiation of treatment can avert potentially severe complications.

Detection is complicated, however, by the lack of specific clinical findings and commercially available laboratory tests that can rapidly distinguish novel or pandemic influenza from seasonal influenza. In addition, neither the clinical characteristics of a novel or pandemic influenza virus

strain nor the groups at highest risk for complications can necessarily be defined beforehand. Therefore, clinicians face significant challenges in:

- Quickly identifying and triaging cases
- Containing the spread of infection
- Beginning an efficient and comprehensive workup
- Initiating antiviral and other supportive therapy and
- Anticipating clinical complications.

Any suspected cases of human infection with a novel influenza virus must first meet the criteria for influenza-like-illness (ILI), defined as temperature of $>38^{\circ}\text{C}$ plus either sore throat or cough. Since lower respiratory tract involvement might result in dyspnea (shortness of breath), dyspnea, and myalgia should be considered as an additional criterion.

Therefore, the full clinical criteria are:

- 1) Fever
- 2) Plus one of the following --
 - Sore throat
 - Cough
 - Shortness of breath
 - myalgia

Although recent infections with novel influenza viruses have resulted in severe respiratory illness, the next pandemic influenza virus strain might present with a different clinical syndrome. In such a situation, the clinical criteria will be modified accordingly and posted at www.cdc.gov/flu. Given the large number of influenza-like illnesses that clinicians encounter during a typical flu season, laboratory evaluation for novel influenza A viruses during the Interpandemic and Pandemic Alert Periods is recommended only for:

- Hospitalized patients with severe ILI, including pneumonia, who meet the epidemiologic criteria (see below), or
- Non-hospitalized patients with ILI and with strong epidemiologic suspicion of novel influenza virus exposure (e.g., direct contact with ill poultry in an affected area, or close contact with a known or suspected human case of novel influenza).

Epidemiologic Criteria

Epidemiologic criteria for evaluation of patients with possible novel influenza focus on the risk of exposure to a novel influenza virus with pandemic potential. Although the incubation period for seasonal influenza ranges from 1 to 4 days, the incubation periods for novel types of influenza are currently unknown and might be longer. Therefore, the maximum interval between potential exposure and symptom onset is set conservatively at 10 days.

Exposure risks fall into two categories: travel and occupational.

Travel

Persons have a travel risk if they have:

- 1) Recently visited or lived in an area affected by highly pathogenic avian influenza A outbreaks in domestic poultry or where a human case of novel influenza has been confirmed. The worst avian influenza cases among humans are low pathogenic in birds.
- 2) And had either--
 - Direct contact with poultry, or
 - Close contact with a person with confirmed or suspected novel influenza.

Direct contact with poultry is defined as:

- Touching birds (well-appearing, sick, or dead)
- Touching poultry feces or surfaces contaminated with feces or
- Consuming undercooked poultry products (including blood) in an affected area.

Close contact with a person from an infected area with confirmed or suspected novel influenza is defined as being within 6 feet of the infected person for a period of 15 minutes or more or as having direct physical contact with the infected person.

Clinicians should recognize that human influenza viruses circulate worldwide and year-round, including in countries with outbreaks of avian influenza A (H5N1) among poultry. Therefore, during the Interpandemic and Pandemic Alert Periods, human influenza virus infection can be a cause of ILI among returned travelers at any time of the year, including during the summer in the United States. This includes travelers returning from areas affected by poultry outbreaks of highly pathogenic avian influenza A (H5N1) in Asia. As of October 2005, such persons are currently more likely to have infection with human influenza viruses than with avian influenza A (H5N1) viruses. (See Clinical Guidelines Section.)

Updated listings of areas affected by avian influenza A (H5N1) and other current/recent novel strains are provided on the websites of the OIE (http://www.oie.int/eng/en_index.htm), WHO (<http://www.who.int/en/>), and CDC (<http://www.cdc.gov/flu/>).

Because specific testing for human infection with avian influenza A (H5N1) might not be locally available in an affected area, persons reporting close contact in an affected area with a person suffering from a severe, yet unexplained, respiratory illness should also be evaluated.

Evaluation of syndromic surveillance systems will be ongoing.

Occupational

Persons at occupational risk for infection with a novel strain of influenza include persons who:

- Work on farms or live poultry markets
- Process or handle poultry infected with known or suspected avian influenza viruses
- Workers in laboratories that contain live animal or novel influenza viruses and
- Healthcare workers in direct contact with a suspected or confirmed novel influenza case.

Avian Influenza Surveillance

ADH works closely with the U.S. Department of Agriculture, Animal Plant Health Inspection

Service (USDA-APHIS), Arkansas Livestock and Poultry Commission, and the poultry industry. In the case of an outbreak by high pathogenic avian influenza (HPAI) in poultry in Arkansas, ADH will be notified by the Livestock and Poultry Commission and will work with the appropriate entity as needed regarding those workers in contact with HPAI.

The Avian Influenza Preparedness Group (AIPG), which is comprised of representatives from ADH, state and federal livestock officials, poultry industry occupational health nurse and veterinarians, the Executive Director of the AR poultry industry, Arkansas Game and Fish Commission, University of Arkansas Cooperative Extension Service, and the Arkansas State Medical Board meet yearly and share disease information. The AIPG prepared and agreed to a document providing for immediate notification of ADH if avian influenza H5 and H7 are confirmed within the State of Arkansas.

In addition, a Senior Epidemiologist and the Public Information Director are members of the Poultry Health Advisory Committee, which meets monthly to advise the poultry industry on poultry health issues.

Activities by WHO Pandemic Period

Interpandemic Period

- Continue state and national surveillance programs
- Expand year-round influenza surveillance program
- Keep medical community informed
- Encourage health care providers to consider influenza infection in ill patients with travel or epidemiological link to an affected country
- Remain abreast of new developments regarding virologic, epidemiologic and clinical information about new variants

Pandemic Alert Period

- Consider broadening surveillance; evaluate and refine current surveillance
- Keep healthcare personnel up to date with available information
- Encourage health care providers to consider influenza infection in ill patients with travel or epidemiological link to an affected country and report immediately

Pandemic Period

- Revise surveillance activities as indicated
- Keep apprised of national and international pandemic trends
- Consider vigorous contact tracing and quarantine of close contacts

Laboratory Diagnostics

The Arkansas Public Health Lab will support surveillance for pandemic influenza through the same mechanisms used for seasonal influenza. Laboratory support for seasonal influenza surveillance includes testing for circulating and new subtypes of influenza.

Laboratory Reporting

The Public Health Laboratory will distribute information to other laboratories throughout the state (private clinics, hospitals, public health units) to report suspected cases of novel influenza viruses directly to the Public Health Lab. This information will be distributed via facsimile and/or voice messages to all numbers on the list. In addition, contact information and instructions for reporting suspected cases of novel influenza to the State Lab will be included on the Laboratory web site of services.

Specimen Collection

At the beginning of each influenza season the Public Health Laboratory provides viral collection and transport kits to Local Health Units and Sentinel clinics. Additional kits are available upon request year round. The collection kits contain throat and nasal swabs, viral transport media, instructions for use, and a specimen submission form for patient information and history, including recent travel and vaccination histories. If a patient with suspected avian influenza presents at a clinic that has no viral transport kit, the Public Health Lab should be contacted for instructions on how to collect and transport specimens.

The Arkansas Public Health Lab will remind other labs in our jurisdiction to notify the Arkansas Department of Health if they receive specimens from suspected cases of novel influenza. The Arkansas Public Health Laboratory will provide hospitals and health care providers with information on how to contact the lab and how to collect and ship specimens to the Public Health Lab when a novel subtype is suspected (via the City Watch (HAN)).

Current Capacity

Testing for pandemic influenza viruses at the State Public Health Lab includes antigen detection on clinical specimens and RT-PCR for influenza nucleic acids using BSL-2 containment. Biosafety Level 3 laboratories are available if needed. The Public Health Laboratory has been approved as a reference level testing facility for influenza A/H5 (Asian lineage) using the real-time PCR assay distributed by the Laboratory Response Network (LRN). All laboratory staff are trained in the proper procedures for handling and testing influenza specimens using appropriate biosafety measures. In addition, the laboratory participates in CDC and College of American Pathologist (CAP) proficiency testing programs for influenza diagnostics.

The typical turnaround time for obtaining results from PCR analysis is 24 hours. However, under special circumstances, where time is critical the minimum turnaround time for PCR analysis is 3 – 5 hours. Results are entered into a laboratory information management system for review by Public Health Colleagues. Reports to private submitters are sent by fax, but can be sent by email, postal service, or telephone, if necessary. All flu test results are sent in near real time via secure encrypted HL/7 electronic message to CDC. The electronic messaging process is

initiated when the flu lab supervisor releases test results in our LIMS.

Enhanced Activities

During the pandemic alert period, the laboratory will enhance surveillance to identify potential cases of novel influenza. The lab will prepare to process and test specimens for avian influenza A, other influenzas, and new/re-emerging human influenzas. In addition, the State Public Health Lab will monitor for new subtypes that might have pandemic potential, report all unusual subtypes detected to the CDC, and send influenza A isolates that cannot be sub-typed to CDC. The Arkansas Public Health lab is certified and participates as a WHO Collaborating Center for the surveillance, epidemiology, and control of Influenza.

Surge Capacity

With regard to laboratory surge capacity during the early stages of a pandemic, the Public Health Lab will be prepared for scaled-up diagnostic activity by having a temporary staff of cross-trained employees capable of performing influenza diagnostic tests. The Lab has also established relationships with other laboratories in Little Rock, AR capable of limited influenza diagnostics whose services and personnel could be available for assistance during a surge event (Children's Hospital, UAMS Hospital, Livestock and Poultry, National Guard Civil Support Mobile Laboratory).

Activities by WHO Pandemic Period

Interpandemic Period

- Provide laboratory viral collection and transport kits to local health units and sentinel clinics
- Develop BSL-3 laboratory capacity and plans for rapid identification of unusual influenza strains
- Remain abreast of new developments regarding virologic, epidemiologic and clinical information about new variants

Pandemic Alert Period

- Expand laboratory testing

Health Care Coordination and Surge Capacity

Rationale

During a pandemic, there will be an increased burden affecting the entire healthcare system. Healthcare facilities, providers, emergency responders, public health and others in the community must prepare and coordinate if a pandemic is to be managed effectively. While, the primary goal of public health is to minimize the transmission of disease, if there is extraordinary spread, containment may not be possible. The priority in this case becomes maintenance of essential public health and health care services.

Planning

Healthcare facilities must plan to expand services to meet pandemic influenza patient needs. The Arkansas Department of Health is assisting counties and healthcare facilities develop pandemic response plans within their jurisdictions.

Hospital planning elements include:

- Hospital surveillance – Expanded influenza surveillance at the local level is an important component of pandemic preparedness.
- Hospital communications – Communications must be coordinated during a pandemic to ensure up-to-date information is available and public messages are consistent.
- Education and training – Each hospital should develop an education and training plan that addresses the needs of staff, patients, and visitors.
- Triage and admission plan – The Clinical Guidelines Section are included to assist with this process.
- Facility access – Facilities may have to restrict access and take measures to prevent unwanted infected people from entering the facility.
- Occupational health – Programs to monitor the health of the staff and patients potentially exposed to influenza should be developed.
- Vaccines and Antiviral Drug Use – These will be in short supply and prudent use is critical.
- Surge capacity – Hospitals must develop surge capability and capacity plans that consider both on and off campus requirements, potential supply shortages, and staffing strategies.
- Security – The excessive demand for services may necessitate additional security.
- Mortuary issues – Mass fatalities could strain the funeral care system, including morgue capacity. In addition, hospital post-mortem care must be addressed.
- Hospital response plans-

Non-hospital healthcare settings will also be strained. Staff shortages may result in closures and increase the burden on hospitals. Understaffed nursing homes may face outbreaks among fragile patients. Home health services will be challenged to meet the needs of their vulnerable clients.

In a pandemic, patients with flu-like illness should be directed to offsite facilities for diagnosis and triage, if possible, in order to reduce the transmission of influenza within facilities. These alternative sites could be schools, gymnasiums or other local facilities available during the pandemic.

The Arkansas Department of Health has assisted healthcare facilities to assist them in developing influenza pandemic response plans by providing tools and planning guides from WHO, HHS, CDC, ADH, and other states. A template plan has been provided to each hospital in the state.

Activities by WHO Pandemic Period

Pandemic Period

- Communicate WHO and CDC pandemic influenza surveillance reports.
- Strengthen hospital surveillance
- Reinforce infection control measures
- Accelerate training and education plans
- Identify, isolate and treat all patients with potential pandemic influenza
- Implement activities to increase capacity and supplement staff shortages

Rationale

The primary strategies for preventing pandemic influenza are the same as those for seasonal influenza: vaccination, early detection and treatment with antiviral medications (as discussed elsewhere in this plan), and the use of infection control measures to prevent transmission during patient care. However, when a pandemic begins, a vaccine may not yet be widely available, and the supply of antiviral drugs may be limited. The ability to limit transmission in healthcare settings will, therefore, rely heavily on the appropriate and thorough application of infection control measures. While it is commonly accepted that influenza transmission requires close contact—via exposure to large droplets (droplet transmission), direct contact (contact transmission), or near-range exposure to aerosols (airborne transmission)—the relative clinical importance of each of these modes of transmission is not known.

The infection control guidance provided is based on scientific knowledge of routes of influenza transmission, the pathogenesis of influenza, and the effects of influenza control measures used during past pandemics and interpandemic periods. Given some uncertainty about the characteristics of a new pandemic strain, all aspects of preparedness planning for pandemic influenza must allow for flexibility and real-time decision-making that take new information into account as the situation unfolds. The specific characteristics of a new pandemic virus—virulence, transmissibility, initial geographic distribution, clinical manifestation, risk to different age groups and subpopulations, and drug susceptibility—will remain unknown until the pandemic gets underway. If the new virus is unusual in any of these respects, ADH and its partners will provide updated infection control guidance.

Modes of Transmission

Influenza Transmission

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

Droplet Transmission

Droplet transmission involves contact of the conjunctivae or the mucous membranes of the nose or mouth of a susceptible person with large-particle droplets containing microorganisms generated from a person who has a clinical disease or who is a carrier of the microorganism. Droplets are generated from the source person primarily during coughing, sneezing, or talking and during the performance of certain procedures such as suctioning and bronchoscopy. Transmission via large-particle droplets requires close contact between source and recipient

persons, because droplets do not remain suspended in the air and generally travel only short distances (about 3 feet) through the air. Because droplets do not remain suspended in the air, special air handling and ventilation are not required to prevent droplet transmission. Based on epidemiologic patterns of disease transmission, large droplet transmission has been considered a major route of influenza transmission. However, data directly demonstrating large droplet transmission of influenza in human outbreaks is indirect and limited.

Contact Transmission

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

Contact transmission of influenza may occur through either direct skin-to-skin contact or through indirect contact with virus in the environment. Transmission via contaminated hands and fomites has been suggested as a contributing factor in some studies. However, there is insufficient data to determine the proportion of influenza transmission that is attributable to direct or indirect contact.

Airborne Transmission

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

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

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

Pathogenesis of Influenza and Implications for Infection Control

The cellular pathogenesis of human influenza indicates that infection principally takes place within the respiratory tract. While conjunctivitis is a common manifestation of systemic influenza infection, the ocular route of inoculation and infection has not been demonstrated for human influenza viruses. This may not be true with certain avian species of influenza (e.g., H7N7) that have been associated primarily with conjunctivitis in humans. This information suggests that preventing direct and indirect inoculation of the respiratory tract is of utmost importance for preventing person-to-person transmission when caring for infectious patients.

Control of Transmission in Healthcare Facilities

Summary of Recommendations for Expanded Precautions

Category	Elements
Contact Precautions	<input type="checkbox"/> <input type="checkbox"/> Single patient room (preferred) <input type="checkbox"/> <input type="checkbox"/> Gloves for all contact with patient and environment of care <input type="checkbox"/> <input type="checkbox"/> Isolation gown for all patient contact
Droplet Precautions	<input type="checkbox"/> <input type="checkbox"/> Single patient room (preferred) <input type="checkbox"/> <input type="checkbox"/> Surgical mask within 3 feet of patient <input type="checkbox"/> <input type="checkbox"/> Eye protection within 3 feet of patient with SARS-CoV
Airborne Infection Isolation	<input type="checkbox"/> <input type="checkbox"/> Private room with monitored negative air pressure relative to surrounding areas and 6-12 air exchanges per hour <input type="checkbox"/> <input type="checkbox"/> Appropriate discharge of the air to the outdoors or monitored high-efficiency filtration of room air before recirculation <input type="checkbox"/> <input type="checkbox"/> Doors closed except as needed for entry and exit <input type="checkbox"/> <input type="checkbox"/> NIOSH-approved respiratory protection (e.g., N-95 respirator) for entry to rooms of patients with infectious pulmonary or laryngeal <i>M. tuberculosis</i> , draining skin lesions with <i>M. tuberculosis</i> , SARS-CoV disease, smallpox, and viral hemorrhagic fevers

Source: <http://www.cdc.gov/sars/guidance/I-infection/app2.pdf>

Outbreaks of influenza have been prevented or controlled through a set of well established strategies that include vaccination of patients and healthcare personnel; early detection of influenza cases in a facility; use of antivirals to treat ill persons and, if recommended, as prophylaxis; isolation of infectious patients in private rooms or cohort units; use of appropriate

barrier precautions during patient care, as recommended for Standard and Droplet Precautions (Box 1); and administrative measures, such as restricting visitors, educating patients and staff, and cohorting healthcare workers assigned to an outbreak unit. These are the primary infection control measures recommended in this plan. They will be updated, as necessary, based on the observed characteristics of the pandemic influenza virus.

Infection Control in Healthcare Settings

Overview

This section provides guidance to healthcare and public health partners on basic principles of infection control for limiting the spread of pandemic influenza. These principles (summarized in Box 1) are common to the prevention of other infectious agents spread by respiratory droplets. This section also includes guidance on the selection and use of personal protective equipment (PPE); hand hygiene and safe work practices; cleaning and disinfection of environmental surfaces; handling of laboratory specimens; and post-mortem care. The guidance also covers infection control practices related to the management of infectious patients, the protection of persons at high-risk for severe influenza or its complications, and issues concerning occupational health.

This section also provides guidance on how to adapt infection control practices in specific healthcare settings, including hospitals, nursing homes and other long-term care facilities, pre-hospital care (emergency medical services [EMS]), medical offices and other ambulatory care settings, and during the provision of professional home healthcare services. The section on hospital care covers detection of entering patients who may be infected with pandemic influenza; implementation of source control measures to limit virus dissemination from respiratory secretions; hospitalization of pandemic influenza patients; and detection and control of nosocomial transmission.

In addition, this section includes guidance on infection control procedures for pandemic influenza patients in the home or in alternative care sites that may be established if local hospital capacity is overwhelmed by a pandemic. Finally, it includes recommendations on infection control in schools, workplaces, and community settings.

Recommendations for Infection Control in Healthcare Settings

Recommendations for Application of Standard Precautions for the Care of All Patients in All Healthcare Settings

<i>Component</i>	<i>Recommendations</i>
Hand hygiene	After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between patient contacts
Personal protective equipment (PPE)	
Gloves	For touching blood, body fluids, secretions, excretions, contaminated items; for touching mucous membranes and nonintact skin
Mask, eye protection, face shield	During procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions
Gown	During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated

Soiled patient-care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; perform hand hygiene
Environmental control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces, especially frequently touched surfaces in patient-care areas
Textiles (linen and laundry)	Handle in a manner that prevents transfer of microorganisms to others and to the environment
Needles and other sharps	Do not recap, bend, break, or hand-manipulate used needles; use safety features when available; place used sharps in puncture-resistant container
Patient resuscitation	Use mouthpiece, resuscitation bag, other ventilation devices to prevent mouth contact
Patient placement	Prioritize for single patient room if patient is at increased risk of transmission, is likely to contaminate the environment or does not maintain appropriate hygiene, or is at increased risk of acquiring infection or developing adverse outcome following infection
Respiratory hygiene/cough etiquette (source containment of infectious respiratory secretions in symptomatic patients, beginning at initial point of encounter)	Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, > 3 feet if possible

Source: <http://www.cdc.gov/sars/guidance/I-infection/appl.pdf>

The recommendations for infection control described below are generally applicable throughout the different pandemic phases. In some cases, as indicated, recommendations may be modified as the situation progresses from limited cases to widespread community illness.

Basic Infection Control Principles for Preventing the Spread of Pandemic Influenza in Healthcare Settings

The following infection control principles apply in any setting where persons with pandemic influenza might seek and receive healthcare services (e.g. hospitals, emergency departments, out-patient facilities, residential care facilities, homes). Details of how these principles may be applied in each healthcare setting follow.

- Limit contact between infected and non-infected persons
- Isolate infected persons (i.e., confine patients to a defined area as appropriate for the healthcare setting).
- Limit contact between nonessential personnel and other persons (e.g., social visitors) and patients who are ill with pandemic influenza.
- Promote spatial separation in common areas (i.e., sit or stand as far away as possible—at least 3 feet—from potentially infectious persons) to limit contact between symptomatic and non-symptomatic persons.
- Protect persons caring for influenza patients in healthcare settings from contact with the pandemic influenza virus.

Persons who must be in contact should

- Wear a surgical or procedure mask³ for close contact with infectious patients.
- Use contact and airborne precautions, including the use of N95 respirators, when appropriate [S4-IV.C].
- Wear gloves (gown if necessary) for contact with respiratory secretions.
- Perform hand hygiene after contact with infectious patients.

- Contain infectious respiratory secretions
- Instruct persons who have “flu-like” symptoms (see below) to use respiratory hygiene/cough etiquette (See Box 2).
- Promote use of masks⁴ by symptomatic persons in common areas (e.g., waiting rooms in physician offices or emergency departments) or when being transported (e.g., in emergency vehicles).

Symptoms of influenza include fever, headache, myalgia, prostration, coryza, sore throat, and cough. Otitis media, nausea, and vomiting are also commonly reported among children. Typical influenza (or “flu-like”) symptoms, such as fever, may not always be present in elderly patients, young children, patients in long-term care facilities, or persons with underlying chronic illnesses.

Management of Infectious Patients

When a patient meets both the clinical and epidemiologic criteria for a suspected case of novel influenza, healthcare personnel should initiate the following activities:

1. *Implement infection control precautions* for novel influenza, including respiratory hygiene/cough etiquette. Patients should be placed on Droplet Precautions for a minimum of 14 days, unless there is full resolution of illness or another etiology has been identified before that period has elapsed. Healthcare personnel should wear surgical or procedure masks on entering a patient’s room, as per Droplet Precautions, as well as gloves and gowns, when indicated for Standard Precautions (Box 1). Patients should be admitted to a single- patient room, and patient movement and transport within the hospital should be limited to medically necessary purposes.

The elements of respiratory hygiene/cough etiquette include:

- Education of healthcare facility staff, patients, and visitors on the importance of containing respiratory secretions to help prevent the transmission of influenza and other respiratory viruses
 - Posted signs in languages appropriate to the populations served with instructions to patients and accompanying family members or friends to immediately report symptoms of a respiratory infection as directed
 - Source control measures (e.g., covering the mouth/nose with a tissue when coughing and disposing of used tissues; using masks on the coughing person when they can be tolerated and are appropriate)
 - Hand hygiene after contact with respiratory secretions, and
 - Spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible.
2. *Notify the local and state health departments.* Report each patient who meets the clinical and epidemiologic criteria for a suspected case of novel influenza to the state or local health department as quickly as possible to facilitate initiation of public health measures. Designate one person as a point of contact to update public health authorities on the patient’s clinical status.

3. *Obtain clinical specimens for novel influenza A virus testing and contact the local and state health departments to arrange testing.* Testing will likely be directed by public health authorities. Since the optimal specimens for detecting novel influenza A virus infections are currently unknown, if feasible, **all** of the following respiratory specimens should be collected for novel influenza A virus testing:
 - Nasopharyngeal swab
 - Nasal swab
 - Wash
 - Aspirate
 - Throat swab
 - Tracheal aspirate (for intubated patients).

Store specimens at 4°C in viral transport media until transported or shipped for testing. Acute (within 7 days of illness onset) and convalescent serum specimens (2–3 weeks after the acute specimen and at least 3 weeks after illness onset) should be obtained and refrigerated at 4°C or frozen at minus 20–80°C. Serological testing for novel influenza virus infection can be performed only at CDC.

Clinicians should immediately notify their local health department for direction in handling and shipping specimens.

Novel influenza can be confirmed by RT-PCR or virus isolation from tissue cell culture with sub typing. RT-PCR for testing of novel influenza viruses cannot be performed by a hospital laboratory and is available only at state public health laboratories and CDC. Viral culture of specimens from suspected novel influenza cases should be attempted only in laboratories that meet the biocontainment conditions for BSL-3 with enhancements or higher.

Acute and convalescent serum samples and other available clinical specimens (respiratory, blood, and stool) should be saved and refrigerated or frozen for additional testing until a specific diagnosis is made.

4. *Decide on inpatient or outpatient management.* The decision to hospitalize a suspected novel influenza case will be based on the physician’s clinical assessment and assessment of risk and whether adequate precautions can be taken at home to prevent the potential spread of infection. Patients cared for *at* home should be separated from other household members as much as possible. All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed with other household waste. Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical or procedure masks by the patient and/or caregiver during interactions may be of benefit. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap.
5. *Initiate antiviral treatment as soon as possible, even if laboratory results are not yet available.* Clinical trials have shown that these drugs can decrease the illness due to

seasonal influenza duration by several days when they are initiated within 48 hours of illness onset. The clinical effectiveness of antiviral drugs for treatment of novel influenza is unknown, but it is likely that the earlier treatment is initiated, the greater the likelihood of benefit.

If test results are negative but the clinical and epidemiologic suspicion remains high, continuing antiviral treatment and isolation procedures should be considered. Test results might be negative for influenza viruses for several reasons. Some patients might have an alternate etiology to explain their illness. The general work-up for febrile respiratory illnesses described below should evaluate the most common alternate causes. A certain number of truly infected cases might also test falsely negative, due to specimen collection conditions, to viral shedding that is not detectable, or to sensitivity of the test. Interpretation of negative testing results should be tailored to the individual patient in consultation with hospital infection control and infectious disease specialists, as well as the state or local health department and CDC. In hospitalized patients who test negative for novel influenza but have no alternate diagnosis established, novel-influenza-directed management should be continued if clinical suspicion is high and there is a strong epidemiologic link to exposure to novel influenza. When influenza tests are negative and an alternative diagnosis is established, isolation precautions and antiviral drug therapy for novel influenza may be discontinued based on clinician's assessment, particularly in the absence of a strong epidemiologic link, if the alternative diagnosis is made using a test with a high positive-predictive value, and if the clinical manifestations are explained by the alternative diagnosis.

6. *Initial management of patients who meet the criteria for pandemic influenza.* When a patient meets the criteria for a suspected case of pandemic influenza, healthcare personnel should initiate the following activities:
 - Follow local and state health department recommendations on reporting for patients who meet the criteria for pandemic influenza.
 - If the patient is hospitalized, implement infection control precautions for pandemic influenza, including Respiratory Hygiene/Cough Etiquette.
 - Place the patient on Droplet Precautions for a minimum of **5-10 days** from the onset of symptoms. Healthcare personnel should wear surgical or procedure masks on entering a patient's room, as per Droplet Precautions, as well as gloves and gowns when indicated, as per Standard Precautions. Once a pandemic is underway, hospital admission of patients should be limited to those with severe complications who cannot be cared for outside the hospital setting. Patients should be admitted to either a single-patient room or an area designated for cohorting of patients with influenza. Patient movement and transport outside the isolation area should be limited to medically necessary purposes.

7. *Droplet precautions and patient placement.* Patients with known or suspected pandemic influenza should be placed on droplet precautions for a minimum of 5-10 days from the onset of symptoms. Because immuno-compromised patients may shed virus for longer periods, they may be placed on droplet precautions for the duration of their illness. Healthcare personnel should wear appropriate PPE. The placement of patients will vary

depending on the healthcare setting (see setting-specific guidance). If the pandemic virus is associated with diarrhea, contact precautions (i.e., gowns and gloves for all patient contact) should be added.

Infection Control Practices for Healthcare Personnel

Infection control practices for pandemic influenza are the same as for other human influenza viruses and primarily involve the application of standard and droplet precautions (Box 1) during patient care in healthcare settings (e.g., hospitals, nursing homes, outpatient offices, emergency transport vehicles). This guidance also applies to healthcare personnel going into the homes of patients. During a pandemic, conditions that could affect infection control may include shortages of antiviral drugs, decreased efficacy of the vaccine, increased virulence of the influenza strain, shortages of single-patient rooms, and shortages of personal protective equipment. These issues may necessitate changes in the standard recommended infection control practices for influenza. Additional guidance is provided for family members providing home care and for use in public settings (e.g., schools, workplace) where people with pandemic influenza may be encountered.

Personal Protective Equipment (PPE)

A. PPE for standard and droplet precautions

PPE is used to prevent direct contact with the pandemic influenza virus. PPE that may be used to provide care includes surgical or procedure masks, as recommended for droplet precautions, and gloves and gowns, as recommended for standard precautions (Box 1). Additional precautions may be indicated during the performance of aerosol-generating procedures (see below). Information on the selection and use of PPE is provided at www.cdc.gov/ncidod/hip/isolat/isolat.htm/.

1. Masks (surgical or procedure)

- Wear a mask when entering a patient's room. A mask should be worn once and then discarded. If pandemic influenza patients are cohorted in a common area or in several rooms on a nursing unit, and multiple patients must be visited over a short time, it may be practical to wear one mask for the duration of the activity; however, other PPE (e.g., gloves, gown) must be removed between patients and hand hygiene performed.
- Change masks when they become moist.
- Do not leave masks dangling around the neck.
- Upon touching or discarding a used mask, perform hand hygiene.

2. Gloves

- A single pair of patient care gloves should be worn for contact with blood and body fluids, including during hand contact with respiratory secretions (e.g., providing oral care, handling soiled tissues). Gloves made of latex, vinyl, nitrile, or other synthetic materials are appropriate for this purpose; if possible, latex-free gloves should be available for healthcare workers who have latex allergy.
- Gloves should fit comfortably on the wearer's hands.
- Remove and dispose of gloves after use on a patient; do not wash gloves for subsequent reuse.
- Perform hand hygiene after glove removal.

- If gloves are in short supply (i.e., the demand during a pandemic could exceed the supply), priorities for glove use might need to be established. In this circumstance, reserve gloves for situations where there is a likelihood of extensive patient or environmental contact with blood or body fluids, including during suctioning.
 - Use other barriers (e.g., disposable paper towels, paper napkins) when there is only limited contact with a patient's respiratory secretions (e.g., to handle used tissues). Hand hygiene should be strongly reinforced in this situation.
3. Gowns
- Wear an isolation gown, if soiling of personal clothes or uniform with a patient's blood or body fluids, including respiratory secretions, is anticipated. Most patient interactions do not necessitate the use of gowns. However, procedures such as intubation and activities that involve holding the patient close (e.g., in pediatric settings) are examples of when a gown may be needed when caring for pandemic influenza patients.
 - A disposable gown made of synthetic fiber or a washable cloth gown may be used.
 - Ensure that gowns are of the appropriate size to fully cover the area to be protected.
 - Gowns should be worn only once and then placed in a waste or laundry receptacle, as appropriate, and hand hygiene performed.
 - If gowns are in short supply (i.e., the demand during a pandemic could exceed the supply) priorities for their use may need to be established. In this circumstance, reinforcing the situations in which they are needed can reduce the volume used. Alternatively, other coverings (e.g., patient gowns) could be used. It is doubtful that disposable aprons would provide the desired protection in the circumstances where gowns are needed to prevent contact with influenza virus, and therefore should be avoided. There are no data upon which to base a recommendation for reusing an isolation gown on the same patient. To avoid possible contamination, it is prudent to limit this practice.
4. Goggles or face shield
- In general, wearing goggles or a face shield for routine contact with patients with pandemic influenza is not necessary.
 - If sprays or splatter of infectious material is likely, goggles or a face shield should be worn as recommended for standard precautions.

B. PPE for special circumstances

1. *PPE for aerosol-generating procedures*

During procedures that may generate increased small-particle aerosols of respiratory secretions (e.g., endotracheal intubation, nebulizer treatment, bronchoscopy, suctioning), healthcare personnel should wear gloves, gown, face/eye protection, and a N95 respirator or other appropriate particulate respirator. Respirators should be used within the context of a respiratory protection program that includes fit-testing, medical clearance, and training. If possible and when practical, use of an airborne isolation room may be considered when conducting aerosol-generating procedures.

2. *PPE for managing pandemic influenza with increased transmissibility*

The addition of airborne precautions, including respiratory protection (an N95 filtering face piece respirator or other appropriate particulate respirator), may be

considered for strains of influenza exhibiting increased transmissibility, during initial stages of an outbreak of an emerging or novel strain of influenza, and as determined by other factors such as vaccination/immune status of personnel and availability of antivirals. As the epidemiologic characteristics of the pandemic virus are more clearly defined, CDC will provide updated infection control guidance, as needed.

3. *Precautions for early stages of a pandemic*

Early in a pandemic, it may not be clear that a patient with severe respiratory illness has pandemic influenza. Therefore precautions consistent with all possible etiologies, including a newly emerging infectious agent, should be implemented.

This may involve the combined use of airborne and contact precautions, in addition to standard precautions, until a diagnosis is established.

C. *Caring for patients with pandemic influenza*

Healthcare personnel should be particularly vigilant to avoid:

- Touching their eyes, nose or mouth with contaminated hands (gloved or ungloved). Careful placement of PPE before patient contact will help avoid the need to make PPE adjustments and risk self-contamination during use. Careful removal of PPE is also important. (See also: <http://www.cdc.gov/ncidod/hip/ppe/default.htm>.)
- Contaminating environmental surfaces that are not directly related to patient care (e.g., door knobs, light switches)

Hand Hygiene

Hand hygiene has frequently been cited as the single most important practice to reduce the transmission of infectious agents in healthcare settings (see <http://www.cdc.gov/handhygiene/pressrelease.htm>) and is an essential element of standard precautions. The term “hand hygiene” includes both hand washing with either plain or antimicrobial soap and water and use of alcohol-based products (gels, rinses, foams) containing an emollient that do not require the use of water.

- If hands are visibly soiled or contaminated with respiratory secretions, wash hands with soap (either non-antimicrobial or antimicrobial) and water.
- In the absence of visible soiling of hands, approved alcohol-based products for hand disinfection are preferred over antimicrobial or plain soap and water because of their superior microbiocidal activity, reduced drying of the skin, and convenience.
- Always perform hand hygiene between patient contacts and after removing PPE.
- Ensure that resources to facilitate hand washing (i.e., sinks with warm and cold running water, plain or antimicrobial soap, disposable paper towels) and hand disinfection (i.e., alcohol-based products) are readily accessible in areas in which patient care is provided

Disposal of Solid Waste

Standard precautions are recommended for disposal of solid waste (medical and non-medical) that might be contaminated with a pandemic influenza virus:

- Contain and dispose of contaminated medical waste in accordance with facility-specific procedures and/or local or state regulations for handling and disposal of medical waste,

- including used needles and other sharps, and non-medical waste.
- Discard as routine waste used patient-care supplies that are not likely to be contaminated (e.g., paper wrappers).
 - Wear disposable gloves when handling waste. Perform hand hygiene after removal of gloves.

Linen and Laundry

Standard precautions are recommended for linen and laundry that might be contaminated with respiratory secretions from patients with pandemic influenza:

- Place soiled linen directly into a laundry bag in the patient's room. Contain linen in a manner that prevents the linen bag from opening or bursting during transport and while in the soiled linen holding area.
- Wear gloves and gown when directly handling soiled linen and laundry (e.g., bedding, towels, personal clothing) as per standard precautions. Do not shake or otherwise handle soiled linen and laundry in a manner that might create an opportunity for disease transmission or contamination of the environment.
- Wear gloves for transporting bagged linen and laundry.
- Perform hand hygiene after removing gloves that have been in contact with soiled linen and laundry. Wash and dry linen according to routine standards and procedures (www.cdc.gov/ncidod/hip/enviro/guide.htm).

Dishes and Eating Utensils

Standard precautions are recommended for handling dishes and eating utensils used by a patient with known or possible pandemic influenza:

- Wash reusable dishes and utensils in a dishwasher with recommended water temperature (www.cdc.gov/ncidod/hip/enviro/guide.htm).
- Disposable dishes and utensils (e.g., used in an alternative care site set-up for large numbers of patients) should be discarded with other general waste.
- Wear gloves when handling patient trays, dishes, and utensils.

Patient-care Equipment

Follow standard practices for handling and reprocessing used patient-care equipment, including medical devices:

- Wear gloves when handling and transporting used patient-care equipment.
- Wipe heavily soiled equipment with an EPA-approved hospital disinfectant before removing it from the patient's room.
- Follow current recommendations for cleaning and disinfection or sterilization of reusable patient-care equipment.
- Wipe external surfaces of portable equipment for performing x-rays and other procedures in the patient's room with an EPA-approved hospital disinfectant upon removal from the patient's room.

Environmental Cleaning and Disinfection

Cleaning and disinfection of environmental surfaces are important components of routine infection control in healthcare facilities. Environmental cleaning and disinfection for pandemic

influenza follow the same general principles used in healthcare settings.

- A. Cleaning and disinfection of patient-occupied rooms
- Wear gloves in accordance with facility policies for environmental cleaning and wear a surgical or procedure mask in accordance with droplet precautions. Gowns are not necessary for routine cleaning of an influenza patient's room.
 - Keep areas around the patient free of unnecessary supplies and equipment to facilitate daily cleaning.
 - Use any EPA-registered hospital detergent-disinfectant. Follow manufacturer's recommendations for use-dilution (i.e., concentration), contact time, and care in handling.
 - Follow facility procedures for regular cleaning of patient-occupied rooms. Give special attention to frequently touched surfaces (e.g., bedrails, bedside and over-bed tables, TV controls, call buttons, telephones, lavatory surfaces including safety/pull-up bars, doorknobs, commodes, ventilator surfaces) in addition to floors and other horizontal surfaces.
 - Clean and disinfect spills of blood and body fluids in accordance with current recommendations for Isolation Precautions (www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm).
- B. Cleaning and disinfection after patient discharge or transfer
- Follow standard facility procedures for post-discharge cleaning of an isolation room.
 - Clean and disinfect all surfaces that were in contact with the patient or might have become contaminated during patient care. No special treatment is necessary for window curtains, ceilings, and walls unless there is evidence of visible soiling.
 - Do not spray (i.e., fog) occupied or unoccupied rooms with disinfectant. This is a potentially dangerous practice that has no proven disease control benefit.

Postmortem Care

Follow standard facility practices for care of the deceased. Practices should include standard precautions for contact with blood and body fluids.

Laboratory Specimens and Practices

Follow standard facility and laboratory practices for the collection, handling, and processing of laboratory specimens.

Occupational Health Issues

Persons at occupational risk for infection with a novel strain of influenza include persons who work on farms or live poultry markets or who process or handle poultry infected with known or suspected avian influenza viruses, workers in laboratories that contain live animal or novel influenza viruses, and healthcare workers in direct contact with a suspected or confirmed novel influenza case. ADH is and will work closely with the poultry industry. In case an outbreak by high pathogenic avian influenza (HPAI) occurs in poultry in Arkansas, the poultry industry will notify ADH and both institutions will collaborate to quarantine and prophylax poultry workers that have come in close contact with the ill birds.

Healthcare personnel are at risk for pandemic influenza through community and healthcare-

related exposures. Once pandemic influenza has reached a community, healthcare facilities must implement systems to monitor for illness in the facility workforce and manage those who are symptomatic or ill.

Implement a system to educate personnel about occupational health issues related to pandemic influenza.

- Screen all personnel for influenza-like symptoms before they come on duty. Symptomatic personnel should be sent home until they are physically ready to return to duty.
- Healthcare personnel who have recovered from pandemic influenza, and should develop antibody against future infection with the same virus, and therefore should be prioritized for the care of patients with active pandemic influenza and its complications. These workers would also be well suited to care for patients who are at risk for serious complications from influenza (e.g., transplant patients and neonates).
- Personnel who are at high risk for complications of pandemic influenza (e.g., pregnant women, immunocompromised persons) should be informed about their medical risk and offered an alternate work assignment, away from influenza patient care, or considered for administrative leave until pandemic influenza has abated in the community

Reducing Exposure of Persons at High Risk for Complications of Influenza

Persons who are well, but at high risk for influenza or its complications (e.g., persons with underlying diseases), should be instructed to avoid unnecessary contact with healthcare facilities caring for pandemic influenza patients (i.e., do not visit patients, postpone nonessential medical care).

Healthcare Setting-specific Guidance

All healthcare facilities should follow the infection control guidance above. The following guidance is intended to address setting-specific infection control issues that should also be considered.

1. Hospitals

- a. Detection of persons entering the facility who may have pandemic influenza
 - Post visual alerts (in appropriate languages) at the entrance to hospital outpatient facilities (e.g., emergency departments, outpatient clinics) instructing persons with respiratory symptoms (e.g., patients, persons who accompany them) to:
 - Inform reception and healthcare personnel when they first register for care, and • Practice respiratory hygiene/cough etiquette (see www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm). Sample visual alerts are available on CDC's Severe Acute Respiratory Syndrome (SARS) website: <http://www.cdc.gov/ncidod/hip/INFECT/RespiratoryPoster.pdf>
 - Triage patients calling for medical appointments for influenza symptoms:
 - Discourage unnecessary visits to medical facilities.
 - Instruct symptomatic patients on infection control measures to limit transmission in the home and when traveling to necessary medical appointments.
 - As the scope of the pandemic escalates locally, consider setting up a separate triage area for persons presenting with symptoms of respiratory infection. Because not

every patient presenting with symptoms will have pandemic influenza, infection control measures will be important in preventing further spread. During the peak of a pandemic, emergency departments and outpatient offices may be overwhelmed with patients seeking care.

- A “triage officer” may be useful for managing patient flow, including deferral of patients who do not require emergency care.
 - Designate separate waiting areas for patients with influenza-like symptoms. If this is not feasible, the waiting area should be set up to enable patients with respiratory symptoms to sit as far away as possible (at least 3 feet) from other patients.
- b. “Source control” measures to limit dissemination of influenza virus from respiratory secretions
- Post signs that promote respiratory hygiene/cough etiquette in common areas (e.g., elevators, waiting areas, cafeterias, lavatories) where they can serve as reminders to all persons in the healthcare facility. Signs should instruct persons to:
 - Cover the nose/mouth when coughing or sneezing.
 - Use tissues to contain respiratory secretions.
 - Dispose of tissues in the nearest waste receptacle after use.
 - Perform hand hygiene after contact with respiratory secretions.
 - Samples of visual alerts are available on CDC’s SARS website: <http://www.cdc.gov/ncidod/hip/INFECT/RespiratoryPoster.pdf>
 - Facilitate adherence to respiratory hygiene/cough etiquette by ensuring the availability of materials in waiting areas for patients and visitors.
 - Provide tissues and no-touch receptacles (e.g., waste containers with pedal-operated lid or uncovered waste container) for used tissue disposal.
 - Provide conveniently located dispensers of alcohol-based hand rub.
 - Provide soap and disposable towels for hand washing where sinks are available.
 - Promote the use of masks and spatial separation by persons with symptoms of influenza.
 - Offer and encourage the use of either procedure masks (i.e., with ear loops) or surgical masks (i.e., with ties or elastic) by symptomatic persons to limit dispersal of respiratory droplets.
 - Encourage coughing persons to sit as far away as possible (at least 3 feet) from other persons in common waiting areas.
- c. Hospitalization of pandemic influenza patients
- 1) Patient placement:
- Limit admission of influenza patients to those with severe complications of influenza who cannot be cared for outside the hospital setting.
 - Admit patients to either a single-patient room or an area designated for cohorting of patients with influenza.
 - Cohorting - Designated units or areas of a facility should be used for cohorting patients with pandemic influenza.

During a pandemic, other respiratory viruses (e.g., non-pandemic influenza, respiratory syncytial virus, parainfluenza virus) may be circulating concurrently in

a community. Therefore, to prevent cross-transmission of respiratory viruses, whenever possible assign only patients with confirmed pandemic influenza to the same room. At the height of a pandemic, laboratory testing to confirm pandemic influenza is likely to be limited, in which case cohorting should be based on having symptoms consistent with pandemic influenza.

- Personnel (clinical and non-clinical) assigned to cohorted patient care units for pandemic influenza patients should not “float” or otherwise be assigned to other patient care areas.
 - The number of personnel entering the cohorted area should be limited to those necessary for patient care and support.
 - Personnel assigned to cohorted patient care units should be aware that patients with pandemic influenza may be concurrently infected or colonized with other pathogenic organisms (e.g., *Staphylococcus aureus*, *Clostridium difficile*) and should adhere to infection control practices (e.g., hand hygiene, changing gloves between patient contact) used routinely, and as part of standard precautions, to prevent nosocomial transmission.
- 2) Because of the high patient volume anticipated during a pandemic, cohorting should be implemented early in the course of a local outbreak.
- 3) Patient transport
- Limit patient movement and transport outside the isolation area to medically necessary purposes.
 - Consider having portable x-ray equipment available in areas designated for cohorting influenza patients.
 - If transport or movement is necessary, ensure that the patient wears a surgical or procedure mask. If a mask cannot be tolerated (e.g., due to the patient’s age or deteriorating respiratory status), apply the most practical measures to contain respiratory secretions.
 - Patients should perform hand hygiene before leaving the room.
- 4) Visitors
- Screen visitors for signs and symptoms of influenza before entry into the facility and exclude persons who are symptomatic.
 - Family members who accompany patients with influenza-like illness to the hospital are assumed to have been exposed to influenza and should wear masks.
 - Limit visitors to persons who are necessary for the patient’s emotional well-being and care.
 - Instruct visitors to wear surgical or procedure masks while in the patient’s room.
 - Instruct visitors on hand-hygiene practices.
- d. Control of nosocomial pandemic influenza transmission
- Once patients with pandemic influenza are admitted to the hospital, nosocomial surveillance should be heightened for evidence of transmission to other patients and healthcare personnel. (Once pandemic influenza is firmly established in a community this may not be feasible or necessary.)

If limited nosocomial transmission is detected (e.g., has occurred on one or two patient

care units), appropriate control measures should be implemented. These may include:

- Cohorting of patients and staff on affected units
- Restriction of new admissions (except for other pandemic influenza patients) to the affected unit(s)
- Restriction of visitors to the affected unit(s) to those who are essential for patient care and support

If widespread nosocomial transmission occurs, controls may need to be implemented hospital wide and might include:

- Restricting all nonessential persons
- Stopping admissions not related to pandemic influenza
- Stopping elective surgeries

2. Nursing homes and other residential facilities

Residents of nursing homes and other residential facilities will be at particular risk for transmission of pandemic influenza and disease complications. Pandemic influenza can be introduced through facility personnel and visitors; once a pandemic influenza virus enters such facilities, controlling its spread is problematic. Therefore, as soon as pandemic influenza has been detected in the region, nursing homes and other residential facilities should implement aggressive measures to prevent introduction of the virus.

a. Prevention or delay of pandemic influenza virus entry into the facility

- Control of visitors
- Post visual alerts (in appropriate languages) at the entrance to the facility restricting entry by persons who have been exposed to or have symptoms of pandemic influenza.
- Enforce visitor restrictions by assigning personnel to verbally and visually screen visitors for respiratory symptoms at points of entry to the facility.
- Provide a telephone number where persons can call for information on measures used to prevent the introduction of pandemic influenza.
- Control of personnel
- Implement a system to screen all personnel for influenza-like symptoms before they come on duty.
- Symptomatic personnel should be sent home until they are physically able to return to duty.

b. Monitoring patients for pandemic influenza and instituting appropriate control measures

Despite aggressive efforts to prevent the introduction of pandemic influenza virus, persons in the early stages of pandemic influenza could introduce it to the facility. Residents returning from a hospital stay, outpatient visit, or family visit could also introduce the virus. Early detection of the presence of pandemic influenza in a facility is critical for ensuring timely implementation of infection control measures.

- Early in the progress of a pandemic in the region, increase resident surveillance for influenza-like symptoms. Notify state or local health department officials if a case(s) is suspected.
- If symptoms of pandemic influenza are apparent implement droplet precautions for the resident and roommates, pending confirmation of pandemic influenza virus infection. Patients and roommates should not be separated or moved out of their

rooms unless medically necessary. Once a patient has been diagnosed with pandemic influenza, roommates should be treated as exposed persons.

- Cohort residents and staff on units with known or suspected cases of pandemic influenza.
- Limit movement within the facility (e.g., temporarily close the dining room and serve meals on nursing units, cancel social and recreational activities).

3. Prehospital care (emergency medical services)

Patients with severe pandemic influenza or disease complications are likely to require emergency transport to the hospital. The following information is designed to protect EMS personnel during transport.

- Screen patients requiring emergency transport for symptoms of influenza.
- Follow standard and droplet precautions when transporting symptomatic patients.
- Consider routine use of surgical or procedure masks for all patient transport when pandemic influenza is in the community.
- If possible, place a procedure or surgical mask on the patient to contain droplets expelled during coughing. If this is not possible (i.e., would further compromise respiratory status, difficult for the patient to wear), have the patient cover the mouth/nose with tissue when coughing, or use the most practical alternative to contain respiratory secretions. Oxygen delivery with a non-rebreather facemask can be used to provide oxygen support during transport. If needed, positive-pressure ventilation should be performed using a resuscitation bag-valve mask.
- Unless medically necessary to support life, aerosol-generating procedures (e.g., mechanical ventilation) should be avoided during prehospital care.
- Optimize the vehicle's ventilation to increase the volume of air exchange during transport. When possible, use vehicles that have separate driver and patient compartments that can provide separate ventilation to each area.
- Notify the receiving facility that a patient with possible pandemic influenza is being transported.
- Follow standard operating procedures for routine cleaning of the emergency vehicle and reusable patient care equipment.

4. Home healthcare services

Home healthcare includes health and rehabilitative services performed in the home by providers including home health agencies, hospices, durable medical equipment providers, home infusion therapy services, and personal care and support services staff. The scope of services ranges from assistance with activities of daily living and physical and occupational therapy to wound care, infusion therapy, and chronic ambulatory peritoneal dialysis (CAPD). Communication between home healthcare providers and patients or their family members is essential for ensuring that these personnel are appropriately protected. When pandemic influenza is in the community, home health agencies should consider contacting patients before the home visit to determine whether persons in the household have an influenza-like illness.

- If patients with pandemic influenza are in the home, consider:
- Postponing nonessential services
- Assigning providers who are not at increased risk for complications of

pandemic influenza to care for these patients

- Home healthcare providers who enter homes where there is a person with influenza-like illness should follow the recommendations for standard and droplet precautions described above.
- Professional judgment should be used in determining whether to don a surgical or procedure mask upon entry into the home or only for patient interactions. Factors to consider include the possibility that others in the household may be infectious and the extent to which the patient is ambulating within the home.

5. Outpatient medical offices

Patients with non-emergency symptoms of an influenza-like illness may seek care from their medical provider. Implementation of infection control measures when these patients present for care will help prevent exposure among other patients and clinical and non-clinical office staff.

- a. Detection of patients with possible pandemic influenza
- b. Post-visual alerts (in appropriate languages) at the entrance to outpatient offices instructing persons with respiratory symptoms (e.g., patients, persons who accompany them) to:
 - Inform reception and healthcare personnel when they first register for care
 - Practice respiratory hygiene/cough etiquette (see www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm)
 - Sample visual alerts may be found on CDC's SARS website: <http://www.cdc.gov/ncidod/hip/INFECT/RespiratoryPoster.pdf>
 - Triage patients calling for medical appointments for influenza symptoms:
 - Discourage unnecessary visits to medical facilities.
 - Instruct symptomatic patients on infection control measures to limit transmission in the home and when traveling to necessary medical appointments.
- c. "Source control" measures
Post signs that promote cough etiquette in common areas (e.g., elevators, waiting areas, cafeterias, lavatories) where they can serve as reminders to all persons in the healthcare facility. Signs should instruct persons to:
 - Cover the nose/mouth when coughing or sneezing.
 - Use tissues to contain respiratory secretions.
 - Dispose of tissues in the nearest waste receptacle after use.
 - Perform hand hygiene after contact with respiratory secretions.
 - Facilitate adherence to respiratory hygiene/cough etiquette. Ensure the availability of materials in waiting areas for patients and visitors.
 - Provide tissues and no-touch receptacles (e.g., waste containers with pedal-operated lid or uncovered waste container) for used tissue disposal.
 - Provide conveniently located dispensers of alcohol-based hand rub.
 - Provide soap and disposable towels for hand washing where sinks are available.
 - Promote the use of procedure or surgical masks and spatial separation by persons with symptoms of influenza.
 - Offer and encourage the use of either procedure masks (i.e., with ear loops) or

surgical masks (i.e., with ties or elastic) by symptomatic persons to limit dispersal of respiratory droplets.

- Encourage coughing persons to sit at least 3 feet away from other persons in common waiting areas.
- d. Patient placement
- Where possible, designate separate waiting areas for patients with symptoms of pandemic influenza. Place signs indicating the separate waiting areas.
 - Place symptomatic patients in an evaluation room as soon as possible to limit their time in common waiting areas.

6. Other ambulatory settings

A wide variety of ambulatory settings provide chronic (e.g., hemodialysis units) and episodic (e.g., freestanding surgery centers, dental offices) healthcare services. When pandemic influenza is in the region, these facilities should implement control measures similar to those recommended for outpatient physician offices. Other infection control strategies that may be utilized include:

- Screening patients for influenza-like illness by phone or before coming into the facility and rescheduling appointments for those whose care is non-emergency
- Canceling all non-emergency services when there is pandemic influenza in the community

Care of Pandemic Influenza Patients in the Home

Most patients with pandemic influenza will be able to remain at home during the course of their illness and can be cared for by other family members or others who live in the household. Anyone residing in a household with an influenza patient during the incubation period and illness is at risk for developing influenza. A key objective in this setting is to limit transmission of pandemic influenza within and outside the home. When a household member provides care, basic infection control precautions should be emphasized (e.g., segregating the ill patient, hand hygiene). Infection within the household may be minimized if a primary caregiver is designated; ideally someone who does not have an underlying condition that places them at increased risk of severe influenza disease. Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical or procedure masks by the patient and/or caregiver during interactions may be of benefit.

1. Management of influenza patients in the home
 - Physically separate the patient with influenza from non-ill persons living in the home as much as possible.
 - Patients should not leave the home during the period when they are most likely to be infectious to others (i.e., 5 days after onset of symptoms). When movement outside the home is necessary (e.g., for medical care), the patient should follow cough etiquette (i.e., cover the mouth and nose when coughing and sneezing) and wear procedure or surgical masks if available.
2. Management of other persons in the home
 - Persons who have not been exposed to pandemic influenza and who are not essential

for patient care or support should not enter the home while persons are actively ill with pandemic influenza.

- If unexposed persons must enter the home, they should avoid close contact with the patient.
- Persons living in the home with the pandemic influenza patient should limit contact with the patient to the extent possible; consider designating one person as the primary care provider.
- Household members should be vigilant for the development of influenza symptoms. Consult with healthcare providers to determine whether a pandemic influenza vaccine, if available or antiviral prophylaxis should be considered. Contact a telephone hotline or medical care provider if symptoms occur.

3. Infection control measures in the home

All persons in the household should carefully follow recommendations for hand hygiene (i.e., hand washing with soap and water or use of an alcohol-based hand rub) after contact with an influenza patient or the environment in which care is provided. Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical or procedure masks by the patient and/or caregiver during interactions may be beneficial. Soiled dishes and eating utensils should be washed either in a dishwasher or by hand with warm water and soap. Separation of eating utensils for use by a patient with influenza is not necessary.

- Laundry can be washed in a standard washing machine with warm or cold water and detergent. It is not necessary to separate soiled linen and laundry used by a patient with influenza from other household laundry. Care should be used when handling soiled laundry (i.e., avoid “hugging” the laundry) to avoid contamination. Hand hygiene should be performed after handling soiled laundry.
- Tissues used by the ill patient should be placed in a bag and disposed with other household waste. Consider placing a bag for this purpose at the bedside.
- Environmental surfaces in the home should be cleaned using normal procedures.

Care of Pandemic Influenza Patients at Alternative Sites

If an influenza pandemic results in severe illness that overwhelms the capacity of existing healthcare resources, it may become necessary to provide care at alternative sites (e.g., schools, auditoriums, conference centers, hotels). Existing “all-hazard” plans have likely identified designated sites for this purpose. The same principles of infection control apply in these settings as in other healthcare settings. Careful planning is necessary to ensure that resources are available and procedures are in place to adhere to the key principles of infection control.

Recommendations for Infection Control in Schools and Workplaces

In schools and workplaces, infection control for pandemic influenza should focus on:

- Keeping sick students, faculty, and workers away while they are infectious.
- Promoting respiratory hygiene/cough etiquette and hand hygiene as for any respiratory infection.

The benefit of wearing masks in these settings has not been established. School administrators and employers should ensure that materials for respiratory hygiene/cough etiquette (i.e., tissues

and receptacles for their disposal) and hand hygiene are available. Educational messages and infection control guidance for pandemic influenza are available for distribution. (CDC has developed educational materials appropriate to various audiences.)

Recommendations for Infection Control in Community Settings

Infection control in the community should focus on “social distancing” and promoting respiratory hygiene/cough etiquette and hand hygiene to decrease exposure to others. This could include the use of masks by persons with respiratory symptoms, if feasible. Although the use of masks in community settings has not been demonstrated to be a public health measure to decrease infections during a community outbreak, persons may choose to wear a mask as part of individual protection strategies that include cough etiquette, hand hygiene, and avoiding public gatherings. Mask use may also be important for persons who are at high risk for complications of influenza. Public education should be provided on how to use masks appropriately. Persons at high risk for complications of influenza should try to avoid public gatherings (e.g., movies, religious services, public meetings) when pandemic influenza is in the community. They should also avoid going to other public areas (e.g., food stores, pharmacies); the use of other persons for shopping or home delivery service is encouraged.

BOX 1. SUMMARY OF INFECTION CONTROL RECOMMENDATIONS FOR CARE OF PATIENTS WITH PANDEMIC INFLUENZA

COMPONENT	RECOMMENDATIONS
STANDARD PRECAUTIONS	See www.cdc.gov/ncidod/hip/ISOLAT/std_prec_excerpt.htm
Hand hygiene	Perform hand hygiene after touching blood, body fluids, secretions, excretions, and contaminated items; after removing gloves; and between patient contacts. Hand hygiene includes both handwashing with either plain or antimicrobial soap and water or use of alcohol-based products (gels, rinses, foams) that contain an emollient and do not require the use of water. If hands are visibly soiled or contaminated with respiratory secretions, they should be washed with soap (either non-antimicrobial or antimicrobial) and water. In the absence of visible soiling of hands, approved alcohol-based products for hand disinfection are preferred over antimicrobial or plain soap and water because of their superior microbicidal activity, reduced drying of the skin, and convenience.
Personal protective equipment (PPE) <ul style="list-style-type: none"> • Gloves • Gown • Face/eye protection (e.g., surgical or procedure mask and goggles or a face shield) 	<ul style="list-style-type: none"> • For touching blood, body fluids, secretions, excretions, and contaminated items; for touching mucous membranes and nonintact skin • During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated • During procedures and patient care activities likely to generate splash or spray of blood, body fluids, secretions, excretions
Safe work practices	Avoid touching eyes, nose, mouth, or exposed skin with contaminated hands (gloved or ungloved); avoid touching surfaces with contaminated gloves and other PPE that are not directly related to patient care (e.g., door knobs, keys, light switches).
Patient resuscitation	Avoid unnecessary mouth-to-mouth contact; use mouthpiece, resuscitation bag, or other ventilation devices to prevent contact with mouth and oral secretions.
Soiled patient care equipment	Handle in a manner that prevents transfer of microorganisms to oneself, others, and environmental surfaces; wear gloves if visibly contaminated; perform hand hygiene after handling equipment.
Soiled linen and laundry	Handle in a manner that prevents transfer of microorganisms to oneself, others, and to environmental surfaces; wear gloves (gown if necessary) when handling and transporting soiled linen and laundry; and perform hand hygiene.
Needles and other sharps	Use devices with safety features when available; do not recap, bend, break or hand-manipulate used needles; if recapping is necessary, use a one-handed scoop technique; place used sharps in a puncture-resistant container.

BOX 1. SUMMARY OF INFECTION CONTROL RECOMMENDATIONS FOR CARE OF PATIENTS WITH PANDEMIC INFLUENZA (CONT.)

COMPONENT	RECOMMENDATIONS
STANDARD PRECAUTIONS (cont.)	See www.cdc.gov/ncidod/hip/ISOLAT/std_prec_excerpt.htm
Environmental cleaning and disinfection	Use EPA-registered hospital detergent-disinfectant; follow standard facility procedures for cleaning and disinfection of environmental surfaces; emphasize cleaning/disinfection of frequently touched surfaces (e.g., bed rails, phones, lavatory surfaces).
Disposal of solid waste	Contain and dispose of solid waste (medical and non-medical) in accordance with facility procedures and/or local or state regulations; wear gloves when handling waste; wear gloves when handling waste containers; perform hand hygiene.
Respiratory hygiene/cough etiquette Source control measures for persons with symptoms of a respiratory infection; implement at first point of encounter (e.g., triage/reception areas) within a healthcare setting.	Cover the mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacles; perform hand hygiene after contact with respiratory secretions; wear a mask (procedure or surgical) if tolerated; sit or stand as far away as possible (more than 3 feet) from persons who are not ill.
DROPLET PRECAUTIONS	www.cdc.gov/ncidod/hip/ISOLAT/droplet_prec_excerpt.htm
Patient placement	Place patients with influenza in a private room or cohort with other patients with influenza.* Keep door closed or slightly ajar; maintain room assignments of patients in nursing homes and other residential settings; and apply droplet precautions to all persons in the room. *During the early stages of a pandemic, infection with influenza should be laboratory-confirmed, if possible.
Personal protective equipment	Wear a surgical or procedure mask for entry into patient room; wear other PPE as recommended for standard precautions.
Patient transport	Limit patient movement outside of room to medically necessary purposes; have patient wear a procedure or surgical mask when outside the room.
Other	Follow standard precautions and facility procedures for handling linen and laundry and dishes and eating utensils, and for cleaning/disinfection of environmental surfaces and patient care equipment, disposal of solid waste, and postmortem care.
AEROSOL-GENERATING PROCEDURES	During procedures that may generate small particles of respiratory secretions (e.g., endotracheal intubation, bronchoscopy, nebulizer treatment, suctioning), healthcare personnel should wear gloves, gown, face/eye protection, and a fit-tested N95 respirator or other appropriate particulate respirator.

Source: HHS Pandemic Influenza Plan, Supplement 4

BOX 2. RESPIRATORY HYGIENE/COUGH ETIQUETTE

To contain respiratory secretions, all persons with signs and symptoms of a respiratory infection, regardless of presumed cause, should be instructed to:

- Cover the nose/mouth when coughing or sneezing.
- Use tissues to contain respiratory secretions.
- Dispose of tissues in the nearest waste receptacle after use.
- Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials.

Healthcare facilities should ensure the availability of materials for adhering to respiratory hygiene/cough etiquette in waiting areas for patients and visitors:

- Provide tissues and no-touch receptacles for used tissue disposal.
- Provide conveniently located dispensers of alcohol-based hand rub.
 - Provide soap and disposable towels for handwashing where sinks are available.

Masking and separation of persons with symptoms of respiratory infection

During periods of increased respiratory infection in the community, persons who are coughing should be offered either a procedure mask (i.e., with ear loops) or a surgical mask (i.e., with ties) to contain respiratory secretions. Coughing persons should be encouraged to sit as far away as possible (at least 3 feet) from others in common waiting areas. Some facilities may wish to institute this recommendation year-round.

Source: HHS Pandemic Influenza Plan, Supplement 4

Clinical Guidelines

SUMMARY OF PUBLIC HEALTH ROLES AND RESPONSIBILITIES FOR CLINICAL GUIDELINES

INTERPANDEMIC AND PANDEMIC ALERT PERIODS

Healthcare providers:

- Be aware of case definitions; procedures for screening, infection control, and laboratory testing; and antiviral regimens for influenza A (H5N1) and other novel influenza viruses.
- Notify health departments about suspected/confirmed novel influenza cases and fatalities.
- Collect recommended specimens for diagnosis of novel influenza, and forward specimens to designated state and federal laboratories.

State and local public health agencies:

- Help educate healthcare providers about novel and pandemic influenza.
- Provide or facilitate testing and investigation of suspected novel influenza cases.
- Conduct follow-up of suspected novel influenza cases.

HHS agencies:

- Develop and disseminate recommendations on the use of influenza diagnostic tests, antiviral drugs, and vaccines during a pandemic (see also Supplement 6 and Supplement 7).
- Develop a national stockpile of antiviral drugs for use during a pandemic (see also Supplement 6).
- Work with partner organizations to discuss and resolve clinical issues related to pandemic influenza response.
- Assist ministries of health and WHO in characterizing cases of human infection with avian influenza A (H5N1) or other novel strains of influenza, particularly with regard to antiviral susceptibility, transmission parameters, and clinical outcomes.
- Work with state and local health departments to investigate and manage suspected cases of human infection with avian influenza A (H5N1) or other novel strains of influenza.
- Establish case definition and reporting mechanisms.

PANDEMIC PERIOD

Healthcare providers:

- Regularly consult updates on case definitions, screening, laboratory testing, and treatment algorithms for pandemic influenza.
- Report pandemic influenza cases or fatalities as requested by health departments.
- Collect recommended specimens for ongoing pandemic influenza surveillance, and forward specimens as requested to designated state and federal laboratories.
- Report atypical cases, breakthrough infections while on prophylaxis, or any other abnormal cases throughout the duration of the pandemic to public health agencies.

State and local public health agencies:

- Update providers regularly as the influenza pandemic unfolds.
- Provide or facilitate testing and investigation of pandemic influenza cases.
- Work with CDC to investigate and report special pandemic situations.

HHS responsibilities:

- Update and disseminate national guidelines on influenza diagnostic testing and use of antiviral drugs and vaccines during the pandemic.
- Develop a pandemic influenza vaccine (see also Part 1 and Supplement 6).
- Work with healthcare partners to refine clinical management guidelines and issue regular updates on treatment issues.
- Conduct observational and interventional studies with partner institutions to investigate pandemic influenza pathogenesis and develop disease prevention and treatment strategies.
- Monitor pandemic influenza cases for antiviral resistance and transmission parameters.
- Monitor antiviral drug use and inventories.
- Collect information on clinical features, outcomes, and treatments.

Source: HHS Pandemic Influenza Plan, Supplement 5

Healthcare Providers Play an Essential Role

Rationale

Healthcare providers play an essential role in the detection of an initial case of novel or pandemic influenza in a community. If implemented early, identification and isolation of cases may help slow the spread of influenza within a community. Clinical awareness of novel or pandemic influenza disease can also benefit the individual patient, as rapid diagnosis and initiation of treatment can avert potentially severe complications.

Detection is complicated, however, by the lack of specific clinical findings and commercially available laboratory tests that can rapidly distinguish novel or pandemic influenza from seasonal influenza. In addition, neither the clinical characteristics of a novel or pandemic influenza virus strain nor the groups at highest risk for complications can necessarily be defined beforehand.

Therefore, clinicians face significant challenges in:

- 1) quickly identifying and triaging cases,
- 2) containing the spread of infection,
- 3) beginning an efficient and comprehensive workup,
- 4) initiating antiviral and other supportive therapy, and
- 5) anticipating clinical complications.

Overview

This section provides clinical procedures for the initial screening, assessment, and management of patients with suspected novel influenza during the Interpandemic and Pandemic Alert Periods and for patients with suspected pandemic influenza during the Pandemic Period.

During the Interpandemic and Pandemic Alert Periods, early recognition of illness caused by a novel influenza A virus strain will rely on a combination of clinical and epidemiologic features.

During the Pandemic Period (in a setting of high community prevalence), diagnosis will likely be more clinical- oriented because the likelihood will be high that any severe febrile respiratory illness is pandemic influenza. During periods in which no human infections with a novel influenza A virus strain have occurred anywhere in the world (Interpandemic Period: Phases 1, 2; see Box 1, pg. 58), or when sporadic cases of animal-to human transmission or rare instances of limited human-to-human transmission of a novel influenza A virus strain have occurred in the world (Pandemic Alert Period: Phases 3, 4), the likelihood of novel influenza A virus infection is very low in a returned traveler from an affected area who has severe respiratory disease or influenza-like illness. Since human influenza A and B viruses circulate worldwide among humans year-round, the possibility of infection with human influenza viruses is much higher and should be considered.

Once local person-to-person transmission of a novel influenza A virus strain has been confirmed (Pandemic Alert Period: Phase 5), the potential for novel influenza A virus infection will be higher in an ill person who has a strong epidemiologic link to the affected area (Box 1, pg. 58). This section is designed to serve as a guide for clinicians, with the understanding that the management of influenza is based primarily on sound clinical judgment regarding the individual patient as well as an assessment of locally available resources, such as rapid diagnostics, antiviral drugs, and hospital beds. Early antiviral therapy shortens the

duration of illness due to seasonal influenza and would be expected to have similar effects on illness due to novel or pandemic influenza viruses. Clinical management must also address supportive care and management of influenza-related complications.

Clinical Guidelines for the Interpandemic and Pandemic Alert Periods

During the Interpandemic and Pandemic Alert Periods, the primary goal of rapid detection is to quickly identify and contain cases of novel influenza. To limit the need to evaluate an overwhelming number of patients, the screening criteria should be specific, relying on a combination of clinical and epidemiologic features. Although febrile respiratory illnesses are one of the most common indications for medical evaluation, particularly during the winter, during the Interpandemic and Pandemic Alert Period, human cases of novel influenza are expected to be quite rare; laboratory diagnosis will most likely be sought for those with severe respiratory illness, such as pneumonia. The main features of detection and clinical management during the Interpandemic and Pandemic Alert Periods are outlined in Figure 1.

Criteria for Evaluation of Patients with Possible Novel Influenza

The following criteria are based on the features of recent avian influenza A (H5N1) cases but are intended for use in evaluating suspected cases of infection with any novel influenza A virus strain. During the Pandemic Alert Period, human infections with novel influenza A viruses will be an uncommon cause of influenza-like illness; therefore, both clinical and epidemiologic criteria should be met. The criteria will be updated when needed as more data are collected.

1. Clinical Criteria

Any suspected cases of human infection with a novel influenza virus must first meet the criteria for influenza-like illness (ILI), defined as temperature of $>38^{\circ}\text{C}$ plus either sore throat or cough. Since lower respiratory tract involvement might result in dyspnea (shortness of breath), dyspnea should be considered as an additional criterion. Therefore, the full clinical criteria are:

Fever plus one of the following: sore throat, cough, or dyspnea.

Although recent infections with novel influenza viruses have resulted in severe respiratory illness, the next pandemic influenza virus strain might present with a different clinical syndrome. In such a situation, the clinical criteria will be modified accordingly and posted at www.cdc.gov/flu. Given the large number of influenza-like illnesses that clinicians encounter during a typical flu season, laboratory evaluation for novel influenza A viruses during the Interpandemic and Pandemic Alert Periods is recommended only for:

- Hospitalized patients with severe ILI, including pneumonia, who meet the epidemiologic criteria (see below), or
- Non-hospitalized patients with ILI and with strong epidemiologic suspicion of novel influenza virus exposure (e.g., direct contact with ill poultry in an affected area, or close contact with a known or suspected human case of novel influenza.).
- Recommendations for the evaluation of patients with respiratory illnesses are provided in Box 2, pg. 59. Exceptions to the current clinical criteria are provided in Box 3.

2. Epidemiologic Criteria

Epidemiologic criteria for evaluation of patients with possible novel influenza focus on the

risk of exposure to a novel influenza virus with pandemic potential. Although the incubation period for seasonal influenza ranges from 1 to 4 days, the incubation periods for novel types of influenza are currently unknown and might be longer. Therefore, the maximum interval between potential exposure and symptom onset is set conservatively at 10 days.

a. Exposure risks

Exposure risks fall into two categories: travel and occupational.

Persons have a *travel risk* if they have:

- recently visited or lived in an area affected by highly pathogenic avian influenza A outbreaks in domestic poultry or where a human case of novel influenza has been confirmed, and either
- had direct contact with poultry, or
- had close contact with a person with confirmed or suspected novel influenza. Updated listings of areas affected by avian influenza A (H5N1) and other current/recent novel strains are provided on the websites of the OIE (http://www.oie.int/eng/en_index.htm), WHO (<http://www.who.int/en/>), and CDC (www.cdc.gov/flu/).

Direct contact with poultry is defined as:

- 1) touching birds (well-appearing, sick, or dead), or
- 2) touching poultry feces or surfaces contaminated with feces, or
- 3) consuming uncooked poultry products (including blood) in an affected area.

Close contact with a person from an infected area with confirmed or suspected novel influenza is defined as being within 3 feet (1 meter) of that person during their illness. Because specific testing for human infection with avian influenza A (H5N1) might not be locally available in an affected area, persons reporting close contact in an affected area with a person suffering from a severe, yet unexplained, respiratory illness should also be evaluated. Clinicians should recognize that human influenza viruses circulate worldwide and year-round, including in countries with outbreaks of avian influenza A (H5N1) among poultry. Therefore, during the Interpandemic and Pandemic Alert Periods, human influenza virus infection can be a cause of ILI among returned travelers at any time of the year, including during the summer in the United States. This includes travelers returning from areas affected by poultry outbreaks of highly pathogenic avian influenza A (H5N1) in Asia. As of October 2005, such persons are currently more likely to have infection with human influenza viruses than with avian influenza A (H5N1) viruses.

Persons at *occupational risk* for infection with a novel strain of influenza include persons who work on farms or live poultry markets or who process or handle poultry infected with known or suspected avian influenza viruses, workers in laboratories that contain live animal or novel influenza viruses, and healthcare workers in direct contact with a suspected or confirmed novel influenza case. ADH is and will work closely with the poultry industry. In case an outbreak of High Pathogenic Avian Influenza (HPAI) occurs in poultry in Arkansas, ADH will be notified by the poultry industry and will

work closely with them in quarantining and prophylaxing those workers that have come in close contact with the ill chickens.

Information on limiting occupational risk is provided on the Occupational Health and Safety Administration (OSHA) website at: www.osha.gov/dsg/guidance/avian-flu.html.

During the Interpandemic and Pandemic Alert Periods, when there is no sustained human-to-human transmission of any novel influenza viruses, direct contact with animals such as poultry in an affected area or close contact with a case of suspected or confirmed human novel influenza—for any reason—is required for further evaluation. During the Pandemic Alert Period, Phases 3 and 4, the majority of human cases of novel influenza will result from avian-to-human transmission (see Box 1). Therefore, a history of direct contact with poultry (well-appearing, sick, or dead), consumption of uncooked poultry or poultry products, or direct exposure to environmental contamination with poultry feces in an affected area will be important to ascertain. During the Pandemic Alert Period, Phase 5, a history of close contact with an ill person suspected or confirmed to have novel influenza in an affected area will be even more important.

Other avian influenza A viruses — Although the epidemiologic criteria for novel influenza are based on recent human cases of avian influenza A (H5N1), they are intended for use in the evaluation of suspected cases of infection with any novel influenza A virus strain, including other avian influenza viruses. Other avian influenza A viruses that have caused human disease include the highly pathogenic viruses H7N7 and H7N3 and the low pathogenic viruses H9N2 and H7N2 (see HHS Pandemic Influenza Plan,

Supplement 2, Box 3). Some of these human cases have occurred in Europe (Netherlands) and North America (Canada and the United States). Therefore, the same high-risk exposures defined above for avian influenza A (H5N1) also apply to other avian influenza A viruses. A strong epidemiologic link to an avian influenza outbreak in poultry— even in areas that have not experienced poultry outbreaks of avian influenza A (H5N1)—may raise the index of suspicion for human infection with avian influenza A viruses.

Initial Management of Patients Who Meet the Criteria for Novel Influenza

When a patient meets both the clinical and epidemiologic criteria for a suspected case of novel influenza, healthcare personnel should initiate the following activities:

1. Implement infection control precautions for novel influenza, including respiratory hygiene/cough etiquette. Patients should be placed on Droplet Precautions for a minimum of 14 days, unless there is full resolution of illness or another etiology has been identified before that period has elapsed. Healthcare personnel should wear surgical or procedure masks on entering a patient's room, as per Droplet Precautions, as well as gloves and gowns, when indicated for Standard Precautions (Table). Patients should be admitted to a single-patient room, and patient movement and transport within the hospital should be limited to medically necessary purposes.
2. Notify the local and state health departments. Report each patient who meets the clinical

and epidemiologic criteria for a suspected case of novel influenza to the state or local health department as quickly as possible to facilitate initiation of public health measures. Designate one person as a point of contact to update public health authorities on the patient's clinical status.

3. Obtain clinical specimens for novel influenza A virus testing and notify the local and state health departments to arrange testing. Testing will likely be directed by public health authorities. Since the optimal specimens for detecting novel influenza A virus infections are currently unknown, if feasible, all of the following respiratory specimens should be collected for novel influenza A virus testing:

Nasopharyngeal swab; nasal swab, wash, or aspirate; throat swab; and tracheal aspirate (for intubated patients). Store specimens at 4°C in viral transport media until transported or shipped for testing. Acute (within 7 days of illness onset) and convalescent serum specimens (2–3 weeks after the acute specimen and at least 3 weeks after illness onset) should be obtained and refrigerated at 4°C or frozen at minus 20–80°C. Serological testing for novel influenza virus infection can be performed only at CDC.

Clinicians should immediately notify their local health departments of their intention to ship clinical specimens from suspected cases of human infection with avian influenza, to ensure that the specimens are handled under proper biocontainment conditions.

Novel influenza can be confirmed by RT-PCR or virus isolation from tissue cell culture with sub typing. RT-PCR for testing of novel influenza viruses cannot be performed by a hospital laboratory and is available only at state public health laboratories and CDC. Viral culture of specimens from suspected novel influenza cases should be attempted only in laboratories that meet the biocontainment conditions for BSL-3 with enhancements or higher.

Rapid influenza diagnostic tests and immunofluorescence (indirect fluorescent antibody staining [IFA] or direct fluorescent antibody staining [DFA]) may be used to detect seasonal influenza, but should not be used to confirm or exclude novel influenza during the Pandemic Alert Period. Rapid influenza tests have relatively low sensitivity for detecting seasonal influenza, and their ability to detect novel influenza subtypes is unknown. The sensitivity of rapid diagnostic tests will likely be higher in specimens collected within two days of illness onset, in children, and when tested in clinical laboratories that perform a high volume of testing. Such tests can identify influenza A viruses but cannot distinguish between human infection with seasonal and novel influenza A viruses. A negative rapid influenza test result does not necessarily exclude human infection with either seasonal or novel influenza A viruses. A positive rapid influenza test result could be a false positive or represent infection with either seasonal or novel influenza A viruses. Therefore, both negative and positive rapid influenza test and immunofluorescence results should be interpreted with caution and RT-PCR testing for influenza viruses should be performed. Acute and convalescent serum samples and other available clinical specimens (respiratory, blood, and stool) should be saved and refrigerated or frozen for additional testing until a specific diagnosis is made.

Evaluate alternative diagnoses. An alternative diagnosis should be based only on laboratory

tests with high positive predictive value (e.g., blood culture, viral culture, PCR, Legionella urinary antigen, pleural fluid culture, transthoracic aspirate culture). If an alternate etiology is identified, the possibility of co-infection with a novel influenza virus may still be considered if there is a strong epidemiologic link to exposure to novel influenza.

4. Decide on inpatient or outpatient management. The decision to hospitalize a suspected novel influenza case will be based on the physician's clinical assessment and assessment of risk and whether adequate precautions can be taken at home to prevent the potential spread of infection. Patients cared for at home should be separated from other household members as much as possible. All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed with other household waste (Box 4). Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical or procedure masks by the patient and/or caregiver during interactions may be of benefit. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap (Box 4).
5. Initiate antiviral treatment as soon as possible, even if laboratory results are not yet available. Clinical trials have shown that these drugs can decrease the illness due to seasonal influenza duration by several days when they are initiated within 48 hours of illness onset. The clinical effectiveness of antiviral drugs for treatment of novel influenza is unknown, but it is likely that the earlier treatment is initiated, the greater the likelihood of benefit. During the Pandemic Alert Period, available virus isolates from any case of novel influenza will be tested for resistance to the currently licensed antiviral medications.
6. Assist public health officials with the identification of potentially exposed contacts. After consulting with state and local public health officials, clinicians might be asked to help identify persons exposed to the suspected novel influenza case-patient (particularly healthcare workers). In general, persons in close contact with the case-patient at any time beginning one day before the onset of illness are considered at risk. Close contacts might include household and social contacts, family members, workplace or school contacts, fellow travelers, and/or healthcare providers.

Management of Patients Who Test Positive for Novel Influenza

If a patient is confirmed to have an infection with a novel influenza virus, healthcare personnel should continue antiviral treatment and all isolation and infection control precautions, and isolate patients with novel influenza from seasonal influenza patients. In addition to prior vaccination against seasonal influenza, such measures may decrease the risk of co-infection and viral genetic reassortment.

Management of Patients Who Test Positive for Seasonal Influenza

Many suspected novel influenza cases may be found to have seasonal human influenza, particularly during the winter season.

It should be recognized that human influenza viruses circulate among people worldwide, including in affected areas with poultry outbreaks of avian influenza A viruses during non-seasonal influenza activity in the United States. For patients with confirmed seasonal influenza, maintain Standard and Droplet Precautions, and continue antiviral treatment for a

full treatment course (e.g., 5 days).

Management of Patients Who Test Negative for Novel Influenza

The sensitivity of the currently available tests for detecting novel influenza viruses in clinical specimens has not been thoroughly evaluated with a full range of specimen types.

Consequently, false-negative test results may occur. Therefore, if test results are negative but the clinical and epidemiologic suspicion remains high, continuing antiviral treatment and isolation procedures should be considered.

Test results might be negative for influenza viruses for several reasons. Some patients might have an alternate etiology to explain their illness. The general work-up for febrile respiratory illnesses described below should evaluate the most common alternate causes. A certain number of truly infected cases might also test falsely negative, due to specimen collection conditions, to viral shedding that is not detectable, or to sensitivity of the test.

Interpretation of negative testing results should be tailored to the individual patient in consultation with hospital infection control and infectious disease specialists, as well as the state or local health department and CDC. In hospitalized patients who test negative for novel influenza but have no alternate diagnosis established, novel-influenza-directed management should be continued if clinical suspicion is high and there is a strong epidemiologic link to exposure to novel influenza. When influenza tests are negative and an alternative diagnosis is established, isolation precautions and antiviral drug therapy for novel influenza may be discontinued based on clinician's assessment, particularly in the absence of a strong epidemiologic link, if the alternative diagnosis is made using a test with a high positive-predictive value, and if the clinical manifestations are explained by the alternative diagnosis

Clinical Guidelines for the Pandemic Period

During the Pandemic Period, the primary goal of rapid detection is to appropriately identify and triage cases of pandemic influenza. During this period, outpatient clinics and emergency departments might be overwhelmed with suspected cases, restricting the time and laboratory resources available for evaluation. In addition, if the pandemic influenza virus exhibits transmission characteristics similar to those of seasonal influenza viruses, illnesses will likely spread throughout the community too rapidly to allow the identification of obvious exposures or contacts. Evaluation will therefore focus predominantly on clinical and basic laboratory findings, with less emphasis on laboratory diagnostic testing (which may be in short supply) and epidemiologic criteria. Nevertheless, clinicians in communities without pandemic influenza activity might consider asking patients about recent travel from a community with pandemic influenza activity or close contact with a suspected or confirmed pandemic influenza case. The main features of clinical management during the Pandemic Period are outlined in Figure 2.

Criteria for Evaluation of Patients with Possible Pandemic Influenza

1. Clinical criteria

Suspected cases of pandemic influenza virus infection should meet the criteria for ILI: temperature of $>38^{\circ}\text{C}$ plus either sore throat or cough. Since lower respiratory tract involvement might result in dyspnea (shortness of breath), dyspnea should be considered as an additional criterion. Therefore, the full clinical criteria are: fever plus one of the

following: sore throat, cough, or dyspnea. Although past influenza pandemics have most frequently resulted in respiratory illness, the next pandemic influenza virus strain might present with a different clinical syndrome. During a pandemic, updates on other clinical presentations will be provided at: www.pandemicflu.gov/ and www.cdc.gov/flu/. Recommendations for general evaluation of patients with influenza-like illness are provided in Box 2, pg.59. Exceptions to the clinical criteria are provided in Box 3, pg.60.

2. Epidemiologic criteria

During the Pandemic Period, an exposure history will be marginally useful for clinical management when disease is widespread in a community. In addition, there will be a relatively high likelihood that any case of ILI during that time period will be pandemic influenza. Once pandemic influenza has arrived in a particular locality, clinical criteria will be sufficient for classifying the patient as a suspected pandemic influenza case.

Initial Management of Patients Who Meet the Criteria for Pandemic Influenza

When a patient meets the criteria for a suspected case of pandemic influenza, healthcare personnel should initiate the following activities:

- Follow local and state health department recommendations on reporting for patients who meet the criteria for pandemic influenza. See Supplement 1 for guidance on case reporting during the Pandemic Period.
- If the patient is hospitalized, implement infection control precautions for pandemic influenza, including Respiratory Hygiene/Cough Etiquette (see Table and Supplement 4). Place the patient on Droplet Precautions for a minimum of 5 days from the onset of symptoms. Healthcare personnel should wear surgical or procedure masks on entering a patient's room, as per Droplet Precautions, as well as gloves and gowns when indicated, as per Standard Precautions (Table 1, pg.68). Once a pandemic is underway, hospital admission of patients should be limited to those with severe complications who cannot be cared for outside the hospital setting. Patients should be admitted to either a single-patient room or an area designated for cohorting of patients with influenza. Patient movement and transport outside the isolation area should be limited to medically necessary purposes (see Table).
- Obtain clinical specimens for general evaluation, as clinically indicated (see Box 2, pg.59). Once pandemic influenza has arrived in a community, influenza testing will likely not be needed for most patients. Laboratory testing in conjunction with health departments will likely be performed in a subset of pandemic influenza cases, however, as part of ongoing virologic surveillance to monitor the antigenic evolution of the strains for vaccine strain selection purposes. At the beginning or end of a pandemic outbreak in a community, diagnostic testing might aid cohorting decisions, but may be optional in the setting of high local prevalence. Influenza diagnostic testing should be considered before initiating treatment with antivirals.

As with seasonal influenza, RT-PCR and virus isolation from tissue culture will be the most accurate methods for diagnosing pandemic influenza. Generally, specimens should include combined nasopharyngeal aspirates or nasal swabs, and throat swabs, stored at 4°C in viral transport media. During the Pandemic Period, BSL-2 conditions should be

sufficient for viral culture of clinical specimens from suspected pandemic influenza patients.

Rapid diagnostic tests for influenza and immunofluorescence may be helpful for initial clinical management, including cohorting and treatment (see above). However, rapid influenza tests have relatively low sensitivity for detecting seasonal influenza, and their ability to detect pandemic influenza viruses is unknown. The sensitivity of rapid diagnostic tests will likely be higher in specimens collected within two days of illness onset, in children, and when tested at clinical laboratories that perform a high volume of testing. Because during a pandemic a negative rapid test may be a false negative, test results need to be interpreted within the overall clinical context. For example, it may not be optimal to withhold antiviral treatment from a seriously ill high risk patient on the basis of a negative test; however, in a setting of limited antiviral drug availability, treatment decisions in less high risk situations could be based on test results. The risk of a false-negative test also must be taken into account in making cohorting decisions. Rapid diagnostic testing should not preclude more reliable testing, if available.

- Decide on inpatient or outpatient management. The decision to hospitalize a suspected pandemic influenza case will be based on the physician's clinical assessment of the patient as well as the availability of hospital beds and personnel. An unstable patient will be considered a high priority for admission, but patients with high-risk conditions might also warrant special attention, such as observation or close follow-up, even if disease is mild. On the other hand, home management with follow-up might be appropriate for well-appearing young children with fever alone. Patients cared for at home should be separated from other household members as much as possible. All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed with other household waste (Box 4 pg.61). Infection within the household may be minimized if a primary caregiver is designated; ideally, someone who does not have an underlying condition that places them at increased risk of severe influenza disease. Although no studies have assessed the use of masks at home to decrease the spread of infection, using a surgical or procedure mask by the patient or caregiver during interactions may be of benefit. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap (Box 4, pg.61).

Clinical Management of Pandemic Influenza Patients

During the Pandemic Period, CDC may request virus isolates from persons who fail treatment or antiviral prophylaxis, as these strains may more likely be drug resistant. In addition, randomly collected isolates will be tested for resistance to establish nationwide rates. Children aged <18 years with suspected or confirmed pandemic influenza should not be treated with aspirin or other salicylate-containing products because of an increased risk of Reye syndrome (characterized by acute encephalopathy and liver failure) in this age group.

The major clinical presentations and complications related to seasonal human influenza occur more commonly in persons with certain underlying medical conditions, such as chronic respiratory or cardiovascular disease and extremes of age. Limited data are available on risk factors and complications related to infection with novel influenza viruses, and these may

change as individual strains evolve. In particular, post-influenza community-acquired pneumonia will likely be a commonly encountered complication, and clinicians will need to be aware of recommended methods for diagnosis and treatment.

BOX 1. RISK OF NOVEL INFLUENZA IN PERSONS WITH SEVERE RESPIRATORY DISEASE OR INFLUENZA-LIKE ILLNESS DURING THE INTERPANDEMIC AND PANDEMIC ALERT PERIODS

Clinicians should recognize that human influenza A and B viruses and other respiratory viruses circulate year-round among people throughout the world, including in countries affected by outbreaks of avian influenza A viruses in poultry. Seasonal human influenza A and B community outbreaks occur in temperate climates of the northern and southern hemisphere, and human influenza activity may occur year-round in subtropical and tropical regions. Outbreaks of human influenza can occur among travelers during any time of the year, including periods of low influenza activity in the United States (e.g., summer).

Phases 1, 2: Interpandemic Period

A novel influenza A virus has been detected in animals but not in humans. During these phases, the risk of human infection with a novel influenza A virus strain is extremely low. The risk of human infection with human influenza viruses or other viruses is much higher in persons living in or traveling to affected areas.

Phases 3, 4: Pandemic Alert Period

A novel influenza A virus has been detected in humans through sporadic animal-to-human transmission in an affected area (e.g., direct contact with infected poultry), and few cases of limited, local human-to-human transmission have occurred (small clusters of cases). During these phases, the risk of human infection with a novel influenza A virus strain is very low. The risk of human infection with human influenza viruses or other viruses is much higher in persons living in or traveling to affected areas.

Phase 5: Pandemic Alert Period

A novel influenza A virus has been detected in humans in larger clusters in an affected area, suggesting that the virus is becoming better adapted to spread among people. During this period, the risk of human infection with a novel influenza A virus strain is higher, depending on specific exposures, in persons living in or traveling to affected areas. Human infection with human influenza viruses or other viruses will occur and should still be considered.

Source: HHS Pandemic Influenza Plan, Supplement 5

BOX 2. CLINICAL EVALUATION OF PATIENTS WITH INFLUENZA-LIKE ILLNESS DURING THE INTERPANDEMIC AND PANDEMIC ALERT PERIODS

- Patients who require hospitalization for an influenza-like illness for which a definitive alternative diagnosis is not immediately apparent* should be questioned about: 1) travel to an area affected by avian influenza A virus outbreaks in poultry, 2) direct contact with poultry, 3) close contact with persons with suspected or confirmed novel influenza, or 4) occupational exposure to novel influenza viruses (such as through agricultural, health care, or laboratory activities).
- Patients may be screened on admission for recent seasonal influenza vaccination and pneumococcal vaccination. Those without a history of immunization should receive these vaccines before discharge, if indicated.
- Patients meeting the epidemiologic criteria for possible infection with a novel strain of influenza should undergo a routine diagnostic work-up, guided by clinical indications. Appropriate personal protective equipment should be used when evaluating patients with suspected novel influenza, including during collection of specimens.**
- Diagnostic testing for a novel influenza A virus should be initiated as follows:
 - Collect all of the following specimens: nasopharyngeal swab, nasal swab, wash, or aspirate, throat swab, and tracheal aspirate (if intubated), and place into viral transport media and refrigerate at 4° C until specimens can be transported for testing.
 - Immediately contact the local and state health departments to report the suspected case and to arrange novel influenza testing by RT-PCR..

RT-PCR testing is not available in hospital laboratories and must be performed at a qualified laboratory such as a state health department laboratory or the CDC Influenza Laboratory. Viral culture should be performed only at biosafety level 3 [BSL-3] with enhancements (see Supplement 2).

- Depending on the clinical presentation and the patient's underlying health status, other initial diagnostic testing might include:
 - Pulse oximetry
 - Chest radiograph
 - Complete blood count (CBC) with differential
 - Blood cultures
 - Sputum (in adults), tracheal aspirate, and pleural effusion aspirate (if an effusion is present) Gram stain and culture
 - Antibiotic susceptibility testing (encouraged for all bacterial isolates)
 - Multivalent immunofluorescent antibody testing or PCR of nasopharyngeal aspirates or swabs for common viral respiratory pathogens, such as influenza A and B, adenovirus, parainfluenza viruses, and respiratory syncytial virus, particularly in children
 - In adults with radiographic evidence of pneumonia, *Legionella* and pneumococcal urinary antigen testing
 - If clinicians have access to rapid and reliable testing (e.g., PCR) for *M. pneumoniae* and *C. pneumoniae*, adults and children <5 yrs with radiographic pneumonia should be tested.
 - Comprehensive serum chemistry panel, if metabolic derangement or other end-organ involvement, such as liver or renal failure, is suspected

*Further evaluation and diagnostic testing should also be considered for outpatients with strong epidemiologic risk factors and mild or moderate illness (see Box 3).

**Healthcare personnel should wear surgical or procedure masks on entering a patient's room (Droplet Precautions), as well as gloves and gowns, when indicated (Standard Precautions) (see Table and Supplement 4).

Source: HHS Pandemic Influenza Plan, Supplement 5

BOX 3. SPECIAL SITUATIONS AND EXCEPTIONS TO THE CLINICAL CRITERIA

Persons with a high risk of exposure—For persons with a high risk of exposure to a novel influenza virus (e.g., poultry worker from an affected area,* caregiver of a patient with laboratory-confirmed novel influenza, employee in a laboratory that works with live novel influenza viruses), epidemiologic evidence might be enough to initiate further measures, even if clinical criteria are not fully met. In these persons, early signs and symptoms—such as rhinorrhea, conjunctivitis, chills, rigors, myalgia, headache, and diarrhea—in addition to cough or sore throat, may be used to fulfill the clinical criteria for evaluation.

High-risk groups with atypical symptoms—Young children, elderly patients, patients in long-term care facilities, and persons with underlying chronic illnesses might not have typical influenza-like symptoms, such as fever. When such patients have a strong epidemiologic risk factor, novel influenza should be considered with almost any change in health status, even in the absence of typical clinical features. Conjunctivitis has been reported in patients with influenza A (H7N7) and (H7N3) infections. In young children, gastrointestinal manifestations such as vomiting and diarrhea might be present. Infants may present with fever or apnea alone, without other respiratory symptoms, and should be evaluated if there is an otherwise increased suspicion of novel influenza.

*Updated lists of affected areas are provided at the websites of the OIE (http://www.oie.int/eng/en_index.htm), WHO (www.who.int/en/), and CDC (www.cdc.gov/flu/).

Source: HHS Pandemic Influenza Plan, Supplement 5

BOX 4. HOME CARE INFECTION CONTROL GUIDANCE FOR PANDEMIC INFLUENZA PATIENTS AND HOUSEHOLD MEMBERS

Most patients with pandemic influenza will be able to remain at home during the course of their illness and can be cared for by family members or others who live in the household. Anyone who has been in the household with an influenza patient during the incubation period is at risk for developing influenza. A key objective in this setting is to limit transmission of pandemic influenza within and outside the home.

Management of influenza patients in the home

- Physically separate the patient with influenza from non-ill persons living in the home as much as possible.
- Patients should not leave the home during the period when they are most likely to be infectious to others (i.e., 5 days after onset of symptoms). When movement outside the home is necessary (e.g., for medical care), the patient should follow respiratory hygiene/cough etiquette (i.e., cover the mouth and nose when coughing and sneezing) and should wear a mask.

Management of other persons in the home

- Persons who have not been exposed to pandemic influenza and who are not essential for patient care or support should not enter the home while persons are still having a fever due to pandemic influenza.
- If unexposed persons must enter the home, they should avoid close contact with the patient.
- Persons living in the home with the patient with pandemic influenza should limit contact with the patient to the extent possible; consider designating one person as the primary care provider.
- Household members should be vigilant for the development of influenza symptoms. Consult with healthcare providers to determine whether a pandemic influenza vaccine, if available, or antiviral prophylaxis should be considered.

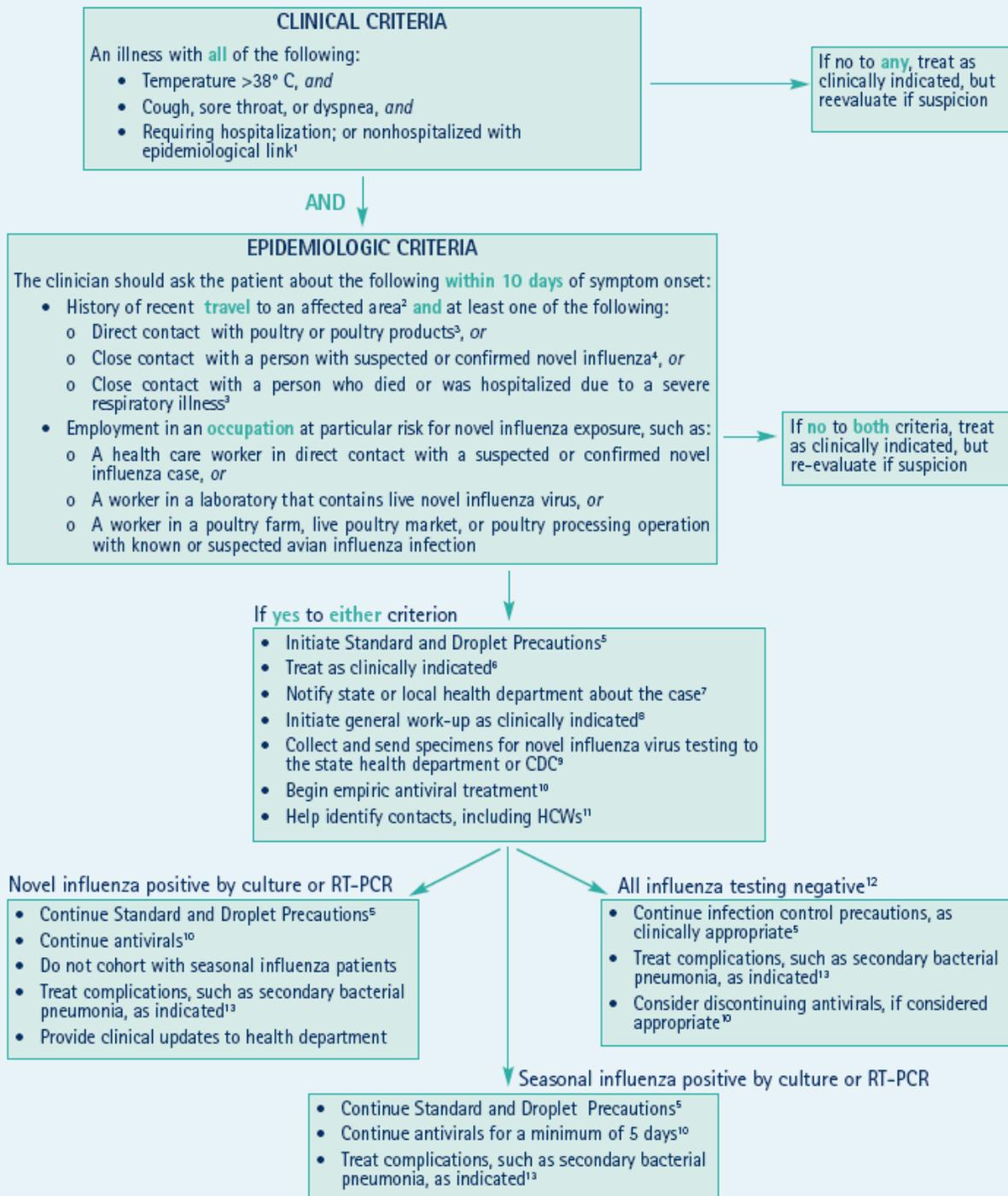
Infection control measures in the home

- All persons in the household should carefully follow recommendations for hand hygiene (i.e., hand washing with soap and water or use of an alcohol-based hand rub) after contact with an influenza patient or the environment in which they are receiving care.
- Although no studies have assessed the use of masks at home to decrease the spread of infection, using a surgical or procedure mask by the patient or caregiver during interactions may be beneficial.
- Soiled dishes and eating utensils should be washed either in a dishwasher or by hand with warm water and soap. Separation of eating utensils for use by a patient with influenza is not necessary.
- Laundry may be washed in a standard washing machine with warm or cold water and detergent. It is not necessary to separate soiled linen and laundry used by a patient with influenza from other household laundry. Care should be used when handling soiled laundry (i.e., avoid "hugging" the laundry) to avoid self-contamination. Hand hygiene should be performed after handling soiled laundry.
- Tissues used by the ill patient should be placed in a bag and disposed of with other household waste. Consider placing a bag for this purpose at the bedside.
- Environmental surfaces in the home should be cleaned using normal procedures.

Source: HHS Pandemic Influenza Plan, Supplement 5

FIGURE 1. CASE DETECTION AND CLINICAL MANAGEMENT DURING THE INTERPANDEMIC AND PANDEMIC ALERT PERIODS

Situation: No human cases of novel influenza are present in the community. Human cases might be present in another country or another region of the United States.



Source: HHS Pandemic Influenza Plan, Supplement 5

Figure 1 Footnotes:

1. Further evaluation and diagnostic testing should also be considered for outpatients with strong epidemiologic risk factors and mild or moderate illness. (See Box 2, pg.58)
2. Updated information on areas where novel influenza virus transmission is suspected or documented is available on the CDC website at: www.cdc.gov/travel/other/avian_flu_ah5n1_031605.htm and on the WHO website at <http://www.who.int/en/>

For persons who live in or visit affected areas, close contact includes touching live poultry (well-appearing, sick, or dead) or touching or consuming uncooked poultry products, including blood. For animal or market workers, it includes touching surfaces contaminated with bird feces. In recent years, most instances of human infection with a novel influenza A virus having pandemic potential, including influenza A (H5N1), are thought to have occurred through direct transmission from domestic poultry. A small number of cases are also thought to have occurred through limited person-to-person transmission or consumption of uncooked poultry products. Transmission of novel influenza viruses from other infected animal populations or by contact with fecal contaminated surfaces remains a possibility.

These guidelines will be updated as needed if alternate sources of novel influenza viruses are suspected or confirmed.

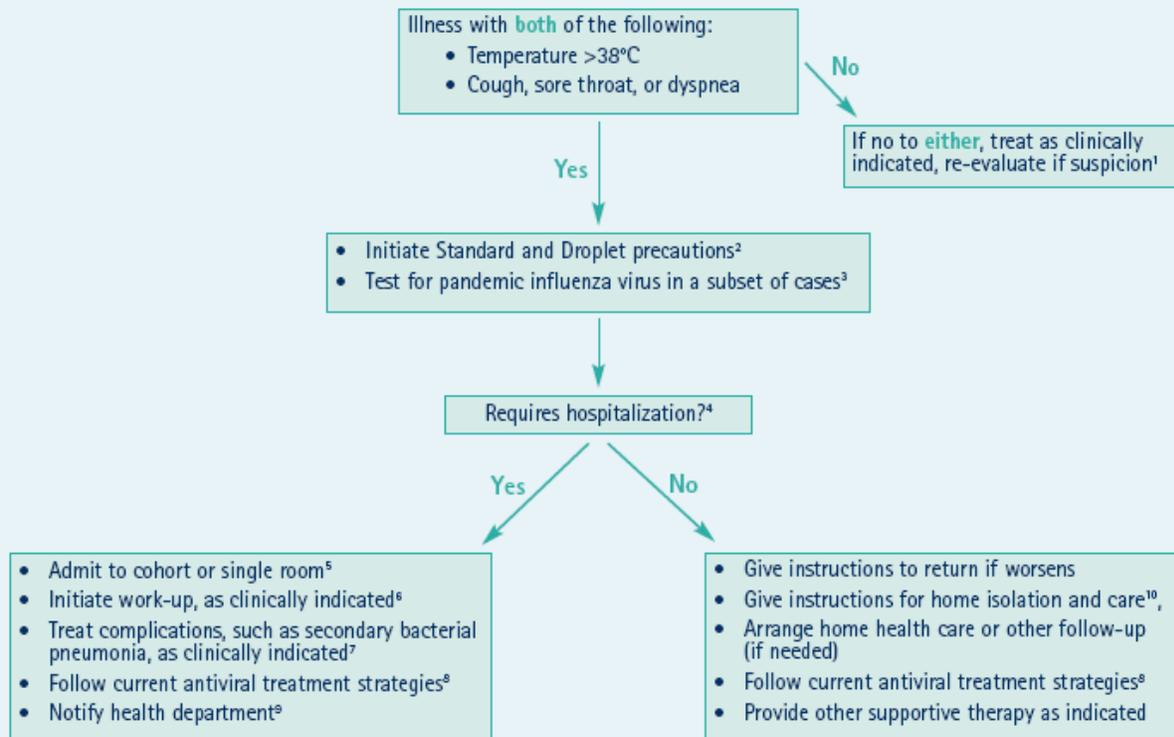
3. Close contact includes direct physical contact, or approach within 3 feet (1 meter) of a person with suspected or confirmed novel influenza.
4. Standard and Droplet Precautions should be used when caring for patients with novel influenza or seasonal influenza (Table 1, pg.68). Information on infection precautions that should be implemented for all respiratory illnesses (i.e., Respiratory Hygiene/Cough Etiquette) is provided at: <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>
5. Hospitalization should be based on all clinical factors, including the potential for infectiousness and the ability to practice adequate infection control. If hospitalization is not clinically warranted, and treatment and infection control is feasible in the home, the patient may be managed as an outpatient. The patient and his or her household should be provided with information on infection control procedures to follow at home (Box 3). The patient and close contacts should be monitored for illness by local public health department staff.
6. Guidance on how to report suspected cases of novel influenza is provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 1.
7. The general work-up should be guided by clinical indications. Depending on the clinical presentation and the patient's underlying health status, initial diagnostic testing might include:
 - Pulse oximetry
 - Chest radiograph
 - Complete blood count (CBC) with differential
 - Blood cultures
 - Sputum (in adults), tracheal aspirate, pleural effusion aspirate (if pleural effusion is present) Gram stain and culture
 - Antibiotic susceptibility testing (encouraged for all bacterial isolates)

- Multivalent immunofluorescent antibody testing or PCR of nasopharyngeal aspirates or swabs for common viral respiratory pathogens, such as influenza A and B, adenovirus, parainfluenza viruses, and respiratory syncytial virus, particularly in children
- In adults with radiographic evidence of pneumonia, Legionella and pneumococcal urinary antigen testing
- If clinicians have access to rapid and reliable testing (e.g., PCR) for *M. pneumoniae* and *C. pneumoniae*, adults and children <5 yrs. with radiographic pneumonia should be tested.
- Comprehensive serum chemistry panel, if metabolic derangement or other end-organ involvement, such as liver or renal failure, is Suspected

See Box 2, pg.58 for additional details.

8. Guidelines for novel influenza virus testing can be found in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 2. All of the following respiratory specimens should be collected for novel influenza A virus testing: nasopharyngeal swab; nasal swab, wash, or aspirate; throat swab; and tracheal aspirate (for intubated patients), stored at 4°C in viral transport media; and acute and convalescent serum samples.
9. Strategies for the use of antiviral drugs are provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 7.
10. Guidelines for the management of contacts in a healthcare setting are provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 3.
11. Given the unknown sensitivity of tests for novel influenza viruses, interpretation of negative results should be tailored to the individual patient in consultation with the local health department. Novel influenza directed management may need to be continued, depending on the strength of clinical and epidemiologic suspicion. Antiviral therapy and isolation precautions for novel influenza may be discontinued on the basis of an alternative diagnosis. The following criteria may be considered for this evaluation:
 - Absence of strong epidemiologic link to known cases of novel influenza
 - Alternative diagnosis confirmed using a test with a high positive-predictive value
 - Clinical manifestations explained by the alternative diagnosis
12. Guidance on the evaluation and treatment of suspected post-influenza community-associated pneumonia is provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 5, Appendix 3.

FIGURE 2. CASE DETECTION AND CLINICAL MANAGEMENT DURING THE PANDEMIC PERIOD



Situation: Pandemic influenza viruses are circulating in the community.

Source: HHS Pandemic Influenza Plan, Supplement 5

Footnotes to Figure 2:

1. Antiviral therapy and isolation precautions for pandemic influenza should be discontinued on the basis of an alternative diagnosis only when both the following criteria are met:
 - Alternative diagnosis confirmed using a test with a high positive-predictive value, and
 - Clinical manifestations entirely explained by the alternative diagnosis
2. Standard and Droplet Precautions should be used when caring for patients with novel influenza or seasonal influenza (Table). Information on infection precautions that should be implemented for all respiratory illnesses (i.e., Respiratory Hygiene/Cough Etiquette) is provided at: www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm
3. Guidance on laboratory testing during the Pandemic Period can be found in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 2. Generally, specimens should include respiratory samples (e.g., nasopharyngeal wash/aspirate; nasopharyngeal, nasal or oropharyngeal swabs, or tracheal aspirates) stored at 4°C in viral transport media.

Routine laboratory confirmation of clinical diagnoses will be unnecessary as pandemic activity becomes widespread in a community. CDC will continue to work with state health laboratories to conduct virologic surveillance to monitor antigenic changes and antiviral resistance in the pandemic virus strains throughout the Pandemic Period.

4. The decision to hospitalize should be based on a clinical assessment of the patient and the availability of hospital beds and personnel.
5. Guidelines on cohorting can be found in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 4. Laboratory confirmation of influenza infection is recommended when possible before cohorting patients.
6. The general work-up should be guided by clinical indications. Depending on the clinical presentation and the patient's underlying health status, initial diagnostic testing might include:
 - Pulse oximetry
 - Chest radiograph
 - Complete blood count (CBC) with differential
 - Blood cultures
 - Sputum (in adults) or tracheal aspirate Gram stain and culture
 - Antibiotic susceptibility testing (encouraged for all bacterial isolates)
 - Multivalent immunofluorescent antibody testing of nasopharyngeal aspirates or swabs for common viral respiratory pathogens, such as influenza A and B, adenovirus, parainfluenza viruses, and respiratory syncytial virus, particularly in children
 - In adults with radiographic evidence of pneumonia, Legionella and pneumococcal urinary antigen testing
 - If clinicians have access to rapid and reliable testing (e.g., PCR) for *M. pneumoniae* and *C. pneumoniae*, adults and children <5 yrs. with radiographic pneumonia should be tested.
 - Comprehensive serum chemistry panel, if metabolic derangement or other end-organ involvement, such as liver or renal failure, is suspected.

See Box 2 for additional details.

7. Guidance on the evaluation and treatment of community acquired pneumonia and suspected post-influenza community-acquired bacterial pneumonia are provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 5, Appendix 3.
8. Strategies for the use of antiviral drugs are provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 7.
9. Guidance on the reporting of pandemic influenza cases is provided in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 1.
10. Patients with mild disease should be provided with standardized instructions on home management of fever and dehydration, pain relief, and recognition of deterioration in status. Patients should also receive information on infection control measures to follow at home (Box 4).

Patients cared for at home should be separated from other household members as much as possible. All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed of with other household waste. Infection within the household may be minimized if a primary caregiver is designated; ideally, someone who does not have an underlying condition that places them at increased risk of severe influenza disease. Although no studies have assessed the use of masks at home to decrease the spread of infection, using a surgical or procedure mask by the patient or caregiver during interactions may be beneficial. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap. Additional information on measures to limit the spread of pandemic influenza in the home and community can be found in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplements 4 and 8.

TABLE 1. PANDEMIC INFLUENZA INFECTION CONTROL GUIDANCE FOR HEALTHCARE PROVIDERS

COMPONENT	RECOMMENDATIONS
STANDARD PRECAUTIONS	See www.cdc.gov/ncidod/dhqp/ISOLAT/std_prec_excerpt.htm
Hand hygiene	Perform hand hygiene after touching blood, body fluids, secretions, excretions, and contaminated items; after removing gloves; between patient contacts. Hand hygiene includes both handwashing with either plain or antimicrobial soap and water and use of alcohol-based products (gels, rinses, foams) that contain an emollient and do not require the use of water. If hands are visibly soiled or contaminated with respiratory secretions, they should be washed with soap (either non-antimicrobial or antimicrobial) and water. In the absence of visible soiling of hands, approved alcohol-based products for hand disinfection are preferred over an antimicrobial or plain soap and water because of their superior microbiocidal activity, reduced drying of the skin, and convenience.
Personal protective equipment (PPE)	<ul style="list-style-type: none"> • For touching blood, body fluids, secretions, excretions, and contaminated items; for touching mucous membranes and nonintact skin • During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated • During procedures and patient care activities likely to generate splash or spray of blood, body fluids, secretions, excretions
Safe work practices	Avoid touching eyes, nose, mouth, or exposed skin with contaminated hands (gloved or ungloved); avoid touching surfaces with contaminated gloves and other PPE that are not directly related to patient care (e.g., door knobs, keys, light switches).
Patient resuscitation	Avoid unnecessary mouth-to-mouth contact; use mouthpiece, resuscitation bag, other ventilation devices to prevent contact with mouth and oral secretions.
Soiled patient care equipment	Handle in a manner that prevents transfer of microorganisms to oneself, others and to environmental surfaces; wear gloves if visibly contaminated; perform hand hygiene after handling equipment.
Soiled linen and laundry	Handle in a manner that prevents transfer of microorganisms to oneself, others, and to environmental surfaces; wear gloves (gown if necessary) when handling and transporting soiled linen and laundry and perform hand hygiene.
Needles and other sharps	Use devices with safety features when available; do not recap, bend break or hand-manipulate used needles; if recapping is necessary, use a one-handed scoop technique; place used sharps in a puncture-resistant container.

TABLE 1. PANDEMIC INFLUENZA INFECTION CONTROL GUIDANCE FOR HEALTHCARE PROVIDERS (CONT.)

COMPONENT	RECOMMENDATIONS
STANDARD PRECAUTIONS (cont.)	
Environmental cleaning and disinfection	Use EPA-registered hospital detergent-disinfectant; follow standard facility procedures for cleaning and disinfection of environmental surfaces; emphasize cleaning/disinfection of frequently touched surfaces (e.g., bed rails, phones, lavatory surfaces).
Disposal of solid waste	Contain and dispose of solid waste (medical and non-medical) in accordance with facility procedures and/or local or state regulations; wear gloves when handling waste; wear gloves when handling waste containers and perform hand hygiene.
Respiratory hygiene/cough etiquette Source control measures for persons with symptoms of a respiratory infection; implement at first point of encounter (e.g., triage/reception areas) within a healthcare setting.	Have the patient cover the mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; perform hand hygiene after contact with respiratory secretions; wear a mask (procedure or surgical) if tolerated; sit or stand as far away as possible (more than 3 feet) away from persons who are not ill.
DROPLET PRECAUTIONS	www.cdc.gov/ncidod/dhqp/[ISOLATE]/droplet_prec_except.htm
Patient placement	Place patients with influenza in a private room or cohort with other patients with influenza.* Keep door closed or slightly ajar; maintain room assignments of patients in nursing homes and other residential settings, and apply droplet precautions to all persons in the room.
Personal protective equipment	During the early stages of a pandemic, infection with influenza should be laboratory-confirmed, if possible. Wear a surgical or procedure mask for entry into patient room; wear other PPE as recommended for standard precautions.
Patient transport	Limit patient movement outside of room to medically necessary purposes; have patient wear a procedure or surgical mask when outside the room.
Other	Follow standard precautions and facility procedures for handling linen and laundry and dishes and eating utensils, and for cleaning/disinfection of environmental surfaces and patient care equipment, disposal of solid waste, and postmortem care.

TABLE 1. PANDEMIC INFLUENZA INFECTION CONTROL GUIDANCE FOR HEALTHCARE PROVIDERS (CONT.)

COMPONENT	
AEROSOL-GENERATING PROCEDURES	During procedures that may generate small particles of respiratory secretions (e.g., endotracheal intubation, bronchoscopy, nebulizer treatment, suctioning), healthcare personnel should wear gloves, gown, face/eye protection, and a fit-tested N-95 respirator or other appropriate particulate respirator.

Standard Precautions for home health care

Healthcare providers who enter homes where there is a person with an influenza-like illness should follow the recommendations for Standard and Droplet Precautions. Standard Precautions include performing hand hygiene and respiratory hygiene/cough etiquette, wearing gloves and gowns, using face/eye protection when needed, and following safe work practices.

Droplet Precautions for home health care

Healthcare providers who enter homes where there is a person with an influenza-like illness should follow the recommendations for Standard and Droplet Precautions. Droplet Precautions include all Standard Precautions plus separating the patient from others in the household as much as possible and wearing a surgical or procedure mask for patient interactions. Professional judgment should be used in determining whether to don a mask upon entry into the home or only on entering the patient's room. Factors to consider in this decision include the possibility that others in the household may be infectious and the extent to which the patient is ambulating within the home.

Source: HHS Pandemic Influenza Plan, Supplement 5

Complications of Illnesses Associated with Avian Influenza A (H5N1) and Previous Pandemic Influenza Viruses

Human infections with different avian influenza A viruses have emerged and caused mild to severe illness in recent years, including H9N2, H7N7, H7N3, and H7N2. One novel subtype, influenza A (H5N1), has repeatedly caused limited outbreaks of severe and fatal human disease in recent years and therefore has been of particular concern.

Human infection with avian influenza A (H5N1) viruses WHO report

The world health organization (WHO) reported 664 laboratory-confirmed human cases of avian influenza A (H5N1) virus infections and 391 deaths from 15 countries between 2003 and 24 March 2014.

http://www.who.int/influenza/human_animal_interface/Influenza_Summary_IRA_HA_interface_24March14.pdf?ua=1

Human infections with avian influenza A (H7N9) viruses in China

WHO is closely monitoring this event and separate risk assessments have been posted. Please find the most updated information at

http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/index.html

Links: Influenza at the human-animal interface

WHO human-animal interface web page

http://www.who.int/influenza/human_animal_interface/en/

Cumulative Number of Confirmed Human Cases of Avian Influenza A/ (H5N1) Reported to WHO

http://www.who.int/influenza/human_animal_interface/EN_GIP_LatestCumulativeNumberH5N1cases.pdf

H5N1 avian influenza: timeline of major events

http://www.who.int/influenza/human_animal_interface/avian_influenza/H5N1_avian_influenza_update.pdf

Avian influenza A (H7N9) information

http://who.int/influenza/human_animal_interface/influenza_h7n9/en/index.html

World Organization of Animal Health (OIE) web page: Web portal on Avian Influenza

<http://www.oie.int/animal-health-in-the-world/web-portal-on-avian-influenza/>

Food and Agriculture Organization of the UN (FAO) webpage: Avian Influenza

<http://www.fao.org/avianflu/en/index.html>

OFFLU

<http://www.offlu.net/index.html>

Human infection with avian influenza A (H5N1) The H5N1 subtype first came to widespread public attention in 1997, when a poultry outbreak of highly pathogenic avian influenza A (H5N1) in Hong Kong caused illness in 18 humans. These cases were the first identified instances of direct avian-to-human transmission of an avian influenza A virus that led to severe disease.

Clinical features ranged from asymptomatic infection or mild upper respiratory symptoms to severe pneumonia and death. Most cases presented with fever, headache, malaise, myalgia, sore

throat, cough, and rhinorrhea; a few persons also had conjunctivitis or gastrointestinal distress. Seven persons, mostly children, developed only mild upper respiratory infections, whereas 11 developed severe primary viral pneumonia with rapid deterioration. Most patients in this latter group developed lymphopenia; six developed acute respiratory distress syndrome (ARDS), and five developed multi-organ system failure. Other abnormalities included pulmonary hemorrhage, renal dysfunction, liver failure, pancytopenia, hemophagocytosis, and Reye syndrome (with aspirin ingestion). Notably, none of the patients had secondary bacterial pneumonia. Six of the 18 infected persons eventually died.

Avian influenza A (H5N1) resurfaced in Hong Kong in February 2003, in a father and son returning from Fujian Province, China. Both presented with influenza-like symptoms, chest radiograph abnormalities, and lymphopenia. The father's status rapidly deteriorated, and he developed severe lung involvement and hemophagocytosis; the 8-year-old son recovered. Of note, the father's 7-year-old daughter had also died of a pneumonia-like illness while in China, but the cause of her illness was not determined. The boy reported close contact with live chickens during his visit to China, but no definite source for H5N1 was found.

The most recent human outbreak of avian influenza A (H5N1) has been ongoing since December 2003. This outbreak has been associated with an extensive H5N1 epizootic among poultry in Asia. Transmission continues to be predominantly from birds to humans, although a few instances of limited human-to-human transmission have been suspected.

Reports published from Vietnam and Thailand describe the early confirmed H5N1 cases from this outbreak. These reports characterize human illness with avian influenza A (H5N1) virus infection as a primarily respiratory febrile illness that progresses to severe disease in a high proportion of cases. Among 10 Vietnamese patients, 5 all were previously healthy children or young adults (mean age, 13.7 years) who presented to medical attention with fever, cough, and dyspnea. None of the patients had other respiratory symptoms, such as sore throat or rhinorrhea, but seven developed diarrhea. Significant lymphopenia was observed in all 10 cases, and moderate thrombocytopenia occurred. All 10 had marked abnormalities on chest radiograph, and eight patients—all of whom eventually died—required mechanical ventilation for respiratory failure.

Respiratory cultures suggested bacterial pneumonia in two patients. Of 12 cases described from Thailand, 6 of seven were aged <14 years, and all but one were previously healthy. All of the patients developed fever, cough, and dyspnea, and six patients were reported with myalgia and diarrhea. Decreased leukocyte counts were reported in seven cases, thrombocytopenia occurred in four cases, and increased serum liver enzymes were found in eight.

All patients had negative blood cultures. They all had abnormal chest radiographs; nine developed respiratory failure with ARDS, whereas five developed cardiac failure, four had renal failure, and eight ultimately died. In the Vietnamese and Thai cases, respiratory deterioration occurred with a median of 5 days after symptom onset, but the range was quite wide.

Whereas all patients described above presented with pulmonary symptoms, subsequently published case reports suggest that other clinical syndromes can occur with H5N1 infection.^{7,8,9} In one report, a 39-year-old female with confirmed H5N1 from Thailand was initially admitted

with symptoms of fever, vomiting, and diarrhea, and was found to have significant lymphopenia. She developed shortness of breath approximately 12 days after illness onset and soon progressed to ARDS and death.

A 4-year-old male from Vietnam presented for medical attention with severe diarrhea, developed acute encephalitis with coma, and died soon thereafter. Although avian influenza A (H5N1) was later detected in throat, stool, serum, and cerebrospinal fluid specimens, the patient had no respiratory symptoms at presentation. This patient's 9-year-old sister died of a similar illness a few days before his illness began, but no H5N1 testing was performed. Asymptomatic H5N1 infection, detected by seroconversion, has been reported.

Updated information on avian influenza can be found at : http://www.who.int/csr/disease/avian_influenza/en/.

Illnesses Associated with Previous Pandemic Viruses

Since most people do not have previous immunity to novel influenza A viruses, an influenza pandemic results in an increased rate of severe disease in a majority of age groups. Nevertheless, the three pandemics of the past century demonstrated significant variability in terms of morbidity.

The 1918–19 pandemic was particularly notable in affecting young, healthy adults with severe illness. A significant proportion of patients developed fulminant disease, accompanied by a striking perioral cyanosis, leading to death within a few days. Postmortem examinations in these patients frequently revealed denuding tracheobronchitis, pulmonary hemorrhage, or pulmonary edema. Others survived the initial illness, only to die of a secondary bacterial pneumonia, usually due to *Streptococcus pneumoniae*, *Staphylococcus aureus*, group A *Streptococcus*, or *Haemophilus influenzae*.

The clinical features of the subsequent pandemics of 1957–58 and 1968–69 were also typical of influenza-like illness, including fever, chills, headache, sore throat, malaise, cough, and coryza, but were milder compared to the 1918–19 pandemic. On a population level, the impact of influenza in 1957–58 was only one-tenth that observed in 1918–19, and the excess death rate in 1968–69 was only half that observed during 1957–58. However, death rates were elevated among the chronically ill and the elderly, and the occurrence of severe complications, such as primary viral pneumonia, was notably increased in healthy young adults during the 1957–58 pandemic, particularly in pregnant women.

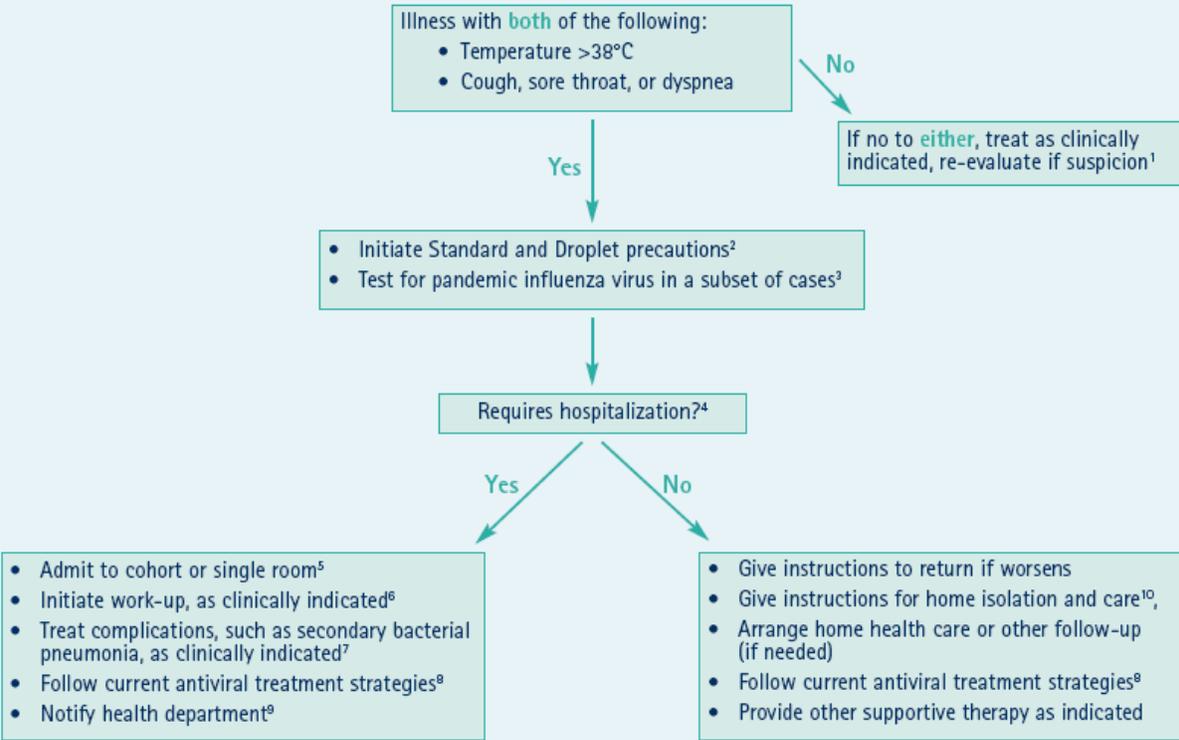
Implications for the Next Pandemic

The characteristic clinical features of the next influenza pandemic cannot be predicted. It is reasonable to assume that most affected persons will have the typical features of influenza (e.g., fever, respiratory symptoms, myalgia, malaise). However, past pandemics have varied considerably with regard to severity and associated complications. Illnesses caused by novel influenza viruses such as avian influenza A (H5N1) might predict the potential characteristics of pandemic influenza, but H5N1 has not adapted to spread easily among humans, and its presentation and severity might change as the virus evolves. Even as the next pandemic begins and spreads, the characteristic features might change, particularly if successive waves occur over several months. Given this potential for a dynamic clinical picture, it will be important for

clinicians and public health partners to work together to disseminate updated and authoritative information to the healthcare community on a regular basis.

Note: References are available in Health and Human Services Pandemic Influenza Plan, Part 2, Public Health Guidance for State and Local Partners, Supplement 5, Clinical Guidelines, Appendix 2, Clinical Presentation and Complications of Illnesses Associated with Avian Influenza A (H5N1) and Previous Pandemic Influenza Viruses.

FIGURE 2. CASE DETECTION AND CLINICAL MANAGEMENT DURING THE PANDEMIC PERIOD



Situation: Pandemic influenza viruses are circulating in the community.

Source: HHS Pandemic Influenza Plan, Supplement 5

Vaccine Distribution and Use

The next pandemic will pose a number of challenges for vaccine delivery particularly to State and local health departments which clearly must serve as the “linchpin” of vaccination efforts. Arkansas has a population of 2.9 million, suggesting that 5.8 million doses of vaccine could be distributed and used in the state.

Assumptions

- The target population for vaccination will be expanded far beyond the typical “high-risk” groups to encompass, ideally, the entire U.S. population.
- The “warning period” preceding spread of the pandemic strain in the U.S. is likely to be relatively short, so that vaccine will have to be distributed and administered as rapidly as possible.
- Because a pandemic strain can arise and be detected at any time, and because current manufacturing procedures dictate that a minimum of 6-8 months would elapse before tens of millions of doses would become available for distribution, it is likely that a severe and/or moderate vaccine shortage is likely to exist, especially early on during the course of the pandemic. Moreover, it is possible that no vaccine will be available.
- Immunologic responses following vaccination of unprimed (seronegative) individuals is generally poor, so the emergence of a pandemic strain with new hemagglutinin (HA) and/or neuraminidase (NA) antigens will likely require a second dose of vaccine about 28-30 days later.
- The vaccine may be administered under an Investigational New Drug (IND) protocol.

Annual Vaccinations

Annual vaccination may provide crossover immunity should a new influenza virus emerge. In addition, it will foster familiarity and confidence in flu vaccines. ADH will:

- Continue to offer yearly influenza vaccine to anyone that comes into one of the LHUs as well as encourage all private physicians to vaccinate their patients. ADH will encourage all health care providers as well as first responders to obtain their influenza vaccination yearly.
- Continue to give pneumococcal vaccine to all nursing home patients (as required by law) and encourage private physicians to vaccinate all their patients that are 65 years and older and/or at high risk.

Vaccine Priority Groups

The U.S. HHS Pandemic Influenza Plan, November 2005, includes recommendations on pandemic influenza vaccine use (page D-13).

Priorities for vaccination need to be established during the Interpandemic Period in order to facilitate planning for an efficient and consistent pandemic immunization strategy. In keeping with the overall goal of pandemic response, the prioritization process must consider the impact the vaccine will have on:

- 1) Reducing morbidity and mortality by maintaining the health services response and by individual protection of high risk groups, and

- 2) Minimizing societal disruption by maintaining the essential services upon which everyone depends.

The priority groups will be reassessed, and possibly altered, as soon as epidemiologic data on the specific pandemic virus becomes available to ensure that they are consistent with the overall goal of the pandemic response and/or CDC gives different recommendations according to their data.

ADH is convening a panel of state experts to develop recommendations on the use of vaccine and prioritization of population groups to receive influenza vaccine. State guidelines will be distributed as soon as possible with the expectation that all counties will follow them in order to ensure a consistent and equitable program.

In the pre-pandemic period, information and education will be provided to employers, state, county, and local governments, as well as first responders. Employers should plan ahead by identifying their employees who are deemed as essential to maintain “business as usual”. A list of essential personnel (minimal requirements to continue services) should be completed and made available upon request.

Critical Assumptions Current assumptions include:

- Morbidity and mortality
The greatest risk of hospitalization and death—as during the 1957 and 1968 pandemics and annual influenza—will be in infants, the elders, and those with underlying health conditions. In the 1918 pandemic, most deaths occurred in young adults, highlighting the need to reconsider the recommendations at the time of the pandemic based on the epidemiology of disease.
- Healthcare system
The healthcare system will be severely taxed if not overwhelmed due to the large number of illnesses and complications from influenza requiring hospitalization and critical care. CDC models estimate increases in hospitalization and intensive care unit demand of more than 25% even in a moderate pandemic.
- Workforce
During a pandemic wave in a community, between 25% and 30% of persons will become ill during a 6 to 8 week outbreak. The workforce absenteeism may reach a peak of 40 percent at the height of a pandemic wave. Among working-aged adults, illness attack rates will be lower than in the community as a whole. A CDC model suggests that at the peak of pandemic disease, about 10% of the workforce will be absent due to illness or caring for an ill family member. Impacts will likely vary between communities and work sites and may be greater if significant absenteeism occurs because persons stay home due to fear of becoming infected.
- Critical infrastructure
Only limited information is currently available from which to assess potential impacts on critical infrastructure sectors such as transportation and utility services. Because of changes in business practices and the complexity of networks, information from prior pandemics is not considered applicable.
- Vaccine production capacity
The U.S.-based vaccine production capacity is expected to be 3 to 5 million doses per week with 3 to 6 months needed before the first doses are produced. Two doses per persons are assumed to be required for protection. Subsequent results of an NIH clinical trial of

influenza A (H5N1) vaccine suggest that higher doses of antigen will be needed to elicit a good immune response; thus, the need could potentially substantially exceed the amount of vaccine that would be produced.

Note: The Arkansas Nursing Home and Employee Immunization Act of 1999 requires that the state provide influenza vaccine to nursing homes.

Mandatory Vaccinations

Before considering mandatory vaccination, other options will be exhausted. Section VI of the current Rules and Regulations Pertaining to Communicable Disease does permit the Director of Health to require forced inoculation to quell or contain an epidemic.

Vaccine Distribution

Ordering/Tracking

CDC will notify ADH how much vaccine is available for the state.

ADH uses the Vaccine Management System (VTrckS) software system to order, and distribute vaccines. Vaccine distribution and inventory information is stored in both VTrckS and Arkansas' IIS WebIZ. Over 300 of the state's providers of children's vaccines have been trained to use WebIZ. Through WebIZ and email order forms, providers submit accountability reports and inventory levels with each new order.

Storage/Distribution

Should vaccine be available, it is likely that the central office at ADH will be responsible for initially receiving and storing all the vaccine. Vaccine will be stored at the SNS site.

If this storage facility should be determined to be inadequate, ADH has arranged for secondary, refrigerated storage. SYSCO MOA, a wholesale food distribution company, has agreed to provide a refrigerated trailer within 24 hours if requested.

Distribution to the vaccine providers will be accomplished by SNS protocol. Travel time to each office is less than four hours.

Providers

All local health units have developed Mass Dispensing Plans. Local health units are responsible for developing pandemic influenza planning documents to complement the mass dispensing plans available through the county emergency management authority. Plans are reviewed and updated annually.

Medical Waste

Medical waste at local health units will be handled and disposed of in accordance with ADH policy and procedures, Disposal of Medical Waste, Patient Care Volume 4. Under this policy biohazardous waste is returned to central office via ADH courier for destruction by a private company.

Use of Volunteers

If an emergency is declared by the Governor, individuals put into service shall have the same immunities as regular state employees for good faith performance of their designated and assigned official duties under state sovereignty laws and practices.

The Secretary of Health and Human Services also has the authority to declare a public health emergency. Intermittent disaster-response personnel benefit from the same immunity from civil liability granted to employees of the U.S. Public Health Service.

Good Samaritan Laws in Arkansas provide any person licensed as a physician or surgeon under the laws of the State of Arkansas or any other person, who, in good faith, lends emergency care or assistance without compensation at the place of an emergency or accident and who is acting as a reasonable and prudent person would have acted under the circumstances present at the scene at the time the services were rendered, shall not be liable for any civil damages for acts or omissions performed in good faith.

Also, see Authority and References.

Adverse Reactions and Investigational New Drugs (INDs)

All adverse reactions to influenza vaccine will be reported to the federal Vaccine Adverse Event Reporting System (VAERS), which is the national vaccine safety surveillance program co-sponsored by FDA and CDC. VAERS report forms and how to report adverse events are available at www.vaers.org or (800) 822-7967. (See Appendix) ADH has designated a vaccine safety officer to act as point of contact for adverse reactions.

The Immunization Section Program Nurse serves as the state coordinator for Arkansas.

Should an IND vaccine be used during a pandemic, ADH will follow all protocols for inventory control and record keeping, including signed consent.

Communication

The Communication section of the plan addresses:

- Educating the public on the importance of vaccination given the likelihood of subsequent waves of influenza.
- Educating the public and healthcare providers regarding the need and rationale for priority groups;
- Outreach too hard to reach populations
- Keeping healthcare providers up-to-date on timelines and availability of vaccines
- Keeping the public informed about vaccine availability (phasing)

- Public notification of vaccination locations and times
- Ensuring an adequate supply of vaccine information sheets

Border Issues

ADH will coordinate vaccine distribution plans with health authorities in bordering jurisdictions, including neighboring states.

Activities by WHO Pandemic Period

Interpandemic Period

- Encourage everyone to be immunized against influenza each year
- Develop plans for pandemic flu vaccine purchase, storage, distribution and use
- Local health units and communities plan for emergency dispensing sites for residents in their community

Pandemic Alert Period

- Modify the plan as needed to account for updates on recommended priority groups and projected vaccine supply
- Notify local health units and communities to review their emergency dispensing site plans

Pandemic Period

- Keep public health and healthcare workforce up-to-date on availability of vaccines
- Activate the vaccination plan to distribute, deliver and administer pandemic vaccines as soon as vaccine is available.
- Monitor vaccine supplies, distribution, and use
- Monitor and investigate adverse events.

Appendix 1: Vaccine Adverse Event Reporting System

Vaccine Distribution and Use
Vaccine Adverse Event Reporting System

WEBSITE: www.vaers.org E-MAIL: info@vaers.org FAX: 1-877-721-0366

 <p>VACCINE ADVERSE EVENT REPORTING SYSTEM 24 Hour Toll-Free Information 1-800-822-7967 P.O. Box 1100, Rockville, MD 20849-1100 PATIENT IDENTITY KEPT CONFIDENTIAL</p>		<p><i>For CDC/FDA Use Only</i></p> <p>VAERS Number _____</p> <p>Date Received _____</p>			
<p>Patient Name:</p> <p>Last _____ First _____ M.I. _____</p> <p>Address _____</p> <p>_____</p> <p>City _____ State _____ Zip _____</p> <p>Telephone no. (____) _____</p>		<p>Vaccine administered by (Name):</p> <p>Responsible Physician _____</p> <p>Facility Name/Address _____</p> <p>_____</p> <p>City _____ State _____ Zip _____</p> <p>Telephone no. (____) _____</p>			
<p>Form completed by (Name): _____</p> <p>Relation <input type="checkbox"/> Vaccine Provider <input type="checkbox"/> Patient/Parent to Patient <input type="checkbox"/> Manufacturer <input type="checkbox"/> Other</p> <p>Address (if different from patient or provider) _____</p> <p>_____</p> <p>City _____ State _____ Zip _____</p> <p>Telephone no. (____) _____</p>					
1. State	2. County where administered	3. Date of birth mm / dd / yy	4. Patient age	5. Sex <input type="checkbox"/> M <input type="checkbox"/> F	6. Date form completed mm / dd / yy
7. Describe adverse event(s) (symptoms, signs, time course) and treatment, if any			8. Check all appropriate: <input type="checkbox"/> Patient died (date mm / dd / yy) <input type="checkbox"/> Life threatening illness <input type="checkbox"/> Required emergency room/doctor visit <input type="checkbox"/> Required hospitalization (____ days) <input type="checkbox"/> Resulted in prolongation of hospitalization <input type="checkbox"/> Resulted in permanent disability <input type="checkbox"/> None of the above		
9. Patient recovered <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN			10. Date of vaccination mm / dd / yy AM/PM	11. Adverse event onset mm / dd / yy AM/PM	
12. Relevant diagnostic tests/laboratory data					
13. Enter all vaccines given on date listed in no. 10					
Vaccine (type)		Manufacturer	Lot number	Route/Site	No. Previous Doses
a. _____		_____	_____	_____	_____
b. _____		_____	_____	_____	_____
c. _____		_____	_____	_____	_____
d. _____		_____	_____	_____	_____
14. Any other vaccinations within 4 weeks prior to the date listed in no. 10					
Vaccine (type)		Manufacturer	Lot number	Route/Site	No. Previous doses
a. _____		_____	_____	_____	_____
b. _____		_____	_____	_____	_____
15. Vaccinated at: <input type="checkbox"/> Private doctor's office/hospital <input type="checkbox"/> Military clinic/hospital <input type="checkbox"/> Public health clinic/hospital <input type="checkbox"/> Other/unknown		16. Vaccine purchased with: <input type="checkbox"/> Private funds <input type="checkbox"/> Military funds <input type="checkbox"/> Public funds <input type="checkbox"/> Other/unknown		17. Other medications	
18. Illness at time of vaccination (specify)			19. Pre-existing physician-diagnosed allergies, birth defects, medical conditions (specify)		
20. Have you reported this adverse event previously? <input type="checkbox"/> No <input type="checkbox"/> To health department <input type="checkbox"/> To doctor <input type="checkbox"/> To manufacturer		<p><i>Only for children 5 and under</i></p> <p>22. Birth weight _____ lb. _____ oz.</p> <p>23. No. of brothers and sisters _____</p>			
21. Adverse event following prior vaccination (check all applicable, specify) Adverse Event Onset Age Type Vaccine Dose no. in series		<p><i>Only for reports submitted by manufacturer/immunization project</i></p> <p>24. Mfr./Imm. proj. report no. _____</p> <p>25. Date received by mfr./Imm.proj. _____</p>			
<input type="checkbox"/> In patient <input type="checkbox"/> In brother or sister		26. 15 day report? <input type="checkbox"/> Yes <input type="checkbox"/> No		27. Report type <input type="checkbox"/> Initial <input type="checkbox"/> Follow-Up	
<p>Health care providers and manufacturers are required by law (42 USC 300aa-25) to report reactions to vaccines listed in the Table of Reportable Events Following Immunization. Reports for reactions to other vaccines are voluntary except when required as a condition of immunization grant awards.</p>					

Form VAERS-1(FDA)

Directions for Completing Form VAERS-1

General

- Use a separate form for each patient. Complete the form to the best of your abilities. Items 3, 4, 7, 8, 10, 11, and 13 are considered essential and should be completed whenever possible. Parents/Guardians may need to consult the facility where the vaccine was administered for some of the information (such as manufacturer, lot number or laboratory data.)
- Refer to the Reportable Events Table (RET) for events mandated for reporting by law. Reporting for other serious events felt to be related but not on the RET is encouraged.
- Health care providers other than the vaccine administrator (VA) treating a patient for a suspected adverse event should notify the VA and provide the information about the adverse event to allow the VA to complete the form to meet the VA's legal responsibility.
- These data will be used to increase understanding of adverse events following vaccination and will become part of CDC Privacy Act System 09-20-0136, "Epidemiologic Studies and Surveillance of Disease Problems." Information identifying the person who received the vaccine or that person's legal representative will not be made available to the public, but may be available to the vaccinee or legal representative.
- Postage will be paid by the addressee. Forms may be photocopied (must be front & back on same sheet).

Specific Instructions

Form Completed By: To be used by parents/guardians, vaccine manufacturers/distributors, vaccine administrators, and/or the person completing the form on behalf of the patient or the health professional who administered the vaccine.

- Item 7: Describe the suspected adverse event. Such things as temperature, local and general signs and symptoms, time course, duration of symptoms, diagnosis, treatment and recovery should be noted.
- Item 9: Check "YES" if the patient's health condition is the same as it was prior to the vaccine, "NO" if the patient has not returned to the pre-vaccination state of health, or "UNKNOWN" if the patient's condition is not known.
- Item 10: Give dates and times as specifically as you can remember. If you do not know the and 11 exact time, please indicate "AM" or "PM" when possible if this information is known. If more than one adverse event, give the onset date and time for the most serious event.
- Item 12: Include "negative" or "normal" results of any relevant tests performed as well as abnormal findings.
- Item 13: List ONLY those vaccines given on the day listed in Item 10.
- Item 14: List any other vaccines that the patient received within 4 weeks prior to the date listed in Item 10.
- Item 16: This section refers to how the person who gave the vaccine purchased it, not to the patient's insurance.
- Item 17: List any prescription or non-prescription medications the patient was taking when the vaccine(s) was given.

- Item 18: List any short-term illnesses the patient had on the date the vaccine(s) was given (i.e., cold, flu, and ear infection).
- Item 19: List any pre-existing physician-diagnosed allergies, birth defects, medical conditions (including developmental and/or neurologic disorders) for the patient.
- Item 21: List any suspected adverse events the patient, or the patient's brothers or sisters, may have had to previous vaccinations. If more than one brother or sister, or if the patient has reacted to more than one prior vaccine, use additional pages to explain completely. For the onset age of a patient, provide the age in months if less than two years old.
- Item 26: This space is for manufacturers' use only.

Appendix 2 Estimated Number of Essential Workers in Arkansas

Vaccine Distribution and Use Appendix 2

Estimated Number of Essential Workers in Arkansas

Industry	Number in US	Percentage of US Population ages 18-64	Estimated Number in Arkansas
Electric Power Generation, Transmission and Distribution	231,060	0.13%	2,117
Natural Gas Distribution	44,910	0.02%	411
Water, Sewage and Other Systems	28,130	0.02%	258
Drugs and Druggists' Sundries Merchant Wholesalers	101,930	0.06%	934
Pipeline Transportation of Natural Gas	17,210	0.01%	158
Wired Telecommunications Carriers	386,210	0.21%	3,538
Wireless Telecommunications Carriers (except Satellite)	93,060	0.05%	853
Waste Treatment and Disposal	80,500	0.04%	738
Offices of Physicians	1,994,670	1.10%	18,274
Outpatient Care Centers	424,350	0.23%	3,888
Medical and Diagnostic Laboratories	179,360	0.10%	1,643
Home Health Care Services	711,360	0.39%	6,517
Other Ambulatory Health Care Services	194,050	0.11%	1,778
General Medical and Surgical Hospitals	4,714,720	2.59%	43,195
Psychiatric and Substance Abuse Hospitals	243,680	0.13%	2,233
Specialty (except Psychiatric and Substance Abuse) Hospitals	174,810	0.10%	1,602
Nursing Care Facilities	1,564,540	0.86%	14,334
Residential Mental Retardation, Mental Health and Substance Abuse Facilities	488,000	0.27%	4,471
Community Care Facilities for the Elderly	557,930	0.31%	5,112
Other Residential Care Facilities	165,060	0.09%	1,512
Death Care Services	140,830	0.08%	1,290
State Government (OES designation)	729,070	0.40%	6,679
Local Government (OES designation)	2,047,850	1.13%	18,762
Total	15,313,290		140,295

Based on US Census Bureau Population estimate from July 1, 2003 and US Bureau of Labor Statistics Occupational Employment Estimates for May 2003

Antiviral Drug Distribution and Use

Rationale

Antiviral drugs may be used for treatment and/or prophylaxis during an influenza pandemic to seek to reduce morbidity and mortality. During the Pandemic Alert Period, antivirals might be used to contain small disease clusters and possibly slow the spread of the virus.

The following drugs have been useful as an adjunct in the management of seasonal influenza: M2 ion channel inhibitors or amantadanes (trade name Symmetrel) and rimantadine (trade name Flumadine) and neuraminidase inhibitors, oseltamivir (trade name Tamiflu) and zanamivir (trade name Relenza).

A large, uncoordinated demand for antivirals early in a pandemic could quickly deplete the anticipated limited supplies. Planning for the best use of antiviral drugs is necessary.

Use of Antivirals

Amantadanes have been effective for most influenza A strains. However, the avian influenza A (H5N1) isolates are resistant. At the present time, avian influenza A is usually sensitive to oseltamivir or zanamivir.

Treatment

The effectiveness of antivirals against a new pandemic influenza virus cannot be predicted. When treatment is started within 48 hours of the onset of symptoms, antiviral agents have shown efficacy against seasonal influenza. If they have a similar effect against pandemic influenza, rapid diagnosis, distribution and administration will be essential.

Most influenza A (H5N1) viruses currently in circulation in southeast Asia are resistant to amantadine and rimantadine. Strains that evolve from these viruses are likely to be resistant to this class of antivirals. Therefore, it may be prudent to reserve oseltamivir and zanamivir for treatment whenever possible.

The best use of limited stocks of antiviral drugs will depend on the severity level. In the early stages of a pandemic, it may be effective in containing small, well-defined disease clusters and delaying the spread of disease to other communities. When the pandemic is widespread, treatment decisions will be made on clinical features and epidemiologic risk. Recommendations for antiviral treatment will be revised as new information is obtained about the pandemic strain.

Prophylaxis

Early treatment is a more efficient use of antivirals than widespread prophylaxis. Because prophylaxis would last approximately six weeks, huge stockpiles would be necessary to effectively use antivirals for prophylaxis. In addition, the increased risk of side effects with prolonged use and the potential for drug-resistance to emerge, may limit usefulness for prophylaxis. Post-exposure prophylaxis might be useful to control small, well-defined disease clusters or to protect first-responders and other exposed healthcare workers.

Antiviral Drug Priority Groups

The U.S. HHS Pandemic Influenza Plan, November 2005, includes recommendations on pandemic antiviral drug use (page D-21).

Priority groups have to be in keeping with the overall goal of reducing morbidity and mortality and secondly, to reduce societal disruption. Since it will not be possible to determine a “risk level” for individuals until the pandemic virus has started causing illness in a population, these groups were identified based on past experience with severe influenza seasons and historic accounts of past pandemics. The Priority Group List may be reviewed and adjusted as necessary based upon the availability of antiviral drugs. It is important to recognize that during a pandemic the definition of “high-risk persons” will be re-assessed, and possibly altered, based on the epidemiologic data available at that time. ADH is convening a panel of state experts to develop recommendations on the use of vaccine and prioritization of population groups to receive influenza vaccine. State guidelines will be distributed as soon as possible with the expectation that all counties will follow them in order to ensure a consistent and equitable program.

Group type	Examples
Pre-hospital / Transportation	Emergency Medical Services (EMS); Public transit drivers
Healthcare workers	Doctors, Nurses, Laboratory staff
Administration and Decision makers	Governor, State
Safety and Law enforcement	Firemen, Police
Department of Defense	Military, National Security; DOD forces and beneficiaries
Hospital Patients and	Immuno- compromised

What is known is that in order to ensure an optimal pandemic response it will be imperative to provide as much protection as possible against influenza to health care workers and other essential emergency service workers. Since onset of the pandemic is expected to precede the availability of an effective vaccine, antiviral drugs represent one method of preventing infection until these workers can achieve protection through immunization. Typically, immunity is assumed to have been conferred two weeks after influenza immunization. However, this may differ for the pandemic vaccine and it may be necessary to give two doses of vaccine to each individual before immunity is assured.

Treatment requires a total of 10 capsules and is defined as 1 course. Post-exposure prophylaxis (PEP) also requires a single course. Prophylaxis is assumed to require one capsule per day of exposure – approximately 40 capsules (4 courses), though more may be needed if community outbreaks last for a longer period.

Critical Assumptions

Current assumptions regarding groups at highest risk during a pandemic and impacts on the healthcare system and other critical infrastructures are the same as those underlying vaccine priorities. Additional assumptions specific for antiviral drugs include:

- Treatment with a neuraminidase inhibitor [oseltamivir (Tamiflu) or zanamivir (Relenza)] will be effective in decreasing risk of pneumonia, will decrease hospitalization by about half (as shown for interpandemic influenza), and will also decrease mortality.
- Antiviral resistance to the adamantanes (amantadine and rimantadine) may limit their use during a pandemic.
- The primary source of antiviral drugs for a pandemic response will be the supply of antiviral drugs that have been stockpiled. Before annual influenza seasons about 2 million treatment courses of oseltamivir are available in the U.S. U.S.-based production of oseltamivir is being established; expected capacity is projected at about 1.25 million courses per month. Treating earlier after the onset of disease is most effective in decreasing the risk of complications and shortening illness duration. Generally, treatment should be given within the first 48 hours.
- Assumptions for the amount of antiviral drug needed for defined priority groups is based on the population in those groups and assumptions that 35% of persons in the priority groups will have influenza-like illness and 75% will present within the first 48 hours will be eligible for treatment. For persons admitted to the hospital, it is assumed that 80% would be treated, as the 48-hour limit may sometimes be relaxed in more ill patients.
- Unlike vaccines, where each tier would be protected in turn as more vaccine is produced, for antiviral drugs, the number of priority groups that can be covered would be known at the start of the pandemic based on the amount of drug that is stockpiled. Additional supply that would become available during the pandemic could provide some flexibility.

Distribution

If antiviral medication is available, it will be distributed based upon the anti-viral distribution plan. Travel time to each office is less than four hours.

Activities by WHO Pandemic Period

Interpandemic Period

- Evaluate the use of antivirals for prophylaxis and treatment based upon availability and priority groups
- The distribution of antiviral drugs to healthcare facilities for administration to priority groups will be accomplished through the implementation of the Vaccine Distribution Section as outlined in Vaccine Management (see Vaccine Management, page 18). The Arkansas SNS Plan is identified as the approved contingency plan in the event that the Vaccine Distribution response is overwhelmed.

Pandemic Alert Period

- Modify the plan as needed to account for updates on recommended priority groups and projected antiviral supply

Pandemic Period

- Activate the antiviral plan as soon as medication is available

Community Disease Control and Prevention

Rationale

The initial response to the emergence of a pandemic influenza subtype that spreads person-to-person will focus on containing the virus at its source. If this is not successful and the disease spreads to other countries, public health measures will be used to attempt to slow viral transmission. Containment measures may include actions that affect individuals (e.g. isolation of patients and monitoring their contacts) as well as measures that affect groups or entire communities (e.g., cancellation of public gatherings; implementation of community-wide “Snow Days”). The Arkansas Department of Health will use epidemiologic data to guide decisions regarding the most appropriate measures to maximize the impact on slowing disease transmission while minimizing the impact on individual freedom of movement.

In April, 2005, influenza with pandemic potential was added to the list of communicable diseases for which individuals may be subject to federal quarantine. However, states have primary responsibility for public health matters within their borders. In Arkansas --

- The Governor may declare a public health emergency, at which time he can close schools, business, and public functions.
- The State Health Officer, through the Board of Health, can implement isolation/quarantine measures, limit travel between communities and close the state’s borders. (See Authority and References Section.) (Arkansas Rules and Regulations Pertaining to Communicable Disease may be found at http://www.healthylarkansas.com/rules_regs/communicable_disease_2004.pdf)

Any public measures undertaken during a pandemic must be performed early in the outbreak. These measures will only “slow down” the spread of disease, not stop it completely, and the public must understand this concept. Public understanding of the dangers of pandemic influenza and the benefits of community-wide disease control practices are critical to encourage community support.

Definitions

- A. Isolation -- The separation of an individual with influenza from non-infected individuals.
- B. Quarantine -- The separation of an individual(s) exposed to influenza from non-exposed individuals.
- C. Case – Isolation will be implemented when an individual meets the criteria for case definition: Fever >100.7 degrees F plus either sore throat, cough or difficulty breathing (or per CDC recommendations).

Note: For purposes of this plan, individuals meeting this definition are considered a “case” unless laboratory testing proves otherwise.

- D. Contacts – Quarantine will be implemented for individuals who were in contact with the case during the 48 hour period prior to the case developing symptoms and until the patient is isolated (or per CDC recommendations).

Non-Medical Containment Measures

The effectiveness of most non-medical containment strategies depends on characteristics of the evolving virus. Because human influenza has a short incubation period, a short generation time (average time between infection of the case and infection of the contacts), asymptomatic transmission, and a non-specific clinical presentation, the utility of classic containment measures may be limited. Most non-medical containment measures will have their greatest impact in the early phases of a pandemic. Opportunities for averting a pandemic or appreciably slowing its spread will likely end once efficient and sustained human-to-human transmission is established.

The two most fundamental strategies for non-medical containment are isolation and quarantine. While isolation typically applies to an individual, quarantine can apply to an individual, a group, such as those exposed at a specific place or gathering, or a wider population or geographic level. Isolation and quarantine are optimally implemented voluntarily, following directions of healthcare providers and health officials. However, in Arkansas, the State Health Officer has the authority to compel isolation and quarantine of individuals and communities when necessary to protect the public's health.

To be most effective, containment measures should be implemented in “packages” that include a mix of strategies tailored to the epidemiologic context of the pandemic.

Isolation

Isolation separates or restricts movement or activities of an ill person with contagious disease to prevent transmission to others. Strict isolation is confinement of the isolated individual to a room with a separate bed, with direct contact only with persons taking care of the individual. There must be appropriate disinfection and disposal of bodily excretions, secretion, garments, and objects in contact with the isolated individual. Persons caring for the isolated individual must take prescribed precautions to prevent the spread of infectious material from the individual's room. Modified isolation is any other type of isolation, as prescribed or recommended by public health authorities.

Infection Control precautions and procedures for isolating influenza patients – at home, in a hospital, or in a community-designated facility – are described in the Infection Control Section.

Contact Tracing and Management

Contact tracing (identifying individuals exposed to a suspected case of pandemic influenza), quarantine and prophylaxis treatment will be important measures in the initial response to slow the spread of pandemic influenza. However, these measures, with the exception of voluntary quarantine and isolation, are not anticipated to be as effective once there is general spread of disease in the community.

Contact Tracing

A patient's contacts may include family, friends, work colleagues, classmates, fellow passengers, and/or healthcare providers. An individual is considered a close contact if he/she was exposed to a suspected case during the infectious period as follows:

- By being within six feet of the suspected case for a period of 15 minutes or more, or
- By having direct physical contact with the suspected case.

However, if proper personal protective equipment (PPE) (See Infection Control Section) is used, an individual is not considered a close contact.

The infectious period is considered to begin 48 hours before the onset of symptoms and continue until 10 days after the onset of symptoms.

It is unlikely that all close contacts can be traced and quarantined. Decisions on whether to trace a patient's close contacts and how to manage them will be made on a case-by-case basis based upon the disease characteristics, nature of the exposure and feasibility of locating contacts. Highest priority will be given to close contacts exposed in the 24 hours after the onset of symptoms.

Contact tracing will be performed based on the policies and procedures in the Communicable Disease Volume of the ADH Policies and Procedures Manual.

Contact Management

Management of close contacts may be passive or active monitoring without activity restriction and/or quarantine at home or in a designated facility.

- A. *Passive* monitoring has the case/contact self-assess twice daily, complete the symptom log and notify public health if symptoms develop or worsen.
- B. *Active* monitoring uses ADH staff/designees to telephone daily to check on the case/contact's health status.

Containment of Small Clusters

Control measures that ADH might use to contain small clusters of infection with pandemic strains of influenza include approaches that could be implemented in epidemiologically linked cases. They are not likely to be useful once the disease is widespread in the community.

Targeted chemoprophylaxis of disease clusters includes investigation of disease clusters, administration of antiviral treatments to persons with confirmed or suspected pandemic influenza, and provision of drug prophylaxis to all likely exposed persons. This approach requires intensive disease surveillance to ensure coverage of all exposed individuals, effective communication, and rapid distribution and administration of antivirals because they are most effective when provided within 48 hours of symptom onset or within 48 hours of exposure when used as post-exposure prophylaxis before the onset of illness.

Determinants

To guide decision-making on which measures to use, public health officials will collect

information on cases and contacts, including:

- Number of contacts identified per case
- Information on each contact:
 - Relationship to the case/patient
 - Nature and time of exposure
 - Whether the contact was vaccinated or on antiviral prophylaxis
 - Whether adequate personal protective equipment was used
 - Underlying medical conditions
 - Number of contacts (including any in quarantine) that become ill
 - Number of days between exposure and onset of symptoms
 - Number of days between onset of symptoms and reporting to health officials

Appendices 3, 4, and 5 are draft forms for Symptom Log for Health Monitoring and Influenza Case Report, and ADH form CD-4, Communicable Disease Contact Worksheet.

Quarantine

Quarantine restricts movement and activities or separation of well persons believed to have been exposed to infection, to prevent transmission, should these persons develop illness. The limitation of freedom of movement is typically equal to twice the typical incubation period of the disease. Quarantine may be lifted as soon as the exposed contact has remained without signs or symptoms of disease for a complete incubation period for influenza disease. Pandemic influenza preparedness activities should plan for containment measures that may last up to 10 days. However, the timeframe will be adjusted as more is known about the virus.

Use of quarantine early in a pandemic may help slow the spread of disease. Later, when disease is widespread, it is much less likely to have an impact and would be unlikely to be feasible to implement.

Experience from the 2003 SARS outbreak suggests that quarantine applied on a voluntary basis can be sufficient to reduce the spread of disease.

Modes of application:

- Persons are usually quarantined in their homes, but may also be quarantined in community- based facilities.
- Quarantine can be applied to an individual or to a group of persons who are exposed at a large public gathering or to persons believed exposed on a conveyance during travel.
- Quarantine can be applied on a wider population or geographic basis with the voluntary or enforced prohibition of movements or activities.
- A working quarantine allows employees to work, but restricts activities while off duty. It may be allowed under some circumstances, e.g. for personnel who provide essential services.

The potential use of these options is described and compared in the table of Non-medical Containment Measures in this Section.

While most people will voluntarily comply with a request to quarantine themselves, the state has the authority to issue a mandatory quarantine order. This legal document will address statutory authority, timeframe, location, notification of release, penalties for non-compliance and method of appeal. (See Appendix 5 for steps in the Arkansas Process to Issue an Order for Isolation or Quarantine and Appendices 7 through 10 for draft Quarantine Orders.)

Note: In the event of the need to quarantine a group of persons, a list of individuals would be attached to the order that could be separated for purposes of HIPAA compliance. Also see Rules Governing Disclosure of Patient Information During a Pandemic in the Communication Section.

Quarantine facilities:

- Home quarantine -- A person's residence is generally the preferred setting for quarantine. It is usually the least disruptive to a person's routine.
- Community-based facility -- Alternative sites for quarantine may be necessary in certain situations. For example, persons who do not have a home situation suitable for this purpose or those who require quarantine while away from their home (e.g. during travel) will need an alternative location. One or more facilities that could be used for quarantine should be identified and evaluated as part of local influenza preparedness planning.

Because persons who have been exposed to influenza may need to stay in quarantine for as long as 10 days, it is important to ensure that the environment meets the individual's basic needs. Ideally, an evaluation of the home/facility for its suitability for quarantine should be performed before individuals are placed in quarantine.

See Appendix 1 for factors to be considered in evaluating a home or facility for suitability for quarantine. Appendix 2 is a draft Assessment for Essential Services of Home/Special Site Form.

DHS, through Emergency Support Function 6, will coordinate resources to assist in meeting essential service needs of those isolated/quarantined at home or in special facilities.

Change in status:

The case/contact's private physician or the State Health Officer will assess the need to change containment status:

- From quarantine to isolation, if the case definition is met;
- From home to hospital isolation, based on acuity and available beds and personnel.

Note: The private physician will notify ADH Communicable Disease reporting of any changes made.

The State Health Officer will lift the health order if:

- The case has no diagnosis or after 10 days
- The contact does not develop symptoms after 10 days

Other

Personal Hygiene

Throughout a pandemic, public health messages will stress the importance of hygiene

and wellness behaviors such as hand-washing, cough etiquette, adequate sleep, exercise and a balanced diet.

In addition, persons with signs and symptoms of a respiratory infection will be encouraged to:

- Cover the nose/mouth when coughing or sneezing
- Use tissues to contain respiratory secretions
- Dispose of tissues in the nearest waste receptacle after use
- Wash/sanitize their hands after contact with respiratory secretions and contaminated objects
- Stay at home and at least 3 feet away from others.

Additional information such as a Personal Planning Checklist and a Pandemic Influenza Planning Guide for Individuals and Families can be found at the US DHHS website <http://www.pandemicflu.gov>.

Social Distancing

Public gatherings can provide a rich environment for disease transmission. Limiting such opportunities, or social distancing, can reduce transmission. Two ways to increase social distance are to cancel events (e.g. concerts, sports events, movies, religious services) and to close or restrict access to certain sites or buildings (e.g. community swimming pools, youth clubs, gymnasiums, shopping malls, schools).

“Snow Days” may be declared to close schools, offices, etc. as if there were a major snow storm. The Governor has statutory authority in the declaration of an emergency to close businesses and schools.

Hotlines and Referral Centers

Hotlines and Referral Centers may be useful in the later phases of a Pandemic Alert. This approach uses self-assessment and hotlines to direct persons with symptoms to the appropriate site and level of care. For example, people might be asked to take their temperature once or twice daily. Persons with temperatures above a certain level may be asked to stay home and phone the hotline for a medical consult, or to proceed to a designated infectious disease center.

Travel Restrictions

Potential travel restriction measures are addressed in the Managing Travel-related Risk of Disease Transmission Section.

Determinants for the Use of Community Containment Measures

Data on cases and contacts—as well as on depletion of healthcare and public health resources over the course of a pandemic—will be used to help state and local health authorities decide when to implement community-level containment measures. Social considerations, such as levels of community cooperation and mobility, will also be considered.

Determinations by public health officials will be based upon:

Cases and contacts--

- Number of cases (absolute or estimated)
- Rate of incident cases
- Number of hospitalized cases
- Number and percentage of cases with no identified epidemiologic link
- Morbidity (including disease severity) and mortality
- Number of contacts under surveillance and/or quarantine

Healthcare resources--

- Hospital/facility bed capacity
- Staff resources
- Patient/staff ratio
- Number of ill or absent staff members
- Availability of specifically trained specialists and ancillary staff members
- Availability of ventilators
- Availability of other respiratory equipment
- Availability of personal protective equipment and other measures
- Availability of therapeutic medications (influenza and non-influenza specific)

Public health resources--

- Investigator to case and contact ratios
- Number of contacts under active surveillance
- Number of contacts under quarantine
- Ability to rapidly trace contacts (number of untraced/interviewed contacts)
- Ability to implement and monitor quarantine (staff member to contact ratio)
- Ability to provide essential services (food, water, etc.)

Community cooperation, mobility, and compliance--

- Degree of compliance with voluntary individual isolation
- Degree of compliance with active surveillance and voluntary individual quarantine
- Degree of movement out of the community
- Degree of compliance with community-containment measures

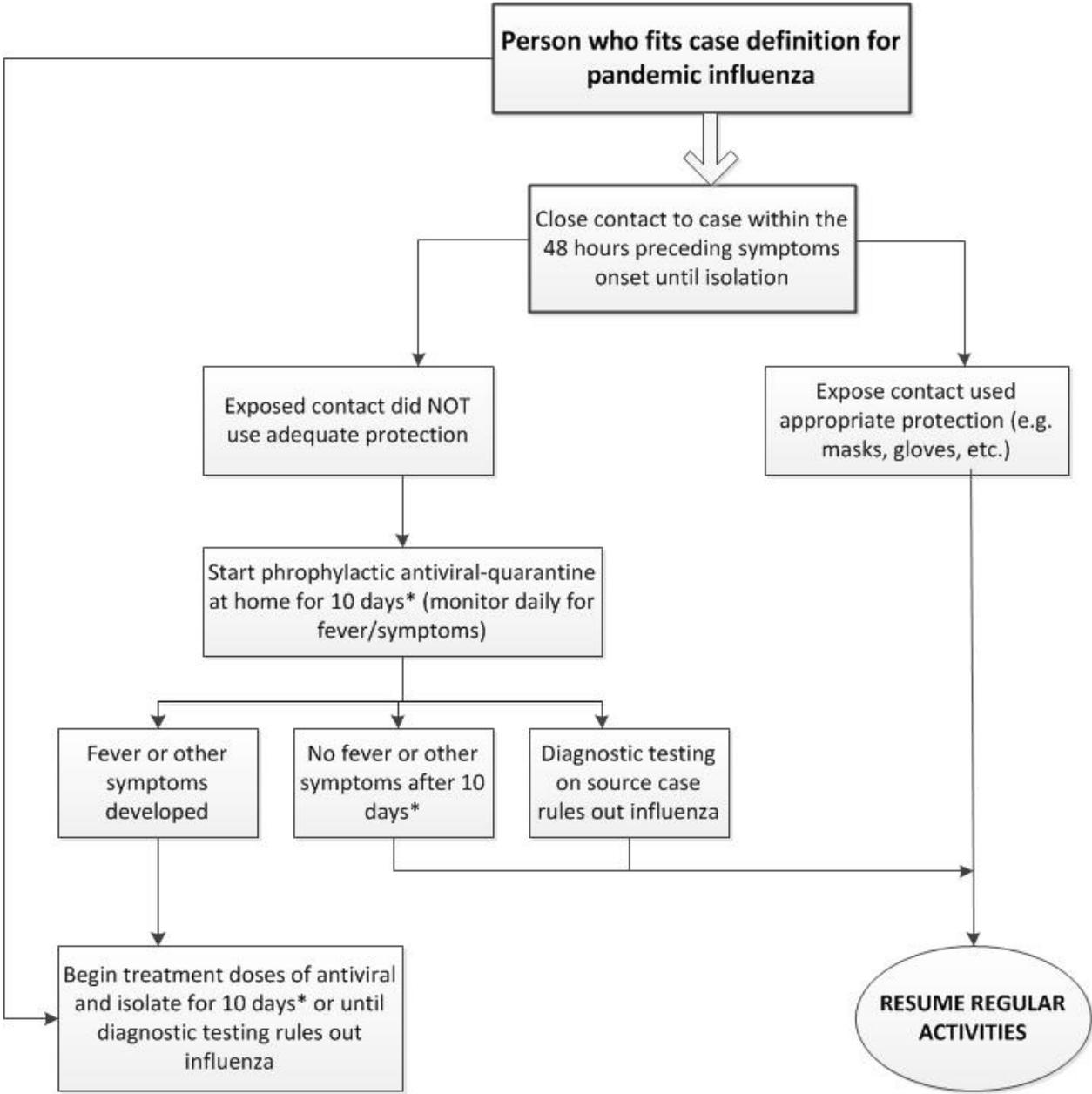
Scaling Back Containment Measures

While premature removal of containment strategies can increase the risk of additional transmission, continuation of such measures must be balanced with individual's needs for movement. The most stringent or disruptive measures should generally be removed first.

Decisions will be based on the following evidence:

- Consistent decrease in the number of cases
- Effective countermeasures are in place (e.g. high coverage of influenza vaccine)
-

Arkansas Isolation/Quarantine Flow Chart
(Pandemic Influenza, Limited Transmission)



*Timeframe may be adjusted as more becomes known about the specific pandemic influenza virus

Non-medical Containment Measures

Level of Influenza Activity	Measure	Definition	Rationale	Considerations
<p>Limited pandemic influenza virus transmission abroad. Local cases of pandemic influenza are either imported or have clear epidemiologic links to other cases</p>	<p>Quarantine of Close Contacts</p>	<p>Individuals exposed to patients with pandemic influenza virus are separated from others for a specific period of time (up to 10 days after potential exposure) during which s/he is assessed on a regular basis for signs and symptoms of disease</p>	<p>Although individual containment measures may have limited impact in preventing the transmission of pandemic influenza, they may have effectiveness with a less efficiently transmitted virus and may slow disease spread and buy time for vaccine development.</p>	<p>May include family members, work or school mates, healthcare workers.</p> <p>May be appropriate in situations in which the risk of exposure and subsequent development of disease is moderate to high.</p> <p>Persons in quarantine who develop fever, respiratory, or other early influenza symptoms should immediately contact their healthcare provider.</p>
	<p>Working Quarantine</p>	<p>Exposed employees are permitted to work but must observe activity restrictions while off duty.</p> <p>Monitoring for signs and symptoms before reporting to work and use of Personal</p>	<p>This strategy may be appropriate for persons for whom activity restrictions are indicated but who provide essential services. It reduces the risk of community spread for high-risk contacts while minimizing adverse</p>	<p>May be appropriate for individuals at moderate to high risk of exposure due to work-related duty as determined by public health authorities.</p> <p>Access to health care services must be available at the worksite</p>

Level of Influenza Activity	Measure	Definition	Rationale	Considerations
		Protective Equipment (PPE) while at work are required.	impact of activity restrictions on provision of essential services.	or a designated facility.
Limited pandemic influenza virus transmission in the area, with either a small number of cases without clear epidemiologic links to other cases or with increased occurrence among close contacts	Quarantine of Close Contacts and/or Working Quarantine	See above.	See above.	May be appropriate in situations in which the risk of exposure and subsequent development of disease is higher. Also, see above.
Increased pandemic influenza virus transmission including cases without clear epidemiologic links to other cases; control measures aimed at individuals and groups appear effective	Quarantine of Groups of Exposed Persons	Quarantine of people who may have been exposed to the same source of illness. May be useful when there is limited transmission in an area and most cases can be traced to exposure to a known transmission setting (a specific school or workplace).	Early in a pandemic, when the scope of the outbreak is focal and limited, focused measures applied to specific groups, most of whom are at risk of exposure may slow the geographic spread and buy time for vaccine development.	This measure is applicable in groups or settings where transmission is believed to have occurred, where the linkages between cases are unclear at the time of evaluation, and where restrictions placed only on persons known to be exposed are considered insufficient to prevent further transmission.
	Restricting the Use of Specific Sites or Buildings or Cancelling	May involve cancellation of public events, suspending	See above.	Requires excellent communication mechanisms.

Level of Influenza Activity	Measure	Definition	Rationale	Considerations
	Public Events to Increase Social Distance	<p>public activities and/or restricting access to public venues.</p> <p>Examples include closure of office buildings, schools, shopping malls, or public transportation.</p>		May reduce the requirement for urgent evaluation of large numbers of persons.
Sustained pandemic influenza activity, with a large number of cases in persons without an identifiable epidemiologic link at the time of initial evaluation, and individual control measures are believed to be ineffective	Coordinated Community and Business Closures to Increase Social Distance	<p>Generally voluntary, measures that coordinate simultaneous closure of offices, schools, transportation systems and other non-essential community activities, services and businesses for a specified period of time, e.g. “snow days.” All non-essential service personnel and community members are urged to stay at home.</p>	Community-level interventions (applied to whole neighborhoods, towns, or cities) are designed to reduce personal interactions and thereby transmission risk.	When disease is occurring in communities around the U.S., individual/group quarantine is less likely to have an impact and likely would not be feasible to implement. Community measures and emphasizing what individuals can do to reduce their risk of infection may be more effective than quarantine of individuals/groups.
	Community-wide Quarantine (including “ <i>cordon sanitaire</i> ”)	Legally enforceable action that restricts movement into or out of the area of quarantine of a large group of people or community.	This action is designed to reduce the likelihood of transmission of pandemic influenza to persons outside the affected area.	Less restrictive measures such as coordinated community and business closures may be equally effective.

Level of Influenza Activity	Measure	Definition	Rationale	Considerations
		Consists of closing community borders or erection of a real or virtual “sanitary barrier” around a geographic area with prohibition of travel into or out of the area except to authorized persons such as public health or health care workers.	May be applicable to all members of a group in which extensive transmission is occurring, a significant number of cases lack an epidemiologic link at the time of evaluation, and restrictions placed on persons known to be exposed are considered insufficient to prevent further spread.	
Between waves or the pandemic is subsiding	Consider Quarantine of Close Contacts	See above.	May be useful when there are decreases in the number of new cases, unlinked cases and cycles of transmission.	
Transmission has been controlled or eliminated, no new cases	Active Monitoring in High Risk Populations for 2-3 Incubation Periods	Requires that the contact be evaluated on a regular (at least daily) basis by phone and/or in person for signs and symptoms suggestive of influenza.		Requires adequate, trained staff to implement, but places fewer constraints on individual movement.

Adapted from U.S. HHS Pandemic Influenza Plan, November 2005

Roles and Responsibilities

Agency	Roles and Responsibilities
Governor's Office	<p>Under certain emergency conditions, has police power to make, amend, and rescind orders and regulations.</p> <p>The Governor is the only authority that can commit National Guard personnel and resources. The National Guard may be called out by the Governor to provide protection of life and property in emergency/disaster situations.</p> <p>In the event of a disaster or catastrophic event, the Governor will declare that a state of emergency exists. Under a state of emergency, the Governor has the following additional authority:</p> <ol style="list-style-type: none"> (1) To enforce all laws, rules and regulations relating to emergency operations and to assume direct operational control of all response organizations. (2) To seize, take or condemn property for the protection of the public. This includes: <ol style="list-style-type: none"> (a) All means of transportation (b) All fuel supplies of whatever type. (c) Food, clothing, equipment, materials, medicines and all necessary supplies (d) Facilities, including buildings and plants
Arkansas Department of Health	<p>Develop and make recommendations for disease containment.</p> <p>Disseminate public health, medical emergency and risk communication messages to the public, healthcare community and state and local government officials.</p> <p>Coordinate the furnishing of health and medical services and resources.</p> <p>Implement disease control measures necessary to protect the public's health, including but not limited to increased surveillance, the issuance of orders for isolation, quarantine, the administration of vaccines and/or medications, medical evaluations and specimen collection.</p>
Arkansas Department of Emergency Management	<p>During any disaster/emergency situation, ADEM, through the State EOC will coordinate and operate the emergency operations reporting system. This system is designed to provide for the maximum sharing of essential information by all emergency services at all levels and between jurisdictions. The system will provide information during all operational periods.</p> <p>ADEM is the primary agency responsible for dissemination of public information during disasters and emergencies utilizing the Joint Information System. Public information is to keep the population informed of the developing situation, give instruction for protection, control rumors and speculation, and to release information needed for the safety and welfare of the state.</p>

Arkansas State Police	<p>Provide personnel and equipment to protect life and property and to enforce the laws of the state of Arkansas.</p> <p>Coordinate all public safety with other state and local agencies during a disaster, including the dissemination of information and request for assistance.</p> <p>Assist and support other state and local agencies where possible, and coordinate public safety services as needed.</p>
Local Public Health	<p>Implement the public health response within the county/city based upon the <i>Arkansas Influenza Pandemic Response Plan</i>.</p> <p>Assess the health and medical needs of the county/city.</p> <p>Coordinate the use of activated health and medical volunteers.</p> <p>Coordinate the allocation of health and medical supplies and resources.</p> <p>Implement the local Mass Dispensing Plan if appropriate.</p> <p>Coordinate the implementation of non-medical disease control measures, such as isolation, quarantine and social distancing as directed by the State Health Officer.</p> <p>Identify and evaluate a community-based facility that could be used for quarantine should that become necessary to help slow the spread of disease in the community.</p>
Local Jurisdiction	Implement Local Emergency Plan for Influenza Pandemic.
Arkansas Department of Human Services	<p>Follow-up on quarantined and isolated individuals.</p> <p>Provide for mental and social well-being of displaced persons.</p>
Arkansas Highway Department	Assist in the delivery of Personal Protective Equipment (PPE)
Arkansas National Guard	Assist in delivery of antivirals

Community Disease Control and Prevention

Evaluation Factors for Quarantine Facilities: Appendix 1

Home Quarantine

A person's residence is generally the preferred setting for quarantine. Because persons who have been exposed to influenza may need to stay in quarantine for as long as 10 days, it is important to ensure that the home environment meets the individual's physical, mental, and medical needs. Ideally, an evaluation of the home for its suitability for quarantine should be performed before the person is placed in quarantine. The evaluation may be performed on site by a health official or designee. It may be more convenient to evaluate the residence through the administration of a questionnaire to the individual and/or the caregiver.

Factors to be considered include:

- Basic utilities (water, electricity, garbage collection, and heating or air-conditioning as appropriate)
- Basic supplies (clothing, food, hand-hygiene supplies, laundry services)
- Mechanism for addressing special needs (e.g., filling prescriptions)
- Mechanism for communication, including telephone (for monitoring by health staff, reporting of symptoms, gaining access to support services, and communicating with family)
- Accessibility to supplies such as thermometers, fever logs, phone numbers for reporting symptoms or accessing services, and emergency numbers
- Access to mental health and other psychological support services

Community-based Facility Quarantine

Alternative sites for quarantine may be necessary in certain situations. For example, persons who do not have a home situation suitable for this purpose or those who require quarantine away from home (during travel) will need to be housed in an alternative location. Because persons who have been exposed to influenza may need to stay in quarantine for as long as 10 days, it is important to ensure that the home environment meets the individual's physical, mental, and medical needs. Ideally, one or more community-based facilities that could be used for quarantine should be identified and evaluated as part of influenza preparedness planning. The evaluation should be performed on site by a public health official or designee.

Additional considerations, beyond those listed above for home quarantine, include:

- Adequate rooms and bathrooms for each contact
- Delivery systems for food and other needs
- Staff to monitor contacts at least daily for fever and respiratory symptoms
- Transportation for medical evaluation for persons who develop symptoms
- Mechanisms for communication, including telephone (for monitoring by health staff, reporting symptoms, gaining access to support services, and communicating with family)
- Adequate security for those in the facility
- Services for removal of waste – No special precautions for removal of waste are required as long as persons remain asymptomatic

Community Disease Control and Prevention Appendix 2

Assessment for Essential Services of Home/Special Site

Name of individual/family _____ Phone _____

Person Responding _____

Relationship to case/contact if applicable _____

Address _____
Street
City
County

Essential Service	Not a Problem	Needs Help	If help is needed, this person/organization will provide it
Shelter			
Caregiver			
Water			
Food			
Electricity			
Heating/cooling issues			
Telephone			
Refuse disposal			
Transportation (for medical purposes)			
Meal preparation			
Medications			
Childcare			
Essential shopping			
Work/school arrangements			
Pet care			
Clothes and laundry services			
Banking and bill paying			
Faith/clergy support			
Special population needs (e.g., language, disability, elderly)			
Legal support			
Emotional support systems			
Hygiene supplies (disposable masks, tissues, hand sanitizer)			

_____ Additional notes on back.

Completed by _____

Date _____

Community Disease Control and Prevention Appendix 4 INFLUENZA CASE REPORT

Name _____
LAST FIRST MIDDLE

Reporting by _____

Address _____
NUMBER STREET APT. NUMBER

Hospital _____

CITY COUNTY STATE ZIP CODE

Att. Physician _____

Tel: Home (_____) - _____ - _____ Work (_____) - _____ - _____
AREA CODE + 7 DIGITS AREA CODE + 7 DIGITS

Telephone Number (_____) - _____ - _____
AREA CODE + 7 DIGITS

1. Date of Birth: MONTH/DAY/YEAR ____/____/____

5. Race: American Indian or Alaska Native

2. Age _____ Years Months

Native Hawaiian or Other Pacific Islander

3. Sex Male Female

Black or African-American

4. Ethnicity Hispanic Not Hispanic

White Asian

6. Is this case a healthcare worker? Y N

8. Date Reported: M/D/Y ____/____/____

7. Place of employment _____

9. Date Investigation Started: ____/____/____

10. Illness Onset Date M/D/Y ____/____/____

Fever: Y N _____°F

Myalgias Y N

Chills: Y N

Shortness of breath: Y N

Headache: Y N

Cough Dry productive: Y N

Sore Throat Y N

Other

11. Did the patient visit a healthcare facility/provider? Y N

14. Is patient immunocompromised? Y N

12. Did the patient have a flu shot this year? Y N

15. Was the patient hospitalized? Y N

13. Was the patient treated with antivirals? Y N

Name _____ Date ____/____/____

Name _____
Date started ____/____/____ For _____ Days

16. Did the patient die? Y N
Date of Death M/D/Y ____/____/____

17. Was laboratory testing for influenza performed? Y N If "Yes":

Date	Test	Results	Date	Test	Results
____/____/____	Rapid Antigen		____/____/____	PCR	
____/____/____	Culture		____/____/____	Other	

18. Transmission setting (Setting of Exposure): Where has the patient been during the 10 days prior to onset of symptoms to 10 days after onset?

Travel	Date(s) ____ / ____ / ____	Location _____
Work	Date(s) ____ / ____ / ____	Location _____
Church	Date(s) ____ / ____ / ____	Location _____
Group meeting	Date(s) ____ / ____ / ____	Location _____
Babysitter/Daycare	Date(s) ____ / ____ / ____	Location _____
Family gathering	Date(s) ____ / ____ / ____	Location _____
School	Date(s) ____ / ____ / ____	Location _____
Bus/Van	Date(s) ____ / ____ / ____	Location _____
Other	Date(s) ____ / ____ / ____	Location _____

19. List of contacts

Name	Address	If <18, Age, Name of parent (P.N.)	Phone*	Date contacted	Comments
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		
		Age P.N.	D: E: C:		

*D: Day phone, E: Evening phone, C: Cell phone

Name	Comments	Signature

20. Any acquaintances of patient with similar symptoms? Y N If "yes" describe _____
 Investigated by: _____ Telephone Number: _____

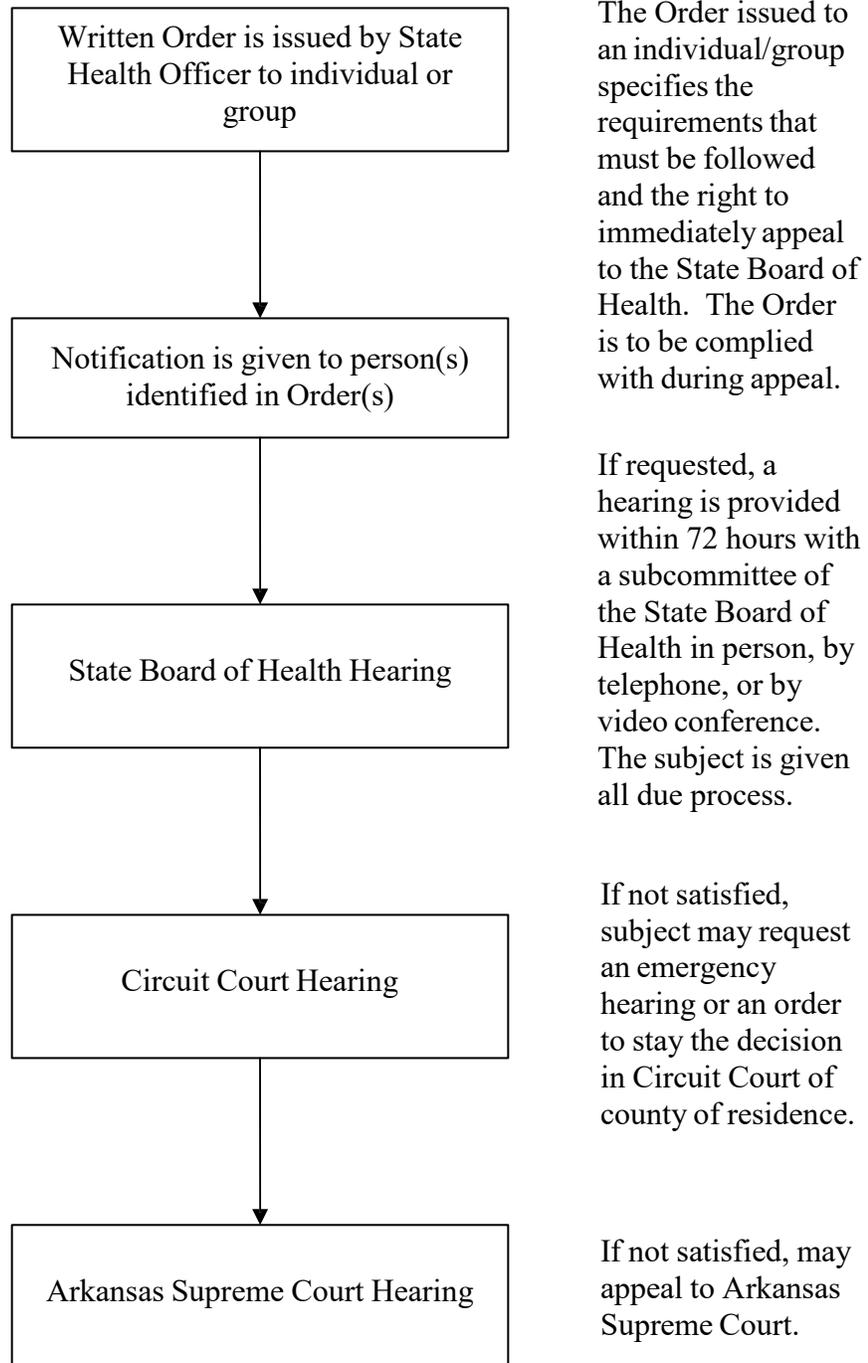
Community Disease Control and Prevention Appendix 5
CD-4, Communicable Disease Contact Worksheet

Index Patient's Name:		Birthdate:			Date of Onset:	Disease:		County:	
Name/Address	Phone No.	Age	Weight	Contacted Status *	Medication	Date Meds Started	Date Meds Completed	Symptoms Ø = absent specify if present	Comments/ Imm. Status
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

* HH = Household CCC = Child Care Center OHR = Other High Risk

Community Disease Control and Prevention Appendix 6
Arkansas Process to Issue an Order for Isolation or Quarantine

If the Arkansas Department of Health determines that a mandatory isolation/quarantine order is necessary to slow the spread of disease, the following process will be followed.



Community Disease Control and Prevention Appendix 7
Request for Voluntary Quarantine

BEFORE THE ARKANSAS STATE BOARD OF HEALTH

DIRECTED TO: _____)
_____) *Number*
_____)
Name _____)
_____)
Street Address _____)
_____)
City, State, Zip _____)

REQUEST FOR VOLUNTARY QUARANTINE

I am asking you to voluntarily quarantine yourself (or the following persons for whom you are the parent or legal guardian _____) because I have determined that you (they)¹ may have, or have been exposed to influenza caused by novel or re-emergent influenza viruses that are causing, or have the potential to cause, a pandemic, and federally quarantine-able. I believe this is necessary because:

Quarantine means that you should not come into contact with other people. It protects your health and the health of others.

Please go and remain at _____ by _____.
(Address) (Date and Time)

Based on what we now know about influenza, you may need to stay there up to _____ days. We will be checking in on you and will let you know when it is safe for you to return to your normal activities.

If you have questions or need help, please call: **1-501-661-2000** or **1-800-462-0599**. Additional information about influenza is available at: <http://www.healthy.arkansas.gov>

Fact sheets about this disease and the steps you should take to protect yourself and others are attached to this letter. Please take these steps to reduce the risk to yourself and others with whom you may have contact.

It is very important that you comply with this request for voluntary quarantine. Your health and the health of others depend on it.

¹ The remainder of this letter should be modified if being delivered to the parent or guardian of dependents. The parent or guardian should be given the choice to be quarantined with the dependent. If the parent or guardian does not choose to be quarantined with the dependent, then

the parent/guardian is responsible for making arrangements for the dependent's care and appropriate level of supervision.

If you do not comply with this request for voluntary quarantine we may use a detention order, enforced by the police, to assure your compliance.

Thank you for your cooperation and help during this public health emergency. Attached is information about available local resources you can reach by telephone or via the Internet. Included in the attached information is a description of how your basic needs (e.g. groceries, medications) can be met while you are quarantined.

Signature: _____

Date: _____

Printed name: _____

Physical address: _____

Mailing address: _____

Nathaniel Smith, M.D., MPH, State Health Officer
Arkansas Department of Health Director

Date

Community Disease Control and Prevention Appendix 8
Draft Home Quarantine Order

BEFORE THE ARKANSAS STATE BOARD OF HEALTH

DIRECTED TO: _____)
_____)
_____)
Name
_____)
Street Address
_____)
City, State, Zip

Order #

HOME QUARANTINE ORDER

The Arkansas Department of Health of the (the Department) has determined that you have had contact with an influenza caused by novel or re-emergent influenza viruses that are causing, or have the potential to cause, a pandemic and are federally quarantine-able. Symptoms usually include (insert symptoms).

Community spread of the virus will have severe public health consequences. The spread of this virus can be stopped by preventing exposure of the disease to an unprotected and susceptible population. Persons who have been exposed to this virus and refuse Home Quarantine are at risk of exposing the public and spreading this potentially life-threatening disease during its incubation period when you may shed the disease or infect others.

The Department has the authority to place anyone who poses a risk of spreading this CD in home quarantine. Quarantine in private homes is used because it is the least restrictive means of protecting the community.

The Department has determined that you pose a risk to others because:

- You have been exposed to influenza; *and*
- You may not be immune to influenza; *and*
- You did not receive preventive treatment in a timely manner.

Therefore, the Department is placing you under a home quarantine order. While this order is in effect, you are required to remain in your home and comply with the following provisions:

1. **Terms of confinement.** You are ordered to remain in your home at:

_____ from _____ through _____.
Street Address, City, State *Date* *Date*

2. **Requirements during confinement.** During the period of quarantine:

- A. You must not leave your home at any time unless you have received prior written authorization from the Department to do so.

- B. You must remain accessible by telephone at all times and answer and respond fully and truthfully to telephone calls from Department staff and other persons identified by the Department as acting on behalf of the Department.
- C. You must not come into contact with anyone **except** the following persons:
- (i) family members and other persons who reside in your home;
 - (ii) authorized healthcare providers;
 - (iii) authorized Department staff or other persons identified by the Department as acting on behalf of the Department; and
 - (iv) such other persons as authorized by the Department.
- D. If family members or other persons who reside in your home have **not** been issued a Home Quarantine Order, they may leave your home to carry on their daily routines and to assist you with any needs you may have during the period of confinement. If you live alone, or if every member of your household is under Home Quarantine Order, you should arrange by telephone for relatives, neighbors, or friends to assist with any needs you may have during the period of confinement. These persons should not have direct contact with you. If you need assistance in providing for your daily needs, you should call the Department free of charge at (800) insert number and ask to speak to _____.
- E. You must follow the directions contained in the attachment to this order labeled Attachment A to monitor your health status on a daily basis.
- F. If you develop any symptoms of influenza detailed in Attachment A, including rash, high fever, cough, runny nose, and red, watery eyes, you should immediately call the Department free of charge at (800) **462-0599** and ask to speak to _____. You should also telephone your family physician. You must inform your physician that you are under Home Quarantine Order. If emergency medical treatment is required for conditions other than those listed in this paragraph (e.g. chest pain or severe accidental injury at home), you should call 911 for an ambulance. When seeking such assistance, you must inform the operator of the 911 line and the ambulance that you are under Home Quarantine Order.
- G. If other persons also reside in your home you must maintain good personal hygiene at all times, including complying with the directions contained in Attachment A, to prevent disease transmission.
- H. You should inform your employer that you are under home quarantine and are not authorized to come to the work place.
- I. If you have additional questions about this order or what is required of you to remain in compliance with it, call the Department free of charge at (800) **462-0599** and ask to speak to _____.
3. **Information about Influenza.** You should review the information contained at Attachment A for information about influenza. In order to find out more information about influenza and its symptoms and spread, you may access the Department's web-page at <http://www.healtharkansas.gov/health.html> If you do not have access to the internet from your home, you may contact the Department at (800) **462-0599**.

4. **Legal authority.** This order is issued pursuant to the legal authority contained at Ark. Code Ann. §20-7-109 and the Communicable Disease Regulations and the Regulations for Administrative Appeal of the Arkansas State Board of Health, a copy of which is labeled Attachment B and is attached to this order for your review.
5. **Ensuring compliance.** In order to ensure that you strictly comply with this Home Quarantine Order the Department or persons authorized by the Department may contact you by telephone on a regular basis and may visit you at your residence without prior notification to you.
6. **Violations of order.** If you fail to comply with this Home Quarantine Order you may be ordered to be quarantined in a hospital or other facility as determined by the Department. In addition, failure to comply with this order is a violation of criminal law for which you may be arrested, fined, and imprisoned.
7. **Your rights – appeal rights.** While under quarantine, you have the rights as described in the Regulations of the Arkansas State Board of Health for Administrative Appeal contained in Attachment B. In addition, you have the right to appeal this order pursuant to Attachment B.

Nathaniel Smith, M.D., MPH, State Health Officer
Arkansas Department of Health Director of the

Date

I have read and understand the above Quarantine Order.

Signature

Date

Attachments to this Order: Attachment A -- Facts About Influenza
Attachment B – Arkansas Statute and Board of Health Regulations

- 2. Requirements during confinement.** During the period of quarantine:
- A. You must not leave this designated place at any time unless you have received prior written authorization from the Department to do so.
 - B. You must remain accessible by telephone at all times and answer and respond fully and truthfully to telephone calls from Department staff and other persons identified by the Department as acting on behalf of the Department.
 - C. You must not come into contact with anyone ***except*** the following persons:
 - (v) family members;
 - (vi) authorized healthcare providers;
 - (vii) authorized Department staff or other persons identified by the Department as acting on behalf of the Department; and
 - (viii) such other persons as authorized by the Department.
 - D. If you need assistance in providing for your daily needs, you should call the Department free of charge at (800) insert number.
 - E. You must follow the directions contained in the attachment to this order labeled Attachment A to monitor your health status on a daily basis.
 - F. If you develop any symptoms of influenza detailed in Attachment A, including rash, high fever, cough, runny nose, and red, watery eyes, you should immediately call the Department free of charge at (800) insert number. You should also telephone your family physician. You must inform your physician that you are under Quarantine Order. If emergency medical treatment is required for conditions other than those listed in this paragraph (e.g. chest pain or severe accidental injury), you should call 911 for an ambulance. When seeking such assistance, you must inform the operator of the 911 line and the ambulance that you are under Quarantine Order.
 - G. You should inform your employer that you are under a quarantine order and not authorized to come to the work place.
 - H. If you have additional questions about this order or what is required of you to remain in compliance with it, call the Department free of charge at (800) insert number.

3. Information about Influenza. You should review the information contained at Attachment A for information about influenza. In order to find out more information about influenza and its symptoms and spread, you may access the Department's web-page at <http://www.healthylarkansas.com/health.html> If you do not have access to the internet, you may contact the Department at (800) insert number.

4. Legal authority. This order is issued pursuant to the legal authority contained at Ark. Code Ann. §20-7-109 and the Communicable Disease Regulations and the Regulations for Administrative Appeal of the Arkansas State Board of Health, a copy of which is labeled Attachment B and is attached to this order for your review.

5. Ensuring compliance. In order to ensure that you strictly comply with this Quarantine Order the Department or persons authorized by the Department may contact you by telephone on a regular basis and may visit you without prior notification to you.

6. Violations of order. If you fail to comply with this Quarantine Order you may be ordered to be quarantined in a hospital or other facility as determined by the Department. In addition,

failure to comply with this order is a violation of criminal law for which you may be arrested, fined, and imprisoned.

7. Your rights – appeal rights. While under quarantine, you have the rights as described in the Regulations of the Arkansas State Board of Health for Administrative Appeal contained in Attachment B. In addition, you have the right to appeal this order pursuant to Attachment B.

Nathaniel Smith, M.D., MPH, State Health Officer
Arkansas Department of Health Director

Date

I have read and understand the above Quarantine Order.

Signature

Date

Attachments to this Order: Attachment A -- Facts About Influenza
 Attachment B – Arkansas Statute and Board of Health Regulations

6. Individuals in the quarantined area will not be allowed to leave the area without proper authorization from health or law enforcement authorities. Individuals outside the quarantine area will not be allowed to enter the area without proper authorization from health or law enforcement authorities.
7. The quarantine will continue for the period of time necessary to arrest, control, and eradicate the threat to public health. Once the area has been determined not to pose a threat to public health, the area quarantine will be terminated.
8. Notice of this order and any further instructions shall be published at least once each week during the area quarantine period in a newspaper of general circulation in the area and will include a brief explanation of the meaning and effect of this order and instructions. I may use other reasonable means of communication to inform persons in the quarantine area of my orders and instructions.
9. **Information about Influenza.** You should review the information contained at Attachment A for information about influenza. In order to find out more information about influenza and its symptoms and spread, you may access the Department's web-page at <http://www.healthyarkansas.gov/health.html>. If you do not have access to the internet, you may contact the Department at (800) 462-0599 or 501-661-2245.
10. **Legal authority.** This order is issued pursuant to the legal authority contained at Ark. Code Ann. §§20-7-109 and 20-7-110 and Arkansas Board of Health Rules and Regulations Pertaining to Communicable Diseases and the Regulations for Administrative Appeals of the Arkansas State Board of Health, a copy of which is labeled Attachment B and is attached to this order for your review.
11. **Ensuring compliance.** In order to ensure that you strictly comply with this Quarantine Order the Department or persons authorized by the Department may contact you by telephone on a regular basis.
12. **Violations of order.** If you fail to comply with this Quarantine Order you may be ordered to be quarantined in a hospital or other facility as determined by the Department. In addition, failure to comply with this order is a violation of criminal law for which you may be arrested, fined, and imprisoned.
13. **Your rights – appeal rights.** While under quarantine, you have the rights as described in the Regulations of the Arkansas State Board of Health for Administrative Appeal is contained in Attachment B. In addition, you have the right to appeal this order pursuant to Attachment B.

If you have questions, please contact me by the means described below (_____).

This order is issued under my authority as The Arkansas Department of Health State Health Officer.

Signature: _____

Date: _____

Printed name: _____

Physical address: _____

Mailing address: _____

Nathaniel Smith, M.D., MPH, State Health Officer
Arkansas Department of Health Director

Date

Attachments to this Order: Attachment A -- Facts About CD
 Attachment B – Arkansas Statute and Board of Health Regulations

Management of Travel-related Risk of Disease Transmission

Rationale

The extensive international and domestic travel conducted today will likely make the spread of influenza pandemic disease faster than ever before. The 2003 severe acute respiratory syndrome (SARS) pandemic demonstrated how quickly human respiratory viruses can spread. Because typical influenza virus has a shorter average incubation period than SARS, it will probably spread even more quickly.

While early in a pandemic travel restrictions may decrease disease transportation, later, as pandemic disease spreads, ongoing indigenous transmission will make this strategy less effective. Furthermore, the effectiveness of limiting travel will depend upon the properties of the pandemic virus that emerges and the facts at the time of emergence.

If an influenza pandemic begins outside the United States, public health authorities might screen inbound travelers from affected areas to decrease disease importation into the United States. If the pandemic begins in or spreads to the U.S., health authorities might screen outbound passengers to decrease exportation of disease.

It will not be possible to identify all arriving or departing infected passengers because some persons infected with influenza will still be in the incubation period, be shedding virus asymptomatically, or have mild symptoms. Nevertheless, the ability to detect some cases early in the pandemic may slow disease spread for a short time, allowing more time to prepare. Many people may decide to limit their personal risk by canceling nonessential trips.

Preparing for Travel-related Containment Measures

Strategies for limiting travel-related risk include travel health alert notices, isolation/quarantine of new arrivals, and restriction or cancellation of nonessential travel. The value of compulsory restrictions must be weighed relative to the societal disruptions that such limitations would cause.

Although states have authority for movement restrictions within states, the federal government has primary responsibility for movement between states or across international borders. Novel influenza virus was added to the federal quarantine list in April 2005. The Arkansas Department of Health will cooperate with federal authorities and will select and implement travel-related strategies in coordination with the U.S. Public Health Service and CDC. CDC's Travelers' Health website (www.cdc.gov/travel) provides up-to-date travel notices for international travelers to countries affected by novel influenza viruses.

During the early stages of a pandemic, the following actions, depending on the status of disease spread and the established epidemiology of the pandemic, the following actions may be beneficial:

- Enhanced disease surveillance at state entry points
- Guidance on infection control procedures that may be used on airplanes

- Isolation of arriving ill passengers or border crossers and quarantine of their contacts as necessary
- Collecting information on arriving ill passengers in the event notification is warranted

Later, if the situation worsens, other actions may be helpful:

- Distributing health alert notices to passengers arriving from affected countries
- Posting travel health alert notices in airports
- Recommending canceling or limiting nonessential travel to affected countries

Managing Ill Travelers at Airports

During the early stages of a pandemic that begins outside the U.S., disease control measures at airports may delay or decrease the introduction of novel influenza strains into the U.S. Airports will develop protocols to identify and manage ill travelers at airports. Provisions include:

- Meeting flights with a reported ill passengers
- Establishing notification procedures and communications links among organizations involved in the response
- Reporting potential cases to ADH
- Medically assessing ill travelers and referring for care
- Separating the ill traveler from other passengers during the assessment
- Providing guidance on infection control procedures
- Identifying potential quarantine facilities
- Transporting the ill traveler to a designated healthcare facility
- Identifying other ill passengers and separating them from passengers who are not sick
- Transporting and quarantining contacts if necessary
- Enforcing isolation and quarantine if necessary

Once the pandemic has spread outside and within the United States, screening for arriving ill passengers will become less useful and feasible.

Travel within the U.S.

If most areas in the U.S. have not yet been affected by influenza, CDC and state authorities may recommend limiting or canceling nonessential travel to highly infected areas.

Scale Back of Travel-related Control Measures

Decisions to reduce travel control measures will be made in consultation with CDC.

Communication

Introduction

As outlined in the CDC Bioterrorism Preparedness and Response cooperative agreement, the ADH Office of Communications is responsible for developing and implementing a plan for connectivity of key stakeholders involved in public health detection and response, including state and local public health officials, the medical community, public safety and other key participants, and the general public. The communication system developed will be used for all public health emergencies. Elements of the plan that are specific to an influenza pandemic are outlined below.

The goal of the Communications Section of the plan is to ensure an efficient flow of accurate and consistent information during a pandemic. It is designed to facilitate communication among federal, state and local agencies about influenza activity and circulating strains of influenza virus, and about recommendations for, and availability of vaccines and antivirals, and other recommended health measures. This plan also describes the system for providing information to the general public through the media and other information outlets.

Communication Goals and Concepts

The goals for communications during an influenza pandemic are:

- Instill and maintain public confidence in the state's public health system and its ability to respond to and manage the appearance of pandemic influenza
- Rapidly provide the public, health care providers, policymakers, and the media access to accurate, consistent and comprehensive information
- Address, as quickly as possible, rumors, inaccuracies and misperceptions and prevent stigmatization of affected groups
- Provide accurate, consistent and highly accessible information and materials through the coordination of communication efforts with federal, state, and local partners
- Fulfill information requests from the media, public and staff
- Eliminate or reduce public fear, anxiety or negative behavior and thoughts
- Direct public action as determined by the Governor and others within the chain of command
- There will be a special need for information for the general public about how and why a Priority Group List for receipt of vaccine and/or antiviral drugs was developed. Appropriate risk communication will need to be employed to mitigate any sense of 'special treatment' being afforded to one or more segments of the population over others. Public education will be an important part of the immunization campaign.
- Certain groups will be hard to reach, including people whose primary language is not English, people who are homeless, people who are hearing and visually impaired, etc. Special Populations will be included in all communication efforts.

Communication preparedness follows seven key risk communication concepts:

- When health risks are uncertain, as likely will be the case during influenza pandemic, people need information about what is known and unknown, as well as interim guidance to formulate decisions to help protect their health and the health of others.

- Coordination of message development and release of information among federal, state, and local health officials is critical to help avoid confusion that can undermine public trust, raise fear and anxiety, and impede response measures.
- Guidance to community members about how to protect themselves and their family members and colleagues is an essential component of crisis management.
- Information provided to the public should be technically correct and succinct without seeming patronizing.
- Information presented during an influenza pandemic should minimize speculation and avoid over-interpretation of data, overly confident assessments of investigations and control measures.
- An influenza pandemic will generate immediate, intense, and sustained demand for information from the public, healthcare providers, policy makers, and news media. Healthcare workers and public health staff are likely to be involved in media relations and public health communications.
- Timely and transparent dissemination of accurate, science-based information about pandemic influenza and the progress of the response can build public trust and confidence.

Rules Governing Disclosure of Patient Information during a Pandemic

As a matter of policy, ADH will routinely provide summary, statistical or aggregate information that does not reasonably identify an individual. The State Health Office or designee shall release information obtained during an investigation or inquiry that is occurring and not yet complete if it is determined the release of the information is necessary to avert or mitigate a clear threat to an individual or public health. That release will be limited to those persons necessary to control, prevent or mitigate the disease or illness.

Recognizing an informed population is more likely to protect itself against health threats, ADH seeks to balance this interest with a fundamental respect for the privacy of individuals in determining the time, place, manner and type of information disclosed.

Accordingly, ADH will utilize the following guidelines:

- If there are at least five cases reported in a county, the number of cases is reported by county of residence.
- ADH will not disclose additional information unless disclosing the information would have strong public health significance such as may be necessary to prevent, mitigate or abate a public health threat. When disclosure of individual level data is in the best interest of the public's health, ADH will disclose only data necessary to protect the health of individuals at risk.
- To the extent practical and where it is appropriate, ADH will consult with staff, its public health partners and/or the individual or their family prior to any disclosure;
- The current or present condition or prognosis of the individual does not affect nor diminish the privacy concerns and rights of the individual.

Roles and Responsibilities for the Arkansas DHHS Office of Communications during a Pandemic

Arkansas ADH Office of Communications

1. ADH Internal Communications

The ADH Office of Communications distributes information internally to ADH staff (and to the ADH staff as needed) via the ADH Internal Communications Office.

The ADH Internal Communications ensures that information such as press releases, fact sheets and other pertinent information are distributed to colleagues throughout the ADH. The Internal Communications Team works in conjunction with the ADH Office of Communications, Video-Conferencing Coordinator, Director of the Health Alert Network, Center Directors, Hometown Health Improvement Leaders/LHU Administrators and the EOC Team to ensure that accurate, current public health information is disseminated.

In the event of an emergency, all personnel with disaster/pandemic responsibility will immediately suspend routine duties and report to the Emergency Operation Center (EOC) or location directed by the Division Director/Incident Commander. Additionally, those personnel from other business units that have been asked to assist the communication effort will respond as well.

ADH Internal Communications is responsible for immediate notification of Internal Communication on-call personnel. A call roster of off-duty telephone numbers of Internal Communications is updated and distributed to all affected personnel.

ADH Internal Communications utilizes a variety of mediums to assure that information is distributed to colleagues within the division. Internal Communications will make direct contact with Center Directors to ensure that colleagues are notified immediately and updated appropriately on emergency activities. A variety of communication vehicles will be used including email, face-to-face communication, Intranet, tele- and/or video-conferencing, and others.

Press releases will be coordinated with the ADH Office of Communications to ensure that timely notifications are made internally before widespread dissemination to the public/media.

ADH Internal Communications will:

- Participate in emergency response activities, including planning, training and exercises at the Arkansas Department of Health.
- Maintain current database of contact persons in each Center to include Center Directors, Regional Directors, Hometown Health Leaders, Communicable Disease Nurse Specialists, etc.
- Maintain a current database of fax numbers of Centers, Regional Office, and Local Health Units.
- Maintain copies of information distributed to division colleagues.
- Coordinate preparedness efforts with the ADH Office of Communications.

- Use redundant methods of communicating messages. Messages will be marked with bold text (URGENT or EMERGENCY, etc.) to ensure that colleagues are alerted to its importance.

2. ADH Office of Communications

The ADH Office of Communications has lead responsibility for developing and approving material for the press and the public. Members include: Director, Health and Marketing Communications Specialist, Communications Specialist, Internal Communications Specialist, a media monitoring team, press release team, runners and administrative support. Information to be released from all sources will be disseminated through this group.

a. Joint Information Center (JIC)

- 1) In a major disaster or emergency, a joint information center (JIC) will likely be established as a central point for coordination of emergency public information, public affairs activities and media access to information about the latest developments. The JIC is a physical location where communications staff from involved agencies come together to ensure the coordination and quick release of accurate and consistent information to the media and the public.
- 2) The JIC serves as the primary point of contact for the media for information regarding all public health emergency response, recovery and mitigation programs provided by federal, state, local and volunteer agencies. This includes providing the media with accurate and timely information on disaster operations, working with members of the media to encourage accurate and constructive news coverage, monitoring media coverage to ensure critical messages are being reported and identifying potential issues or problems that could have an impact on public confidence in the response and recovery effort.
- 3) Before its release, disaster information from the various participating agencies will be coordinated to the maximum extent possible to ensure consistency and accuracy. That said, no editorial or policy control will be exercised by the coordinating agency over other agencies' release of information about their own policies, procedures or programs. All participating agencies may use their own mechanisms for releasing information.
- 4) Various government agencies as well as volunteer and private responding organizations are encouraged to participate in and share the resources of the JIC. If being together at the JIC is not feasible, all organizations are encouraged to conduct their information activities in cooperation with the JIC.

The following Standard Operating Procedures (SOPs) have been compiled to help the ADH Office of Communication responders complete the tasks they have been assigned in their various work areas. SOPs will be reviewed and modified as needed after every exercise.

To maintain ADH Communication Team readiness Communication Team members will prepare/maintain checklists for Communication Team assignments. Communication Team members will keep information current and review annually. Information includes, but is not limited to:

- shelf kits
- media contact lists
- supplies
- pandemic influenza web site

The ADH Communication Team will be activated any time the ADH Emergency Operations Center (EOC) is activated. The ADH Communication Public Information Officer (PIO) will make call-downs in accordance with the ADH Communication Team call-down roster. All Communication Team staff are to report to the ADH EOC.

Upon Arrival at the EOC, members of the ADH Communication Team will enter through the door of the ADH EOC (basement of ADH) show identification, sign in, and establish communications with the ADH PIO in the EOC.

The *EOC Public Information Officer* will:

- Serve as a focal point for the overall communication efforts of the EOC and is the lead agent for coordination, comment and review of all information being released from the EOC by the EOC Director, EOC Center Directors, and the media/public.
- Hold staff briefings with the EOC Director and EOC Center Directors immediately when essential information becomes available and before and after media briefings if possible
- Coordinate and secure approval of all information in news releases and media advisories before release.
- Work with press release writers to create written materials if needed. Fill out internal distribution list for each piece of written information before handing to runner who will distribute materials to EOC Director and appropriate Center Directors and Communication Team.
- Provide information for Log Keeper of PIO functions in EOC.
- Check Health Communications and Marketing Specialist's office computer to monitor the Associated Press (AP) for newspaper reports. Clip written news reports and give to administration support for copy and distribution in-house.
- Schedule media briefings:
 - 1) Identify spokesperson (s) or be prepared to act as a spokesperson for the ADH. (See Section III.D.1 "Spokesperson Identified")
 - 2) Make available audio/visuals, handouts, props and equipment, etc. needed for briefing.
- Participate in news conferences
 - 1) Participate in news conferences. Identify spokesperson (s) or be prepared to act as a spokesperson for ADH. (See Section III.D.1 "Spokesperson Identified")
 - 2) Make available audio/visuals, handouts, props and equipment, etc. needed for briefing.
- Respond to media inquiries with appropriate information.

Press Release Writers, upon arrival at the EOC, will enter through the basement door, show identification, sign in and report to the EOC PIO.

- Receive guidance from ADH EOC PIO.
- Make sure computer is up and running. Report problems to the Information Technology Representative.
- Locate pre-scripted news releases on computer. If unavailable, locate backup disk in shelf kit.
- Be aware of conversations and changes coming in from EOC PIO and on the status board that may affect what is being written. If something doesn't sound or look right, ask questions.
- Prepare news releases and advisories on ADH Letterhead for approval by the EOC Director, EOC Center Directors, subject matter experts, and EOC PIO.
 - 1) For pre-scripted messages, locate the template or document in the Shelf Kit that best fits the information going out. If starting new, look for the "ADH News Release" template, also in the Shelf Kit. Adjust the date, time and number of the release. Print out the release and be prepared to put it on disk if someone else is e-mailing it.
 - 2) Be prepared to make changes to a release once it is reviewed by the verifying authorities. Secure approval. (See Section III.E. "Verification and Approval of Information")
 - 3) Provide approved copy to the Administrative Support for internal distribution and to the ADH PIO to send to the media/public.
 - 4) Provide information for inter-jurisdictional news releases when applicable.

Administrative Support Team, upon arrival at the EOC, enter through the basement door, show identification, sign in and report to the EOC PIO.

As the EOC is being declared operational:

- Ensure that the Administration Support Team is able to be operational:
 - 1) Turn on and test copiers and faxes to verify that they are in proper working order.
 - 2) Restock supplies if necessary:
 - copy paper for copier and faxes
 - ink cartridges and toner for copier and fax machines,
 - staplers, staples, pens, pencils, paper clips, tape, post-it pads, in-out boxes
 - Communication Team forms
- Report problems and/or readiness to EOC PIO.

After EOC is declared operational:

- Receive item to be copied:
 - 1) If exercise related, make sure all items are marked "Test Exercise Message."
 - 2) Make sure item is initialed by verifying authorities (See Section III.E. "Verification and Approval of Information") and is ready for release.
 - 3) Make sure item is numbered and the date and time is on it.
- Keep a copy of all items distributed and attach distribution list.

- Distribute the following number of copies. The numbers may change. Adjust as needed.
 - 1) EOC Director - 1
 - 2) EOC PIO – 1
 - 3) EOC ICS Team – 15
 - 4) Press Release Writers - 2
 - 5) Phone Team Members - 8
 - 6) Media Analysis Team - 2
 - 7) Evaluators (if graded exercise) – To Be Determined
- If personnel are not present at workstations, place copies at work stations.
- Post Releases on wall. Remove and file posted news releases at the end of each day.

Log Keeper, upon arrival at the EOC, enter through the basement door, show identification, sign in and report to the EOC PIO.

- Obtain log forms from shelf kit and begin notation of Communication Team actions.
- Other duties as assigned by the EOC PIO.
 - 1) The log keeper should stay abreast of the situation and may be asked to proof news releases for accuracy and clarity.
 - 2) If the need arises, the log keeper may be asked to keep information maintained on a separate easel board or on one of the computers.

Team Leader, Media Monitoring and Analysis Team, upon arrival at the EOC, enter through the basement door, show identification, sign in and report to the EOC PIO.

- Check required equipment.
 - 1) Verify that there are tapes for TVs and cassette radio. Put tapes into TVs and radios. Test VCR in each TV. Test radio recording capabilities.
 - 2) Verify that the TVs are receiving cable. Check with IT support for any problems.
 - 3) Set up TVs for 4 major networks and CNN. Be aware that other stations may also have coverage. Check with EOC PIO and phone team information on the broadcast media showing an interest.
 - 4) Set up radios to monitor local stations (KARN radio – AM 920). Be aware that other stations may also have coverage. Check at top of the hour for national news broadcasts.
- Supervise the monitoring and recording of radio and television. (PIO needs to check Health Communications and Marketing Specialist's office computer to monitor AP for newspaper reports.)
- Analyze media reports for accuracy and trends.
 - 1) Check information against EOC status board, news releases, and information from news conferences and briefings.
 - 2) Be aware that a lack of media coverage or lack of knowledge of the situation also needs to be reported to the EOC PIO.
 - 3) Check the Internet for web news stories and print out.

- Analyze public and media phone inquiries for trends.
 - 1) Check information against status board, news releases, information from news conferences and briefings. Report trends to EOC PIO.
 - 2) Be aware that a lack of media coverage or lack of knowledge of the situation also needs to be reported to the EOC PIO.
- Inform the EOC PIO on media trends, inaccurate reports and rumors.
 - 1) Be prepared to report to the EOC PIO during in-house briefings.
 - 2) Be prepared to immediately report to the EOC PIO if a major inaccuracy is found.
- Ensure that call down list for Media Monitoring and Analysis Team is current and provide updates to EOC PIO.

Team Member, Media Monitoring and Analysis Team, upon arrival at the EOC, enter through the basement door, show identification, sign in and report to the EOC PIO.

- Help set up required equipment.
 - 1) Verify that there are tapes for TVs and cassette radio. Put tapes into TVs and radios. Test VCR in each TV. Test radio recording capabilities.
 - 2) Verify that the TVs are receiving cable. Check with IT support for any problems.
 - 3) Set up TVs for 4 major networks and CNN. Be aware that other stations may also have coverage. Check with EOC PIO and phone team for information on broadcast media showing an interest.
 - 4) Set up radios to monitor local stations (KARN radio – AM 920). Be aware that other stations may also have coverage. Check at top of the hour for national radio news broadcasts.
- Monitor and record radio and television.
 - 1) Make sure equipment is recording broadcasts. Write out any trends, inaccuracies and lack of information on Media Monitoring and Analysis form in Shelf Kit. Get completed form to Team Leader immediately.
 - 2) Be aware that a lack of media coverage or lack of knowledge of the situation also needs to be reported to the EOC PIO.
- Analyze media reports for accuracy and trends.
 - 1) Check information against status board, news releases, information from news conferences and briefings.
 - 2) Be aware that a lack of media coverage or lack of knowledge of the situation also needs to be reported to the EOC PIO.
 - 3) Periodically check the Internet for web news stories and print out for PIO.
- Check with EOC Phone Team and analyze public and media phone inquiries for trends.
 - 1) Check information against status board, news releases, information from news conferences and briefings. Report trends to Team Leader.
 - 2) Be aware that a lack of media coverage or lack of knowledge of the situation also needs to be reported to Team Leader.
- Inform Team Leader of media trends, inaccurate reports and rumors. Don't wait. If you notice anything that doesn't correspond to the released information, immediately inform Team Leader.

Local Health Unit (LHU)

The LHU is well-known and trusted within its jurisdiction. Coordination between the EOC and LHU is necessary for a consistent message that ensures smooth operations and credibility.

If a public health crisis involves multiple counties or is of significant importance, ADH will issue news releases and handle media inquiries. ADH communications staff may be dispatched to a central location in the affected area to assist and is equipped to manage the media response in the field. If the crisis occurs in one county or city, the EOC may designate the LHU to issue news releases and take media inquiries. LHUs should share copies of releases with ADH Communications Office (EOC FAX: 501-280-4227) prior to sending them to the media. ADH Internal Communications will notify all LHUs before distribution of any news release to the media. The ADH Communications Office (EOC Phone: 800-651-3493) is available to assist LHUs with media issues.

1. Recommendation and Distribution of Internal Communication Messages

Regional leadership will be responsible for coordinating internal communication messages with the following individuals/groups**:

- Group Leaders
- Hometown Health Improvement Coalition Members
- County Health Officers
- Business Unit Media Liaison
- Patient Care Leaders
- Communicable Disease Nurses
- Administrative Support Colleagues

**Please note that the aforementioned list is not inclusive of all colleagues that may need to be contacted.

ADH regional leadership will ensure that all information is distributed to appropriate colleagues and public and private partners in a timely manner (normally within one working day).

ADH regional leadership will ensure that appropriate backup is in place at all times to check faxes, emails, Intranet, in case of emergencies. Notifications will be made to designated business unit contact persons or their backup.

The Emergency Communication Center initiates contact with the respective regional contacts or their designee. Regional contacts initiate calls to individuals listed on their call-down roster.

Regional offices/LHUs have the latitude to designate their response teams; however, they must ensure Communicable Disease nurse involvement on the team.

2. Utilization of Shelf Kit

The Arkansas Department of Health will develop and share shelf kit information on a wide range of public health emergency issues and will make it readily available to LHUs.

Spokespersons

1. Spokespersons Identified and Speakers Bureau Established

An appropriate spokesperson for pandemic influenza will be identified by the Incident Commander in consultation with the State Health Officer.

Local health units/regional offices will identify spokespersons and provide appropriate training if necessary (via ADH Office of Communications).

A Speakers Bureau has been established and speakers identified at the state and local levels. Presentations have been developed to assure consistency of messages by speakers.

2. Risk Communication Curriculum Development

The ADH Health Communications and Marketing Specialist and ADH Risk Communications Specialist, in partnership with the ADH Section of Emergency Preparedness, the Medical Director of the Center for Health Protection and the Medical Director of Immunization Section will modify the CDC Crisis and Emergency Risk Communication curriculum to include pandemic influenza information.

3. Risk Communication Training

The ADH Health Communications and Marketing Specialist and ADH Risk Communications Specialist will train spokesperson as identified and as requested.

Verification and Approval of Information

The following people will approve information before it is released to the public and media. When possible, the clearance will be completed simultaneously and in person.

- ADH Director or designee/Incident Commander
- Subject Matter Expert or designee
- Director of Communications or designee

Some material may require approval from the governor's office. The ADH PIO or designee will maintain contact with the governor's communications office and have access to governor's key staff pager and home phone numbers for 24/7 contact.

An approval form must be completed and signed by all of the bulleted individuals above prior to releasing information/materials.

Responsibilities

Primary responsibilities for communication activities during a pandemic are outlined below:

1. The ADH Sections of Epidemiology and Immunization are responsible for collecting and interpreting influenza surveillance data, and for disseminating this information to:
 - Other Centers within the ADH, especially to the Director's Office and the ADH Branch of Emergency Preparedness. (Collection of surveillance data is described in the Surveillance section of the Arkansas Influenza Pandemic Plan).

- Centers for Disease Control and Prevention (CDC)
 - With approval from the Director's Office, the Sections of Epidemiology and Immunization also disseminate this information to the state Board of health and LHUs via the HAN.
 - Health care providers via the HAN, the secured Providers Web page (to be established).
2. The ADH Sections of Epidemiology and Immunization are responsible for developing guidelines on the prevention, diagnosis and treatment of influenza and influenza-related illnesses that are consistent with those of the CDC and other national advisory groups.

The Sections of Epidemiology and Immunization and the ADH Branch of Emergency Preparedness will work with their partners to disseminate these guidelines and recommendations to health care providers and hospitals (specifically local health units, hospital administrators, hospital disaster coordinators, emergency department directors, infection control nurses and hospital epidemiologists, and infectious disease directors).

3. In order to ensure consistency of all messages for the general public, the ADH Communications Office will utilize the ADH JIC system for communicating with the general public about circulating virus, disease burden and control measures as well as providing information on anticipated and on-going emergency response efforts necessary to maintain essential community services during the pandemic.

Communication Infrastructure

See Annex C of the State Emergency Operations Plan and Annex C.1. RACES for details on communication infrastructure and redundant systems.

Communication Tools/Resources

A. Health Alert Network

The Health Alert Network (HAN) is a nationwide program that establishes communications, information, distance-learning, and organizational infrastructure providing a new level of defense against health threats, emerging infectious diseases and the possibility of bioterrorism.

The HAN links local health departments to one another and to other organizations critical for preparedness and response: Community first-responders, hospital and private laboratories, state health departments, CDC, and other federal agencies. More than 8500 practicing, licensed, frontline healthcare personnel in Arkansas have voluntarily enrolled in the HAN.

CDC is leading development of the HAN, in partnership with the National Association of County and City Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), and other health organizations.

HAN System Facts:

The HAN is a high-speed system with continuous, secure connections to the Internet, access to public health information, and front-line staff skilled in the use of electronic information and communications technology;

The system includes distance-learning capacity, via satellite- and web-based technologies, for continuous upgrading of skills in preparedness for bioterrorism and other health threats;

The HAN includes early warning systems, such as broadcast fax, to alert local, state and federal authorities and the media about urgent health threats and about the necessary prevention and response actions;

The HAN enables local health officials nationwide to instantaneously access and share disease reports, response plans, and CDC diagnostic and treatment guidelines;

The HAN strengthens local health units and links them to critical community health organizations, hospitals, laboratories, Emergency Medical Services (EMS), and clinicians, to form a coordinated public health response.

The HAN enables local, state, and federal health authorities to communicate and coordinate rapidly and securely with each other and with law enforcement agencies.

HAN Directory Maintenance

There is a system in place to check the accuracy and periodically update the directory. HAN members, who are in health professions, receive the CDC Weekly Report: Influenza Summary Update from ADH (Dr. Snow's newsletter). Through the newsletter members notify the ADH when contact information changes or when new members need to be added to the directory. The ADH Internal Communications office provides updates and changes for field staff at local health units as they occur. The regional preparedness coordinators send updates on a quarterly basis. The ADH Internal Communications office provides updates and changes for media contacts as they occur.

B. Communicable Disease and Immunizations' Weekly Emails/Faxes

The HAN sends out the Communicable Disease/Immunization Branch's weekly health update. Recipients include those individuals listed above in the HAN list, and other lists as appropriate. They include but are not limited to:

- Arkansas Department of Health Local Health Units
- Statewide Media (Newspapers, TV, Radio)
- Public Health Laboratories
- Veterinarian Clinics
- Fire Stations
- Pharmacy Students
- Arkansas Associations (Arkansas Medical Society; Dental; Pharmacist; Nurses; Hospitals, Homecare; etc.)
- State Representatives
- State Senators
- Water Systems

C. Information/Hotline Numbers

ADH will establish a “hotline” for the general public. A “hotline” for physicians and others is also being considered. A hotline reference manual will be created for staff manning hotline calls.

D. Arkansas Influenza Pandemic Preparedness Website

The ADH website will be used as a coordinating resource for timely communication of vital information to healthcare providers, emergency responders and public health professionals as well as for status updates of benefit to the general public. The website will have a link to a “Providers Only” website with information that is pertinent for the provider community. Alerts will be sent to providers to access the webpage.

E. Healthcare Provider Website

A secure website with registered, password protected access will be made available to healthcare providers. This website will be used to distribute patient-specific information, latest information regarding disease control measures and outbreak data, and other information as needed.

F. Facilities to Receive Satellite Broadcasts

The ADH has satellite downlink capacity in 40 of its local health units/regional offices statewide.

G. Media Webcasting

In the event that social distancing is implemented, the ADH will conduct media webcasting for press briefings and press conferences.

H. Face-to-face Video Conferencing and Communications Infrastructure

In the event that social distancing is implemented, the ADH staff and pandemic influenza partners will utilize video conferencing. ADH has established video conferencing with 85 hospitals. In addition, the ADH EOC will have video conferencing links with the EOCs in CDC and states in HHS Region VI.

Also, ADH has telemedicine capabilities in the 12 largest hospitals in the state.

See Annex C of the State Emergency Operations Plan and Annex C.1 ARES/RACES for more information regarding communication infrastructure.

I. Conference Calls/Teleconferencing

Conference calls and teleconferencing will be used to disseminate information to LHUs and partners. There are 45 teleconferencing locations statewide.

J. Collaboration with Media

ADH has blast fax/e-mail capability via City Watch, a blastfax software system. The system has the capacity to disseminate information to all television stations, radio stations and newspapers in the state and surrounding border states within an hour. Information is sent first

to the Associated Press and the ADH has an agreement with them regarding rapid dissemination of information during a disaster event.

K. New Conferences/Media Briefings/Media Inquiries

The ADH will host news conferences, media briefings, and media inquiries as situations warrant, will make spokespersons available as needed/requested, and will notify local health units of media events. News conferences and media briefings will take place in the ADH Press Room on the fifth floor of the Markham Street facility. The Office of Communications will coordinate the event and any materials, audio visuals, and equipment needed.

L. Pandemic Influenza Shelf Kit (under construction):

- Message Maps
- Talking points
- Public Service Announcements/News Release Templates
 - a. Television
 - b. Radio
- Educational Materials
 - a. Fact Sheets
 - b. Brochures
 - c. Posters
- Forms
 - a. ADH Press Release Template
 - b. Log Form
 - c. Media Monitoring and Analysis Form
 - d. Verification and Approval of Information Form

M. Information for Non-English-Speaking Communities

The message maps, talking points, public service announcements/news release templates, and educational materials will be translated into Spanish and other languages as needed.

N. Information for Special Needs Populations

The message maps, talking points, public service announcements/news release templates, and educational materials will be adjusted for Special Needs Populations.

Communications Plan Exercise

The ADH will test and exercise this Communications Section in conjunction with scheduled state and local pandemic influenza exercises. The Communications Section will be revised and updated as needed.

Activities by WHO Pandemic Period

Interpandemic Period

- Identify and train subject-specific spokespersons
- Address rumors and false reports of pandemic influenza threats
- Arrange for contingency contracts needed for communications resources during a pandemic
- Develop materials for the media, providers, the public, including translating for non-English-speaking populations and special needs populations

Pandemic Alert Period

- If outbreak occurs outside the U.S., notify and educate the news media about the virus and issue travel advisories as per CDC's recommendations
- Prepare generic news releases about virus and what public can do to protect them and have ready to distribute when needed
- Test the communication system
- Review and update materials

Pandemic Period

- Tailor messages and services to specifics of situation and audiences
- Implement a Joint Information Center (JIC) to disseminate accurate and consistent information
- Continue to update news media as well as public, especially concerning self-protection as well as protection of others

Workforce Support and Psychosocial Considerations

Rationale

The response to an influenza pandemic will pose substantial physical, personal, emotional, and social challenges to healthcare workers, public health officials, other first responders, and essential services workers. Their occupational stresses are likely to differ from those responding to localized disasters. Globally and nationally a pandemic may last for more than a year compared to local disease outbreaks that often can be resolved in a matter of weeks. Public health responders and their families will find themselves at personal risk as long as the pandemic continues in their communities. Special planning efforts are required to ensure that hospitals, public health agencies, first responder organizations, and employers of essential services workers are prepared to help employees maximize personal resilience and professional performance.

In general, all Arkansans will exhibit physical, emotional, cognitive, and behavioral reactions to a public health emergency. The response to pandemic influenza will vary according to the impact of the disease on the individual and on his social network. Planning must include developing and disseminating messages and techniques for managing stress and anxiety. These must be age-specific and crafted according to the needs of vulnerable populations as well as to the majority of the citizens.

Experience with recovery efforts post-Hurricane Katrina confirmed the importance of pets in peoples' lives. Pets are good for our emotional and physical health. Caring for a companion animal can provide a sense of purpose and fulfillment and lessen feelings of loneliness and isolation in all age groups (HSUS, 2006). According to the latest survey of pet owners by the American Pet Products Manufacturers Association, 63 percent of all US households own at least one pet while 45 percent own more than one pet (APPMA, 2006). The State of Arkansas recognizes that keeping companion animals with their owners must be a priority. However, when owners are hospitalized or die during a pandemic; unsupervised companion animals are likely to pose a public health risk. Similarly, wildlife, livestock, zoo animals, and other exotics may pose a risk during a pandemic. As a result, Arkansas includes animal care planning in this section of the state pandemic influenza plan.

Psychosocial, Behavioral, and Cognitive Issues

When preparing for or responding to pandemic influenza, it is helpful to know the Guiding Principles of Disaster Recovery:

- No one who experiences pandemic influenza remains untouched by it.
- Most people pull together and function but their effectiveness is diminished.
- Mental health concerns exist in preparedness, response, and recovery.
- Stress and grief are “normal responses to abnormal situations.”
- Survivors respond to active, genuine interest and concern.
- Pandemic mental health assistance is often more practical than psychological (coffee, reassurance, comfort, encouragement).
- Assistance may be confusing to pandemic influenza survivors. They may experience frustration, anger, and helplessness and may reject assistance of all types. (CDC, 2005)

The Impact Pyramid *(The victim count only represents the tip of the iceberg.)*



(CDC, 2005)

Individual Responses

Individual responses to stress vary. Based on experience with natural disasters, we expect physiological signs to include fatigue, nausea, tremors, tics, sweating, dizziness, GI upset, heart palpitations, and a choking or smothering sensation. Behavioral signs may include anxiety, grief, irritability, feeling overwhelmed, insomnia, hyper-vigilance, uncontrollable crying, gallows humor, and ritualistic behavior. Cognitive signs may include memory loss, difficulty making decisions, confusing trivial problems with major issues, concentration problems, reduced attention span, and difficulties with calculations (Klomp, 2005).

Pandemic influenza, however, will last longer than a natural disaster and present in more than one wave. The longer-term effects of stress on an individual may include nightmares, intrusive thoughts, relationship problems, decreased libido, appetite change, decreased immune response, and a desire to place blame. Exposure to dead bodies or to grotesque images, a threat to one's own life and loss of loved ones may lead to psychiatric disorders (Klomp, 2005). Some reactions signal the possible need for referral to a psychiatrist or psychologist, among them:

- Disorientation (dazed, memory loss, inability to recall date/time or recent events, etc.)
- Depression (pervasive feeling of hopelessness and despair, withdrawal from others, etc.)
- Anxiety (“on edge”, restless, obsessive fear of another wave of influenza, etc.)
- Mental illness (visions, voices, delusions, etc.)
- Inability to care for oneself (not eating, bathing, or changing clothes).
- Suicidal or homicidal thoughts or plans.
- Problematic drug or alcohol use.
- Domestic violence, child or elder abuse (Klomp, 2005).

Community Trauma

Several factors may contribute to community trauma: loss of employment/wages, family upheaval, disruption of the support system, need to interface with large bureaucracies, closing of schools and religious institutions to slow the pandemic progression, and loss of community infrastructure (Klomp, 2005). Communities may respond to pandemic influenza depending on their perceived status or vulnerability: demonstrations of anger toward authorities or caregivers, scapegoating, stigma (discrimination), paranoia, loss of faith in government and social institutions, and social isolation (Klomp, 2005).

Workforce Support

In addition to first responders, healthcare workers, and public health employees, workers at risk include “responsible parties” (county judges, State agency directors, heads of essential

corporations, etc.), coroners, forensic dentists, and those deemed essential services workers. Their special needs are included in the State all hazards contract with the Arkansas Chapter of the National Association of Social Workers (NASW).

Include ethnic minorities and non-English speakers; people with physical and mental/cognitive impairments, deaf, blind, those who are functionally illiterate; pregnant women, people with chronic illness, the immune-compromised; those isolated by geography or confined in close quarters; homeless people and the impoverished; substance abusers/addicts; the very young and the very old. The needs of vulnerable populations vary (See Appendix, Vulnerable Populations Grid) and are addressed in Chapter VII of the Mental Health First Responders Manual prepared for ADH by NASW.

Several mental health best practices for people responding to the stress of pandemic influenza do not require the assistance of a mental health professional. Stress control may be accomplished by implementing self-care according to the 5 R's:

- **Reassuring** (things are normal)
- **Rest**
- **Replenishing** psychological needs
- **Restoring** confidence and
- **Returning** to duty, to the team, to the community (Klomp, 2005).

Eating properly, exercising, engaging in sports, getting enough sleep, relaxing; maintaining social support systems; training for implementing pandemic flu plans, reading, maintaining perspective as priorities change; preparing the family and getting involved in the community; meditation, prayer, and volunteerism contribute to maintaining mental health during all phases of pandemic influenza (Klomp, 2005). Implementing the American Psychological Association's Ten Ways to Build Resilience before and during the pandemic will also contribute to effective stress control without requiring intervention (APA Help Center, 2004). (See Appendix, 10 Ways to Build Resilience.)

Plans for the continuity of operations should include workforce resilience programs that will help deployed workers to prepare for, cope with, and recover from the social and psychological challenges of emergency work, such as

- Plan for a long response
- Identify pre-deployment briefing materials
- Augment employee assistance programs with social support services for the families of deployed workers
- Provide information on symptoms of need, self-care and cultural differences

Roles and Responsibilities of the Psychosocial Support Team during a Pandemic

According to the terms of the partnership between the Arkansas Department of Health and the Arkansas Chapter of NASW, the duties of the Mental Health First Responder(s) are:

- **Initial Assessment**
 - Needs assessment: acquiring the most up-to-date information on the pandemic by interfacing with emergency responders, victims, local and State authorities, and media.

- Identify victims: primary client groups have experienced the pandemic first hand; secondary client groups are family and friends close to an immediate victim who have been affected by the pandemic; tertiary client groups include caregivers, first responders, essential workers, public health workers, volunteers, and others at the operational level providing assistance.
- Identify degree of loss and trauma
- Identify and target services: short and long-term crisis counseling, outreach, education, referral services.
- Assess the capability to deliver services: within the assigned county, Statewide
- Interventions (Mental Health First Responders Manual, 2004)
 - Crisis Management Briefing (CMB)
 - Critical Incident Stress Debriefing (CISD)
 - CISD for Children
 - Crisis Intervention: Safety, security, ventilation, validation, prediction, preparation.
 - Interventions for special populations, caregivers, and the mental health team
- Recruitment of Area Team
 - Local volunteers
 - Qualifications
 - Red flags
 - Licensing issues
- Development and Implementation of Local Pandemic Preparedness Plan for Mental Health Responders
 - Communications within the Area Team, local county operations, and Arkansas Department of Health
 - Identify local first responders, chain of command structure, contact information
 - Identify and interface with LHU/County Operations Planning and State Arkansas Department of Health
 - Identify and interface with volunteer agencies, faith-based organizations
 - Exercise the mental health plan along with local county operations
 - Revise mental health plan according to lessons learned
 - Exercise and implement as appropriate

Animals and Their Care:

Emergency response issues concerning animal care are addressed in Appendix G.7 of the Arkansas State Emergency Operations Plan titled Arkansas Veterinary Service and Animal Care (2005). Developed to provide guidelines for rapid response to disasters affecting the health, safety, and welfare of human beings and animals, Appendix G.7 acknowledges that veterinarians, animal control officers, and volunteers play an important role in maintaining/restoring the human/animal bond effect seen during disasters. This bond with companion animals promotes emotional and psychological support for human victims. Similarly, livestock owners are both psychologically and economically bonded with their animals. Economic bonding may create additional stress on owners with the uncertainty of their animals' safety and with the future economic impact post-disaster.

Appendix G.7 outlines the services provided, including:

- Mitigation
 - Zoos, wildlife parks, aquariums, research laboratory animals, exotic animal specialists, and animal shelters will develop their own plans for animals in their care.
- Preparedness
 - American Veterinary Medical Agency (AMVA) is lead authority.
 - Partners include Arkansas Animal Control Association, Arkansas Humane Alliance, Red Cross, Arkansas Department of Emergency Management (ADEM), State Veterinarian (Livestock & Poultry), Arkansas Department of Health & Human Services-Arkansas Department of Health, Arkansas Department of Environmental Quality (ADEQ), Arkansas Game & Fish Commission, and the US Department of Agriculture (USDA).
 - Veterinary services and animal care activities will be incorporated into county emergency operations plans (EOP).
- Response
 - Maintain security of veterinary medical facilities and supplies.
 - Coordinate communications with local public health.
 - Arrange for or provide food, water, and shelter for small and large animals.
 - Care for sick and injured animals.
 - Assist in apprehending animals that escape from their confinement, including exotic or wild animals.
 - Coordinate with State and Federal Agencies to recommend proper disposal of dead animals in accordance with applicable laws and regulations.
 - Permit use of veterinary facilities and equipment when human medical facilities are unavailable.
 - Implement Animal's Disaster Response Team (ADRT).
- Recovery
 - AMVA will provide documentation of injuries and deaths of animals.
 - AMVA and ADRT will provide technical assistance to the State Veterinarian (Livestock & Poultry)

Appendix G.7 Attachments include:

1. Forms to be used during an emergency
2. Emergency Response Flow Chart and key players
3. ADRT Regional map
4. Guidelines for emergency animal care and handling
 - a. Companion animals
 - b. Horses
 - c. Cattle
 - d. Swine
 - e. Poultry
 - f. Small ruminants (sheep, goats, llamas, alpacas)
 - g. Laboratory animals
 - h. Zoo animals by class: large carnivores, large hoof stock, large birds, small ruminants, small mammals (primates, carnivores, etc.), large primates, and reptiles
 - i. Wildlife (being developed)

- j. Livestock behavior
 - k. Guidelines for humane euthanasia
5. Emergency Response Plan Checklist

Communication and Training:

Education and training for the Mental Health Responders and their teams and for animal care service providers are outlined in their respective plans.

Additional materials are available online:

- *PANDEMIC INFLUENZA PLANNING: A guide for Individuals and Families*
<http://www.pandemicflu.gov>
- *Maintaining a Healthy State of Mind* (age-appropriate)
http://www.redcross.org/preparedness/cdc_english/health.asp
- *Mental Health Response to Mass Violence and Terrorism: A Field Guide*
<http://www.mentalhealth.samhsa.gov/publications/allpubs/SMA05-4025/>
- *A Guide to Managing Stress in Crisis Professions*
<http://www.mentalhealth.samhsa.gov/publications/allpubs/SMA-4113/default.asp>
- *Post-traumatic stress disorder* (age-appropriate)
http://www.guideline.gov/summary/summary.aspx?view_id=1&doc_id=6850
- *Managing the Emotional Consequences of Public Health Emergencies and Understanding and Coping with Anxiety Related to SARS, Bird Flu, and Other Health Emergencies* <http://www.disastermentalhealth.com>
- Disaster resources for older adults (various) <http://www.aoa.gov/eldfam/>
- *The Flu (Influenza)* American Academy of Pediatrics <http://www.aap.org>
- *Psychological First Aid Manual* <http://www.ncptsd.va.gov/pfa/PFA.html>
- *Tips for Talking About Disasters* (age-appropriate)
<http://www.mentalhealth.samhsa.gov/cmhs/EmergencyServices/after.asp>

Activities by WHO Pandemic Period

Interpandemic and Pandemic Alert Periods

Healthcare, state and local agencies, first responders, animal care providers, and employers of essential services workers—

- Implement NASW plan: institutionalize psychosocial support services for those who participate in or support pandemic influenza activities; recruit and train local mental health provider teams.
- Prepare additional educational, training, and media materials for inclusion in the overall communications plan.
- Develop an evidence-based workforce resilience program.
- Implement state AMVA plan: institutionalize animal care services plan across the state.
- Train LHU nurses to be mental health responders.

Pandemic Period

Implement the plans outlined above.

Workforce Support and Psychosocial Consideration Appendix 1

References

- American Veterinary Medical Association (AVMA). (2006). Disaster preparedness and response guide. Retrieved March 15, 2006 from http://www.avma.org/disaster/responseguide/responseguide_toc.asp
- American Pet Products Manufacturers Association (APPMA). 2005/2006 National Pet Owners Survey. Retrieved March 13, 2006 from http://www.appma.org/press_industrytrends.asp
- APA Help Center. (2004). The Road to Resilience. Retrieved February 14, 2006 from <http://www.apahelpcenter.org/featuredtopics/feature.php?id=6&ch=4>
- Arkansas ADEM EOP. (2005) Appendix G.7: Arkansas Veterinary Service and Animal Care. Available as a DOC file.
- Arkansas ADH EOP. (2004) Mental Health Responders Manual (NASW). Available in hardcopy only.
- CDC, (2005, August 30). Disaster Mental Health Primer. Retrieved February 25, 2006 from <http://www.bt.cdc.gov/mentalhealth/pdf/primer.pdf>
- The Humane Society of the United States. How pets help people. Retrieved March 14, 2006 from http://www.hsus.org/pets/pet_care/how_pets_help_people/
- Klomp, RW. (2005). Addressing Psychosocial & Behavioral Issues in Terrorism Events. Second Annual Arkansas Statewide Terrorism Preparedness Conference, July 8, 2005— PowerPoint Presentation.

Workforce Support and Psychosocial Consideration Appendix 2

Vulnerable Population Bioterrorism Issue Grid

Population	Contact/Locating	Communication	Transportation/ Mobility	Medication Needs	Particular Biologic Vulnerability	Security/ Protection	Cultural Issues	Trust			
Pregnant women			*	*	*						
MH/MR	*	*		*		*					
African Americans							*	*			
Hispanic/Latino	*	*					*	*			
Marshallese		*					*	*			
Homeless	*										
Prisoners			*			*					
Children & adolescents					*	*					
Elderly		*	*	*	*	*					
Physically challenged	*	*	*			*					
Deaf/blind	*	*				*					
Immunocompromised	*			*	*						
Chronic physical illness	*		*	*	*						
Functionally illiterate		*									
Substance abusers	*			*	*			*			
Geographically isolated	*	*	*					*			
Impoverished		*	*		*			*			

People with pets/livestock

Chronically ill probably should be further subdivided (need: oxygen, feeding, diapering, dialysis, etc.)

Workforce Support and Psychosocial Consideration Appendix 3

10 Ways to Build Resilience

Make connections. Good relationships with close family members, friends, or others are important. Accepting help and support from those who care about you and will listen to you strengthens resilience. Some people find that being active in civic groups, faith-based organizations, or other local groups provides social support and can help with reclaiming hope. Assisting others in their time of need also can benefit the helper.

Avoid seeing crises as insurmountable problems. You can't change the fact that highly stressful events happen, but you can change how you interpret and respond to these events. Try looking beyond the present to how future circumstances may be a little better. Note any subtle ways in which you might already feel somewhat better as you deal with difficult situations.

Accept that change is a part of living. Certain goals may no longer be attainable as a result of adverse situations. Accepting circumstances that cannot be changed can help you focus on circumstances that you can alter.

Move toward your goals. Develop some realistic goals. Do something regularly – even if it seems like a small accomplishment – that enables you to move toward your goals. Instead of focusing on tasks that seem unachievable, ask yourself, “What’s one thing I know I can accomplish today that helps me move in the direction I want to go?”

Take decisive actions. Act on adverse situations as much as you can. Take decisive actions, rather than detaching completely from problems and stresses and wishing they would just go away.

Look for opportunities for self-discovery. People often learn something about themselves and may find that they have grown in some respect as a result of their struggle with loss. Many people who have experienced tragedies and hardship have reported better relationships, greater sense of strength even while feeling vulnerable, increased sense of self-worth, a more developed spirituality, and heightened appreciation for life.

Nurture a positive view of yourself. Developing confidence in your ability to solve problems and trusting your instincts helps build resilience.

Keep things in perspective. Even when facing very painful events, try to consider the stressful situation in a broader context and keep a long-term perspective. Avoid blowing the event out of proportion.

Maintain a hopeful outlook. An optimistic outlook enables you to expect that good things will happen in your life. Try visualizing what you want, rather than worrying about what you fear.

Take care of yourself. Pay attention to your own needs and feelings. Engage in activities that you enjoy and find relaxing. Exercise regularly. Taking care of yourself helps to keep your mind and body primed to deal with situations that require resilience.

Additional ways of strengthening resilience may be helpful. For example, some people write about their deepest thoughts and feelings related to trauma or other stressful events in their life. Meditation and spiritual practices help some people build connections and restore hope.

The key is to identify ways that are likely to work well for you as part of your own personal strategy for fostering resilience.

From the American Psychological Association Help Center (www.apahelpcenter.org)

Acronyms

ADEM	Arkansas Department of Emergency Management
ADEQ	Arkansas Department of Environmental Quality
ADRT	Animal Disaster Response Team
AI	Avian Influenza
AMVA	American Veterinary Medical Agency
AP	Associated Press
APHIS	Animal Plant Health Inspection Service, USDA
ARES	Amateur Radio Emergency Services
ASTHO	Association of State and Territorial Health Officials
BSL	Laboratory Biosafety Level
CAP	College of American Pathologists
CISD	Critical Incident Stress Debriefing
CDC	Centers for Disease Control and Prevention
CMB	Crisis Management Briefing
DFA	Direct Fluorescence Assay
DHS	Arkansas Department of Human Services
ADH	Arkansas Department of Health,
EMAC	Emergency Management Assistance Compact
EMS	Emergency Medical Services
EOC	Emergency Operation Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
GIS	Geographic Information System
H5N1	Avian Influenza A
HA	Hemagglutinin
HAN	Health Alert Network
HHS	U.S. Department of Health and Human Services
HPAI	High Pathogenic Avian Influenza
ICS	Incident Command System
IDB	Infectious Disease Branch, Arkansas Department of Health
IFA	Indirect Fluorescence Assay
ILI	Influenza-like-illness
INC	Immunization Network for Children
IND	Investigational New Drug
JIC	Joint Information Center
LHU	Local Health Unit
LRN	Laboratory Response Network
MDIRP	Major Disaster and Incident Response Plan
MRC	Medical Reserve Corp
NA	Neuraminidase
NACCHO	National Association of County and City Health Officials
NASW	National Association of Social Workers
NIMS	National Incident Management System

NP	Nasopharyngeal
PIO	Public Information Officer
PPE	Personal Protective Equipment
RACES	Radio Amateur Civil Emergency Service
RET	Reportable Events Table
RT-PCR	Real Time – Polymerase Chain Reaction
SARS	Severe Acute Respiratory Syndrome
SNS	Strategic National Stockpile
SOP	Standard Operating Procedures
USDA	U.S. Department of Agriculture
VACMAN	Vaccine Management System
VAERS	Vaccine Adverse Event Reporting System
WHO	World Health Organization