



Indiana State
Department of Health

Pandemic Influenza Plan

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Acronyms - Indiana Pandemic Influenza Plan

ACIP	Advisory Committee on Immunization Practices
APIC	Association of Professionals in Infection Control and Epidemiology
ARDS	Acute Respiratory Distress Syndrome
BOAH	Indiana Board of Animal Health
C-TASC	Indiana Counter-Terrorism and Security Council
CAG	Community Advisory Group
CDC	Centers for Disease Control and Prevention
CEFO	Career Epidemiology Field Officer
CHC	Community Health Centers
CHIRP	Children and Hoosiers Immunization Registry Program
COOP	Continuity of Operations Planning
DHS	Department of Homeland Security (federal level)
DMHA	Division of Mental Health and Addiction
DOC	Department of Correction
DOC-ISDH	Department Operations Center (ISDH)
DOE	Indiana Department of Education
ED	Emergency Department
EMA	Emergency Management Agency
EMS	Emergency Medical Services
EOC-IDHS	Emergency Operations Center (IDHS)
ERC	Epidemiology Resource Center
ESAR-VHP	Emergency System for Advanced Registration of Volunteer Health Professionals
ESF	Emergency Support Functions
FSSA	Indiana Family and Social Services Administration
GIS	Geographic Information Systems
HHS	U.S. Department of Health and Human Services
IAHSA	Indiana Association of Homes and Services for the Aging
ICP	Infection Control Professional
ICS	Incident Command System
IDHS	Indiana Department of Homeland Security
IFA	Immunofluorescence Antibody
IHAN	Indiana Health Alert Network
IHHA	Indiana Hospital & Health Association
ILI	Influenza-like Illness
Imm.	Immunization Program
IPHCA	Indiana Primary Health Care Association
IPLA	Indiana Professional Licensing Agency
ISDH	Indiana State Department of Health
ISMA	Indiana State Medical Association
IT	Information Technology
LHD	Local Health Department
LCMS	Learning Content Management System
LRN	Laboratory Response Network
LTC	Long-Term Care

MCH	Maternal and Child Health
NIMS	National Incident Management System
NNDSS	Nationally Notifiable Diseases Surveillance System
NVAC	National Vaccine Advisory Committee
OLA	ISDH Office of Legal Affairs
OPA	ISDH Office of Public Affairs
OPR	ISDH Office of Partner Relations
OPS	ISDH Operational Services/Finance Division
PHESS	Public Health Emergency Surveillance System
PHPER	ISDH Public Health Preparedness and Emergency Response Division
PIO	Public Information Officer
PSA	Public Service Announcement
RHC	Rural Health Clinics
RT-PCR	Reverse Transcription Polymerase Chain Reaction
SHC	State Health Commissioner
SNS	Strategic National Stockpile
TAG	Technical Advisory Group
VAERS	Vaccine Adverse Event Reporting System
WHO	World Health Organization

Introduction

Purpose of the Plan

The purpose of the Indiana State Department of Health (ISDH) Pandemic Influenza Plan (the Plan) is to provide an overview of the many medical and public health issues related to a pandemic. The Plan defines many critical issues and strategies in the narrative portion and provides more detailed and updated checklists of activities to be completed in the Appendices.

The ISDH has revised and updated this October 2006 Plan to include more information on vaccines and antiviral medication, infection control, guidance on submitting influenza specimens for laboratory testing, clinical guidelines, and ethical considerations. The Plan is not intended for use as a detailed implementation plan since health care organizations or agencies planning for a pandemic need to develop individual action plans to include detailed lists of activities, timelines, and assignments that address the major issues noted in this Plan.

The ISDH is developing an Action Plan to complement this Plan. The Action Plan, which will be available by November 30, 2006, describes activities to be accomplished by the ISDH, with specific assignments and timelines for completion. The Indiana Department of Homeland Security (IDHS) and local Emergency Management Agencies (EMA) have developed plans to address pandemic influenza as part of all-hazards preparedness. More information on pandemic influenza preparedness in Indiana can be accessed through <http://www.fluinfo.in.gov>.

Background

Although preliminary work related to pandemic influenza planning was accomplished in 2004-2005, the Indiana State Department of Health (ISDH) began intensive development of this ISDH Pandemic Influenza Plan (the Plan) in March of 2005. A multidisciplinary Planning Committee of 20 people, representing 9 separate ISDH programs or divisions, met weekly between March and June of 2005. In June 2005, a draft document was distributed to Indiana's local health departments (LHD) and other interested organizations for feedback and comments. Based on that feedback, the Plan was slightly revised, and the final version of the Plan was published in August of 2005. The Health and Human Services (HHS) agency published the federal Pandemic Influenza Plan in November of 2005. The HHS Plan serves as a model for health department and medical care provider planning. This 2006 revision of the original ISDH Plan incorporates information from the HHS Plan as well as from other sources.

Much effort is being devoted to planning for an influenza pandemic at the community, state, national, and international levels. This revision of the ISDH Plan is based on the knowledge available as of August 2006 and is being published in October 2006.

The Chairpersons of the ISDH Pandemic Influenza Planning Committee are Charlene Graves, MD, Medical Director of the Immunization Program; and James Howell, DVM, State Veterinary Epidemiologist, Epidemiology Resource Center. The ISDH divisions or programs involved in this planning effort include:

- Public Health Surveillance and Preparedness Commission: Epidemiology Resource Center, Public Health Preparedness and Emergency Response (PHPER) Division, and Laboratory Resource Center;
- Human Health Services Commission: Immunization Program, Office of Primary Care, and Partner Relations;
- Health Care Regulatory Services Commission: Long-Term Care;
- Operational Services Commission: Office of Legal Affairs, Office of Public Affairs; and
- Commissioner's Office: Office of Public Health and Medicine Partnerships

Situation Status

As Indiana State Department of Health (ISDH) staff revise this Indiana Pandemic Influenza Plan (the Plan), there is continuing concern about the possibility of pandemic influenza. An H5N1 avian influenza virus has caused many outbreaks in poultry and wild fowl in several continents. As revealed by surveillance, medical data, and scientific study, this avian influenza strain has many troubling properties:

- Characterized as Highly Pathogenic Avian Influenza (HPAI) virus
- Shows capability of disease in a variety of species
- Harbored and shed by certain species that show no apparent infection (e.g., ducks)
- Causes human cases with mortality above 50 percent
- Potential for reassortment of genes leading to ease of human-to-human transmission

Experience with pandemics in the twentieth century (1918, 1957, 1968) suggests that the disease attack rate may be high due to an immunologically naive population. Morbidity and mortality will be markedly increased, resulting in excess deaths ranging from hundreds of thousands to millions worldwide, depending on the virulence of the pandemic strain.

The table below illustrates basic differences between pandemic influenza and typical seasonal influenza based on previous pandemic influenza occurrences and the current human cases of H5N1:

PANDEMIC INFLUENZA	TYPICAL SEASONAL INFLUENZA
Comes from a novel virus to which no one, or few people, have any immunity	Circulating viruses slightly mutate (antigenic drift) year to year
Attack rate may be as high as 30% of population	Attack rate of 5 to 20%
Patients are sicker for a longer period of time	Illness usually lasts 1 to 2 weeks
Limited vaccine availability	Vaccine available prior to illness in population
May be resistant to some antivirals	Antiviral medications are available
Excess mortality	Usual influenza mortality – 36,000/year in the U.S.
Patients may present with primary viral pneumonia	Pneumonia is usually a later complication
May be severe in all ages	Severe in the very old and the very young
Can occur at any time of the year	Seasonal – occurs in the winter
May have more than one wave of illness	Usually just one wave of illness
Spreads rapidly throughout the world	

The impact of a pandemic upon Indiana can be estimated using FluSurge software available from CDC. (Please see [Appendix A](#) for more detailed data.) Estimates of the *excess hospital admissions and deaths* for eight weeks during a pandemic are shown below:

Table 1. Hospital Admissions and Deaths

Pandemic Influenza/Attack Rate	25 Percent
<i>Total Hospital Admissions</i>	
Most Likely Scenario	20,823
Minimum Scenario	8,232
Maximum Scenario	27,986
<i>Total Deaths</i>	
Most Likely Scenario	4,110
Minimum Scenario	2,365
Maximum Scenario	6,916

The World Health Organization (WHO) has developed a scheme of Six Phases for Influenza Planning as shown in Table 2. These preparedness phases provide a basis for plan development and activities.

Please Note: For ease of use, the Indiana Pandemic Influenza Plan is primarily organized with state and local health department tasks listed by Interpandemic (between pandemics), Pandemic Alert, and Pandemic Periods, rather than activities for each specific Phase.

Table 2. World Health Organization Phases of Pandemic Influenza - 2005

Period	Phase	Definition
Interpandemic Period	One	<ul style="list-style-type: none"> • No new virus subtype detected in humans • Risk of human infection by animal viruses is considered to be low
	Two	<ul style="list-style-type: none"> • No new virus subtype detected in humans • A subtype circulating in animals poses substantial risk to humans
Pandemic Alert	Three	<ul style="list-style-type: none"> • Human cases with new subtype occur • Human-to-human transmission occurs only with close contact
	Four	<ul style="list-style-type: none"> • Small clusters of human cases with new subtype occur • Cases are localized • Human-to-human transmission is limited
	Five	<ul style="list-style-type: none"> • Larger clusters of human-to-human cases with new subtype occur • Clusters are limited geographically • New subtype appears to be increasingly adapted to humans
Pandemic	Six	<ul style="list-style-type: none"> • Increased and sustained transmission in the general human population • Formal declaration of pandemic

Limitations of this Plan

Indiana State Department of Health (ISDH) staff members prepared this revision to the Pandemic Influenza Plan (the Plan) during the summer of 2006—there are still many unknowns; thus, the Plan should be viewed as a “picture in time”. The Plan is intended to be dynamic, with ongoing updates and revisions. In the description of activities, staff members have been mindful of the WHO listing of scenarios that range from the *best case possibility* of a mildly virulent pandemic virus along with adequate supplies of an effective vaccine and antiviral medication to the *worst case possibility* of a highly virulent strain with no effective vaccine and limited antiviral supplies.

Updates of portions of this Plan and additional information about pandemic influenza can be obtained from the ISDH Web site: <http://www.IN.gov/isdh/bioterrorism/PandemicFlu/index.htm>. Other information about pandemic influenza is also available at <http://www.fluinfo.IN.gov>.

Section 1. Strategies and Policies

Policy Issues

Federal, state, and local agencies and organizations continue to be challenged with a number of policy issues related to planning for pandemic influenza, such as limited supplies of vaccine and antiviral medication, priority groups for these limited resources, and community containment recommendations, e.g., quarantine and isolation policies. Some information related to strategies and policymaking are described in this Section of the Pandemic Influenza Plan (the Plan).

Liaison with Agencies and Partners

Many important aspects of a pandemic influenza response are carried out by other agencies/organizations, particularly local health departments (LHD). The Indiana State Department of Health (ISDH) has met with and continues to meet with collaborating agencies and organizations to provide education about pandemic influenza response and to help them identify specific roles and activities. Many are members of the Indiana Counter-Terrorism and Security Council (C-TASC)**, where education and coordination are in process. Many other important partners, especially Indiana hospitals, have developed pandemic influenza plans. Planning is also being done by long-term care facilities, emergency service providers, medical care providers in private practice, managed care organizations, community health centers, rural health care providers, as well as a myriad of other organizations or agencies that will be affected by a pandemic. These include all educational institutions: public and private schools, universities, and colleges. Continuity of operations planning is needed by all partners, including public safety officials, businesses, and their suppliers, thus every aspect of society is involved in the planning process.

In addition to in-state partners, the ISDH is coordinating response with agencies in other states and Canada. Contacts have been established with Michigan, Illinois, Ohio, Minnesota, Wisconsin, Pennsylvania, New York, and Ontario with information exchanged on a regular basis through conference calls. In August 2006, an ISDH representative attended a Border Pandemic Influenza Conference in Michigan with many of the above-listed states in attendance to establish cross-border communication policies during a pandemic. Because pandemic influenza will affect all jurisdictions in the country nearly simultaneously, Indiana does not expect direct assistance (other than advice, plans for coordination, and funding) from the federal government or from other states with the exception of the provision of some antiviral medications through the Strategic National Stockpile (SNS).

**C-TASC agencies are: Governor's Office (Lieutenant Governor), Indiana Department of Homeland Security, Indiana Department of Environmental Management, Indiana State Police, Indiana Department of Natural Resources, Indiana Department of Agriculture, Indiana Bureau of Motor Vehicles, Indiana Department of Transportation, Indiana Criminal Justice Institute, Indiana State Department of Health, Indiana Board of Animal Health, Indiana Utility Regulatory Commission, the Indiana Adjutant General, and the U.S. Attorney General's Office (Northern and Southern Districts). C-TASC also includes several Indiana legislators, a representative of the Indiana Supreme Court, and a local law enforcement representative.

Community Advisory Groups (CAG)

The ISDH is convening Community Advisory Groups (CAG) to engage community stakeholders and solicit input for policy advisement. The CAGs will include broad representation from a number of organizations to advise the ISDH on policy issues and related social, operational, and ethical considerations in the areas of: 1) community containment, such as the use of isolation and quarantine and other non-pharmacologic interventions; 2) antiviral and vaccine prioritization; 3) consideration of the need for altered standards of care; and 4) mental health issues.

Ethical Considerations

In a situation such as an influenza pandemic, there will likely be a shortage of medical personnel and resources such as vaccines, antiviral medications, and hospital bed space. Under these conditions, decisions must be made regarding which persons should receive the scarce resources available. In addition, enforcing isolation and quarantine measures and anticipating the amount of risk that medical personnel are willing to take related to work responsibilities are issues that also involve considerations such as civil liberties and professional codes of conduct.

Processes and policies on a variety of similar issues should be carefully considered and fairly implemented. The ISDH is working with CAGs, the Indiana University Center for Bioethics, community leaders, and the ISDH Office of Legal Affairs (OLA) in developing these approaches. Public education programs utilizing risk communication methods to cover the rationale for such decisions can improve their effectiveness.

The Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC) developed vaccine priority group recommendations, which were adopted by the U.S. Department of Health and Human Services (HHS) and published in the HHS Pandemic Influenza Plan (November 2005). These two committees acknowledged that priority groups could vary depending on epidemiologic information related to a pandemic, as well as state and local considerations. The HHS Plan does not address strategies for implementation of vaccine delivery or the prioritization of the use of limited medical supplies and hospital beds, nor does it provide a framework for other ethical decision points related to a pandemic.

The ISDH strategy to address the ethical considerations not identified in the HHS Plan is described in [Appendix E](#). Nationally, numerous studies have been conducted and workgroups continue to consider the ethical implications related to pandemic influenza. The ISDH supports this important work and will utilize all available information from a variety of sources in the process of developing ethically informed recommendations and guidance during a pandemic.

Community Containment (See additional information in [Section 10](#) on containment.)

Containment consists of several types of actions: 1) social distancing, which refers to interventions designed to reduce personal interactions; 2) restrictions on mass gatherings and public events; 3) isolation of symptomatic individuals; and 4) quarantine of individuals and/or groups with potential or actual exposure.

The legal basis for instituting community containment measures already exists in state and local law. [Indiana Code 16-41-9-1.5](#) provides the legal authority and procedure for establishing involuntary quarantine or isolation of individuals or groups. Based on the most current information available, the Indiana State Health Commissioner and local health officers will determine when restrictions on mass gatherings and the voluntary and court-ordered use of isolation and quarantine measures should become necessary. Canceling mass gatherings may become necessary as a method to help reduce and control transmission of influenza infection.

The use of quarantine and isolation restricts the movement of persons exposed to influenza (those designated for quarantine) and infected persons (isolation). Isolated patients are symptomatic and usually receive care in a health care setting or at home. Both measures are problematic and difficult to carry out successfully. Not only must exposed and infected persons be identified and located, but local emergency management agencies (EMA) must assist restricted persons through the provision of food, medications, and other necessities.

The current consensus is that quarantine and isolation will be most beneficial at the beginning of a pandemic when restrictions on an exposed or infected person might delay introduction of a novel virus. Once a pandemic strain has become established in Indiana, quarantine and isolation would be of limited practical value.

Because restrictions on mass gatherings and, to a lesser extent, quarantine and isolation might be used in response to an influenza pandemic, the ISDH continues to inform judges, the Attorney General's Office, county attorneys, law enforcement and public safety officials, and others about existing laws to enable needed restrictive measures, with the goal of implementing such restrictions with minimal delay following a decision to institute their use.

Social distancing measures can be applied on a community-wide basis (e.g., snow days, when all activities are canceled as a result of a major snowstorm) or applied to groups of persons (e.g., canceling public events, schools, or public transportation services). Another term to become familiar with is *self-shielding*, which refers to self-imposed exclusion from infected persons or those perceived to be infected (e.g., staying home from work or school during a pandemic).

The ISDH has developed and communicated recommended infection control and personal protection actions for the general public that will reduce the risk of transmitting or acquiring influenza (please see [Section 6](#)). These actions include staying home if ill, washing hands frequently, avoiding sick persons in public, minimizing interactions with others outside the home, and the importance of heeding warnings and advisories from health officials.

Considerations for Special Populations

Certain institutions, such as prisons, jails, juvenile detention centers, hospices, residential homes, and long-term care facilities (LTC), will face special problems in attempting to prevent and control infection in persons under their care, because it will be difficult or impossible to relocate the residents. While resident contact with persons from the general population should be restricted to the greatest degree possible, this may be difficult to achieve in practice. The ISDH will provide educational information and guidance on measures to protect these special populations.

Vaccine and Antiviral Medication – Prophylaxis and Treatment

It is unlikely that an adequate supply of a vaccine against a pandemic influenza strain will be available at the start of a pandemic. In addition, the more common influenza antiviral medications may not be effective against a new virus strain. Issues related to antiviral medication—its use and stockpiling considerations—are discussed in [Section 9](#) of this Plan. Consideration of the utility and availability of vaccine or antiviral medication for mass prophylaxis/treatment will be an important factor in the early weeks of pandemic influenza. It is possible that postexposure prophylaxis of household contacts of limited, early cases of influenza may help to contain disease spread, but this will not be an effective control measure as more people become infected.

Based on CDC recommendations, the ISDH will provide guidance to LHDs, health care providers, and the public regarding steps that individuals and organizations can take to reduce exposure risks to pandemic influenza. Should a vaccine become available, the ISDH *Protocol for Mass Prophylaxis* will be followed. LHDs have developed mass prophylaxis plans in recent years. However, large-scale vaccination will, of necessity, be a collaborative effort among public health, hospitals, and the whole range of medical care providers (managed care organizations, community health centers, providers in private practice).

Because vaccine will be in limited supply when first available, the ISDH, in consultation with CDC and others, will recommend which population groups will have the highest priority for receiving vaccine. Preliminary priority groups have been delineated in the HHS Plan and are noted in [Section 8](#) for vaccine and in [Section 9](#) for antiviral medication. However, each state will need to consider modifications of these priority groups, depending on the epidemiology of the pandemic and local needs or issues.

Protection of Essential Workers (Continuity of Operations Plans)

All organizations and agencies should determine which employees are essential for maintaining operations through Continuity of Operations Plans (COOP). While specific population groups have been identified within prioritization schemes by HHS, essential workers of certain agencies and organizations may or may not be considered as high priority groups to receive vaccine or antiviral medication during a pandemic. CDC/HHS will continue to provide guidance on which population groups or worker categories should be considered as high priority for antiviral medication and/or vaccine. Stockpiling of antiviral medication in order to have sufficient quantities for short-term prophylaxis and/or treatment of essential staff members who may contract influenza is also discussed in [Section 9](#) of this Plan.

Volunteers

No adequate response to a pandemic influenza outbreak would be possible without the assistance of volunteers. LHDs should establish a list of potential volunteers, which may include retired health care workers and others. Prior to a pandemic, LHDs should consider the issues of: 1) credentialing requirements and the number of persons needed for each role; 2) potential volunteers, including contact information; 3) educational materials needed; 4) confidentiality policies and statements; and 5) determination of workers' compensation and liability coverage.

The ISDH partners with the Indiana Professional Licensing Agency (IPLA) to identify, during relicensure, those health care professionals who would be willing to volunteer during an emergency. The ISDH will continue to distribute lists of potential volunteers for each of Indiana's 10 Public Health Preparedness Districts to local planners. The ISDH continues to develop an Emergency System for Advanced Registration of Volunteer Health Professionals (ESAR-VHP), an electronic registry of volunteer health professionals, in order to promote coordination and the rapid identification and credentialing of health care workers to participate in an emergency response.

Section 2. Planning, Coordination, and Command Structure

Background

As the lead state agency for Emergency Support Function (ESF) #8, “Public Health and Medical Services,” the Indiana State Department of Health (ISDH) recognizes its responsibility as “the capability of the ISDH to prepare for and to execute an effective response to pandemic influenza that assures promotion of health and protection from harm for Indiana citizens.”

This revised Pandemic Influenza Plan (the Plan) was developed with staff input from those ISDH organizational units that have primary response duties during an influenza pandemic and the necessary expertise to contribute significantly to the preparedness process. State agencies, particularly the Indiana Department of Homeland Security (IDHS), and local Emergency Management Agency (EMA) personnel incorporate information from this Plan into their planning efforts. Likewise, pandemic influenza planners define more clearly the roles for other state professional associations and organizations. In addition, the key partners and leadership organizations for local Emergency Support Functions (ESF) “Health and Medical”—hospitals, LHDs, community health centers, private practice and managed health care providers, and mental health providers—are engaged in the planning process. There are numerous other partner agencies and organizations involved in pandemic influenza planning and response, including businesses, that will work in concert with other ESFs.

Department Operations Center - Indiana State Department of Health

The Department Operations Center (DOC-ISDH) was developed under the CDC Cooperative Agreement for Public Health Emergency Preparedness. The ISDH Public Health Preparedness and Emergency Response Division (PHPER) is responsible for operation of the DOC-ISDH. The DOC-ISDH at the central office in downtown Indianapolis—as well as the alternate DOC-ISDH located several miles from the central office—is fully equipped with computer networks and robust communications capability. Both of these sites have secure access. During 2005-2006, the DOC-ISDH participated in pandemic influenza response exercises for each of Indiana’s 10 Public Health Preparedness Districts as well as a series of similar exercises related to testing hospital capabilities.

In addition to the DOC-ISDH, the ISDH has designated staff whose responsibility during a large-scale public health emergency is to be present in the Indiana Department of Homeland Security (IDHS) Emergency Operations Center (EOC).

Technical Advisory Group

During a pandemic, there will be a continuing need to provide additional technical information and advice to the ISDH leadership in order to revise current policies and institute new ones. That will be the function of a Technical Advisory Group (TAG). The State Health Commissioner will chair the TAG. Other members will include the Deputy State Health Commissioner, State Epidemiologist, Immunization Medical Director, Career Epidemiology Field Officer (CEFO), Laboratory Director, Director of Public Health Preparedness and Emergency Response, Director of Surveillance and Investigation, Respiratory Disease Epidemiologist (who will serve as the Influenza Coordinator), Bioterrorism Attorney, and Public Affairs Bioterrorism designee.

For many issues, a smaller group consisting of the State Epidemiologist, CEFO, Laboratory Director, and Immunization Medical Director will be the most efficient and expedient source of information. For more complex issues, the entire TAG will convene and include expert consultation, such as specialists available through the Purdue University Homeland Security Institute, the Indiana University Center for Bioethics, and other content experts.

Command Structure

Figure 1 on the following page shows the proposed design for the ISDH command structure. Each of the primary organizational units is represented. The design is set so that principles of Incident Command System (ICS) are met with regard to span of control. Also, the individuals who serve in command positions are the same as those who ordinarily supervise the staff members of that unit.

In addition to the units designated for response, the TAG will continue to provide the State Health Commissioner and the ISDH organizational units with expert input into decisions as a pandemic unfolds.

Decision-making and Communication During Pandemic Response

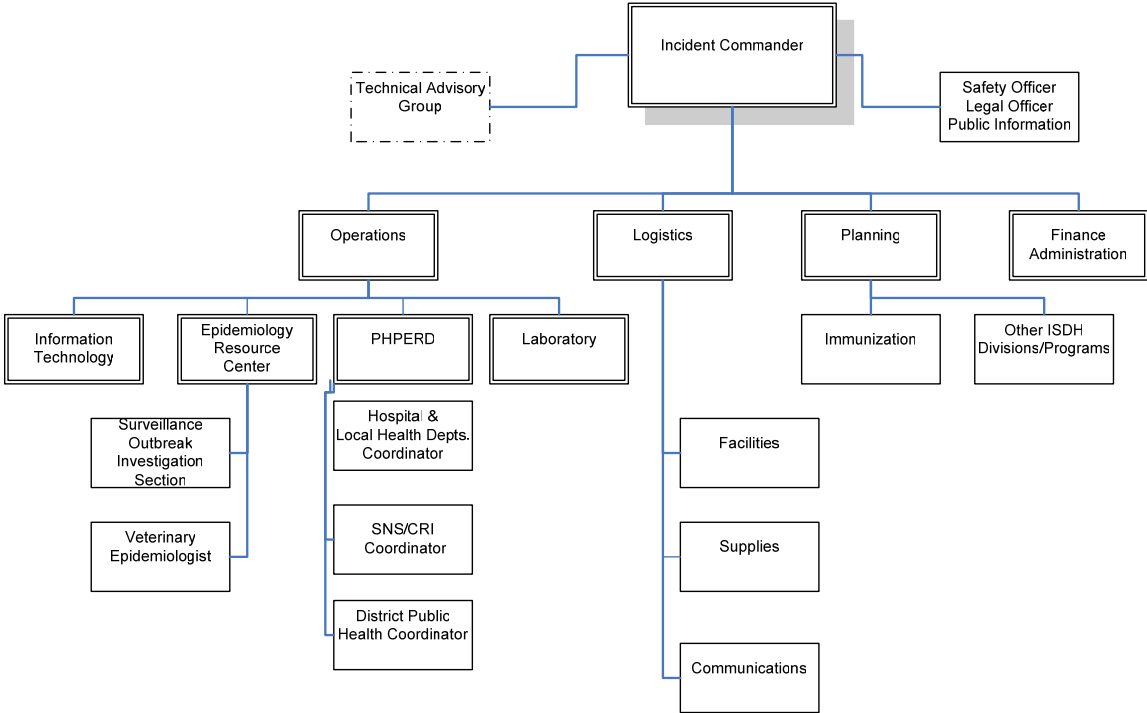
During an influenza pandemic, the ISDH anticipates frequent telephone conferences with its counterparts at CDC. As a functional part of Indiana's Emergency Operations Center (EOC), the ISDH will review the most recent Indiana pandemic influenza-related data, CDC information, and expertise from TAG to prepare briefings for ISDH staff, LHDs, state and local emergency management agencies (EMA), and partner agencies and organizations.

Frequent telephone conferences will be held with Indiana's local health officers to aid them with local response. The Indiana Health Alert Network (IHAN) is utilized for widespread communication of information to all partner agencies and organizations. Through the Public Health Preparedness District system of contacts, the ISDH also provides frequent updates electronically to Indiana hospitals. Communication with health care providers will be maintained through professional and leadership organizations. Through these mechanisms, decisions will be made based on pertinent and recent factual information and will be widely communicated throughout Indiana.

Indiana Health Alert Network (IHAN)

The ISDH utilizes the IHAN system to alert LHDs and other partners, including volunteers, about public health emergencies, including pandemic influenza. The IHAN communicates urgent information electronically and/or via telephone and fax to a wide audience of constituencies through a cascading network.

Figure 1. ISDH Command Structure for Pandemic Influenza



Section 3. Surveillance and Investigation

State Surveillance Activities

The Indiana State Department of Health (ISDH) uses five different surveillance components to monitor influenza activity in Indiana. These components assist in determining where, when, and what influenza viruses are circulating and also in determining the level of influenza activity. Prior to and during a pandemic, the ISDH will disseminate surveillance information to local health departments (LHD), hospitals, and other stakeholders via the Indiana Health Alert Network (IHAN) and other means. The five surveillance components include:

1. Influenza Sentinel Providers Surveillance Network

Approximately 30 Indiana health care providers (sentinel sites) report the total number of patients seen and the number and age group of those patients with influenza-like illness (ILI) to the ISDH each week, year-round. ILI is defined as fever (temperature of >100.4 °F) plus either a cough and/or sore throat with no known cause. The ISDH continues to update and to recruit sentinel sites as necessary. The percentage of patient visits to sentinel providers for ILI reported each week is weighted on the basis of the weekly sentinel's patient population. This percentage is compared each week with the national baseline of 2.5 percent.

Sentinel sites also send nasopharyngeal swabs to the ISDH Laboratory for influenza viral isolation. This laboratory testing is a key component to Indiana's surveillance, because it identifies the exact subtypes of influenza viruses that are circulating. The ISDH Laboratory has the ability to test potential pandemic viral strain specimens by RT-PCR (results within 3-6 hours) and viral isolation (results in 2 weeks) under normal conditions. The protocol and specimen submission guidelines for suspect pandemic specimen submission are found in [Appendix F](#) and are also available through the ISDH Web site at www.IN.gov/isdh under the Laboratory tab. To submit suspect pandemic specimens to the ISDH Laboratory for testing, the case definition must be met and prior approval must be obtained from the ISDH Epidemiology Resource Center.

2. Reporting to CDC via State and Territorial Epidemiologists

The ISDH reports the estimated level of influenza activity each week to the Centers for Disease Control and Prevention (CDC). These levels are defined as follows:

- *No Activity:* No laboratory-confirmed cases of influenza and no reported increase in the number of cases of ILI.
- *Sporadic:* Small numbers of laboratory-confirmed influenza cases or a single influenza outbreak has been reported, but there is no increase in cases of ILI.
- *Local:* Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.
- *Regional:* Outbreaks of influenza or increases in ILI and recent laboratory-confirmed influenza in at least 2 but less than half the regions of the state.
- *Widespread:* Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state.

3. Influenza-associated mortality

In August of 2005, reporting of pediatric deaths from influenza was added as a nationally notifiable condition. The ISDH reports laboratory-confirmed influenza-associated deaths in children younger than 18 years old through the Nationally Notifiable Diseases Surveillance System (NNDSS). The ISDH is exploring the benefit and value of having all influenza deaths in Indiana reported to the ISDH.

4. Public Health Emergency Surveillance System (PHESS)

The PHESS, the ISDH syndromic surveillance system, incorporates data from hospital emergency department (ED) chief complaints and school absenteeism rates. Chief complaints are categorized into various medical category syndromes, including a respiratory syndrome. PHESS alerts are generated when syndromic counts exceed baseline values. Alerts are then analyzed for necessity of detailed follow-up by ED medical records review. Indiana public schools and accredited nonpublic schools must report student absenteeism rates ≥ 20 percent to local health departments (LHD). LHDs determine if the increased absenteeism rate is possibly outbreak related and notify the ISDH.

5. Pandemic Tracking System

The ISDH is in the process of procuring a system to track and report hospital-related data during a pandemic. Examples of data to be collected include the number of hospitalized cases, number of ill hospital staff, deaths during hospitalization, number of beds available, and the availability of essential equipment, such as ventilators. This computerized database should also be able to track deaths and quarantine and isolation data outside of the hospital setting. The information from this database will be disseminated to LHDs and hospitals.

Communication

The ISDH Epidemiology Resource Center (ERC) staff members review the epidemiology of influenza cases and other communicable diseases and disseminate pertinent information to the field Epidemiologists and LHDs. Nine field Epidemiologists receive reports of ILI in their own districts as well as reports from their surrounding districts and then provide relevant case information to the LHDs within their districts. The field Epidemiologists communicate frequently with ISDH field Public Information Officers (PIO) in order to support the LHDs in preparing public information for their jurisdictions. The field Epidemiologists also assist LHDs with investigations of ILI in institutions or other special settings.

Local Activities Related to Surveillance and Investigation

Some of the expectations for LHDs are noted below. Additional activities are described in [Appendix C.2, Local Health Department Checklist](#).

- Provide information about pandemic influenza surveillance to citizens within the jurisdiction. This includes explanations about activities taken into consideration to determine decision-making at the state level.
- Assure that hospital staff and other health care workers understand the protocol for obtaining and submitting suspect pandemic specimens to the ISDH Laboratory for testing and when testing will be curtailed.
- Assist the ISDH in identifying and recruiting health care providers in local jurisdictions to participate in sentinel surveillance.
- Describe how the LHD will communicate pandemic surveillance tracking information to partners and the public.

Section 4. Laboratory Testing

In collaboration with Indiana's local health departments (LHD) and the Centers for Disease Control and Prevention (CDC), the Indiana State Department of Health (ISDH) Laboratory will perform testing on specimens from suspected human influenza A cases in Indiana. This effort is intended to enhance current influenza surveillance for early identification of patients with influenza A infection. Patient clinical criteria for suspected pandemic influenza infection and protocols for submission of specimens to the ISDH Laboratory are found in [Appendix F](#).

The ISDH Laboratory and the Epidemiology Resource Center (ERC) will continue active surveillance for influenza through the early phases of the pandemic. Once the ISDH Laboratory has confirmed that the pandemic virus strain has arrived in Indiana and is circulating throughout the state, laboratory testing will be tapered or curtailed. Surveillance will continue after identification of the pandemic strain in Indiana in order to identify any changes in the pandemic strain and to identify other viruses that may be circulating. Decisions to test additional specimens from suspected pandemic influenza patients will be based on guidance from CDC and the epidemiology of the pandemic strain of virus.

INTERPANDEMIC PERIOD

1. The ISDH Laboratory will:
 - a. Provide laboratory specimen submission forms containing at least the following information fields
 - i. Demographics, Symptom onset date, Date of collection, Specimen source, and Vaccination history
 - b. Maintain reference capability and capacity to isolate influenza in cell culture and subtype using reagents provided by WHO
 - c. Maintain Laboratory Response Network (LRN) protocols for identifying influenza subtypes
 - d. Submit influenza isolates to CDC according to WHO guidelines, sending isolates that cannot be subtyped with kit reagents; pre-season, early-season, late-season isolates and a representative number of isolates during peak activity; isolates obtained during an outbreak; isolates from persons receiving antivirals or from their contacts who become ill; and isolates from cases of suspect animal-to-human transmission
 - e. Identify additional staff required for surge capacity
 - f. Identify and maintain a list of laboratories that, in addition to those in the LRN, may serve as resources for specimen analysis

PANDEMIC ALERT PERIOD

1. The ISDH Laboratory will coordinate assistance for specimen transport to national laboratories as per protocol.
2. Enhanced and secure communication with CDC and other states will be maintained, (e.g., identification of virus, surveillance). Conference calls, e-mail, Epi-X (a secure Web site), and IHAN may be used.
3. The ISDH Laboratory will:
 - a. Continue testing routine influenza specimens and referring isolates to CDC as defined for the Interpandemic Period
 - b. Test specimens that are suspected of being a novel subtype using nonculture techniques, as requested by ISDH Epidemiologists
 - c. Refer specimens that test positive for Influenza A to CDC as needed
 - d. Provide staff identified for surge capacity with training
 - e. Determine need for increased transportation resources and additional shipping materials for viral specimens
4. In addition, the ISDH Laboratory will:
 - a. Ensure nonroutine laboratory submitters have current instructions for collecting appropriate samples for influenza specimens and how to package and ship those specimens to meet laboratory requirements
 - b. Continue to separate specimens for routine surveillance from specimens for enhanced surveillance, testing specimens for enhanced surveillance using nonculture techniques
 - c. Develop and evaluate diagnostic tests for novel subtype
 - d. Ensure availability of diagnostic reagents to identify the novel subtype
 - e. Provide laboratory support to test clinical specimens for influenza and identify a novel subtype

PANDEMIC PERIOD

1. The ISDH Laboratory will test clinical specimens for influenza and identify the novel subtype
 - a. Case criteria for specimens will be determined by the Epidemiology Resource Center
 - b. Instructions for completing the ISDH Laboratory Influenza Specimen Submission Form are available
 - c. Maintain appropriate staffing levels, calling upon surge resources as needed
 - d. Ensure continuing availability of trained surge staff

Section 5. Health Care Planning

Planning for Mass Care

Through joint consensus of the Indiana Department of Homeland Security (IDHS) and the Indiana State Department of Health (ISDH), Indiana is divided into 10 Public Health Preparedness Districts. Indiana hospitals are required to coordinate with the local health departments (LHD) in the development of District-level plans. District meetings are being held where individual hospital jurisdiction plans are being reviewed in the context of District-wide coordinated emergency planning. The Indiana Hospital & Health Association (IHHA) remains involved in hospital planning by lending its support and expertise. The Indiana Primary Health Care Association (IPHCA) and the Indiana Rural Health Association (IRHA) have also been involved to ensure that community health clinics/centers are included in the response process.

The 143 participating Indiana hospitals have developed District-level “All Hazards” plans. In addition, hospitals have developed or are developing Pandemic Influenza Plans in accordance with the checklist in [Appendix D](#). Specific guidance was provided to encourage recognition of the unique aspects of this public health emergency using the parameters listed below:

- Magnitude – anticipated attack rate possibly as high as 30 percent of the immunologically naive population
- Duration – several months nationally, with individual regions experiencing at least 4 to 6 weeks of disease
- Lack of vaccine early in the pandemic
- Shortages of antiviral medications

The ISDH Public Health Preparedness and Emergency Response Division (PHER) data collection survey from Indiana hospitals for 2005-2006 included questions on bed surge capacity and health care worker surge capacity for in-patient care and alternate care sites; total staffed bed capacity of all alternate care sites; personal protective equipment; supplies and pharmaceutical caches related to airborne respiratory diseases; and ventilator capacity. These same questions will be repeated in the 2006-2007 hospital preparedness program survey to update the hospital activity and readiness evaluation, and additional requirements will be included to cover National Incident Management System (NIMS) compliance and Hospital Emergency Operations/Response planning as it applies to pandemic influenza. All data being collected will be incorporated into a hospital surveillance and capability database.

Local Emergency Management Agencies (EMA) are active participants in planning for a pandemic response and are key entities for management of the non-medical support issues of a community.

Surge Capacity and Capability

Experts in mass care are promoting both increased capacity (e.g., more beds, more staff, more equipment, more pharmaceuticals) and increased capability (i.e., ability to manage the surge increases). Indiana population projections (through the FluAid program models) for a moderate scenario attack rate show a range of 6,577 to 23,143 hospitalizations. In a severe scenario attack rate, this total ranges from 54,064 to 190,245, as projections over usual hospitalization volume. Although these increased numbers of hospitalizations would be spread out across the weeks of the pandemic wave, hospitals need to consider the implications of a greatly expanded patient load and

the required surge in bed capacity now. Similarly, hospitals must consider staff surge capabilities and stockpiles of personal protective equipment (PPE) and necessary supplies and pharmaceuticals. The ISDH will provide guidance so that hospitals can build on their general All Hazards preparedness for pandemic readiness.

Alternate Care Sites

Alternate care sites are non-traditional care sites important in providing mass care during a pandemic. An alternate care site is a site that is currently not an established health care site or is an established health care site that usually offers a different type or level of care. Discussions and sharing of information on alternate care sites should be done between and within the 10 Indiana Public Health Preparedness Districts. The ISDH PHER District Coordinators are available to assist in these planning efforts. Several Indiana hospitals have already identified alternate care sites, and all hospitals are providing information to the ISDH on this issue.

Triage – The term “triage” can be applied in a variety of settings. In military or other disaster settings where people are injured, triage refers to the function of rapidly assessing injuries to determine who is salvageable and who is not. In hospital emergency department (ED) or medical care delivery settings, the term triage is often used to describe the sorting of patients who are more seriously ill and require immediate medical attention from those who are less ill. The ISDH will disseminate information from HHS or CDC related to patient triage as it becomes available.

Since each hospital’s circumstances are unique, each hospital needs to develop a plan to evaluate and separate those patients with more serious illness from those who are less ill. Strong consideration should be given to setting up a patient sorting area (portable structure) outside/before the entry to a hospital ED as a possible locale for this function, as well as allocating adequate facility space (outpatient clinic or similar structure) to route individuals who are found to be less ill for further assessment and treatment. Municipality zoning regulations may need to be explored on the use of portable structures. In addition, the use of mobile clinic facilities can be considered.

One role of the ISDH is to educate the public on the need for the patient sorting function and to encourage each hospital to have a workable plan for this function. The ISDH will develop educational materials for various groups, including the public, in order to explain why patient sorting is necessary during a pandemic. The ISDH reviews each hospital’s pandemic influenza plan as part of federal grant funding provided for hospital emergency preparedness.

Protection of the Health Care Workforce

Maintaining surge capability response during pandemic influenza is complicated by the possibility of absenteeism by health care workers due to their own illness or that of their family members. During the peak period, 30 percent or more workers may be unavailable to perform their usual duties. If limited vaccine and/or antiviral medication are available, the Advisory Committee on Immunization Practices (ACIP) proposes that health care workers involved in direct patient contact be among the highest priority groups for vaccination and/or chemoprophylaxis, as they will be needed to provide care for the large numbers of individuals who become ill from influenza.

Another aspect of workforce protection is *effective infection control*. The major mode of transmission of influenza virus is likely to be droplet inhalation or contact with the conjunctiva and,

therefore, staff must observe droplet precautions. Adequate supplies of personal protective equipment (PPE) should be stockpiled along with supplies for hand hygiene. Proper infection control also protects patients who may be in the hospital because of other health problems. Infection Control Professionals (ICP) should conduct surveillance to identify quickly any nosocomial infection (e.g., case of influenza in a patient admitted with symptoms beginning at least 48 hours after admission). According to CDC, if more than three such cases have occurred, the hospital is experiencing an outbreak and must strengthen infection control. Part of pandemic planning should include arrangements for cohorting influenza patients so as to minimize contact with uninfected individuals. Mental health support for those affected by restrictions is important.

Altered Standards of Care in a Mass Casualty Event

Pandemic influenza is a mass casualty event. The primary goal of the health care delivery system during a mass casualty event is to save as many lives as possible, which often requires the delivery of health care that differs from normal standards and practices. The triage effort focuses on maximizing the number of lives saved. The usual scope of practice standards may not apply, i.e., employees may need to function outside of normal capacity or credentialing. Staff shortages and delays in care are to be expected. It will not be possible for hospitals in affected geographic areas to be “on diversion” (ambulances diverted to another hospital), as all local facilities will be affected simultaneously.

The following are guiding principles:

- 1) In planning for a mass casualty event, the aim should be to keep health care system functioning and to deliver acceptable quality of care to preserve as many lives as possible.
- 2) Planning a health and medical response to a mass casualty event must be comprehensive, community-based, and coordinated at the regional level.
- 3) There must be an adequate legal framework for providing health and medical care in a mass casualty event.
- 4) The rights of individuals must be protected to the extent possible and reasonable under the circumstances.

Clear communication with the public is essential before, during, and after a mass casualty event.

During a pandemic, the massive increase in patients needing medical care will strain the capacity of all hospitals and all health care providers. An April 2005 report on Altered Standards of Care in Mass Casualty Events is available on the Agency for Healthcare Research and Quality Web site: <http://www.ahrq.gov/research/altstand>.

Mass Fatalities/Morgue Surge

During a pandemic, there will be a significant increase in the number of fatal cases of influenza. The entire process of handling deceased persons will be affected, from the hospital morgue to burial in the cemetery. Hospitals must plan for what to do when the hospital morgue reaches capacity. Partners in this planning effort should include:

- Local health departments
- Local emergency management agencies
- Local funeral directors
- Local coroners
- Managers of local cemeteries
- Faith-based organizations
- Mental health support personnel

Because mass gatherings will be discouraged and family members may also be ill, funerals may be delayed. The above-listed workers may be ill and unavailable to carry out their functions for the process of burial. Local communities may need to develop a means of extended storage of the deceased.

Section 6. Infection Control

Because of the likely initial lack of vaccine and limited supply of antiviral medications, infection control measures will be the most effective means of controlling the spread of the pandemic influenza virus. As this Pandemic Influenza Plan (the Plan) is being revised, the focus of infection control measures is on the use of droplet precautions. Influenza viruses are historically spread by droplet transmission. Droplets are generated primarily by coughing, sneezing, or talking. The normal range for droplet spread is about 3 to 6 feet. Infection is spread by contact with droplets through the eyes, nose, or mouth.

During a pandemic, infection control guidelines for health care providers include:

- Isolating infected persons from those who are not infected (reverse airflow rooms are not required)
- Limiting contact with visitors and other non-health care personnel
- Promoting spatial separation in common areas (at least 3 feet between infectious and non-symptomatic persons)
- Wearing a surgical or procedure mask and gloves (and sometimes a gown) for close contact with infectious patients
- Using airborne precautions, including a fit-tested N95 respirator, for procedures that may aerosolize droplets (intubation, suction, nebulizer treatments, or bronchoscopy)
- Washing hands frequently

Health care personnel must be trained in the proper application and removal of personal protective equipment (PPE) and the importance of good hand hygiene after removal.

For patients who are ill with fever and cough and must be in a common area, it is recommended that a surgical or procedure mask be worn to help contain secretions. Proper respiratory etiquette is necessary for anyone with “flu-like” symptoms:

- Wear a mask or cough into tissues
- Discard the tissues in the trash and wash hands thoroughly
- If a mask or tissues are not available, cough into the upper sleeve

In addition to the containment guidelines referenced in [Section 10](#), the general public can help stop or slow the spread of the virus by adhering to the following guidelines:

- Cough and sneeze into tissues
- Throw the tissues in the trash and wash your hands
- If tissues are not available, cough or sneeze into your upper sleeve
- Do not use handkerchiefs (handkerchiefs harbor the very germs you want to avoid)
- Follow normal procedures for cleaning environmental surfaces in the home
- Practice *social distancing*. Droplet spread of the virus occurs when you are within 3 to 6 feet of an infectious person. Avoid mass gatherings of people.

We will not know the exact nature and degree of transmissibility of the influenza virus until the pandemic actually begins. For updated information on the current threat of an influenza pandemic, visit the following Web sites www.cdc.gov/flu or www.pandemicflu.gov.

Section 7. Clinical Guidelines

Clinicians face challenges related to the identification and triage of persons infected with influenza, containing the spread of infection, evaluation of patients and recognition of clinical complications, and the use of vaccine or treatment regimens. 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, diagnosis will likely be more clinically oriented because of the strong probability that any severe febrile respiratory illness is pandemic influenza.

Clinical criteria for influenza-like illness (ILI) include a temperature of >38 degrees Centigrade (>100.4 degrees Fahrenheit) plus one or more of the following: sore throat, cough, or dyspnea (shortness of breath). Clinical criteria will be modified if a pandemic influenza virus strain presents with a different clinical syndrome.

Epidemiologic criteria for evaluation of patients with a possible novel influenza virus focus on the risk of exposure to a novel virus with pandemic potential. Exposure risks can be related to *travel* (visiting an area where poultry outbreaks or human cases have been confirmed), along with direct contact with poultry or poultry feces; or close contact (within 3 to 6 feet) with a person suspected or confirmed to be ill with a novel influenza virus. Exposure risks can also be related to *occupation* – working in poultry farms or poultry markets or poultry processing; laboratory employees working with a novel influenza virus; or health care workers in direct contact with a suspected or confirmed case of novel influenza.

During the *Interpandemic and Pandemic Alert Periods*, when a patient meets both the clinical and epidemiologic criteria for a suspected case of novel influenza, health care personnel should include these activities related to patient management:

- Implement infection control precautions for novel influenza – Droplet Precautions for a minimum of 14 days and Respiratory Hygiene/Cough Etiquette.
- Notify local and state health departments.
- Obtain clinical specimens for novel influenza A virus testing through the ISDH.
- Consider the differential diagnosis, including seasonal influenza, and evaluate/test accordingly.
- Evaluate the need for hospitalization.
- Initiate antiviral treatment as soon as possible (within 48 hours of illness onset).
- Assist public health officials with the identification of potentially exposed contacts.

During the *Pandemic Period*, clinical criteria noted above will be of major importance, and epidemiologic criteria, such as exposure history, will be of little use when disease is widespread in a community. Initial management of patients who meet criteria for a suspected case of pandemic influenza are noted above, although influenza testing will likely not be needed for most patients once disease is broadly evident in a community.

More detailed information on clinical management of infected patients is provided in the HHS Plan, Supplement 5 (35 pages) at www.pandemicflu.gov.

Section 8. Vaccine Distribution and Use

Influenza Vaccine

Currently, the usual manufacturing process for influenza vaccine requires at least six months before distribution for use. Because a pandemic occurs due to a novel virus strain, CDC has not encouraged public health planners to rely on vaccination as the sole control measure, at least not during the first wave of a pandemic. However, pre-pandemic vaccine from stockpiles may be considered for persons in designated priority groups.

Recognizing that the vaccine manufacturing process needs to be updated to use modern technology and to be more nimble in combating emerging strains, public health officials and scientists have been active in searching for improvements such as cell culture production. The National Institutes of Health (NIH) is sponsoring clinical trials of a vaccine against the H5N1 avian influenza strain circulating in Asia. The results from these trials will reveal the safety and efficacy of vaccine, with the hope that expedited production could result in availability of some vaccine as an H5N1 pandemic unfolds. Federal funding is being provided to vaccine manufacturers to expedite the development of effective vaccines related to a pandemic response. Distribution of vaccine (related to a pandemic) to health care providers may occur via private-sector vaccine distributors or directly via manufacturers, although public health involvement in tracking vaccine distribution is necessary.

The number of persons who may be protected by vaccination depends on the manufacturing capacity, the amount of antigen per doses needed for a protective immune response, and the number of doses required. Two doses of vaccine, probably one month apart, are likely to be needed when people have had no previous exposure to the influenza virus subtype.

Local health departments (LHD) (and possibly some other health care providers) who provide seasonal influenza vaccine are being encouraged to test their ability to provide mass vaccinations through exercises in conjunction with administration of seasonal influenza vaccine for the 2006-2007 influenza season. The Indiana State Department of Health (ISDH) continues to evaluate the ability of the Children and Hoosiers Immunization Registry Program (CHIRP) to track vaccine administered during mass vaccination clinics. Since two doses of a pandemic influenza vaccine will likely be needed to achieve immunity, all medical care providers need to maintain a call-back system to ensure that vaccinated persons return for their second dose.

Vaccination of specified population groups will occur according to CDC priority group recommendations, which may be modified by the ISDH in consultation with technical and community advisory groups. The ISDH has provided guidance to LHDs to prepare detailed plans for mass prophylaxis. In the event of large-scale vaccination, all medical care providers will need to be familiar with priority group recommendations for the use of limited supplies of vaccine.

If vaccine is available, the ISDH will provide recommendations, based on CDC guidance, for prophylaxis by vaccination to LHDs and partner agencies and organizations. While LHDs have identified locations for mass prophylaxis clinics, the method by which hospitals and medical care practice sites (private practice, managed care) would administer large volumes of vaccine has not been determined. If needed, the ISDH will direct deliveries of Strategic National Stockpile (SNS) supplies to the mass prophylaxis clinic sites, but vaccine will probably not be distributed via this

route. When vaccine becomes available, large-scale vaccination will be a public-private partnership with collaborative responsibility shared among the ISDH, LHDs, hospitals, and health care providers.

Vaccine Priority Groups

The epidemiologic characteristics of pandemic influenza will determine which priority groups are recommended for vaccination during a pandemic. The primary goal of a pandemic response is to decrease health impacts, including severe morbidity and death. A secondary response goal includes minimizing societal and economic impacts.

The following chart lists pandemic influenza priority groups, as noted in the HHS Plan of 2005, Table D-1. This tiered ranking list of influenza vaccine priority groups provides a useful scheme to be implemented when vaccine is in short supply, which is likely to be the situation in the early stages of a pandemic. When a tiered ranking system is used, persons in Tier 1 would be vaccinated preferentially, followed by persons in Tier 2, then persons in Tier 3, etc. Within Tier 1, persons listed in Tier 1.A. would be of higher priority than those in Tier 1.B.

Tier	Vaccine Priority Group
1.A	<ul style="list-style-type: none"> • Vaccine and antiviral manufacturers essential to the manufacturing process • Medical and public health workers involved in direct patient contact, support services essential for direct patient care, and vaccinators
1.B	<ul style="list-style-type: none"> • Persons ages 65 years or older with 1 or more influenza high-risk conditions • Persons ages 6 months to 64 years with 2 or more influenza high-risk conditions • Persons ages 6 months or older with history of hospitalization for pneumonia or influenza or other high-risk conditions in the past year
1.C	<ul style="list-style-type: none"> • Pregnant women • Household contacts of severely immunocompromised persons who would not be vaccinated • Household contacts of children less than 6 months of age
1.D	<ul style="list-style-type: none"> • Public health emergency response workers • Key government leaders
2.A	<ul style="list-style-type: none"> • Healthy persons ages 65 years and older • Persons ages 6 months to 64 years with 1 high risk condition • Healthy children ages 6-23 months
2.B	<ul style="list-style-type: none"> • Other public health emergency responders • Public safety workers (police, fire, 911 dispatchers, and correctional facility staff) • Utility workers essential for power, water, and sewage system functioning • Transportation workers transporting fuel, water, food, and medical supplies as well as public ground transportation • Telecommunications/Information technology for essential network operations
3.	<ul style="list-style-type: none"> • Other key government health decision-makers • Funeral directors/Embalmers
4.	<ul style="list-style-type: none"> • Healthy persons ages 2-64 years not included in above categories

Pneumococcal Vaccine

Patients with influenza may develop secondary bacterial pneumonias/infections, with *Streptococcus pneumoniae* being the organism most frequently involved. Vaccination against *S. pneumoniae* involves use of the polysaccharide vaccine for the elderly and individuals with chronic diseases that place them at high risk for complications and administration of the pneumococcal conjugate vaccine for routine immunization of young children. The immunization of young children against invasive pneumococcal disease has also resulted in decreasing the incidence of such disease in broader age categories. Continued vaccination against pneumococcal infection is important for pandemic influenza preparedness. During a pandemic, it is possible that other population groups will be determined to be at increased risk of invasive pneumococcal infections and require such vaccination.

Adverse Events

Tracking vaccination adverse events is a well established mechanism in the U.S. The Vaccine Adverse Event Reporting System (VAERS) is a passive reporting system that allows immunization providers to report suspected vaccine adverse events by phone, mail, or e-mail. The ISDH Immunization Program can assist providers with VAERS reporting. However, during a pandemic, tracking systems for adverse events to influenza vaccination may need to be expanded. CDC recommendations will be utilized in tracking adverse events.

Section 9. Antiviral Distribution and Use

Antiviral Medication

Two categories of antiviral medications are available—the adamantane derivatives and the neuraminidase inhibitors. The adamantane derivatives (amantadine, trade name Symmetrel; and rimantadine, trade name Flumadine) are older and less expensive than the neuraminidase inhibitors, but they can produce troublesome side effects and are prone to viral strain resistance. In addition, the H5N1 strain that has infected people in several continents is not susceptible to the adamantane derivatives. Oseltamivir (Tamiflu) and zanamivir (Relenza), the neuraminidase inhibitors, are less prone to development of viral resistance but are much more expensive. Oseltamivir is licensed for both treatment and prophylaxis of influenza A, but Roche Pharmaceuticals is the only manufacturer. Zanamivir is licensed for treatment but not for prophylaxis. However, it is possible that new antiviral medications may be developed, or that new influenza strains may have different susceptibility and resistance patterns.

Most antiviral medication would be used for treatment, because that is the most effective way to utilize a limited supply. For antiviral treatment, infected persons must receive medication within 48 hours of symptom onset to reduce the impact of the disease. A greater impact on reduction of symptoms of illness has been demonstrated when antiviral treatment is begun within 12-24 hours of illness onset.

The use of antivirals for *long-term prophylaxis* (4 weeks or more) has not previously been recommended due to issues of cost-effectiveness but, due to the possibility of increased production of oseltamivir, all aspects of antiviral usage are currently under review by U.S. Department of Health and Human Services (HHS). The Indiana State Department of Health (ISDH) will look to HHS/Centers for Disease Control and Prevention (CDC) to provide guidance as to which groups may be considered high priority for antiviral prophylaxis. The use of antiviral medication for *short-term prophylaxis* of household contacts of a suspected or confirmed case of influenza (postexposure prophylaxis) during the very early stages of a pandemic may assist in reducing transmission of infection. The utility of this strategy is being examined at the federal level. CDC has arranged for some supplies of oseltamivir to be included in the Strategic National Stockpile (SNS). States may also stockpile supplies of oseltamivir and zanamivir, with the goal of being able to treat 25 percent of the population during a pandemic. Methods of distributing antiviral medication to people in priority groups are being examined, as the urgency of getting antivirals to those who need them is of utmost importance.

As CDC and the ISDH define specific categories of people as high priority for postexposure antiviral prophylaxis or for longer time periods (outbreak prophylaxis), local health departments (LHD), hospitals, emergency medical services (EMS) providers, and medical care practice sites (including community health centers and similar health care providers) need to develop estimates of the numbers of persons who are candidates for such prophylaxis and coordinate efforts to provide prophylactic antiviral medication to them. CDC currently is developing more detailed guidance related to the strategies and recommendations for use of antiviral medication.

The HHS Plan lists the following Critical Assumptions, Priority Group Recommendations, and Strategies for Treatment (HHS Plan - Appendix D, Table D-2) www.pandemicflu.gov.

A. Critical Assumptions

Assumptions regarding groups at highest risk during a pandemic and impacts on the health care system and other critical infrastructures are the same as those underlying the vaccine priority recommendations. 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, with expected capacity projected at about 1.25 million courses per month.
- Early treatment after the onset of disease is most effective in decreasing the risk of complications and shortening illness duration. Generally, treatment should begin 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 percent of persons in the priority groups will have influenza-like illness and 75 percent will present within the first 48 hours and be eligible for treatment. For persons admitted to the hospital, the committee assumed that 80 percent would be treated, as the 48-hour limit may sometimes be relaxed in patients with more severe influenza illness.
- 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.

B. Priority Group Recommendations

Table D-2: Antiviral Drug Priority Group Recommendations* (from HHS Plan)

T = Treatment P = Prophylaxis PEP = Postexposure Prophylaxis

Group	Strategy**	Rationale
1. Patients admitted to hospital***	T	Consistent with medical practice and ethics to treat those with serious illness and who are most likely to die.
2. Health care workers (HCW) with direct patient contact and emergency medical services (EMS) providers	T	Health care workers are required for quality medical care. There is little surge capacity among health care sector personnel to meet increased demand.
3. Highest risk outpatients—immunocompromised persons and pregnant women	T	Groups at greatest risk of hospitalization and death; immunocompromised cannot be protected by vaccination.
4. Pandemic health responders (public health, vaccinators, vaccine and antiviral manufacturers), public safety (police, fire, corrections), and government decision-makers	T	Groups are critical for an effective public health response to a pandemic.
5. Increased risk outpatients—young children 12-23 months old, persons >65 yrs old, and persons with underlying medical conditions	T	Groups are at high risk for hospitalization and death.
6. Outbreak response in nursing homes and other residential settings	PEP	Treatment of patients and prophylaxis of contacts is effective in stopping outbreaks; vaccination priorities do not include nursing home residents.
7. HCWs in emergency departments, intensive care units, dialysis centers, and EMS providers	P	These groups are most critical to an effective health care response and have limited surge capacity. Prophylaxis will best prevent absenteeism.
8. Pandemic societal responders (e.g., critical infrastructure groups as defined in the vaccine priorities) and HCWs without direct patient contact	T	Infrastructure groups that have impact on maintaining health, implementing a pandemic response, and maintaining societal functions.
9. Other outpatients	T	Includes others who develop influenza and do not fall within the above groups.
10. Highest risk outpatients	P	Prevents illness in the highest risk groups for hospitalization and death.
11. Other HCWs with direct patient contact	P	Prevention would best reduce absenteeism and preserve optimal function.

*The committee focused its deliberations on the domestic U.S. civilian population. NVAC recognizes that Department of Defense (DoD) needs should be highly prioritized. A separate DoD antiviral stockpile has been established to meet those needs. Other groups also were not explicitly considered in deliberations on prioritization. These include American citizens living overseas, non-citizens in the U.S., and other groups providing national security services such as the border patrol and customs service.

**Strategy: Treatment (T) requires a total of 10 capsules and is defined as 1 course. Postexposure prophylaxis (PEP) also requires a single course. Prophylaxis (P) is assumed to require 40 capsules (4 courses), though more may be needed if community outbreaks last for a longer period.

***There are no data on the effectiveness of treatment at hospitalization. If stockpiled antiviral drug supplies are very limited, the priority of this group could be reconsidered based on the epidemiology of the pandemic and any additional data on effectiveness in this population.

C. Strategies for Treatment

Treatment strategies for optimizing the use of limited stocks of antiviral drugs will vary depending on the phase of the pandemic. The following interim guidance will be updated as more information becomes available. Strategies for consideration include:

At all stages of a pandemic:

Targeting therapy to influenza patients admitted to a hospital who present within 48 hours of symptom onset.

Implementing mechanisms to detect the emergence of drug-resistant variants of a pandemic influenza strain (e.g., obtaining specimens from persons who develop influenza while on prophylaxis or who progress to severe disease despite treatment).

During the earliest stages of a pandemic in the United States:

Basing treatment decisions on laboratory-confirmed subtype identification of the pandemic strain by viral isolation, RT-PCR, or other means recommended by CDC. A positive rapid antigen test for influenza A would be sufficient grounds for initiating treatment, with a confirmatory, definitive laboratory test required for continuation of treatment.

Interpreting negative results of influenza testing as permitting termination of treatment, given the overall low rate of infection in a particular community.

Considering targeted use of antivirals to contain small, well-defined disease clusters, to possibly delay or reduce spread to other communities.

When there is increasing disease activity in the United States:

Basing treatment decisions on:

Laboratory-confirmed identification of the pandemic subtype by viral isolation and subtyping, RT-PCR, or other means recommended by CDC, *or*

Detection of influenza A by rapid antigen test, *or*

Epidemiologic and clinical characteristics.

Permitting initiation of antiviral treatment before results from viral isolation, IFA, RT-PCR assays, or rapid antigen tests become available, since early treatment is more likely to be effective.

Once infection becomes more common, negative rapid antigen test results are more likely to represent false negatives; therefore, treatment should continue while awaiting results from confirmatory testing.

When the pandemic is widespread in the United States:

Basing treatment decisions on clinical features and epidemiologic risk factors, taking into account updated knowledge of the epidemiology of the pandemic virus.

As the pandemic progresses, strategies for antiviral treatment may be revised as new information is obtained about the pandemic strain.

Section 10. Community Disease Control and Prevention (Containment)

Containment strategies are complicated by the characteristics of influenza including:

- a. a brief incubation period (1 to 4 days) and transmission of infection before becoming symptomatic;
- b. shedding by asymptomatic persons and possible prolonged shedding by symptomatic persons (7 days or more);
- c. a relatively easy mode of transmission (droplets spread by coughing, sneezing, and even speaking);
- d. clinical presentations which may be atypical.

Furthermore, containment measures are problematic because they may be unacceptable to the population; they may be expensive to maintain and enforce, and they may be ineffective. When and where to apply containment strategies creates many dilemmas, and growing consensus suggests their application is most productive during the earliest outbreaks or in the health care setting. Containment strategies should be considered at both the state and local levels.

Data on the efficacy of the containment strategies discussed below, except those applied in the health care setting, are incomplete.

Isolation

Isolation is applied to individuals who are ill. The goal is to prevent shed virus from coming into contact with unprotected persons. In the health care setting, droplet and standard precautions, along with disinfection routine, can accomplish the goal of preventing spread if the patients are recognized as having influenza and if they are placed in isolation or cohorted with minimal transportation. In the early stages of a pandemic, housing infected patients in negative air pressure rooms would be feasible. However, airborne transmission is thought to be much less significant than ordinary droplet transmission, and the limited number of such rooms would preclude such accommodation as the number of people infected increases. [Indiana Code 16-41-9](#) provides the legal authority and procedure for the involuntary isolation of individuals or groups.

Quarantine

Quarantine measures are applied to individuals who are contacts of ill persons or other suspected exposure. Such individuals may be travelers returning from an affected region, household members of an influenza patient, or work colleagues who have been within 3 to 6 feet of an influenza patient. Quarantined individuals are sequestered from the general public and might be required to stay in their own residence or in a dedicated facility for a period of several days, during which time they should be monitoring their temperatures and reporting to public health officials if they develop fever. The latter arrangement is costly for authorities to maintain, but the former is difficult to enforce. Furthermore, individuals quarantined at home must also be isolated from other household members. [Indiana Code 16-41-9-1.5](#) provides the legal authority and procedure for establishing involuntary quarantine.

General public acceptance of quarantine in the United States is unlikely until the number of infected people increases and people begin to perceive the threat as personal. Furthermore, CDC suggests

that quarantine would be most effective in slowing the progression of cases in the early stages of the pandemic. The potential cost of large-scale quarantine coupled with the unpredictable level of benefit make the feasibility of this measure highly suspect.

Willingness of families to self-quarantine can be promoted by public service announcements (PSA) that encourage individuals to treat the quarantine as a prolonged “snow emergency day”. Communities can begin to promote this concept as part of educational efforts related to pandemic influenza. This measure could be applied in the earliest events of the pandemic with the hope of applying containment measures to those who are already ill, minimizing contact with individuals who are shedding virus, and allowing more time for availability of vaccine and antiviral medication use. A family’s ability to be compliant rests on their advance preparedness of family stockpiles that would permit them to live independently for up to one week (7 days). The American Red Cross has helpful materials to aid families in preparing for disasters (such as a pandemic) when they might need to stay home for an extended period of time (shelter in place). To assure that public safety and infrastructure remain in place, essential workers who provide these services must understand that they will report to work regardless of the “snow emergency day” advisory.

Social Distancing and Self-Shielding

Social distancing is a term used to describe measures that limit contact between people, i.e., reducing personal interactions. Examples of social distancing are self-initiation of limiting contact with people for social gatherings, closing schools, and canceling public events. All social distancing measures are attempts to decrease the spread of pandemic influenza, although the effectiveness of such measures is not clearly known.

Self-shielding refers to self-imposed exclusion from infected persons or those perceived to be infected, such as staying home from school or work during a pandemic, which may also be called self-isolation or self-quarantine.

Limitations on Public Gatherings

Possible limitations on public gatherings include: a) canceling or postponing large events, b) closing schools, and c) issuing public advisories to avoid close contact with other persons as much as possible. [Indiana Code 16-19-3-10](#) (ISDH) and [Indiana Code 16-20-1-24](#) (LHD) provide the legal authority for ordering schools and churches closed and forbidding public gatherings. The economic impact of these measures may be great, and there may be significant resistance from the public, as well as from key decision-makers, such as government officials. Advance discussions among these key decision-makers are vital to successfully achieving these measures.

ISDH guidance on limitations on public gatherings can be obtained through the ISDH pandemic influenza Web site: www.IN.gov/isdh/bioterrorism/PandemicFlu/index.htm.

Section 11. Managing Travel-related Risks

The Centers for Disease Control and Prevention (CDC) provides current information on outbreaks and public health events in countries outside of the U.S., as well as travel notices that describe the risk of exposure to a particular disease in a given country. Defining and describing levels of risk for travelers will clarify the need for the recommended preventive measures. This information can be found in the Traveler's Health section of the CDC Web site at www.cdc.gov/travel/outbreaks.htm. If the situation warrants, the Indiana State Department of Health (ISDH) will relay this information via the Indiana Health Alert Network (IHAN).

There are four different categories of travel notices. Criteria for issuing travel notices include: disease transmission, containment measures, quality of surveillance, and quality and accessibility to medical care. Protocols for management of suspect pandemic influenza passengers on flights landing in Indianapolis are under development in conjunction with the Marion County Health Department.

Section 12. Public Health Communication and Education

Because all aspects of society will be affected, efficient and effective communication with the general public will be a crucial element of managing an influenza pandemic. In keeping with the principles of crisis communication, messages must be caring and empathetic, while still communicating important information to citizens in an accurate, clear, and easily understood manner.

During a pandemic, the Indiana State Department of Health Office of Public Affairs (ISDH OPA) will follow the agency's Crisis Communication Plan. This plan provides guidelines on individual roles and responsibilities, various procedures, and identified methods of information dissemination.

Equally important will be information that is communicated to the public even before a pandemic begins. Indiana residents must understand the very real threat of an influenza pandemic, the steps that the health care community is taking to prepare for such an event, as well as the steps that they, as individuals, can take to prepare themselves.

Information dissemination can be accomplished in several ways. Information about pandemic influenza and links to other electronic sites will be made available on the ISDH Web site. A pandemic influenza listserv has been established to encourage the sharing of planning information and materials. As the media and public become more aware of the growing threat, experts will be available to speak about the threat and the steps being taken to prepare for such an event. Press releases will be issued to highlight plans developed by the ISDH based on information from CDC. During a pandemic, the ISDH will maintain a telephone hotline to address public concerns.

Various educational activities play an important role in pre-event communications. These educational offerings increase awareness of the threat of pandemic influenza among local health departments (LHD), the media, and, subsequently, the public at large. This education is accomplished by various methods: personal/expert presentations, via satellite linkages, or via Web-streamed seminars.

Both prior to and during a pandemic, preparations include answering certain basic questions. Many questions can be anticipated and answers prepared in advance. Although circumstances will dictate the answers in many cases, anticipating questions will greatly improve the effectiveness of the response to questions.

Research has shown that access to timely and accurate information greatly enhances the ability of people to deal with a crisis such as an influenza pandemic. By preparing as much as possible ahead of time, the ISDH and partner agencies and organizations improve their ability to provide the needed information in an effective manner.

Identified Vehicles of Crisis Information Dissemination

The ISDH OPA will use the following vehicles to provide risk communication and to inform and instruct the media, citizens, and partners/stakeholders about health and medical factors involved in the emergency:

- Media, including print, radio, and television
- ISDH Web site, partner/stakeholder Web sites, and media Web sites
- Printed materials, including Quick Facts sheets (available on the Web) and other specially prepared leaflets
- The Indiana Health Alert Network (IHAN) to send messages specifically to members of the media
- Public service announcements (PSA) in video, audio, and print formats
- Telephone calls to media and partners/stakeholders
- A telephone hotline to receive calls from concerned Hoosiers
- E-mail, using prepared media, LHDs, and partner/stakeholder lists and listservs
- Fax, using pre-programmed broadcast fax lists
- Partner newsletters and fax and/or e-mail distribution lists
- U.S. Postal Service and alternate mailing services to send video news releases and other bulky items

Education

The ISDH believes that educating the medical community and the general public is the primary means by which the effects of a pandemic will be mitigated in Indiana. The pandemic influenza education and awareness program is being managed through a subcommittee designed for that purpose. ISDH educators continue to develop educational sessions for a variety of audiences and in a variety of venues.

- All of Indiana's LHDs and hospitals have been educated on the nature, impact, and control methods of pandemic influenza.
- A statewide Pandemic Influenza Summit, held on March 23, 2006, was attended by more than 400 people, representing schools, health care, business, faith-based communities, government, first responders, and mental health sectors.
- All LHDs were asked to conduct Pandemic Influenza Town Hall Meetings in their local communities—to date, more than 90 percent of the counties have done so, with 274 local presentations attended by more than 9,700 people.
- 265 presentations given by ISDH staff involved a large variety of venues, including the business community, organization/association meetings, and local communities. A database is maintained of all educational presentations by ISDH personnel.
- A Train-the Trainer model is being implemented by District and local Public Health Coordinators to provide more extensive education for many organizations.
- Documents have been developed to address the needs of special populations such as the homeless, immunocompromised, and maternal/child health needs.

- Contacts have been developed to share information regularly with medical and nursing organizations.
- Representatives from the State and LHDs have been assisting various businesses and agencies to develop pandemic influenza preparedness plans.
- The Learning Content Management System (LCMS), which is available through a contractual agreement with the University of Illinois at Chicago (UIC) – This online educational resource allows registered users to perform a self-assessment of their training needs, then courses are recommended to help users enhance their knowledge base. Offerings specific to pandemic influenza are included with revised and/or additional courses being added as new information becomes available. The LCMS plans to add a Pandemic Influenza Simulation Exercise, which will involve training on a more advanced level, with practical applications.

Audiences to Receive Education

A variety of audiences need education about pandemic influenza, and virtually every Indiana resident will benefit from educational outreach. Education and training are ongoing for persons who have technical roles in preparedness and response for pandemic influenza, including public health and medical professionals, emergency management professionals, public safety personnel, public infrastructure personnel, elected officials, attorneys, as well as citizen volunteers who will provide support for professional activities.

ISDH educators interact with other responding agencies to help with the design of educational offerings for their employees. As educational modules become available and staff members are identified for various roles, schedules of educational sessions (including tabletop exercises and drills) are being designed, communicated, and posted on the ISDH Web site. Educators maintain databases to monitor the numbers, locations, and affiliations of persons being educated.

Section 13. Workforce Support: Psychosocial Considerations and Information Needs

Mental Health Support and Care

Mental health support and intervention related to a pandemic is an important part of the services needed. Early mental health interventions should focus on supporting public health activities aimed at reducing mortality and morbidity, offering psychological first aid, and identifying patients with serious mental illness who need psychiatric care. It will be necessary for primary care providers to be enlisted to assist in the provision of these support services. Professional educational support for issues pertinent to mental health care is available through the Indiana State Department of Health Public Health Preparedness and Emergency Response Division (ISDH PHER) range of services and the Indiana Family and Social Services Administration, Division of Mental Health and Addiction (FSSA/DMHA).

The response to an influenza pandemic poses substantial physical, personal, social, and emotional challenges to health care providers, public health officials, and other emergency responders and essential service workers. Critical stress levels may reach varying degrees of severity among health care providers and emergency responders throughout the duration of the response as well as the recovery phases of a pandemic. These critical stress levels may persist for more than a year.

The FSSA/DMHA has developed guidelines for mental health support during a pandemic. It is essential that all health care providers, public health officials, emergency responders, and essential service workers reside in the safest and healthiest environment possible by addressing the psychosocial needs of those that participate in the response to an influenza pandemic in Indiana.

The FSSA/DMHA provides guidance on development of appropriate mental health information messages. A pandemic will cause emotional stress for workers as well as victims and their families.

Stressors encountered during a pandemic include:

- Shortage of health care personnel
- Excessive illness and death
- Fear of contracting the disease
- Sense of powerlessness
- Prolonged separation from family
- Child-care and elder-care issues
- Shortages of food, medications, and other basic needs
- Limited contact with others due to restrictions on movement
- Confusing or complicated information

Health care facilities must plan for mental health support for staff and their families, patients and their families, and for patients who present to the facility believing they are ill but displaying no physical symptoms.

To counter the stress effects of a pandemic, health care providers need to:

- Educate all employees about the pandemic—what it is, how it will impact their jobs, what the employer is planning, and how the employees can prepare themselves and their families.
- Understand the normal responses to stressful situations and prepare staff to handle these reactions in patients and families.
- Partner with local mental health providers to plan for stress reduction programs that will best serve patients and staff.
- Educate the public about what to expect from the medical community when the pandemic arrives.
- Provide stress relief activities for staff.

With the guidance of the FSSA/DMHA, local mental health communities have developed educational information for the general public about the stress effects of the pandemic and suggested coping mechanisms. Health care facilities will require significant mental health support for patients and their families, as the normal standard of care may not be available to everyone, and fatality rates are likely to be higher than normal.

Appendix A

Population Impact of Pandemic Influenza in Indiana

An influenza pandemic is defined as a worldwide outbreak of influenza caused by the introduction of a new influenza virus or one that has not circulated for a significant number of years. Past influenza pandemics have resulted in high levels of morbidity and mortality. Part of the planning for pandemic influenza is to understand the impact on the population and the health care system.

Estimation of the impact of an influenza pandemic was developed by using two Centers for Disease Control and Prevention (CDC) modeling programs. While the estimations by the two programs differ in actual calculations, the trends they present are similar. The two programs were used because they provided estimations on different segments of a pandemic impact, all of which are important for health care planning.

FluSurge

FluSurge is a CDC spreadsheet-based effort to allow public health officials and hospital administrators to estimate the impact of an influenza outbreak in their state, local jurisdiction, or service area. The estimates are based on the population and its age distribution, the number of hospital beds, the number of intensive care unit (ICU) beds, and the number of ventilators. The program focuses on hospital admissions, ICU usage, and ventilator usage.

In order for the program to make estimations, some assumptions had to be made by the developers:

- Average length of hospital stay for influenza-related illness is 7 days.
- Average length of ICU stay for influenza-related illness is 10 days.
- Average length of ventilator usage for influenza-related illness is 10 days.
- An average of 15 percent of admitted influenza patients will need ICU care.
- An average of 7.5 percent of admitted influenza patients will need ventilators.

To provide estimations of the impact on Indiana's population and health care system, the estimated 2004 census was used. The Indiana State Health Department (ISDH) Acute Care and Public Health Preparedness and Emergency Response Divisions provided the number of staffed hospital beds (17,374), the number of staffed ICU beds (2,464), and the number of ventilators (1,736). With this information, the estimates of impact on Indiana's population from a pandemic influenza were calculated at a 25 percent attack rate. Those estimates are presented here.

Table 1. Hospital Admissions and Deaths

Pandemic Influenza/Attack Rate	25 Percent
<i>Total Hospital Admissions</i>	
Most Likely Scenario	20,823
Minimum Scenario	8,232
Maximum Scenario	27,986
<i>Total Deaths</i>	
Most Likely Scenario	4,110
Minimum Scenario	2,365
Maximum Scenario	6,916

Figure 1. Distribution of Admissions: By Week, Eight Week Outbreak, 25% Attack Rate

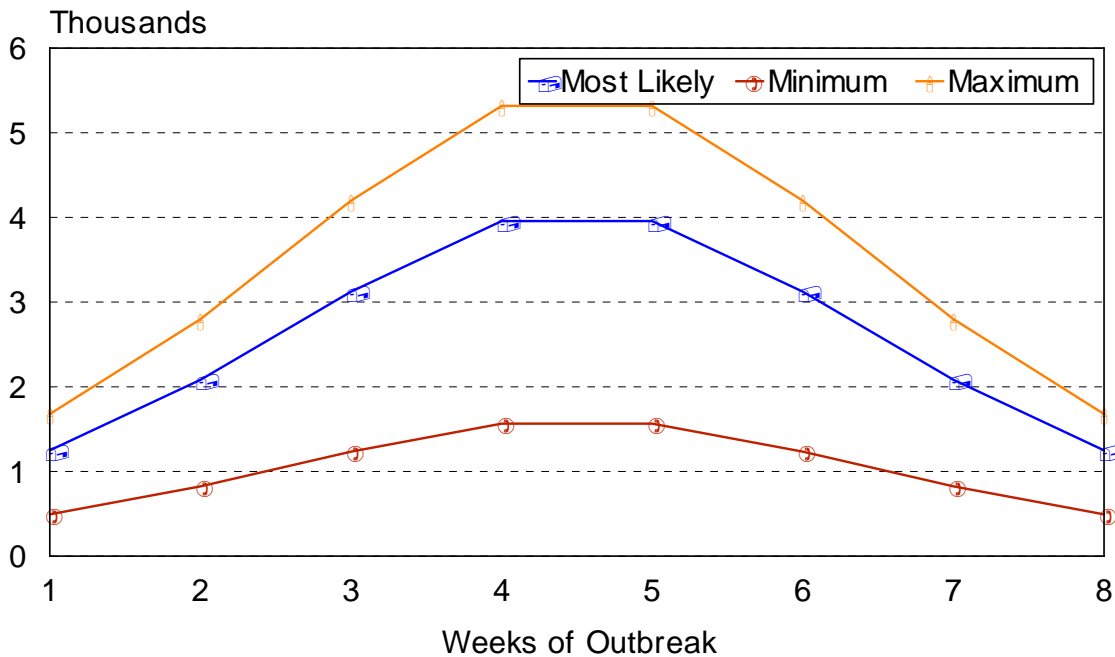


Table 2. Pandemic Influenza Impact on Hospital Admissions and Capacity

Pandemic Influenza Impact by Week		1	2	3	4	5	6	7	8	9	10
Hospital Admissions	Weekly admissions	1249	2082	3123	3956	3956	3123	2082	1249		
	Peak admissions/day				617	617					
Hospital Capacity	# influenza patients in hospital	918	1531	2296	2908	3011	2647	2030	1332		
	% of hospital capacity needed	5%	9%	13%	17%	17%	15%	12%	8%		
ICU Capacity	# of influenza patients in ICU	187	397	610	806	872	849	674	466		
	% of ICU capacity needed	8%	16%	25%	33%	35%	34%	27%	19%		
Ventilator Capacity	# of influenza patients on ventilators	94	199	305	403	436	424	337	233		
	% usage of ventilators	5%	11%	18%	23%	25%	24%	19%	13%		
Deaths	# of deaths from influenza			247	411	616	781	781	616	411	247
	# of deaths in hospitals			173	288	432	547	547	432	288	173

FluAid

FluAid was designed to provide a range of estimates of impact in terms of deaths, hospitalizations, and outpatient visits. The program only models the total impact of a pandemic influenza outbreak. The program comes with a number of defaults, including percent of the population by age group considered as high risk. These defaults are based on national estimations and were used to develop an Indiana model.

FluAid estimations are based on the population being divided into three population groups: 0-18, 19-64, and 65+. For the purposes of this Plan, Indiana population age groups used were 0-19, 20-64, 65+ and were based on the estimated 2004 population.

The use of FluAid was also used to determine the potential differences in health care impact from a moderate outbreak, e.g., the 1968 pandemic, or from a severe outbreak, e.g., the 1918 pandemic.

The following chart provides estimations of the deaths, hospitalizations, outpatient visits, and the number of individuals who are ill but do not seek medical care. Two presentations were prepared, one for a moderate illness such as occurred in 1968 and another for a severe illness such as occurred in 1918. Estimates are provided for a most likely minimum and maximum impact.

Table 3. Estimated Impact of Pandemic Influenza on Indiana's Population* by Age Groups

Health Outcome	Moderate Scenario (1968-type) 25 Percent Attack Rate			Severe Scenario (1918-type) 25 Percent Attack Rate		
	Most Likely	Minimum	Maximum	Most Likely	Minimum	Maximum
Deaths						
0-19	46	27	642	381	221	5,275
20-64	1,938	408	3,640	15,933	2,282	29,917
65+	2,125	2,060	2,635	17,466	16,937	21,663
Total	4,109	2,364	6,917	33,780	19,440	56,855
Hospitalizations						
0-19	830	408	3,480	6,820	3,356	28,610
20-64	11,452	2,119	12,502	94,132	17,421	102,770
65+	5,665	4,050	7,161	46,567	33,287	58,865
Total	17,947	6,577	23,143	147,519	54,064	190,245
Outpatient Visits						
0-19	262,755	219,512	305,998	207,402	218,140	285,214
20-64	478,050	343,241	729,667	427,668	336,570	636,537
65+	100,590	94,689	156,149	72,471	72,508	96,202
Total	841,395	657,673	1,191,814	707,541	627,218	1,017,953
# Ill No Med Care						
0-19	180,632	224,316	134,431	142,348	222,546	125,165
20-64	437,914	583,586	183,545	391,621	573,080	160,130
65+	80,210	93,578	28,432	57,873	71,644	17,647
Total	697,342	901,480	346,408	591,842	876,270	302,942
Expected Ill						
0-19	444,263	444,263	444,263	444,263	444,263	444,263
20-64	929,354	929,354	929,354	929,354	929,354	929,354
65+	194,377	194,377	194,377	194,377	194,377	194,377
Total	1,567,994	1,567,994	1,567,994	1,567,994	1,567,904	1,567,904

*2004 Estimated Population of 6,271,973

Appendix B. Medical Offices and Clinics Checklist
(from HHS Plan, November 2005)

Medical Offices and Clinics Pandemic Influenza Planning Checklist			
NS - Not Started, IP - In Progress, C - Completed			
Action/Task	NS	IP	C
1. Structure for planning and decision-making			
Pandemic influenza has been incorporated into emergency management planning for the organization.			
<ul style="list-style-type: none"> • A planning committee¹ has been created to specifically address pandemic influenza preparedness for the medical office or clinic. 			
A person has been assigned responsibility for coordinating preparedness planning for the practice or organization (hereafter referred to as the pandemic influenza response coordinator). (Insert name, title, and contact information):			
Members of the planning committee include the following (insert below or attach list with name, title, and contact information for each):			
Administration: _____			
Medical Staff: _____			
Nursing Staff: _____			
Reception Staff: _____			
Environmental Services (if applicable): _____			
Clinic Laboratory Staff (if applicable): _____			
Other Member(s): _____			

Action/Task	NS	IP	C
1. Structure for planning and decision-making (cont.)			
A point of contact (e.g., person assigned infection control responsibility for the organization or an outside consultant ²) for questions/consultation on infection control measures to prevent transmission of pandemic influenza has been identified. (Insert name, title, and contact information):			
2. Development of a written pandemic influenza plan			
Copies of relevant sections of the Department of Health and Human Services (HHS) Pandemic Influenza Plan have been obtained from www.hhs.gov/pandemicflu/plan ; copies of available state pandemic plans have also been obtained.			
A written plan has been completed or is in progress that includes the elements listed in #3 below.			
The plan describes the organizational structure that will be used to operationalize (i.e., lines of authority) the plan.			
The plan incorporates and complements the community response plan.			
3. Elements of an influenza pandemic plan			
A plan is in place for surveillance and detection of pandemic influenza in the population served.			
<ul style="list-style-type: none"> Responsibility has been assigned for monitoring public health advisories (federal and state) and informing members of the pandemic influenza planning committee and/or the pandemic influenza response coordinator when pandemic influenza is in the U.S. and when it is nearing the geographic area (e.g., state and/or city). (For more information, see www.cdc.gov/flu/weekly/fluactivity.htm) (Insert name, title, and contact information): 			

Action/Task	NS	IP	C
3. Elements of an influenza pandemic plan (cont.)			
<ul style="list-style-type: none"> A system has been created to monitor and review influenza activity in patients cared for by clinical staff (i.e., weekly or daily number of patients calling or presenting to the office or clinic with influenza-like illness) and among medical office or clinic staff. (For more information, see www.cdc.gov/flu/professionals/diagnosis/) (Monitoring for seasonal influenza activity is performed to ensure that the monitoring system for pandemic influenza will be effective and will ensure that organizations can detect stressors that may affect organizational capacity, such as staffing and supply needs, and hospital and emergency department capacity [and supply needs] during a pandemic.) 			
<ul style="list-style-type: none"> A system is in place to report unusual cases of influenza-like illness and influenza to the local or state health department. (For more information, see www.hhs.gov/pandemicflu/plan/sup1.html#outpat and www.hhs.gov/pandemicflu/plan/sup5.html#nov.) 			
A communication plan has been developed.			
<ul style="list-style-type: none"> Key public health points of contact for pandemic influenza have been identified, and arrangements have been made for telephone, facsimile, or e-mail messaging. 			
<ul style="list-style-type: none"> Local health department contact (Insert name, title, and contact information): 			
<ul style="list-style-type: none"> State health department contact (Insert name, title, and contact information): 			
<ul style="list-style-type: none"> The office or clinic's point person for external communication has been assigned. (Insert name, title, and contact information): 			
<p><i>(Having one person who speaks with the health department and, if necessary, media, local politicians, etc., will help ensure consistent communication is provided by the organization.)</i></p>			
<ul style="list-style-type: none"> A list has been created of health care entities and their points of contact (e.g., local hospitals/health facilities, home health care agencies, social service agencies, emergency medical services, commercial and clinical laboratories, relevant community organizations [including those involved with disaster preparedness]) with whom the medical office or clinic anticipates it will be necessary to maintain communication and coordination of care during a pandemic. (Attach or insert location of contact list) 			

Action/Task	NS	IP	C
3. Elements of an influenza pandemic plan (cont.)			
<ul style="list-style-type: none"> The pandemic response coordinator has contacted local or regional pandemic influenza planning groups to obtain information on communication and coordination plans, including notification when updated plans are created. (For more information on state and local planning, see www.hhs.gov/pandemicflu/plan/part2.html#overview.) 			
<ul style="list-style-type: none"> A list or database has been created with contact information on patients who have regularly scheduled visits and may need to be contacted during a pandemic for purposes of rescheduling office visits or assigning them to another point of care. (Insert location of list/database): 			
A plan is in place to provide an education and training program to ensure that all personnel understand the implications of, and control measures for, pandemic influenza.			
<ul style="list-style-type: none"> A person has been designated to coordinate education and training (e.g., identify and facilitate access to education and training programs, maintain a record of attendance at education and training programs). (Insert name, title and contact information): 			
<ul style="list-style-type: none"> Current and potential opportunities for distance learning (e.g., Web-based) and local (e.g., health department- or hospital-sponsored programs, programs offered by professional organizations or federal agencies) education of medical and nursing personnel have been identified. (http://www.cdc.gov/flu/professionals/training/) 			
<ul style="list-style-type: none"> Language- and reading-level appropriate materials on pandemic influenza (e.g., available through state and federal public health agencies and professional organizations) appropriate for professional, allied, and support personnel have been identified, and a plan is in place for obtaining these materials. (For more information, see www.cdc.gov/flu/professionals/patiented.htm.) 			
<ul style="list-style-type: none"> Education and training includes information on infection control measures to prevent the spread of pandemic influenza. www.hhs.gov/pandemicflu/plan/sup4.html 			
Informational materials for patients on pandemic influenza that are language- and reading-level appropriate for the population being served have been identified, and a plan is in place to obtain these materials. (For more information, see www.cdc.gov/flu/professionals/patiented.htm.)			
<ul style="list-style-type: none"> The roles of medical and nursing personnel in providing health care guidance for patients with pandemic influenza have been established. 			

Action/Task	NS	IP	C
3. Elements of an influenza pandemic plan (cont.)			
A plan for triage and management of patients during a pandemic has been developed.			
<ul style="list-style-type: none"> A system is in place for phone (and e-mail, where appropriate) triage of patients to determine who requires a medical evaluation, to limit office visits to those that are medically necessary. 			
<ul style="list-style-type: none"> Plans have been developed to manage patient care at the height of the pandemic including the following possibilities: 			
<ul style="list-style-type: none"> Temporarily canceling non-essential medical visits (e.g., annual physicals). 			
<ul style="list-style-type: none"> Designating separate blocks of time for non-influenza and influenza-related patient care. 			
<ul style="list-style-type: none"> Local plans and criteria for the disposition of patients following a medical evaluation (e.g., hospitalization, home health care services, self- or family-based care at home) have been discussed with local hospital and health care agencies and local health department. (Flexibility will be necessary based on hospital bed capacity.) 			
<p>An infection control plan is in place and includes the following (for information on infection control recommendations for pandemic influenza, see www.hhs.gov/pandemicflu/plan/sup4.html):</p>			
<ul style="list-style-type: none"> A specific waiting room location has been designated for patients with symptoms of pandemic influenza that is segregated from other patients awaiting care. (This may not be feasible in very small waiting rooms, in which case the emphasis may be on use of masks as noted below.) 			
<ul style="list-style-type: none"> A plan for implementing respiratory hygiene/cough etiquette is in place. (For more information, see www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm.) 			
<ul style="list-style-type: none"> Signage (language appropriate) directing patients and those accompanying them to notify reception personnel if they have symptoms of pandemic influenza has been developed, or a source of signage (e.g., CDC Web site above) has been identified. 			
<ul style="list-style-type: none"> Signage (language appropriate) on Respiratory Hygiene/Cough Etiquette, instructing symptomatic persons to use tissues to cover their cough to contain respiratory secretions and perform hand hygiene, has been developed or a source of signage (e.g., CDC Web site above) has been identified. 			
<ul style="list-style-type: none"> The plan includes distributing masks to symptomatic patients who are able to wear them (adult and pediatric sizes should be available), providing facial tissues, receptacles for their disposal, and hand-hygiene materials in waiting areas and examination rooms. 			
<ul style="list-style-type: none"> Implementation of Respiratory Hygiene/Cough Etiquette has been exercised during seasons when influenza and other respiratory viruses (e.g., respiratory syncytial virus, parainfluenza virus) are circulating in communities. 			

Action/Task	NS	IP	C
3. Elements of an influenza pandemic plan (cont.)			
If patients with pandemic influenza will be evaluated in the same location as patients without an influenza-like illness, separate examination rooms have been designated for evaluation of patients with symptoms of pandemic influenza.			
A policy is in place that requires health care personnel to use Standard (www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html) and Droplet Precautions (i.e., mask for close contact) (www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html) with symptomatic patients.			
The policy includes protection of reception and triage personnel at initial points of patient encounter.			
A vaccine and antiviral use plan has been developed.			
<ul style="list-style-type: none"> Web sites where current federal and/or state health department recommendations for the use and availability of pandemic influenza vaccines and antiviral medications have been identified. (For more information, see www.hhs.gov/pandemicflu/plan/sup6.html.) 			
<ul style="list-style-type: none"> An estimate of the number of personnel and patients who would be targeted as first and second priority for receipt of pandemic influenza vaccine or antiviral prophylaxis, based on HHS guidance for use, has been developed (www.hhs.gov/pandemicflu/plan/appendixd.html). (This estimate can be used for considering which patients may need to be notified first about vaccine or antiviral availability, anticipating staffing requirements for distribution of vaccines and antivirals, and for procurement purposes.) 			
An occupational health plan has been developed and includes the following:			
<ul style="list-style-type: none"> A liberal/non-punitive sick leave policy for managing personnel who have symptoms of, or documented illness with, pandemic influenza. The policy considers: 			
The handling of staff who become ill at work.			
When personnel may return to work after recovering from pandemic influenza.			
When personnel who are symptomatic, but well enough to work, will be permitted to continue working.			
Personnel who need to care for their ill family members.			

Action/Task	NS	IP	C
3. Elements of an influenza pandemic plan (cont.)			
<ul style="list-style-type: none"> • A system for evaluating symptomatic personnel before they report for duty and tested during a non-pandemic influenza period. 			
<ul style="list-style-type: none"> • Mental health and faith-based resources that are available to provide counseling to personnel during a pandemic. 			
<ul style="list-style-type: none"> • The management of personnel who are at increased risk for influenza complications (e.g., pregnant women, immunocompromised health care workers) by placing them on administrative leave or altering their work location. 			
<ul style="list-style-type: none"> • The ability to monitor seasonal influenza vaccination of health care personnel. 			
<ul style="list-style-type: none"> • The offer of annual influenza vaccine to medical office or clinic personnel. 			
Issues related to surge capacity (i.e., dealing with an influx of patients and staff and supply shortages) during a pandemic have been addressed. (For more information, see www.hhs.gov/pandemicflu/plan/sup3.html#surge.)			
<ul style="list-style-type: none"> • Plans for managing a staffing shortage within the organization due to illness in personnel or their family members have been addressed. 			
<ul style="list-style-type: none"> • Staff have been encouraged to develop their own family care plans for the care of dependent minors and seniors in the event community containment measures (e.g., "snow days", school closures) are implemented. (www.pandemicflu.gov/planguide/checklist.html; www.pandemicflu.gov/planguide/familyhealthinfo.html) 			
<ul style="list-style-type: none"> • The minimum number and categories of personnel necessary to keep the office/clinic open on a given day have been determined. 			
<ul style="list-style-type: none"> • Plans for either closing the office/clinic or recruiting temporary personnel during a staffing crisis have been addressed. 			
<ul style="list-style-type: none"> • Anticipated consumable resource needs (e.g., masks, gloves, hand-hygiene products, medical supplies) have been estimated. 			
<ul style="list-style-type: none"> • A primary plan and contingency plan to address supply shortages have been developed, and each details procedures for acquisition of supplies through normal channels, as well as requesting resources when normal channel resources have been exhausted. 			
<ul style="list-style-type: none"> • Plans include stockpiling at least a week's supply of consumable resources, including all necessary medical supplies, when there is evidence that pandemic influenza has reached the United States. 			

Appendix C.1

Indiana State Department of Health Tasks List

(Adapted from the HHS Plan of November 2005 and the ISDH Plan of August 2005)

Indiana State Department of Health Interpandemic Period	
No. ¹	Action/Task
I1.	Establish a Pandemic Preparedness Coordinating Committee that represents all relevant stakeholders in the jurisdiction (including governmental, public health, health care, emergency response, agriculture, education, business, communication, and community- and faith-based sectors, as well as private citizens) and that is accountable for articulating strategic priorities and overseeing the development and execution of the jurisdiction's operational pandemic plan. (Also known as the Community Advisory Group or CAG)
I2.	Coordinate planning and formalize agreements with neighboring states/jurisdictions and address communication, mutual aid, and other cross-jurisdictional needs.
I3.	Coordinate with C-TASC about pandemic influenza and roles of member agencies.
I4.	Delineate accountability and responsibility, capabilities, and resources for key stakeholders engaged in planning and executing specific components of the operational plan. Assure that the plan includes timelines, deliverables, and performance measures.
I5.	Address integration of state, local, tribal, territorial, and regional plans across jurisdictional boundaries in the plan.
I6.	Estimate number of essential staff responding to a pandemic with expanded shift assignments.
I7.	Create an Incident Command System for the pandemic plan based on the National Incident Management System and exercise this system along with other operational elements of the plan.
I8.	Identify the authority responsible for declaring a public health emergency at the state and local levels and for officially activating the pandemic influenza response plan.
I9.	Identify the state and local law enforcement personnel who will maintain public order and help implement control measures.
I10.	Educate law enforcement officials so they can pre-plan for their families and sustain themselves during the emergency.
I11.	Maintain a current roster of all active and formerly active health care personnel available for emergency health care services.
I12.	Identify potential sources of funding. Authorize relaxed procurement rules in the event of a large-scale emergency.
I13.	Develop policies to address work responsibilities for ill essential employees and contractors.

¹ The letter/numbering guide is provided for quick reference and ease of use. They do not indicate the proper sequence of actions/tasks. I = Interpandemic, A = Pandemic Alert, P = Pandemic Period.

I14.	Appointment of ISDH Technical Advisory Group (TAG) available to State Health Commissioner for rapid consultation on pandemic issues.
I15.	Update LHDs through usual communication methods, including biweekly conference calls.
I16.	Work with health care partners and other stakeholders to develop state-based plans for vaccine distribution, use, and monitoring; and for communication of vaccine status.
I17.	Determine the availability, efficacy, legal authority, and cost of stockpiling antivirals, masks, ventilators.
I18.	Develop state-based plans for distribution and use of antiviral drugs during a pandemic via the Strategic National Stockpile (SNS), as appropriate, to health care facilities that will administer the drugs to priority groups. Establish methods for monitoring and investigating adverse events.
I19.	Exercise an operational plan that addresses the procurement, storage, security, distribution, and monitoring actions necessary (including vaccine safety) to ensure access to this product during a pandemic.
I20.	Be aware of LHD/District preparedness for availability of care facilities, including alternate care sites.
I21.	Develop and maintain a file of all pandemic-related relevant legal documents as templates for use by local jurisdictions.
I22.	Confirm legal authority for quarantine.
I23.	Educate judges, the Attorney General's Office, county attorneys, public safety officials, and law enforcement personnel on laws enabling community containment, their roles, and necessary procedures.
I24.	Develop a continuity of operations plan (COOP) for essential ISDH services, including cross-training programs and contingency planning for increasing the public health workforce in response to absenteeism among health department staff and stakeholder groups that have key responsibilities.
I25.	Develop workforce resilience programs and ensure readiness to deploy to maximize responders' performance and personal resilience during a public health emergency.
I26.	Conduct year-round surveillance for seasonal influenza/influenza-like illness (ILI) (e.g., virologic, sentinel network, outpatient visits, hospitalization, and mortality data), including electronic reporting.
I27.	Improve capacity for rapid identification of unusual influenza strains by working with federal partners to enhance laboratory-based monitoring of seasonal influenza subtypes.
I28.	Develop and be prepared to implement enhanced surveillance once a pandemic is detected to ensure recognition of the first cases of pandemic virus infection in time to initiate appropriate containment protocols. Exercise enhanced surveillance protocol regularly.
I29.	Link and routinely share influenza data from animal and human health surveillance systems.
I30.	Verify laboratory capabilities for testing specimens, typing for novel virus strains.
I31.	Institute surveillance for ILI among laboratory personnel working with novel influenza viruses.
I32.	Develop and test a plan for surge capacity of public health and clinical laboratories to meet the needs of the jurisdiction during a pandemic.
I33.	Assess regularly the influenza diagnostic testing proficiency and adherence to biosafety containment and biomonitoring protocols.
I34.	Ensure appropriate local health authorities have access to EPI-X and are trained in its use.

I35.	Guidance to LHDs, sentinels re: unusual occurrences of ILI, suspect influenza vaccine failures.
I36.	Ensure the Indiana Health Alert Network (IHAN) reaches at least 80 percent of Indiana's practicing, licensed, frontline health care personnel and links via the communication network to other pandemic responders.
I37.	Develop and maintain up-to-date communications contacts of key stakeholders and exercise the plan to provide regular updates.
I38.	Ensure the provision of redundant communication systems/channels that allow for the expedited transmission and receipt of information.
I39.	Develop and test a plan (as part of the communication plan) to regularly update providers as the influenza pandemic unfolds.
I40.	Prepare strategies and establish relationships with LHDs and stakeholders to ensure accurate and consistent messages.
I41.	Prepare strategies to educate the public about the threat of pandemic influenza, using the media, the ISDH Web site, fact sheets/flyers.
I42.	Prepare and present educational material on pandemic influenza for numerous audiences, update as needed (including volunteers and the general public).
I43.	Educate partners and stakeholders on the ISDH and Indiana Pandemic Influenza Plan.

Indiana State Department of Health Pandemic Alert Period

No.	Action/Task
A1.	Notify government officials and legislators of potential pandemic status and the need for additional resources.
A2.	When novel virus is identified, alert partners, hospitals, providers, public (all stakeholders).
A3.	Review all elements of ISDH Plan, modify and update according to federal recommendations and information on a novel virus.
A4.	Assure that the operational plan for pandemic influenza response is an integral element of the overall state and local emergency response plan established under Federal Emergency Support Function 8 (ESF8): Health and medical service and compliant with National Incident Management System (NIMS).
A5.	Ensure that the plans are scalable, to the magnitude and severity of the pandemic and available resources. Revise as necessary.
A6.	Ensure existence of a demographic profile (including special needs populations and language minorities) and ensure that the needs of these populations are addressed in the operational plan.
A7.	Identify for all stakeholders the legal authorities responsible for executing the operational plan, especially those authorities responsible for case identification, isolation, quarantine, movement restriction, health care services, emergency care, and mutual aid.
A8.	Make clear to all stakeholders the process for requesting, coordinating, and approving requests for resources from federal agencies.
A9.	Assess influenza activity level in Indiana through surveillance mechanisms, including hospitals, outpatient providers, and sentinel network physicians.
A10.	Inform frontline clinicians and laboratory personnel of protocols for safe specimen collection and testing, how and to whom a potential case of novel influenza should be reported.
A11.	Inform frontline clinicians and laboratory personnel of the indications and mechanism for specimen collection and testing.
A12.	Assess need to screen travelers arriving in Indiana from affected countries, implement screening.
A13.	Request that the Indiana Board of Animal Health (BOAH) contact the ISDH if birds/animals are suspect avian influenza cases.
A14.	Communicate with CDC on availability of vaccine and antivirals, initiate procurement of vaccine and antivirals, if available.
A15.	Ensure the operational plan delineates procedures for tracking the number and priority of vaccine recipients, where and by whom vaccinations will be given.
A16.	Address vaccine security issues, cold chain requirements, transport and storage issues, and biohazardous waste issues in the operational plan.
A17.	Document with written agreements the commitments of participating personnel and organizations in the vaccination operational plan.
A18.	Antiviral use guidelines disseminated to pertinent stakeholders.
A19.	Revise <i>Protocol for Mass Prophylaxis</i> as new information becomes available.

A20.	Test the operational plan that addresses the procurement, storage, security, distribution, and monitoring actions necessary to assure access to antivirals during a pandemic.
A21.	Review and revise plans for distribution and use of vaccine and antivirals, based on CDC recommendations and availability.
A22.	Ensure the jurisdiction has a contingency plan if unlicensed antiviral drugs administered under Investigational New Drug or Emergency Use Authorization provisions are needed.
A23.	Ensure the jurisdiction has exercised the operational plan to implement various levels of movement restrictions within, to, and from the jurisdiction.
A24.	Exercise the jurisdiction's containment operational plan that delineates procedures for isolation and quarantine, the procedures and legal authorities for implementing and enforcing these containment measures (such as school closures; canceling public transportation services; and other movement restrictions within, to, and from the jurisdiction) and the methods that will be used to support, service, and monitor those affected by these containment measures in health care facilities, other residential facilities, homes, community facilities, and other settings.
A25.	Craft messages to help educate health care providers about novel and pandemic influenza.
A26.	Craft messages to help educate health care providers about novel and pandemic influenza, and infection control and clinical guidelines.
A27.	Identify and train lead and back-up subject-specific spokespersons.
A28.	Provide public health communications staff with training on risk communication for use during an influenza pandemic.
A29.	Disseminate information on what people can do to protect themselves from infection and on family preparedness.
A30.	Provide timely and accurate information to the public about emerging influenza strains that could lead to a pandemic. (ISDH Web site, media)
A31.	Without violating state confidentiality laws, inform the public about the appearance of emerging strains in Indiana.
A32.	Assess readiness to meet communication needs in preparation for an influenza pandemic, including regular review, exercise, and update of communication plans.
A33.	Test the communication operational plan that addresses the needs of targeted public, private sector, governmental, public health, medical, and emergency response audiences; identifies priority channels of communication; delineates the network of communications personnel, including lead spokespersons and persons trained in emergency risk communication; and links to other communication networks.
A34.	Implement and maintain, as appropriate, community resources, such as hotlines and Web site, to respond to local questions from the public and professional groups.
A35.	Assure that the development of public health messages has included the expertise of behavioral health experts.
A36.	Ensure availability of psychosocial support services (including educational and training materials) for employees who participate in, or provide support for, the response to public health emergencies such as influenza pandemics.
A37.	Address provision of psychosocial support services for the community, including patients and their families, and those affected by community containment procedures in the Plan.

Indiana State Department of Health Pandemic Period	
No.	Action/Task
P1.	Update/Revise Pandemic Influenza Plan based on epidemiology of disease.
P2.	Update and coordinate with LHDs, partner agencies and organizations (all stakeholders).
P3.	Activate Department Operations Center (DOC) at ISDH; contact Indiana Department of Homeland Security (IDHS) re: Emergency Operations Center (EOC) activation.
P4.	Activate Continuity of Operations Plan (COOP) and revised personnel assignments.
P5.	Activate and staff hotline.
P6.	Coordinate with bordering jurisdictions, link to bordering states' health department Web sites.
P7.	Coordinate implementation of pandemic response plans (all stakeholders).
P8.	Obtain and track information daily during a pandemic (coordinating with epidemiologic and medical personnel) on the numbers and location of newly hospitalized cases, newly quarantined persons, and hospitals with pandemic influenza cases. Use these reports to determine priorities among community outreach and education efforts.
P9.	With CDC, assess epidemiology of outbreaks in Indiana and globally.
P10.	Ensure that the Plan provides for real-time situational awareness of patient visits, hospital bed and intensive care needs, medical supply needs, and medical staffing needs during a pandemic.
P11.	Prioritize laboratory specimens, use prearranged plans for triage of specimens for testing, isolates to CDC.
P12.	Determine if and when to curtail specimens for laboratory testing.
P13.	Expand laboratory diagnosis, use rapid antigen tests for persons with compatible clinical symptoms.
P14.	Ensure completeness, timeliness of ILI reports from all participating facilities, including sentinel provider network.
P15.	Continue collaboration with all networks, LHDs, and Districts to investigate and/or monitor outbreaks.
P16.	Implement use of antivirals and pandemic influenza vaccine per epidemiology of the outbreak and priority group recommendations.
P17.	Reconfirm and disseminate antiviral guidelines to medical community.
P18.	Activate SNS and mass prophylaxis plan as appropriate.
P19.	Implement distribution of antiviral stockpile per CDC recommendations; obtain additional antivirals if possible.
P20.	Monitor for antiviral resistance and adverse drug reactions.
P21.	Inform citizens in advance about where they can be vaccinated.
P22.	Begin distribution of vaccine, if available, and immunization of priority groups.
P23.	Monitor vaccine distribution and usage.
P24.	Monitor vaccination coverage, effectiveness, and safety (adverse reactions).
P25.	Monitor antiviral and vaccine supply and demand, and redistribute as needed.

P26.	Reassess containment strategies (isolation, quarantine, restrictions); implement new strategies as needed.
P27.	Regularly disseminate information to public and partners by various methods.

Appendix C.2

Local Health Department Checklist

(Adapted from the HHS Plan of November 2005 and the ISDH Plan of August 2005)

Local Health Department: Interpandemic Period				
NS - Not Started, IP - In Progress, C - Completed				
No.	Action/Task	NS	IP	C
I1.	Establish a Pandemic Preparedness Coordinating Committee that represents all relevant stakeholders in the jurisdiction (including governmental, public health, health care, emergency response, agriculture, education, business, communication, and community- and faith-based sectors, as well as private citizens) and that is accountable for articulating strategic priorities and overseeing the development and execution of the jurisdiction's operational pandemic plan.			
I2.	Delineate accountability and responsibility, capabilities, and resources for key stakeholders engaged in planning and executing specific components of the operational plan. Assure that the plan includes timelines, deliverables, and performance measures.			
I3.	Address integration of state, local, tribal, territorial, and regional plans across jurisdictional boundaries in the plan.			
I4.	Formalize agreements with neighboring jurisdictions and districts and address communication, mutual aid, and other cross-jurisdictional needs.			
I5.	Create an Incident Command System (ICS) for the pandemic plan based on the National Incident Management System (NIMS) and exercise this system along with other operational elements of the plan.			
I6.	Identify the authority responsible for declaring a public health emergency at the state and local levels and for officially activating the pandemic influenza response plan.			
I7.	Identify the state and local law enforcement personnel who will maintain public order and help implement control measures.			
I8.	Estimate number of essential staff responding to a pandemic with expanded shift assignments.			
I9.	Maintain a current roster of all active and formerly active health care personnel available for emergency health care services.			
I10.	Develop policies to address work responsibilities for ill essential employees and contractors.			

No.	Action/Task	NS	IP	C
I11.	Develop a continuity of operations plan (COOP) for essential health department services, including cross-training programs and contingency planning for increasing the public health workforce in response to absenteeism among health department staff and stakeholder groups that have key responsibilities under a community's response plan.			
I12.	Develop workforce resilience programs and ensure readiness to deploy to maximize responders' performance and personal resilience during a public health emergency.			
I13.	Identify potential sources of funding. Authorize relaxed procurement rules in the event of a large-scale emergency.			
I14.	Confirm legal authority for quarantine in local community.			
I15.	Monitor availability of care facilities, including alternate care sites.			
I16.	Report all influenza-related deaths to the ISDH.			
I17.	Prepare strategies and establish relationships with partners and stakeholders to ensure accurate and consistent messages.			
I18.	Prepare and present educational material on pandemic influenza for numerous audiences, update as needed (including volunteers and general public).			
I19.	Educate partners and stakeholders on ISDH and Indiana Pandemic Influenza Plan.			
I20.	Develop and maintain up-to-date communications contact information for key stakeholders and exercise the plan to provide regular updates.			
I21.	Ensure the provision of redundant communication systems/channels that allow for the expedited transmission and receipt of information.			
I22.	Develop and test a plan (as part of the communication plan) to regularly update providers.			

Local Health Department: Pandemic Alert Period

NS - Not Started, IP - In Progress, C - Completed

No.	Action/Task	NS	IP	C
A1.	Review all elements of local and district plans, modify and update according to federal recommendations and information on novel virus.			
A2.	Notify government officials and legislators of potential pandemic status and need for additional resources.			
A3.	Assure that the operational plan for pandemic influenza response is an integral element of the overall state and local emergency response plan established under Federal Emergency Support Function 8 (ESF8): Health and medical service and compliant with National Incident Management System.			
A4.	Ensure that the plans are scalable, to the magnitude and severity of the pandemic and available resources. Revise as necessary.			
A5.	Ensure existence of a demographic profile of the community (including special needs populations and language minorities) and ensure that the needs of these populations are addressed in the operational plan.			
A6.	Exercise the jurisdiction's operational plan to investigate and contain potential cases or local outbreaks of influenza potentially caused by a novel or pandemic strain.			
A7.	Identify for all stakeholders the legal authorities responsible for executing the operational plan, especially those authorities responsible for case identification, isolation, quarantine, movement restriction, health care services, emergency care, and mutual aid.			
A8.	Make clear to all stakeholders the process for requesting, coordinating, and approving requests for resources from state agencies.			
A9.	Assist in establishing and promoting community-based task forces that support health care institutions on a local or regional basis.			
A10.	Coordinate and test the operational plan for the health care sector (as part of the overall plan) that addresses safe and effective: 1) health care of persons with influenza during a pandemic, 2) the legal issues that can affect staffing and patient care, 3) continuity of services for other patients, 4) protection of the health care workforce, and 5) medical supply contingency plans.			
A11.	Ensure all components of the health care delivery network (e.g., hospitals, long-term care, home care, emergency care) are included in the operational plan and that the special needs of vulnerable and hard-to-reach patients are addressed.			
A12.	Test the operational plan for surge capacity of health care services, workforce, and supplies to meet the needs of the jurisdiction during a pandemic.			
A13.	Coordinate and test the plan provisions for mortuary services during a pandemic.			

No.	Action/Task	NS	IP	C
A14.	Determine what constitutes a public health staffing emergency and exercise the operational plan to obtain appropriate credentials of volunteer health care personnel (including in-state, out-of-state, international, returning retired, and non-medical volunteers) to meet staffing needs during a pandemic.			
A15.	Coordinate with health care facilities in the jurisdiction in the testing of a plan for isolating and cohorting patients with known or suspected influenza, for training clinicians, and for supporting the needs for personal protective equipment (PPE).			
A16.	Coordinate with health care facilities in the jurisdiction in the testing of an operational plan to initiate, support, and implement quarantine of potentially exposed health care personnel.			
A17.	Initiate procurement of vaccine (if available) and antivirals.			
A18.	Ensure that vaccine and necessary equipment and supplies are available at all points of distribution in the community, the security and logistical support for the points of distribution, and the training requirements for involved personnel.			
A19.	Document with written agreements the commitments of participating personnel and organizations in the vaccination operational plan.			
A20.	Adapt ISDH <i>Protocol for Mass Prophylaxis</i> as new information becomes available.			
A21.	Test the operational plan that addresses the procurement, storage, security, distribution, and monitoring actions necessary to assure access to antivirals during a pandemic.			
A22.	Inform citizens in advance about what containment procedures may be used in the community.			
A23.	Exercise the jurisdiction's containment operational plan that delineates procedures for isolation and quarantine, the procedures and legal authorities for implementing and enforcing these containment measures (such as closing schools; canceling public transportation services; and other movement restrictions within, to, and from the jurisdiction) and the methods that will be used to support, service, and monitor those affected by these containment measures in health care facilities, other residential facilities, homes, community facilities, and other settings.			
A24.	Assess readiness to meet communications needs in preparation for an influenza pandemic, including regular review, exercise, and update of communication plans.			
A25.	Craft messages to help educate health care providers about novel and pandemic influenza, and infection control and clinical guidelines.			
A26.	Plan and coordinate emergency communication activities with private industry, education, and non-profit partners (e.g., local Red Cross chapters).			
A27.	Identify and train lead and back-up subject-specific spokespersons.			
A28.	Provide public health communications staff with training on risk communication for use during an influenza pandemic.			

No.	Action/Task	NS	IP	C
A29.	Implement and maintain, as appropriate, community resources, such as hotlines and Web site, to respond to local questions from the public and professional groups.			
A30.	Work with organizations for dissemination of information on family preparedness.			
A31.	Provide timely and accurate information to the public about emerging influenza strains that could lead to a pandemic (ISDH Web site, media).			
A32.	Assure that the development of public health messages has included the expertise of behavioral health experts.			
A33.	Continually reinforce basic individual prevention steps. Supplement information being communicated through media and the ISDH Web site.			
A34.	Test the communication operational plan that addresses the needs of targeted public, private sector, governmental, public health, medical, and emergency response audiences; identifies priority channels of communication; delineates the network of communications personnel, including lead spokespersons and persons trained in emergency risk communication; and links to other communication networks.			
A35.	Address provision of psychosocial support services for the community, including patients and their families, and those affected by community containment procedures in the Plan.			
A36.	Ensure availability of psychosocial support services (including educational and training materials) for employees who participate in, or provide support for, the response to public health emergencies such as influenza pandemics.			

Local Health Department: Pandemic Period

No.	Action/Task	Assigned to
P1.	Activate Continuity of Operations Plan (COOP) and revise personnel assignments and the Incident Command System (ICS) as needed.	
P2.	Update/Revise Pandemic Influenza Plan based on epidemiology of disease.	
P3.	Update and coordinate with partner agencies and organizations (all stakeholders).	
P4.	Coordinate implementation of health care sector (ESF 8) pandemic response plans (all stakeholders).	
P5.	Reconfirm strategies for antiviral medication use and vaccination, based on ISDH and CDC recommendations.	
P6.	Reconfirm and disseminate antiviral guidelines to medical community.	
P7.	Activate SNS and mass prophylaxis plans as appropriate.	
P8.	Inform citizens about where they will be vaccinated.	
P9.	Begin distribution of vaccine (if available), immunization of priority groups, and monitor vaccine distribution and usage.	
P10.	Monitor antiviral and vaccine supply and demand, and redistribute as needed.	
P11.	Monitor vaccination coverage, effectiveness, and safety (adverse reactions).	
P12.	Reassess containment strategies (isolation, quarantine, restrictions), implement new strategies if necessary.	
P13.	Activate and staff hotline, if applicable.	
P14.	Regularly disseminate information to public and partners by various methods (paycheck inserts, etc).	
P15.	Coordinate with bordering jurisdictions, link to bordering states' health department Web sites.	
P16.	Ensure that plan provides for real-time situational awareness of patient visits, hospital bed and intensive care needs, medical supply needs, and medical staffing needs during a pandemic.	

Appendix D

Hospital Checklist

Hospital Pandemic Influenza Preparedness Checklist

Preparedness Subject	Actions Needed/Completion Level
1. Structure for planning and decision-making.	
1A. An internal, multidisciplinary planning committee for influenza preparedness has been created.	
1B. A person has been designated as the influenza preparedness coordinator. Name:	
1C. Members of the planning committee include the following hospital staff members (insert names):	
(1) Administration:	
(2) Legal Counsel:	
(3) Infection Control:	
(4) Hospital Disaster Coordinator:	
(5) Risk Management:	
(6) Facility Engineering:	
(7) Nursing Administration:	
(8) Medical Staff:	
(9) Intensive Care:	
(10) Emergency Department:	
(11) Laboratory Services:	
(12) Respiratory Therapy:	
(13) Psychiatry:	
(14) Environmental Services:	
(15) Public Relations:	
(16) Security:	
(17) Materials Management:	
(18) Staff Development:	
(19) Occupational Health:	
(20) Diagnostic Imaging:	
(21) Pharmacy:	
(22) Information Technology:	
(23) Other Members:	

1D. Public Health:	
(1) A state or local health department person has been identified as a committee liaison. Liaison's Name:	
(2) A linkage with local or regional emergency preparedness groups has been established. (Planning organization) Name of Group:	
2. Development of a written pandemic influenza plan.	
2A. A written plan has been completed or is in progress that includes the elements listed in #3 below.	
2B. The plan specifies the circumstances under which the plan will be activated.	
2C. The plan describes the organizational structure that will be used to operationalize the plan.	
2D. Responsibilities of key personnel related to executing the plan have been described.	
2E. A simulation exercise has been developed to test the effectiveness of the plan.	
2F. A simulation exercise has been performed. Date performed:	
3. Elements of an influenza pandemic plan.	
3A. A surveillance plan has been developed.	
(1) Syndromic surveillance has been established in the emergency department.	
(2) Criteria for distinguishing pandemic influenza is part of the syndromic surveillance plan.	
(3) Responsibility has been assigned for reviewing global, national, regional, and local influenza activity trends and informing the pandemic influenza coordinator of evidence of an emerging problem. Name:	
(4) Thresholds for heightened local surveillance for pandemic influenza have been established.	
(5) A system has been created for internal review of pandemic influenza activity in patients presenting to the emergency department.	
(6) A system for monitoring for nosocomial transmission of pandemic influenza has been implemented and tested by monitoring for non-pandemic influenza.	

3B. A communications plan has been developed.	
(1) Responsibility for external communications has been assigned.	
(a) Person responsible for updating public health reporting:	
(b) Clinical spokesperson for the facility:	
(c) Media spokesperson for the facility:	
(2) Key points of contact outside the facility have been identified.	
(a) State health department contact:	
(b) Local health department contact:	
(c) Newspaper contact(s):	
(d) Radio contact(s):	
(e) Public official(s):	
(3) A list of other health care facilities with whom it will be necessary to maintain communication has been established.	
(4) A meeting with local health care facilities has been held to discuss a communication strategy.	
(5) A plan for updating key facility personnel on a daily basis has been established.	
(a) The person(s) responsible for providing these updates:	
(6) A system to track pandemic influenza admissions and discharges has been developed and tested by monitoring non-pandemic influenza admissions and discharges in the community.	
(7) A strategy for regularly updating clinical, ED, and outpatient staff on the status of pandemic influenza, once detected, has been established. Responsible person:	
(8) A plan for informing patients and visitors about the level of pandemic influenza activity has been established.	

3C. An education and training plan on pandemic influenza has been developed.	
(1) Language- and reading level-appropriate materials for educating all personnel about pandemic influenza and the facility's pandemic influenza plan have been identified.	
(2) Current and potential sites for long-distance and local education of clinicians on pandemic influenza have been identified.	
(3) Means for accessing state and federal Web-based pandemic influenza training programs have been identified.	
(4) A system for tracking personnel who have completed pandemic influenza training is in place.	
(5) A plan is in place for rapidly training non-facility staff brought in to provide patient care when the hospital reaches surge capacity.	
(6) The following groups of health care personnel have received training on the facility's pandemic influenza plan:	
(a) Attending Physicians	
(b) House Staff	
(c) Nursing Staff	
(d) Laboratory Staff	
(e) Emergency Department Personnel	
(f) Outpatient Personnel	
(g) Environmental Services Personnel	
(h) Engineering and Maintenance Personnel	
(i) Security Personnel	
(j) Nutrition Personnel	
3D. A mental health plan has been developed that includes:	
(1) Support for staff	
(2) Support for patients	
(3) Support for patients' families	
(4) Counseling for patients without flu-like symptoms but who are still concerned	

3E. A triage and admission plan has been developed.	
(1) A specific location has been identified for triage of patients with possible pandemic influenza in order to separate flu and non-flu patients.	
(2) The plan includes use of signage to direct and instruct patients with possible pandemic influenza on the triage process.	
(3) Patients with possible pandemic influenza will be physically separated from other patients seeking medical attention.	
(4) A system for phone triage of patients for purposes of prioritizing patients who require a medical evaluation has been developed.	
(5) Criteria for determining which patients need a medical evaluation are in place.	
(6) A method for tracking the admission and discharge of patients with pandemic influenza has been developed.	
(7) The tracking method has been tested with non-pandemic influenza patients.	
(8) A plan has been developed to ensure an extra supply of personal protective equipment (PPE) will be available at triage location.	
(9) Alternate care sites have been identified:	
(a) Location(s) of alternate care sites have been identified.	
(b) Memoranda of Understanding (MOU) have been signed with owners of alternate care sites.	
(c) Maintenance and janitorial staff for these sites have been identified.	
(d) A staffing plan has been developed for the alternate care sites.	
(e) A plan is in place to provide an adequate amount of medical and non-medical supplies for alternate care sites.	
(f) A plan is in place to provide food for staff and patients.	
(g) A security plan is in place for the alternate care sites.	
(h) The types of patients to be housed at alternate care sites have been identified.	
(i) EMS is aware of alternate locations and the types of patients to be transported there.	
3F. A facility access plan has been developed.	
(1) Criteria and protocols for controlled access to the facility are in place.	
(2) Criteria and protocols for limiting visitors have been established.	
(3) Hospital security has provided input into procedures for enforcing facility access controls.	

3G. An occupational health plan has been developed.	
(1) A system for rapidly delivering vaccine or antiviral prophylaxis to health care personnel has been developed.	
(2) The system has been tested during a non-pandemic influenza season.	
(3) A method for prioritizing health care personnel for receipt of vaccine or antiviral prophylaxis based on level of patient contact and personal risk for influenza complications has been established.	
(4) A system for detecting symptomatic personnel before they report for duty has been developed.	
(5) This system has been tested during a non-pandemic influenza period.	
(6) A policy for managing health care personnel with symptoms of or documented pandemic influenza has been established. This policy considers:	
(a) When personnel may return to work after having pandemic influenza.	
(b) When personnel who are symptomatic but well enough to work will be permitted to continue working.	
(c) A method for furloughing or altering the work locations of personnel who are at high risk for influenza complications (e.g., pregnant women, immunocompromised health care workers) has been developed.	
3H. A vaccine and antiviral use plan has been developed.	
(1) A contact for obtaining influenza vaccine has been identified. Name:	
(2) A contact for obtaining antiviral prophylaxis has been identified. Name:	
(3) A priority list (based on HHS guidance for use of vaccines and antivirals in a pandemic when in short supply) and estimated number of patients and health care personnel who would be targeted for influenza vaccination or antiviral prophylaxis have been developed.	
(a) Number of first priority personnel:	
(b) Number of second priority personnel:	
(c) Number of remaining personnel:	
(d) Number of first priority patients:	
(e) Number of second priority patients:	
(4) A system for rapidly distributing vaccine and antivirals to patients has been developed.	

3I. Workforce Support:	
(1) A plan is in place to address unmet staffing needs in the hospital.	
(2) The minimum number and categories of personnel needed to care for a group of patients with pandemic influenza have been determined.	
(3) Responsibility for assessing day-to-day clinical staffing needs during an influenza pandemic has been assigned. Persons responsible (names and/or titles):	
(4) A strategy for accommodating and supporting personnel who have child- or elder-care responsibilities has been developed.	
(5) A strategy for housing health care personnel who may be needed on-site for prolonged periods of time is in place.	
(6) Mental health and faith-based resources who will provide counseling to personnel during a pandemic have been identified.	
(7) Legal counsel and hospital administration have reviewed emergency credentialing and privileging mechanisms and addressed concerns regarding liability.	
(8) Triggers for the implementation of the hospital disaster plan are clear.	
(9) The disaster plan includes linkages to local and regional planning and response groups to collaborate on addressing widespread health care staffing shortages during a crisis.	
(10) A plan for reassignment and recruitment of personnel has been developed.	
(11) Mutual Aid Agreements (MAA) and Memoranda of Understanding/Agreement (MOU/A) have been signed with other facilities that have agreed to share their staff, as needed.	
3J. Issues related to surge capacity have been addressed.	
(1) Surge Beds:	
(a) Strategies to increase bed capacity have been identified.	
(b) A threshold has been established for canceling elective admissions and surgeries.	
(c) MOAs have been signed with facilities that would accept non-influenza patients in order to free up bed space.	
(d) Areas of the facility that could be utilized for expanded bed space have been identified.	
(e) The estimated patient capacity for this facility is:	
(f) Plans for expanded bed capacity have been discussed with local and regional planning groups.	

(2) Supplies:	
(a) Anticipated durable and consumable resource needs have been determined.	
(b) A primary plan and contingency plan to address supply shortages have been developed.	
(c) Plans for obtaining limited resources have been discussed with local and regional planning and response groups.	
(3) Morgue Surge Plan:	
(a) A strategy for handling increased numbers of deceased persons has been developed.	
(b) Plans for expanding morgue capacity have been discussed with local and regional planning groups.	
(c) Local morticians have been involved in planning discussions.	
(d) Mortality estimates have been used to determine the procurement estimate for body bags and shrouds.	
(e) Supply sources for postmortem materials have been identified.	

Appendix E

Ethical Considerations

After extensive deliberation, the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC) developed vaccine priority recommendations which were adopted by the U.S. Department of Health and Human Services (HHS) and were published in the HHS Pandemic Influenza Plan (November 2005). These two committees acknowledged that priority groups would vary depending on state and local needs, as well as epidemiologic information.

The HHS Plan does not provide detailed definitions of priority groups; it only minimally ranks them and, most significantly, provides no guidance for strategies for implementation of vaccine delivery to those priority groups. Furthermore, the HHS Plan does not address prioritization of the use of limited medical supplies and hospital beds, nor does the Plan provide a framework for other ethical decision points related to a pandemic.

The ISDH has a strategy to address the ethical considerations not identified in the HHS Plan. Nationally, numerous studies have been conducted and workgroups have reviewed and discussed pandemic influenza related issues with ethical implications. The Indiana State Department of Health (ISDH) supports this important work and will utilize all available information from a variety of sources in the process of developing ethically informed recommendations and guidance during a pandemic.

Ethical Issue	Description of Issue	Strategy
Vaccine Distribution - priority setting: Equity between groups; Equity within groups	<p>Pre-pandemic vaccine in very limited amounts may be available during first six months, and pandemic vaccine may be available after first six months.</p> <p>It is crucial to pre-identify who will receive the vaccine and to develop clear and transparent implementations strategies.</p>	<p>Convene an interagency, multidisciplinary group, with a component of public input, to develop processes to address issues and provide an ethical framework for decision-makers that could be used to promote public understanding, trust, and buy-in. The results of these processes would allow for the development of implementation strategies.</p>
Antiviral distribution – priority setting	<p>Antivirals will be utilized for:</p> <ol style="list-style-type: none"> 1) treatment of persons with symptoms of influenza, and 2) potentially, prophylaxis of workers whose professions put them at risk of contracting influenza and the household contacts of the ill. <p>Because of anticipated limited supply, prioritization and implementation strategies must be clear to the providers of antivirals.</p>	

Ethical Issue	Description of Issue	Strategy
Use of limited medical supplies – priority setting of: ventilator, PPE, Other	Use of supplies or a standard of care may vary across local or regional health care facilities. Standardization is desired and the process to understand the rationale behind the standard is necessary in order to promote efficient and accurate decision-making along with public understanding, trust, and buy-in of the decisions.	<p>Convene an interagency, multidisciplinary group, with a component of public input, to develop processes to address issues and provide an ethical framework for decision-makers that could be used to promote public understanding, trust, and buy-in. The results of these processes would allow for the development of implementation strategies.</p> <p>Convene a science advisory workgroup consisting of Indiana adult and pediatric critical care specialists, emergency medicine physicians, infectious disease specialists, and selected stakeholders to develop a process for adjusting standards of care in a public health emergency such as pandemic influenza or a terrorist act.</p> <p>Develop a process to integrate the work of the above two groups.</p>
Health care workers' (HCW) duty to provide care	The skills of HCWs make them most qualified to take care of persons with influenza. Does that mean they should be mandated to work during a pandemic or other communicable disease outbreak? If so, can they be mandated to be vaccinated or prophylaxed in order to work with at-risk populations? What level of risk is acceptable for the HCW, and what level of personal protective equipment (PPE) should be provided by employers? How should administrators deal with conflicting obligations such as between the HCW's and the HCW's duty to provide care?	Develop an ethical framework utilizing above stakeholder groups with focus on health care community.

Accompanying Issues	Description of Issue
Public Communication	Communication and transparency of the processes developed in the planning strategies suggested above are crucial to successful implementation of the difficult decisions that must be made.
Flexibility	An evolving pandemic will require flexibility and responsiveness to new and revised information and guidance from many sources. The rationale for this flexibility also requires transparency.

Appendix F

Clinical Criteria for Suspected H5 Testing and Specimen Submission Protocol

The CDC has approved the ISDH Laboratory for influenza virus testing on patients meeting the influenza A (H5) surveillance criteria below:

Influenza A (H5) Surveillance Criteria

1. Patient is hospitalized and has:
 - a. radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternative diagnosis has not been established; **and**
 - b. a history of travel within 10 days of symptom onset to a country with documented H5 influenza infections in poultry or humans.

Ongoing listings of countries affected by avian influenza are available from the World Organization for Animal Health (http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm).

2. Patient is hospitalized or ambulatory and has:
 - a. documented temperature of >100.4°F (>38°C); **and**
 - b. cough, sore throat, or shortness of breath; **and either:**
 - c. history of contact within 10 days prior to onset of symptoms with:
 - i. poultry or domestic birds (e.g., visited a poultry farm, a household raising poultry, or a bird market) in an affected country; **or**
 - ii. a patient with known or suspected influenza A (H5) infection.

Patients meeting the influenza A (H5) surveillance criteria may be tested at the ISDH Laboratory for influenza A (H5) if laboratory capacity is available. Specimens will be accepted with prior approval from a member of the ISDH Epidemiology Resource Center Surveillance Team (ERC ST), provided there is an epidemiologic need.

Reporting Suspect Cases of Human Influenza A (H5)

A. Initial Report/Screening Form

Prior to submitting a case report form or suspect specimen, health care workers should notify ISDH ERC ST officials immediately. Health care workers requesting specimen testing should *contact the ERC at 1.866.233.1237*. This number is available 24 hours a day, 7 days a week.

The ISDH duty officer will notify a member of the ERC ST, who will contact the health care worker and complete, via telephone or fax, the Emerging Influenza Screening Form to determine if the specimen should be submitted to the ISDH Laboratory for testing. If the screening form indicates that the specimen should be submitted, a member of the ERC ST will provide the health care worker with an authorization code for the specimen. *This authorization code MUST be included on the submission form before the ISDH Laboratory will test the*

specimen. The ERC ST member will then contact the ISDH Laboratory and the appropriate ISDH field Epidemiologist regarding the specimen to be tested. The ERC ST member will provide the specimen authorization code and the specimen's shipping date and time to the Laboratory. The ISDH Laboratory should notify the ERC ST member when the specimen arrives. The ISDH field Epidemiologist will notify the appropriate local health department when a specimen is submitted.

The ISDH will then transmit screening reports to the CDC within 3 to 5 business days of first contact, per CDC's policy. State health departments may request help from the CDC in completing the screening form by contacting the CDC Flu Hotline at 770.488.7100.

B. Specimen Submission Form

1. Following the initial telephone report, fax the screening form (if not completed via telephone) and the specimen submission form with the authorization code to the ISDH ERC at 317.234.2812.
2. Please include the authorization code and contact information on a cover sheet with the header "ATTN: Influenza A (H5) Case Reporting".
3. Complete the specimen submission form as thoroughly as possible, including the appropriate submitter information. Reports will be returned to the submitter indicated on the submission form. This can be a physician, clinic or hospital, or reference laboratory.
4. Include submission form(s) with the specimen(s). A separate submission form must be completed for each specimen.

C. Laboratory Procedures, Specimen Collection and Shipment

The following human respiratory specimens are acceptable for suspected avian influenza testing:

- nasopharyngeal swabs and aspirates
- oropharyngeal aspirates or washes
- throat swabs
- tracheal aspirates
- bronchoalveolar lavage

Nasopharyngeal swabs and aspirates are the samples of choice. Tissue specimens are not recommended at this time.

Swab specimens should be collected using swabs with a Dacron® tip and an aluminum or plastic shaft and should be submitted in viral transport medium. M5 is the transport medium of choice. Swabs with calcium alginate or cotton tips and wooden shafts are unacceptable.

Specimens must be labeled with the patient's name and collection date, or they will be deemed unsatisfactory for testing. Samples should be refrigerated and transported within 24 hours of collection by priority overnight shipping or courier to the ISDH Laboratory:

Indiana State Department of Health Laboratories
Attn: Virology Lab
7230 Western Select Drive
Indianapolis, Indiana 46219

Protocols for standard interstate shipment of etiologic agents should be followed. These standards are available at <http://www.cdc.gov/od/ohs/biosfty/shipregs.htm>. All shipments must comply with current DOT/IATA shipping regulations.