Indiana State Department of Health

Pandemic Influenza Plan

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State Health Commissioner

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Indiana State Department of Health

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Acronyms - Indiana Pandemic Influenza Plan

APIC	Association of Professionals in Infection Control and Epidemiology
BOAH	Board of Animal Health
CDC	Centers for Disease Control and Prevention
CEFO	Career Epidemiology Field Officer
CHC	Community Health Centers
Coord.	DOC Coordinator
DHS	Department of Homeland Security
DMHA	Division of Mental Health and Addiction
DOC	Department Operations Center (ISDH)
DOE	Department of Education
ED	Emergency Department
EMA	Emergency Management Agency
EMS	Emergency Medical Services
EOC	Emergency Operations Center (IDHS)
ERC	Epidemiology Resource Center
FSSA	Indiana Family and Social Services Administration
GIS	Geographic Information Systems
HAN	Health Alert Network
HHS	U.S. Department of Health and Human Services
IAHSA	Indiana Association of Homes and Services for the Aging
ICP	Infection Control Professional
IDHS	Indiana Department of Homeland Security
IHCA	Indiana Health Care Association
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
Labs	ISDH Laboratory Resource Center
LHD	Local Health Department
LMS	Learning Management System
LTC	Long Term Care
MCH	Maternal & Child Health
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 Epidemiology Surveillance System
PHPER	ISDH Public Health Preparedness and Emergency Response Division
PIO	Public Information Officer
PSA	Public Service Announcement
RHC	Rural Health Clinics
SHC	State Health Commissioner
SNS	Strategic National Stockpile
TAG	Technical Advisory Group
WHO	World Health Organization

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Introduction

Situation Status

As Indiana State Department of Health (ISDH) staff prepares the Indiana Pandemic Influenza Plan (the Plan), there is growing concern about the possibility of pandemic influenza. An H5N1 avian influenza virus has caused a number of poultry outbreaks in Southeastern Asia. This strain has many troubling properties as revealed by surveillance, medical data, and scientific study:

- Characterized as Highly Pathologic 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)
- Caused human cases with mortality of about 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 will 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 flu occurrences and the current human cases of H5N1:

PANDEMIC INFLUENZA	TYPICAL SEASONAL FLU
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	
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	Several antiviral medications are available
Excess mortality (3 to 7 times normal rate)	Normal flu 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 (see more detailed data in Appendix A). Estimates of the excess hospital admissions and deaths for eight weeks during a pandemic are shown below:

Impact	15 Percent Attack Rate		35 Percent Attack Rate	
	Total	Peak	Total	Peak
Hospital Admissions (Peak = Weeks 4-5)	4,894 min 16,732 max	907 min 3,084 max	11,420 min 39,040 max	2,117 min 7,195 max
Deaths (Peak = Weeks 6-7)	1,399 min 4,148 max	452	3,265 min 9,675 max	738

The World Health Organization (WHO) has developed a scheme of Six Phases for Influenza Planning as shown in Table 1 below. These preparedness phases provide a basis for plan development and activities.

However, for ease of use, the Indiana Pandemic Influenza Plan is primarily organized with activities listed as recommended by Interpandemic (between pandemics), Pandemic Alert, Pandemic, and Post-Pandemic Periods, rather than activities for each specific Phase.

Table 1. World Health Organization Phases of Pandemic Influenza - 2005

Period	Phase	Definition
Interpandemic Period	One	• No new virus subtype detected in humans • Risk of human infection by animal viruses is considered to be low
	Two	• No new virus subtype detected in humans • A subtype circulating in animals poses substantial risk to humans
Pandemic Alert	Three	• Human cases with new subtype occur • Human-to-human transmission occurs only with close contact
	Four	• Small clusters of human cases with new subtype occur • Cases are localized • Human-to-human transmission is limited
	Five	• 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	• Increased and sustained transmission in the general human population • Formal declaration of pandemic

Limitations of this Plan

ISDH staff members are preparing this Plan during the spring and summer of 2005, at a point where there are many unknowns. Therefore, the Plan is necessarily incomplete. However, 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 to the worst case possibility of a highly virulent strain with no effective vaccine. This ISDH Plan includes activities (listed in Appendix C) designed for the latter scenario but also includes steps to be taken should vaccine be available.

Section 1. Strategies and Policies

Policy Issues

Liaison with Agencies and Partners – Many important aspects of a pandemic influenza response will be carried out by other agencies/organizations, particularly local health departments (LHD). The ISDH will meet with collaborating agencies and organizations to educate them about pandemic influenza response and to help them identify their specific roles. Many agencies are part of the Counter-Terrorism and Security Council (CTASC), where the educational effort will begin. In addition to CTASC membership, there are many other important partners, especially Indiana hospitals, which should have explicit pandemic influenza plans. Long-term care facilities, emergency service providers, and other organizations or agencies likely to be affected by a pandemic should also develop plans. Medical care providers in private practice and managed care organizations as well as community health centers and rural health care providers are also a critical component for responding to a pandemic.

In addition to in-state partners, the ISDH will begin the process of coordinating response with agencies in other states. Initial contacts will be made with the health departments in Indiana's four neighboring states (Michigan, Ohio, Kentucky, and Illinois). Because pandemic influenza will affect all jurisdictions in the country nearly simultaneously, Indiana will not expect direct assistance (other than advice, plans for coordination, and funding) from the federal government or from other states.

Community Containment – (See additional information in Section 5 on containment.) Containment consists of three types of actions: 1) restrictions on mass gatherings and public events, 2) isolation of symptomatic individuals, and 3) quarantine of individuals and/or groups with potential or actual exposure. The legal basis for community containment already exists in state and local law. The State Health Commissioner and local health officers, based on the most current information available, will determine when restrictions on mass gatherings and the voluntary and court-ordered use of isolation and quarantine measures become necessary. Canceling mass gatherings may become necessary as a method to help reduce and more evenly distribute the number of infected persons, resulting in less stress on responders and caregivers.

The use of quarantine and isolation restricts the movement of persons exposed to influenza [those designated for quarantine] and infected persons. 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 the exposed and infected persons be identified and located, but it will be the responsibility of local emergency management agencies to address the well-being of restricted persons (e.g., provision of food, medications, other necessities) in coordination with other local agencies.

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 will inform judges, the Attorney General's Office, county attorneys, and others about existing laws to enable needed measures, with the goal of implementing such restrictions with minimal delay following a decision to institute their use.

The ISDH will develop and communicate recommended personal protection actions for the general public that will reduce the risk of transmitting or acquiring influenza. These actions include staying home if ill, washing hands frequently, wearing a mask, avoiding sick persons in public, minimizing interactions with others outside the home, and heeding warnings and advisories from officials.

Considerations for Special Populations – Certain institutions (e.g., prisons, jails, hospices, residential homes, and long-term care facilities [LTC]) will face special problems in attempting to prevent 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 hard to achieve in practice. The ISDH will provide guidance on measures to protect these populations.

Prophylaxis/Mass Treatment – It is unlikely that 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, stockpiling considerations—are discussed in Section 4 of this Plan. It is likely that mass prophylaxis/treatment will not be a significant factor in the early weeks of pandemic influenza.

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 or an effective antiviral medication become available, the ISDH publication, *Protocol for Mass Prophylaxis,* will be followed. LHDs and hospitals have developed mass prophylaxis plans in recent years. However, mass prophylaxis through 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 groups will have the highest priority for receiving vaccine.

Protection of Essential Workers – It is unclear at this time what specific population groups, and whether essential workers of certain agencies and organizations, will be considered as high priority groups to receive antiviral medication during a pandemic. CDC will provide guidance on which population groups or worker categories should be considered high priority for antiviral medication and/or vaccine. All organizations and agencies should determine which employees are essential for maintaining operations; however, those essential employees may or may not be included in the high priority groups for antiviral medication as determined by CDC. Stockpiling of antiviral medication may be considered in order to have sufficient quantities for short-term prophylaxis and/or treatment of essential staff members who may contract influenza.

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. Retired health care workers may be a valuable source of volunteers. 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 to identify, during re-licensure, those health care professionals who are willing to volunteer during an emergency. The ISDH will continue to distribute lists of potential volunteers for each of the Public Health Preparedness Districts to local planners.

Section 2. Planning, Coordination, and Command Structure

As the lead agency for Emergency Support Function (ESF) "Public Health and Medical Services," the ISDH has identified the overall goal 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."

The current planning effort has produced this Plan with staff input from those ISDH organizational units who will have primary response duties during an influenza pandemic and who have the necessary expertise to contribute significantly to the preparedness process. In subsequent revisions, State agencies, particularly the Indiana Department of Homeland Security (IDHS) and State and local Emergency Management Agency personnel, will offer input. Likewise, pandemic influenza planners will define more clearly the roles for other state professional associations and organizations. In addition, the key partners and leadership organizations for local ESF "Health and Medical"—hospitals, LHDs, community health centers, private practice and managed health care providers, and mental health providers—will be engaged in the planning process. There are numerous other partner agencies and organizations that will be important in pandemic influenza planning and response as listed in Appendix B.

Indiana State Department of Health Departmental Operations Center

The Department Operations Center (DOC) has been developed under the CDC Cooperative Agreement for Public Health Emergency Preparedness. The ISDH Public Health Preparedness and Emergency Response Division (PHPER) is responsible for this development. The DOC at the central office in downtown Indianapolis—as well as the alternate DOC located several miles from the central office—is fully equipped with computer arrays and robust communications capability. Both of these sites have secure access as well.

In addition to the DOC, 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"), PHPER Attorney, and Public Affairs PHPER 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 (and possibly other content specialists, including a bioethicist) will be convened.

Creation of Planning Committee for Pandemic Influenza Preparedness

The ISDH Executive Planning Committee (see page iii for membership) that developed this Plan is composed of representatives of ISDH organizational units that are most likely to be responsible for response activities during a pandemic and that are the most likely to have the expertise needed for effective planning.

Command Structure

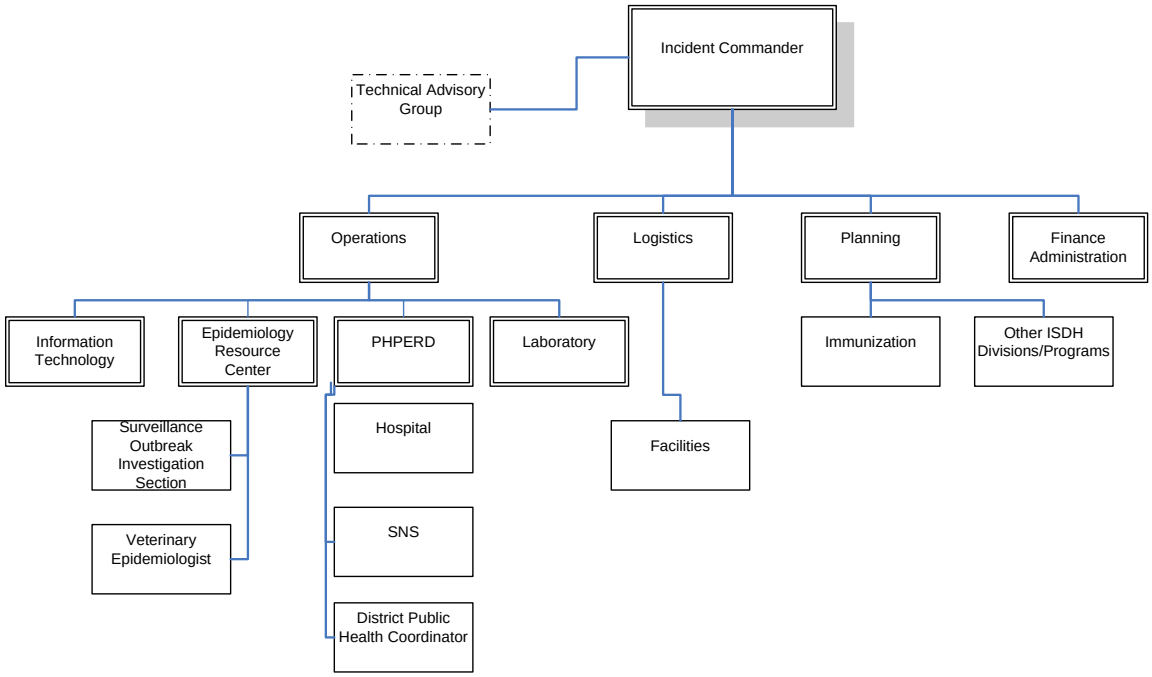
Figure 1 on the following page shows the proposed design for the ISDH command structure. Each of the primary organizational units is represented. The design is set so that principles of Incident Command System (ICS) are met with regard to span of control. Also, the individuals who serve in command positions 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 organizational units with expert input into decisions as a pandemic unfolds.

Decision-making During Pandemic Response – During an influenza pandemic, the ISDH anticipates frequent telephone conferences with its counterparts at CDC. The ISDH, as a functional part of Indiana's Emergency Operations Center, will review the most recent Indiana pandemic influenza-related data and develop briefings for ISDH staff, LHDs, state and local EMAs, and partner agencies and organizations that combine CDC information, expertise from TAG, and updated information on the situation in Indiana.

Frequent telephone conferences will be held with Local Health Officers to aid them in their local responses. The Indiana Health Alert Network (IHAN), currently under development, will be utilized for widespread communication of information to all partner agencies and organizations. Through the District PHPER system of contacts, the ISDH can also provide frequent updates to Indiana hospitals via e-mail. 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.

Figure 1. ISDH Command Structure for Pandemic Influenza



Section 3. Surveillance and Investigation

Epidemiological Investigation and Surveillance

A variety of surveillance mechanisms will be utilized during a pandemic, including monitoring of severe morbidity (patients hospitalized due to pandemic influenza or its complications), syndromic surveillance through the Public Health Emergency Surveillance System (PHESS), laboratory surveillance, and sentinel health care providers.

The Epidemiology Resource Center (ERC) conducts surveillance and investigation of Indiana outbreaks and/or increased reporting of influenza-like illness (ILI). ERC staff members will review the epidemiology of initial influenza cases and disseminate pertinent information to the field epidemiologists and LHDs. Nine field epidemiologists will 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 will communicate frequently with ISDH field Public Information Officers (PIO) so that they can support the LHDs in preparing public information for their jurisdictions. The field epidemiologists will also assist LHDs with investigations of ILI in institutions or other special settings.

ERC staff members receive, review, and prepare reports on influenza morbidity and mortality through regular communication with the CDC. The ERC will use data from hospitals, the ILI sentinel surveillance system, PHESS, and vital statistics (death certificates) for estimation of in-state influenza morbidity and mortality. In the event of a large-scale epidemic, the ERC staff would likely be unable to conduct multiple jurisdictional investigations. During the peak period of a pandemic, LHDs will need to maintain essential public health functions to the best degree possible (considering the circumstances).

Public Health Emergency Surveillance System (PHESS)

Currently in the testing phase, the Public Health Emergency Surveillance System (PHESS) is the ISDH syndromic surveillance monitoring system designed to detect early trends that may indicate a public health emergency. This system processes surveillance information transmitted in near-real time to the ISDH on patient encounters in Indiana hospital emergency departments (ED). Prior to and during an influenza pandemic, hospital ED visit data categorized as respiratory syndrome will be particularly important. The respiratory syndrome definition includes **"**problems of the nose (coryza) and throat (pharyngitis)," as well as many symptoms relating to the lungs. Because of the near-real time capability of PHESS, data secured by this means will be invaluable during the Pandemic Alert Period and throughout the Pandemic. Other PHESS data sources analyzed include "over-the-counter" medication sales information, Indiana Poison Center symptom outlier reports, and school absenteeism information. These data are analyzed by time and location for unusual trends.

Sentinel Influenza Surveillance Program

Under the leadership of the ISDH Respiratory Epidemiologist, who addresses influenza surveillance and investigation, the ISDH collaborates with CDC in the national influenza surveillance program. Selected physicians or health care facilities participate by providing

reports to CDC about patients with ILI (fever >100^0 F, cough, and/or sore throat with no known cause). This surveillance is conducted year-round. CDC has requested that Indiana recruit one participating site for every 250,000 people, so approximately 35 sites participate each year.

Weekly reporting consists of tracking the total number of patients seen at a sentinel site and the total number that present with ILI within various age groups. These data are sent directly to CDC for analysis. In addition, each sentinel physician submits nasopharyngeal swabs to the ISDH Laboratories for viral testing at no cost to the sentinel site. Laboratory testing determines if influenza virus is present and, if so, the influenza viral type and subtype. However, during a pandemic, sentinel providers are likely to experience heavy patient care responsibilities, which may limit their ability to fully participate in this system.

Laboratory Surveillance

The ISDH Laboratories will conduct testing on pandemic influenza specimens and isolates in a modular BioSafety Level (BSL) 3+ laboratory. This testing will be most useful during the Pandemic Alert and early Pandemic periods. If viral subtyping reagents are not available to the ISDH Laboratories, specimens will be sent to CDC.

Other Surveillance Activities

ERC staff members will work with the ISDH Immunization Program staff to obtain information from CDC as it monitors vaccine coverage and adverse events through mechanisms such as the Behavioral Risk Factor Survey System (BRFSS) and the Vaccine Adverse Event Reporting System (VAERS). During a pandemic, ISDH staff members would also rely on any supplementary arrangements made by CDC and the U.S. Food and Drug Administration to capture influenza vaccine-related information.

ERC Relationships

The ERC is active in all outbreaks of infectious disease and takes the lead for these events. The ISDH Public Health Preparedness and Emergency Response Division (PHPER) is broadly responsible for the ISDH portion of the response to public health emergencies of any kind. PHPER is also responsible for Strategic National Stockpile (SNS) arrangements to mass prophylaxis clinic and provider sites. During a pandemic, the two units would work closely together to coordinate those activities. ERC maintains long-term relationships with LHDs, Infection Control Professionals (ICP), and the Indiana Board of Animal Health (BOAH), among others.

Indiana Health Alert Network (IHAN)

The ISDH will utilize the IHAN system, currently under development, to alert LHDs and other partners, including volunteers, about pandemic influenza. IHAN can communicate urgent information electronically, and/or via telephone and fax machine, to a broad variety of constituencies through a cascading network.

Section 4. Vaccine and Antivirals

Influenza Vaccine and Antivirals Availability

Vaccine

Because the usual manufacturing process for influenza vaccine requires at least six months before distribution for use, and 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 pandemic phases.

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. As this document is being written, 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 this vaccine, with the hope that expedited production could result in availability of some vaccine as an H5N1 pandemic unfolds.

Vaccine Priority Groups

The epidemiological characteristics of pandemic influenza will determine which priority groups are recommended for vaccination during a pandemic. Although no determination of priority groups for a pandemic can be done at this time, the following chart provides an **example** of seasonal influenza priority groups (for the 2005-2006 influenza season) as recently determined by CDC. This example of tiered ranking of seasonal influenza 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. A tiered ranking system was developed based on influenza-associated mortality and hospitalization rates. 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.

Tier	Priority Group
1. A	Persons aged 65 years and older with comorbid conditions Residents of long-term-care facilities
1. B	Persons aged 2-64 years with comorbid conditions Persons aged 65 years and older without comorbid conditions Children aged 6-23 months Pregnant women
1. C	Health-care personnel Household contacts and out-of-home caregivers of children below age 6 months
2	Household contacts of children and adults at increased risk for influenza-related complications Healthy persons aged 50-64 years
3	Persons aged 2-49 years without high-risk conditions

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, tradename 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 currently found in Asia 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. 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 will be used for treatment, because that is the most effective way to utilize a limited supply. **The use of antivirals for long-term prophylaxis is not recommended, as it is not cost-effective.** CDC will provide guidance as to which groups may be high priority for short-term (2-4 weeks) antiviral prophylaxis. For treatment, infected persons must receive medication within 48 hours of symptom appearance to reduce the impact of the disease. Production of the neuraminidase inhibitors is limited. CDC does not encourage pandemic planners to rely on significant availability of these medications and recommends their use for treatment rather than prophylaxis. CDC has arranged for oseltamivir and some supplies to be included in the Strategic National Stockpile (SNS).

Prophylaxis

Vaccination of specified population groups will occur according to CDC priority group recommendations. The ISDH has provided guidance to both hospitals and local health departments (LHD) to prepare detailed plans for mass prophylaxis. If vaccine is available, the ISDH will provide recommendations, based on CDC guidance, for prophylaxis by vaccination to LHDs and partner agencies and organizations. If CDC defines specific categories of health care workers as being high priority for prophylaxis, then LHDs, hospitals, EMS providers, and medical care practice sites (including community health centers and similar health care providers) need to develop estimates of the number of such workers who are candidates for prophylaxis. While hospitals and LHDs have identified locations for mass prophylaxis clinics, the method by which 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 supplies to the mass prophylaxis clinic sites, but vaccine will probably not be distributed via this route. Mass prophylaxis through vaccination will be a public-private partnership with collaborative responsibility shared among the ISDH, LHDs, hospitals, and medical care providers.

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 the pneumococcal conjugate

vaccine for routine immunization of young children. Continued vaccination of these groups 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, thus, require such vaccination. CDC recommendations will be utilized in regard to tracking of adverse events.

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.

Section 5. Containment During a Pandemic

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. IC 16-41-9 provides the legal authority and procedure for the isolation of individuals. The goal is to prevent the 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.

Quarantine

Quarantine measures are applied to individuals who are contacts of ill persons or other suspected exposure. IC 16-19-3-9 provides the legal authority for establishing quarantine. Such individuals may be travelers returning from an affected region, household members of an influenza patient, or work colleagues who have been within 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. While voluntary quarantine is preferred, Indiana law does allow for enforced quarantine by court order if necessary.

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 of persons 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 a week (7 days). The American Red Cross has helpful materials to aid families in preparing for disasters during which 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.

Limitations on Public Gatherings

Possible limitations on public gatherings include: a) canceling or postponing large events, b) closing schools, and c) public advisement to avoid close contact with other persons as much as possible. IC 16-19-3-10 (ISDH) and IC 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 not only from the public, but also from key decision-makers such as government officials. Advance discussions among these key decision-makers are vital to achieving these measures.

Section 6. Communication

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 ISDH Office of Public Affairs (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. As the media and public become more aware of the growing threat, experts will be available to speak about the threat and the steps that are 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 will also play an important role in pre-event communications. These educational offerings will increase awareness of the threat of pandemic influenza among local health departments, the media, and, subsequently, the public at large. This education will be accomplished by various methods: personal/expert presentations, via satellite linkages, or via Web-streamed seminar.

Both prior to and during a pandemic, preparations must be accomplished to answer certain basic questions. Many of these questions can be anticipated and answers prepared in advance. (See Appendix F for some likely questions and answers.) 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 can 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:

- Telephone calls made to media and partners/stakeholders
- A telephone hotline to receive calls from concerned Hoosiers
- E-mail, using prepared media, LHD, and partner/stakeholder lists and listserves
- Fax, using pre-programmed broadcast fax lists on a fax computer and a separate (redundant) fax machine
- Partner newsletters and fax and/or e-mail distribution lists
- Mail and Airborne Express to send video news releases and other bulky items
- Face-to-face, including media briefings and community meetings
- ISDH Web site, partner/stakeholder Web sites, and media Web sites
- Media, including print, radio, and television
- Printed materials, including Quick Facts sheets (available on the Web) and other specially prepared leaflets

Section 7. Education

The CDC Cooperative Agreement for Public Health Emergency Preparedness provided funding that helped create a variety of opportunities for public health professionals to receive education. Issues important for pandemic influenza preparedness response include:

- Identification of audiences to receive education
- Identification of educational needs
- Development of a multi-tiered educational program
- Scheduling educational sessions

The ISDH Learning Management System (LMS) is available through a contractual agreement with the University of Illinois at Chicago. This online educational resource allows registered users to perform a self-assessment of their training needs and then review possible online courses that will help them become more knowledgeable. Offerings on pandemic influenza are available. Also, three field Public Health Educators are available through the Indiana Public Health Association (IPHA) to help with educational outreach to LHDs.

Audiences to Receive Education

A variety of audiences need education about pandemic influenza, and virtually every Indiana resident will benefit from educational outreach. This section is focused on education and training for persons who will play 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.

The pandemic influenza education and awareness program is under way, being managed through a subcommittee designed for that purpose. ISDH educators will interact with other responding agencies to help with the design of educational offerings to their employees. As educational modules become available and staff members are identified for various roles, schedules of educational sessions, including tabletop exercises and drills, will be designed, communicated, and posted on the ISDH Web site. Educators will maintain databases to monitor the numbers, locations, and affiliations of persons educated.

Development of a Multi-tiered Educational Program

A schedule of progressively complex individual units or modules allows learners to first become familiar with an overview of pandemic influenza, then move on to the more technical aspects of their roles. A three-tiered program begins with awareness, then becomes increasingly technical, and culminates with specific operations education for those with the greatest responsibilities for program implementation. There are a variety of educational delivery mechanisms: self-study, Web-assisted trainings, seminars, workshops, and skill-building sessions. The ISDH has used the Indiana Higher Education and Training System (IHETS) repeatedly and successfully to reach LHDs with helpful technical teleconferences. Pre- and posttests can help document the learner's progress in mastering information, while practical demonstration of abilities will document skill mastery.

Appendix A.

FluSurge Population Projections

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.

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 jurisdictions, 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 beds (ICU), and the number of ventilators.

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

- Average length of hospital stay of 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.

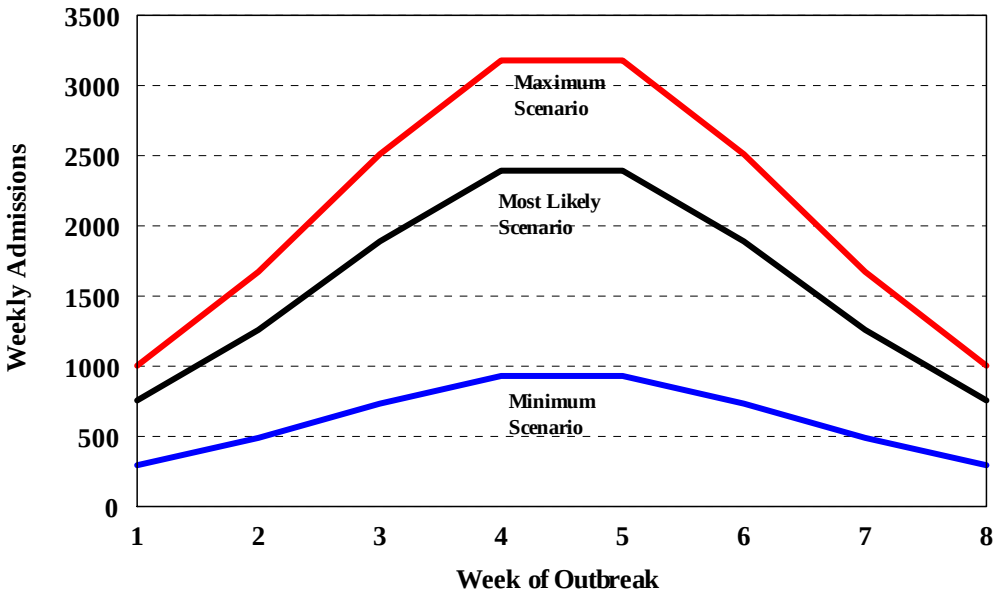
To provide estimations of the impact on Indiana's population and health care system, the estimated 2002 Census was used. The Indiana State Health Department Acute Care and Public Health Preparedness and Emergency Response Divisions provided the number of staffed hospital beds (17,636) and the number of staffed ICU beds (1,763). The total number of ventilators was estimated to be one per ICU bed. With this information, the estimates of impact on Indiana's population from a pandemic influenza were calculated at a 15 percent attack rate and a 35 percent attack rate. Those estimates are presented here.

Pandemic Influenza Impact on Indiana
FluSurge Estimates

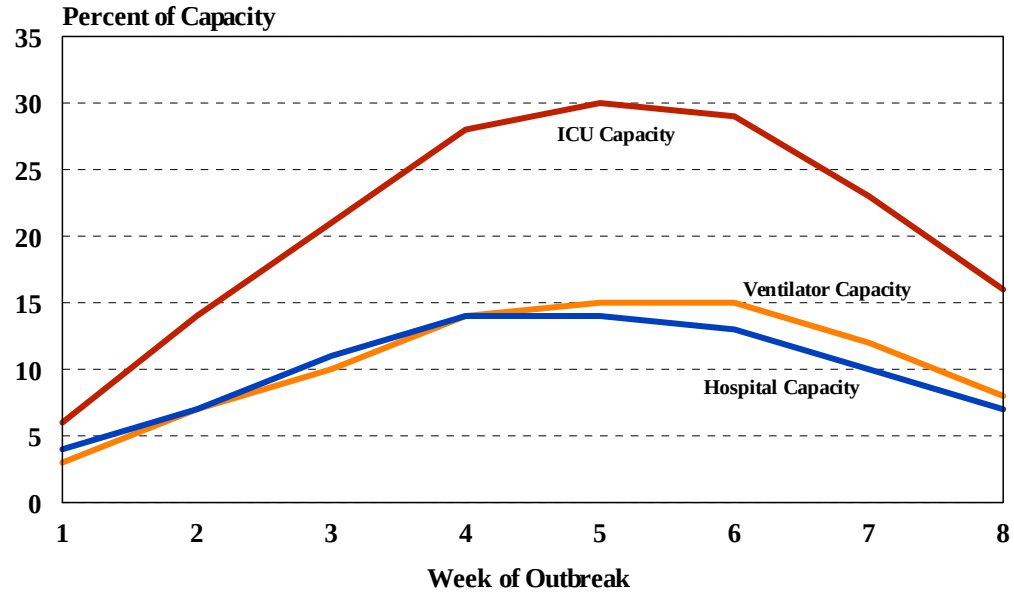
I. Pandemic influenza's impact when attack rate is 15 percent of Indiana's population.

Gross Attack Rate	15 percent
Total Hospital Admissions	
Most Likely Scenario	12,594
Minimum Scenario	4,894
Maximum Scenario	16,732
Total Deaths	
Most Likely Scenario	2,474
Minimum Scenario	1,399
Maximum Scenario	4,148

Distribution of Hospital Admissions: By Week, 15 Percent Attack Rate



Pandemic Influenza's Impact on Hospitals, 15 Percent Attack Rate*

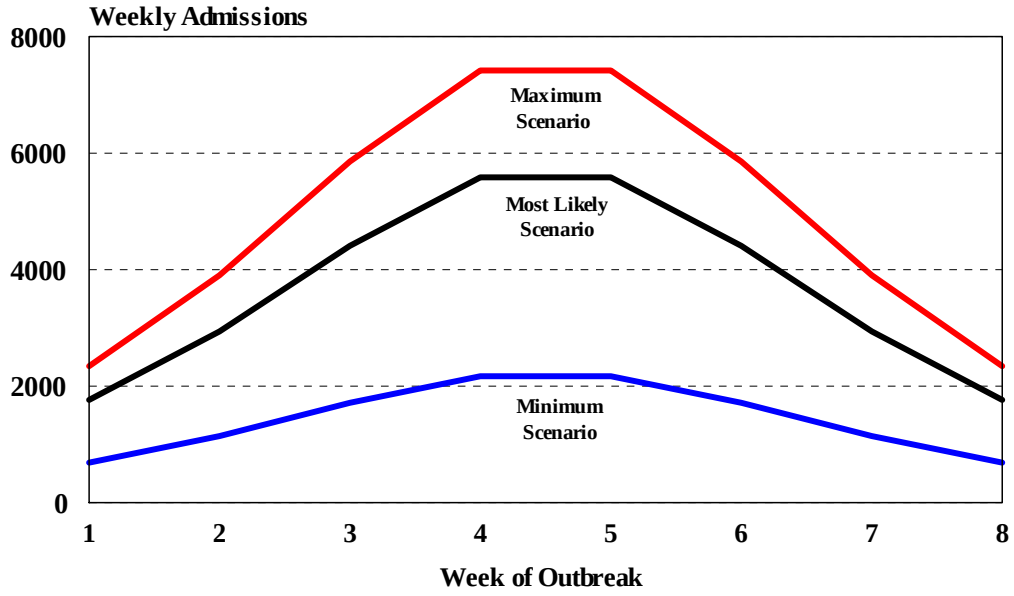


***Results based on most likely scenario**

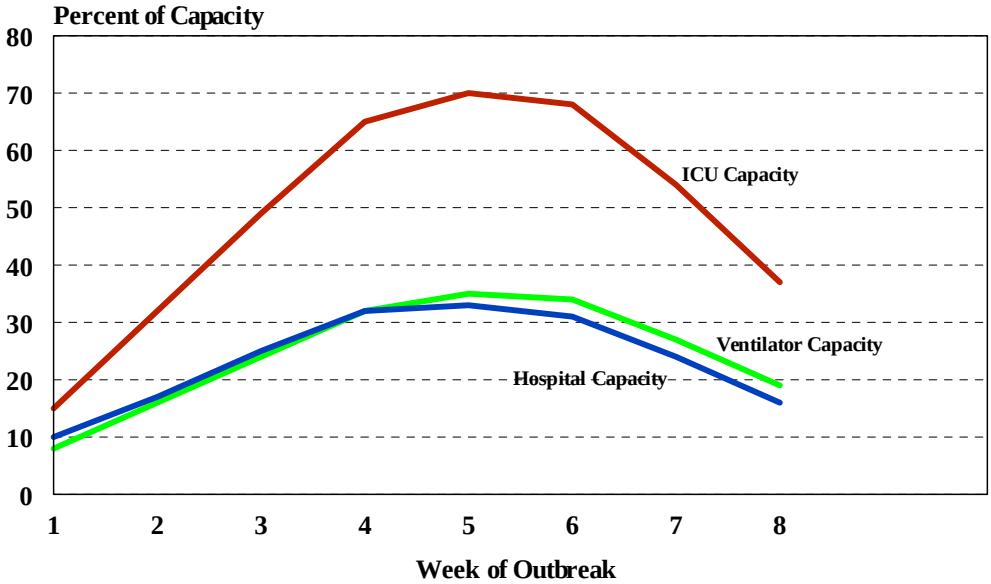
II. Pandemic influenza's impact when attack rate is 35 percent of Indiana's population.

Gross Attack Rate	35 percent
Total Hospital Admissions	
Most Likely Scenario	29,385
Minimum Scenario	11,420
Maximum Scenario	39,040
Total Deaths	
Most Likely Scenario	5,773
Minimum Scenario	3,265
Maximum Scenario	9,675

Distribution of Hospital Admissions: By Week, 35 Percent Attack Rate



Pandemic Influenza's Impact on Hospitals, 35 Percent Attack Rate*



*Results based on most likely scenario

Appendix B

Indiana Partners for Pandemic Influenza Planning and Preparedness

The ISDH has identified a preliminary list of partner agencies and organizations that will be important in pandemic influenza planning and response. These organizations have been divided into three categories (as listed below): local response agencies, state response agencies and organizations, and public health partner organizations and associations with whom the ISDH will share information. As planning continues, the ISDH will add organizations to the list of partners as needed.

LOCAL RESPONSE AGENCIES/ORGANIZATIONS

1. Community Health Centers
2. Community Mental Health Centers
3. Community-based Organizations
4. Emergency Management Agencies
5. Emergency Medical Services
6. Hospitals
7. Local Health Departments
8. Private Health Care Providers
9. Rural Health Clinics
10. School Districts
11. Voluntary Organizations

STATE RESPONSE AGENCIES/ORGANIZATIONS

1. American Red Cross
2. Board of Animal Health
3. FSSA Division of Aging
4. FSSA Division of Mental Health & Addiction
5. Indiana Counter-Terrorism and Security Council (CTASC)
6. Indiana Department of Education
7. Indiana Department of Homeland Security
8. Indiana Licensing Agency
9. Indiana Poison Center

PUBLIC HEALTH PARTNER ORGANIZATIONS/ASSOCIATIONS

1. American Academy of Pediatrics Indiana Chapter
2. American Lung Association of Indiana
3. Indiana Academy of Family Physicians
4. Indiana Association for Home & Hospice Care
5. Indiana Association of Homes & Services for the Aging
6. Indiana Association of Public Health Physicians
7. Indiana Dental Association
8. Indiana Environmental Health Association
9. Indiana Funeral Directors Association
10. Indiana Health Care Association

11. Indiana Hospital Council
12. Indiana Hospital&Health Association
13. Indiana Latino Institute
14. Indiana Minority Health Coalition
15. Indiana Osteopathic Association
16. Indiana Pharmacists Alliance
17. Indiana Primary Health Care Association
18. Indiana Public Health Association
19. Indiana Public Health Foundation
20. Indiana Rural Health Association
21. Indiana State Medical Association
22. Indiana State Nurses Association
23. Indiana University School of Medicine
24. Interagency Council on the Homeless

Appendix C

Activities Related to WHO Pandemic Periods

Key:

I = Interpandemic Period
A = Pandemic Alert Period
P = Pandemic Period
PP = Post-Pandemic Period

1. Strategies/Policies 2. Planning/Coordination 3. Surveillance/Investigation,
4. Vaccine/Antivirals 5. Containment 6. Communication
7. Education

Each Action/Task below is designated by the Period involved, the Section of the Plan involved (#1–7 above), and also numbered for that specific Action/Task.

For example: I. 2.1 refers to the Interpandemic Period and the first Task listed relating to Planning and Coordination.

Acronyms used in this Appendix:

ISDH = Indiana State Department of Health
LHD = Local Health Department

Units within ISDH:

DOC = Department Operations Center
ERC = Epidemiology Resource Center
HR = Human Resources
OLA = Office of Legal Affairs
OPA = Office of Public Affairs
OPS = Operational Services
PHPER = Public Health Preparedness and Emergency Response Division
SHC = State Health Commissioner
TAG = Technical Advisory Group

Other State Agencies:

BOAH = Board of Animal Health
CTASC = Counter-Terrorism and Security Council
DOE = Indiana Department of Education
EOC = Emergency Operations Center (at IDHS)
IDHS = Indiana Department of Homeland Security

Other Public Health Entities:

HCP = Health Care Providers
IAHSA = Indiana Association of Homes and Services for the Aging
IHHA = Indiana Hospital&Health Association
IPHCA = Indiana Primary Health Care Association
ISMA = Indiana State Medical Association
ISNA = Indiana State Nurses Association

INTERPANDEMIC PERIOD

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
I. 1.1	**X**		Determine the availability, efficacy, legal authority, and cost of stockpiling antivirals, masks, ventilators.	PHPER, ERC	
I. 1.2	**X**	**X**	Estimate number of essential staff responding to a pandemic with expanded shift assignments, calculate costs.	PHPER, TAG	
I. 1.3	**X**	**X**	Estimate equipment and supply needs and estimate costs.	PHPER, TAG	
I. 1.4	**X**	**X**	Based on above estimates, identify potential sources of funding. Encourage relaxed procurement rules in the event of a large-scale emergency.	PHPER, Finance	
I. 1.5	**X**	**X**	Develop a roster of essential personnel, contact information. Determine support needs for same.	PHPER, ERC	
I. 1.6	**X**	**X**	Develop roles, roster of potential volunteers, contact information.	PHPER	
I. 1.7	**X**		Encourage counties to elect with their insurance carrier to include workers' compensation coverage for rostered volunteers.	PHPER	
I. 1.8	**X**	**X**	Develop policies to address work responsibilities for ill essential employees and contractors.	PHPER, HR	
I. 2.1	**X**		Educate CTASC about pandemic influenza, roles of member agencies.	PHPER	
I. 2.2	**X**		Appointment of Technical Advisory Group (TAG).	SHC	
I. 2.3	**X**		Meet with appropriate partners to review major elements of the health sector and essential non-health sector response plans.	PHPER, ERC	IHHA, IPHCA, ISNA, IDHS, ISMA, DOE, IAHSA, Pharmacies
I. 2.4	**X**		Require hospitals to develop own Plans, submit to ISDH.	PHPER	
I. 2.5	**X**	**X**	With EMA, partners and stakeholders, evaluate level of preparedness and define roles and responsibilities. (Determine partners, including business partners, hospitals, medical offices.)	PHPER, CHC, ERC	
I. 2.6	**X**		Update LHDs through usual communication methods, including biweekly conference calls.	SHC, ERC, PHPER	
I. 2.7	**X**		Coordinate planning with bordering states.	PHPER	
I. 2.8	**X**	**X**	Confirm availability of care facilities, including alternative sites.	PHPER	Hospitals, HCP
I. 2.9	**X**		Appoint evaluation group to develop evaluation plan.	SHC	
I. 3.1	**X**		Maintain/Expand sentinel physicians to report influenza-like-illness (ILI) year-round.	ERC	

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
I. 3.2	**X**		Verify Lab capabilities for testing specimens, typing for novel virus strains.	ERC, Labs	
I. 3.3	**X**		Guidance to LHDs, sentinels re: unusual occurrences of ILI, suspect flu vaccine failures.	ERC	
I. 3.4	**X**		Guidance re: reporting pediatric deaths related to flu.	ERC	
I. 4.1	**X**		Assess vaccine coverage from seasonal flu, mechanisms used for vaccine distribution.	Immuniz ERC	
I. 4.2	**X**		Investigate cost of antiviral stockpiles to treat essential workers with flu.	PHPER, ERC	
I. 5.1	**X**	**X**	Develop and maintain a file of all relevant legal document templates.	PHPER, OLA	
I. 5.2	**X**	**X**	Confirm legal authority for quarantine.	PHPER, OLA	
I. 5.3			Educate judges, the Attorney General's Office, county attorneys on laws enabling community containment, their roles, and necessary procedures.	PHPER, OLA	
I. 6.1	**X**		Prepare strategies to educate the public about the threat of pandemic influenza, using the media, the ISDH Web site, fact sheets/flyers.	OPA	Ind. Bar Association
I. 6.2	**X**		Prepare strategies and establish relationships with LHDs and stakeholders to ensure accurate and consistent messages.	OPA	
I. 6.3	**X**		Provide training to LHDs and stakeholders about crisis communication principles as they would relate to pandemic influenza, in person, via satellite or Web-streamed seminar.	OPA	
I. 6.4	**X**		Prepare messages and answers to likely pre-event questions. Share information with ISDH staff, LHDs, and stakeholders so messages are consistent.	OPA	
I. 6.5	**X**		Develop plan for telephone hotline to handle large volume of calls.	Immuniz, ERC, OPS	
I. 7.1	**X**		Prepare and present educational material on pandemic influenza for numerous audiences, update as needed.	PHPER, ERC	
I. 7.2	**X**		Educate LHDs, partners on State Pandemic Influenza Plan (this document).	PHPER, SHC, ERC	
I. 7.3	**X**	**X**	Develop educational materials for volunteers.	ERC, PHPER	
I. 7.4	**X**		Develop educational materials for the general public.	PHPER, OPA	
I. 7.5	**X**	**X**	Prepare information to prevent spread of infection.	ERC, OPA	

PANDEMIC ALERT PERIOD

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
A. 1.1	**X**	**X**	Review all elements of Plan, modify and update according to federal recommendations, information on, and spread of, novel virus.	PHPER, ERC, Immuniz	IHHA, ISMA
A. 1.2	**X**	**X**	Review capacity of health care and emergency response systems to meet needs in a pandemic.	PHPER, ERC	
A. 1.3	**X**	**X**	Confirm estimates of essential workers and health care personnel capacity.	PHPER	
A. 1.4	**X**	**X**	Confirm rosters, availability of volunteers.	PHPER	
A. 1.5	**X**		Evaluation group develops indicators to be tracked.	ERC	
A. 2.1	**X**	**X**	Assess preparedness status and identify actions needed to fill gaps.	PHPER, ERC, Labs, Immuniz	IDHS
A. 2.2	**X**	**X**	Notify government officials and legislators of potential pandemic status and need for additional resources.	PHPER, SHC, OPS	CTASC
A. 2.3	**X**	**X**	Update government officials and legislators as needed.	SHC, PHPER	
A. 2.4	**X**	**X**	Initiate partner briefings as needed.	ERC, PHPER, OPA	IDHS
A. 2.5	**X**	**X**	Coordinate information sharing with other agencies and organizations.	PHPER, SHC, ERC	IDHS
A. 2.6	**X**	**X**	Initiate procurement of vaccine (if available) and antivirals.	PHPER, Immuniz, OPS	
A. 2.7	**X**	**X**	Assess legal authority for pandemic influenza response activities.	PHPER, OLA	
A. 2.8	**X**		Develop and disseminate guidance for institutions.	ERC, LTC	
A. 2.9	**X**		Develop and disseminate information about appropriate visitation policies.	ERC, LTC, OPA	
A. 3.1	**X**		Guidance re: proper specimen collection and transport to providers.	ERC, Labs	
A. 3.2	**X**		Assess influenza activity level weekly, report to CDC.	ERC	
A. 3.3	**X**		When novel virus identified, alert partners, hospitals, providers, public (all stakeholders).	ERC, PHPER, OPA	
A. 3.4	**X**		Add contingent sentinel providers for redundancy.	ERC	
A. 3.5	**X**		Collect data to determine risk groups for infection.	ERC	
A. 3.6	**X**		Lab develops collection, methods for novel strains, prepares reagents.	Labs	
A. 3.7	**X**		Subtype all influenza A viruses, report non-subtypables to CDC.	Labs	

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
A. 3.8	**X**		Review recommendations re: efficacy of masks for preventing viral transmission.	ERC, TAG	
A. 3.9	**X**		Emergency contact list for LHDs, airline officials.	ERC	
A. 3.10	**X**		Assess need to screen travelers arriving in state from affected countries, implement screening.	ERC	
A. 3.11	**X**		Request BOAH to contact ISDH if birds/animals are suspect avian influenza cases.	ERC	
A. 3.12	**X**		Determine if novel virus strain present in Indiana.	ERC, Labs	
A. 4.1	**X**		Communicate with CDC on availability of vaccine and antivirals, obtain if available.	ERC, PHPER, Immuniz	
A. 4.2	**X**		Reconfirm strategies for vaccination and antiviral medication use.	ERC, Immuniz	
A. 4.3	**X**		Review and revise plans for distribution and use of vaccine and antivirals, based on CDC recommendations and availability.	ERC, PHPER, Immuniz	
A. 4.4	**X**		Information on vaccine development, status, availability, proposed vaccination recommendations to all stakeholders.	SHC, ERC, Immuniz OPA	
A. 4. 5	**X**		Antiviral use guidelines disseminated to pertinent stakeholders.	ERC	
A. 4.6	**X**		Revise *Protocol for Mass Prophylaxis* as new information becomes available.	PHPER. ERC	
A. 5.1	**X**		Develop information on what people can do to protect themselves from infection.	OPA, ERC, PHPER	
A. 5.2	**X**	**X**	Review, update public officials on issues related to quarantine.	PHPER, ERC, OLA	
A. 5.3	**X**	**X**	Work with organizations for dissemination of information on family preparedness.	OPA, PHPER	SW Chapter of Red Cross
A. 6.1	**X**	**X**	Provide timely and accurate information to the public about emerging influenza strains that could lead to a pandemic. (ISDH Web site, media)	OPA	
A. 6.2	**X**	**X**	Continually reinforce basic individual prevention steps. Distribute fact sheets to supplement information being communicated through media and on ISDH Web site.	OPA	
A. 6.3	**X**		As information becomes available, develop messages and answers to questions likely to be asked during a pandemic. Share with ISDH staff, local health departments, and stakeholders so messages are consistent.	OPA	
A. 6.4	**X**		Without violating state confidentiality laws, inform the public about the appearance of emerging strains in Indiana.	OPA, OLA	

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
A. 6.5	**X**	**X**	Educate the public about steps being taken by the public health sector to limit the spread of the virus as much as possible.	OPA	

PANDEMIC PERIOD

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
P. 2.1	**X**		Activation of DOC at ISDH, contact EOC.	PHPER, Coord.	
P. 2.2	**X**		Establish coordination of response activities through the DOC.	PHPER	IDHS
P. 2.3	**X**	**X**	Activation of revised personnel assignments, including field staff.	PHPER, ERC	
P. 2.4	**X**		Update/revise State Plan, based on epidemiology of disease.	ERC, PHPER, Exec. Plan Comm.	
P. 2.5	**X**		Update and coordinate with LHDs, partner agencies and organizations (all stakeholders).	DOC, PHPER, ERC, OPA	
P. 2.6	**X**	**X**	Coordinate implementation of pandemic response plans (all stakeholders).	DOC, PHPER, EOC	
P. 2.7	**X**		Confirm funding to support costs of response.	OPS	
P. 2.8	**X**		Set priorities for vaccination and antivirals, based on CDC recommendations.	ERC, TAG, PHPER	
P. 3.1	**X**		Investigate epidemiology of early cases, either of U.S. origin or imported from another country.	ERC	
P. 3.2	**X**		Prioritize lab specimens, use prearranged plans for triage of specimens for testing, isolates to CDC.	Labs	
P. 3.3	**X**		Determine if and when to curtail specimens for testing by Labs.	Labs, ERC	
P. 3.4	**X**		Expand lab diagnosis, use rapid antigen tests for persons with compatible clinical symptoms.	Labs	
P. 3.5	**X**		Ensure completeness, timeliness of ILI reports from all participating facilities.	ERC, Labs	
P. 3.6	**X**		Assess reporting from sentinel provider network, upgrade as needed.	ERC	
P. 3.7	**X**		Continue collaboration with networks, Districts, to investigate outbreaks.	ERC	
P. 3.8	**X**		Assess efficiency of person-to-person transmission.	ERC	

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
P. 3.9	**X**		With CDC, assess epidemiology of outbreaks in Indiana and globally.	ERC	
P. 3.10	**X**		With CDC, identify risk groups for infection and complications.	ERC	
P. 3.11	**X**		Characterize epidemiology of the pandemic in Indiana, monitor disease incidence.	ERC	
P. 3.12	**X**		Evaluate effectiveness of response and control measures.	PHPER, ERC	CDC
P. 4.1	**X**		Reconfirm strategies for antiviral medication use and vaccination, based on CDC recommendations.	PHPER, ERC, Immuniz	
P. 4.2	**X**		Review and revise plans for distribution and administration of antivirals and vaccines.	PHPER, ERC, Immuniz	
P. 4.3	**X**	**X**	Reconfirm and disseminate antiviral guidelines to medical community.	ERC, PHPER	
P. 4.4	**X**		Begin process of obtaining antivirals and pandemic influenza vaccine.	PHPER, Immuniz, OPS	
P. 4.5	**X**		Activate SNS and mass prophylaxis plans.	DOC, PHPER	Governor
P. 4.6	**X**		Implement distribution of antiviral stockpile per CDC recommendations; purchase additional antivirals if possible.	DOC, PHPER	
P. 4.7	**X**	**X**	Begin distribution of vaccine, if available, and immunization of priority groups.	Immuniz, ERC	
P. 4.8	**X**	**X**	Monitor vaccine distribution and usage.	Immuniz	
P. 4.9	**X**	**X**	Monitor antiviral and vaccine supply and demand, and redistribute as needed.	PHPER, ERC	
P. 4.10	**X**	**X**	Monitor vaccination coverage, effectiveness, and safety (adverse reactions).	Immuniz, ERC	
P. 4.11	**X**		Monitor for antiviral resistance and adverse drug reactions.	ERC	
P. 5.1	**X**	**X**	Reassess containment strategies (isolation, quarantine, restrictions), implement new strategies if necessary.	PHPER, OLA, ERC	
P. 5.2	**X**		Support LHDs in investigation of disease outbreaks in institutions.	ERC	
P. 6.1	**X**	**X**	Using crisis communication principles, provide regular updates about the situation, remaining empathetic, open, and honest, while also continuing to reinforce basic individual prevention steps.	OPA	
P. 6.2	**X**	**X**	Develop messages and prepare to answer questions related to any sort of quarantine or isolation orders.	SHC, PHPER, ERC	

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
P. 6.3	**X**	**X**	Ensure educational material on pandemic influenza for public and health care workers is up to date.	ERC, OPA, PHPER	
P. 6.4	**X**		Activate and staff hotline.	PHPER, OPS	
P. 6.5	**X**	**X**	Regularly disseminate information to public and partners by various methods (paycheck inserts, etc).	OPA	
P. 6.6	**X**		Coordinate with bordering jurisdictions, link to bordering states' health depart. Web sites.	OPA, ERC	
P. 6.7	**X**		Update stakeholders and the media through regular briefings.	OPA, PIO	
P. 7.1	**X**	**X**	Educate health care providers via all communication channels.	ERC, PIO,	ISMA, ISNA, IHHA, IPHCA

END OF THE FIRST WAVE OF THE PANDEMIC (Post-Pandemic = PP)

Topic	Applicable		Action/Task	Responsible	
	ISDH	LHD		ISDH	Partners
PP4. 1	**X**	**X**	Assess vaccine coverage during the pandemic.	Immuniz, ERC	
PP4.2	**X**	**X**	Assess vaccine coverage to determine number of unprotected residents.	Immuniz, ERC	
PP2.1	**X**	**X**	Assess coordination during prior pandemic phases & revise plans as indicated.	PHPER, ERC	
PP 1.1	**X**		Implement evaluation plan and expert review of pandemic response activities.	ERC, Evaluation Group	
PP1.2	**X**	**X**	Assess need for additional resources and level of authorities required for subsequent pandemic activities.	PHPER, ERC	
PP1.3	**X**	**X**	Post-Pandemic First Wave After Action Report.	PHPER, ERC	
PP.6.1	**X**		Assess effectiveness of communications during pandemic phases. Revise plans as indicated.	OPA, PHPER, ERC	
PP6.2	**X**	**X**	Communicate with health care providers, media, and public about the potential for future pandemic events.	OPA, ERC, PHPER	
PP6.3	**X**	**X**	Continue to provide information after the pandemic regarding issues related to recovery efforts.	OPA, ERC, PHPER	

Note: For second or subsequent waves of the pandemic, follow same activities as listed for Pandemic Period above.

Appendix D

Indiana Local Health Department Pandemic Influenza Checklist

Key: I = Interpandemic Period, A = Pandemic Alert Period, P = Pandemic Period, PP = Post-Pandemic Period

Item No.	Pandemic Influenza: Emergency Response	Action Plan	Assigned to	Target Date of Completion	Completed? Yes/No	Date Completed
INTERPANDEMIC PERIOD ***(Pre-Pandemic)***						
I. 1.2	Estimate number of essential staff responding to a pandemic with expanded shift assignments, calculate costs.					
I. 1.3	Estimate equipment and supply needs and estimate costs.					
I. 1.4	Based on above estimates, identify potential sources of funding. Encourage relaxed procurement rules in the event of a large-scale emergency.					
I. 1.5	Develop a roster of essential personnel, contact information. Determine support needs for same.					
I. 1.6	Develop roles, roster of potential volunteers, contact information.					
I. 1.7	Elect with county insurance carrier to include workers' compensation coverage for rostered volunteers.					
I. 1.8	Develop policies to address work responsibilities for ill essential employees and contractors.					

Item No.	Pandemic Influenza: Emergency Response	Action Plan	Assigned to	Target Date of Completion	Completed? Yes/No	Date Completed
I. 2.5	With partners and stakeholders evaluate level of preparedness. (Determine partners, including business partners, hospitals, medical offices.)					
I. 2.8	Confirm availability of care facilities, including alternative sites.					
I. 5.1	Develop and maintain a file of all relevant legal document templates.					
I. 5.2	Confirm legal authority for quarantine.					
I. 7.3	Develop educational materials for volunteers.					
I. 7.5	Prepare information to prevent spread of infection.					
PANDEMIC ALERT PERIOD						
A. 1.1	Review all elements of Plan, modify and update according to federal recommendations, information on, and spread of, novel virus.					
A. 1.2	Review capacity of health care and emergency response systems to meet needs in a pandemic.					
A. 1.3	Confirm estimates of essential workers and health care personnel capacity.					
A. 1.4	Confirm rosters, availability of volunteers.					
A. 2.1	Assess preparedness status and identify actions needed to fill gaps.					

Item No.	Pandemic Influenza: Emergency Response	Action Plan	Assigned to	Target Date of Completion	Completed? Yes/No	Date Completed
A. 2.2	Notify government officials and legislators of potential pandemic status and need for additional resources.					
A. 2.3	Update government officials and legislators as needed.					
A. 2.4	Initiate partner briefings as needed.					
A. 2.5	Coordinate information sharing with other agencies and organizations.					
A. 2.6	Initiate procurement of vaccine and antivirals (if available).					
A. 2.7	Assess legal authority for pandemic influenza response activities.					
A. 5.2	Review, update public officials on issues related to quarantine.					
A. 5.3	Work with organizations for dissemination of information on family preparedness.					
A. 6.1	Provide timely and accurate information to the public about emerging influenza strains that could lead to a pandemic.					
A. 6.2	Continually reinforce basic individual prevention steps. Distribute fact sheets to supplement information being communicated through media and on ISDH Web site.					
A. 6.5	Educate the public about steps being taken by the public health sector to limit the spread of the virus as much as possible.					

Item No.	Pandemic Influenza: Emergency Response	Action Plan	Assigned to	Target Date of Completion	Completed? Yes/No	Date Completed
PANDEMIC PERIOD						
P. 2.3	Activation of revised personnel assignments, including field staff.					
P. 2.6	Coordinate implementation of pandemic response plans (all stakeholders).					
P. 4.3	Reconfirm and disseminate antiviral guidelines to medical community.					
P. 4.7	Begin distribution of vaccine, if available, and immunization of priority groups.					
P. 4.8	Monitor vaccine distribution and usage.					
P. 4.9	Monitor antiviral and vaccine supply and demand, and redistribute as needed.					
P. 4.10	Monitor vaccination coverage.					
P. 5.1	Reassess containment strategies (isolation, quarantine, restrictions), implement new strategies if necessary.					
P. 6.1	Using crisis communication principles, provide regular updates about the situation, remaining empathetic, open, and honest, while also continuing to reinforce basic individual prevention steps.					
P. 6.2	Develop messages and prepare to answer questions related to any sort of quarantine of isolation orders.					
P. 7.1	Educate health care providers via all communication channels.					

Item No.	Pandemic Influenza: Emergency Response	Action Plan	Assigned to	Target Date of Completion	Completed? Yes/No	Date Completed
POST-PANDEMIC PERIOD						
PP. 1.2	Assess need for additional resources and level of authorities required for subsequent pandemic activities.					
PP. 1.3	Post-Pandemic First Wave After Action Report.					
PP 2.1	Assess coordination during prior pandemic phases & revise plans as indicated.					
PP 4.1	Assess vaccine coverage.					
PP 4.2	Assess vaccine coverage to determine number of unprotected residents.					
PP. 6.2	Communicate with health care providers, the media, and the public about the potential for future pandemic events.					
PP. 6.3	Continue to provide information after the pandemic regarding issues related to recovery efforts.					

Note: For second or subsequent waves of the pandemic, follow same activities as listed for Pandemic Period above.

Appendix E

Hospital and Health Care Provider Information

Mass Care, Surge Capacity and Capability

Planning for Mass Care – The ISDH, in cooperation with State Emergency Management Agency personnel (now housed under the newly organized Indiana Department of Homeland Security [IDHS]), created 10 Indiana Public Health Preparedness Districts. Both local health departments (LHD) and hospitals arrange District-level meetings where individual jurisdiction plans are reviewed in the context of District-wide coordinated emergency planning. The ISDH, in cooperation with Indiana Hospital&Health Association, has conducted a detailed assessment of hospital readiness.

The 146 participating Indiana hospitals have developed District-level "All Hazards" plans. To encourage specific planning related to pandemic influenza preparedness and response, guidance is provided to encourage recognition of the unique aspects of this public health emergency. These aspects include:

- Magnitude – anticipated attack rate possibly as high as 35 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 (PHPER) data collection survey from Indiana hospitals for 2005-2006 includes questions on: bed surge capacity and surge capacity for: in-patient alternative care sites, total staffed bed capacity of all alternative care sites, and personal protective equipment supplies related to airborne respiratory diseases. The survey also includes questions about each hospital's progress in completing a pandemic influenza plan, and ventilator capacity. Each hospital is required to submit a pandemic influenza plan to the ISDH for review.

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 FluSurge projections for a 15 percent attack rate and most likely scenario show more than 12,000 total hospitalizations; and at 35 percent attack rate, this total is almost 30,000. These hospitalizations would be spread out across the weeks of the pandemic wave, but 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 pharmaceuticals. The ISDH will provide guidance that highlights these considerations so that hospitals can build on their general All Hazards preparedness for pandemic readiness.

Alternate Care Sites – As alternate care sites are being considered in planning for mass care, discussions and sharing of information should be done between and within the 10 Indiana Public Health Preparedness Districts. The ISDH PHPER District Coordinators are available to assist in

these planning efforts. Several Indiana hospitals have already identified alternate care sites, and all hospitals are being asked to supply information to the ISDH on this issue, as noted above.

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 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. For this document, the latter function will be termed "sorting of patients". The ISDH will provide information from CDC related to patient sorting and/or triage as it becomes available.

Since each hospital's circumstances are unique, each will need 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 emergency department 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 to be further assessed and treated. Municipality zoning regulations may need to be explored regarding the use of portable structures.

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 will also review 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, 10 percent or more workers may be unavailable to perform their usual duties. If limited vaccine and/or antivirals 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 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 and Care

Mental health support and intervention related to a pandemic will be 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. Educational support for issues pertinent to mental health care is available through the ISDH Public Health and Emergency Preparedness range of services and the Indiana Family and Social Services Administration (FSSA) Division of Mental Health and Addiction.

Mass Casualty Event

Consideration should be given to the possibility of pandemic influenza being 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 must focus 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 guiding principles should be considered:

1) In planning for a mass casualty event, the aim should be to keep the health care systems 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.
5) Clear communication with the public is essential before, during, and after a mass casualty event.

Appendix F

Likely Questions Before and During an Influenza Pandemic

Questions that are likely to be asked during a crisis are related to three broad topics:

1. What happened?
2. What caused it to happen?
3. What does it mean?

The following questions are likely to be asked before and during an influenza pandemic. Suggested answers for pre-event questions are also included.

Pre-event:

1. What is influenza pandemic?

A: An influenza pandemic is a global outbreak of disease that occurs when a new influenza virus appears or "emerges" in the human population, causes serious illness, and then spreads easily from person to person worldwide. Past pandemics have led to high levels of illness, death, social disruption, and economic loss.

2. How is an influenza pandemic different from a normal influenza outbreak?

A: Seasonal outbreaks of influenza are caused by subtypes of influenza viruses that are already in existence among people, whereas pandemic outbreaks are caused by new subtypes or by subtypes that have never circulated among people or that have not circulated among people for a long time. Also, pandemics do not necessarily occur during what is considered the "normal" influenza season.

3. When will the next influenza pandemic occur?

A: It is impossible to predict when the next pandemic will occur, but many scientists believe it is only a matter of time. The last pandemic was the 1968-69 Hong Kong flu, which caused about 34,000 deaths in the United States.

4. How can an influenza pandemic be avoided?

A: It is nearly impossible to avoid another influenza pandemic. Instead, plans must be developed to be as prepared as possible when a pandemic begins.

5. Are we prepared for an influenza pandemic?

A: Plans for responding to the next influenza pandemic are being developed at the state, federal, and even international levels. These plans deal with a variety of issues to determine how to make best use of available resources to protect people from infection, to care for patients, and to limit the spread of infection as much as possible.

6. How many people could die in Indiana in an influenza pandemic?

A: The severity and death rate of any influenza pandemic is impossible to predict ahead of time.

7. Is there a vaccine available?

A: A vaccine probably would not be available in the early stages of a pandemic, or would be available in very limited amounts. When a new vaccine against an influenza virus is being developed, scientists around the world work together to select the virus strain that will offer the best protection against that virus, and then manufacturers use the selected strain to develop a vaccine. Once a potential pandemic strain of influenza virus is identified, it usually takes at least six months before a vaccine will be widely available. If a pandemic occurs, it is expected that the U.S. government will work with many partner groups to make recommendations to guide the early use of vaccine.

8. Can antiviral medications be useful during a pandemic?

A: Although four influenza antiviral medications (amantadine, rimantadine, oseltamivir, and zanamivir) are approved by the U.S. Food and Drug Administration for the treatment and/or prevention of influenza, only oseltamivir appears to be effective against the H5N1 influenza virus strains in Asia. Supplies of antiviral medication are likely to be limited and insufficient to meet the demand.

9. Are there enough resources available to handle an influenza pandemic?

A: An influenza pandemic would require a large-scale response, both in terms of personnel and material resources. A great deal of work is being done now to develop and plan for those resources, and to identify where and how they will be accessed.

10. What quarantine/isolation orders will be issued during an influenza pandemic?

A: The severity of the pandemic would determine if any such orders would need to be issued. However, the State Health Commissioner does have the authority to take such action if it is deemed to be necessary. Local Health Officers also have similar authority at the local level.

11. How can people protect themselves?

A: The same steps that individuals can take to protect themselves from seasonal outbreaks of influenza will also be critical during a pandemic. Those steps include frequent and thorough hand washing and various "respiratory hygiene" practices such as covering your mouth when you sneeze or cough. It will also be important for people to stay home from work or school while ill and to seek medical advice and care as needed.

<u>Event:</u>

1. What is happening?

2. What is the cause of this influenza pandemic?

3. Were you prepared for this?

4. **What steps are being taken to deal with this?**
5. **Why wasn't this prevented?**
6. **How many people will die in Indiana?**
7. **How long will it be before the pandemic is over?**
8. **How are you prioritizing care?**
9. **What vaccines or treatment options are available?**
10. **What are you advising people to do?**