

Mississippi Pandemic Influenza Preparedness and Response Plan

Functional Annex 7.0



Mississippi State Department of Health
Public Health Emergency Preparedness and Planning Program

Version 1.3
Prepared July 10, 2008

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I. INTRODUCTION

A. Promulgation and Authorities

This Mississippi Pandemic Influenza (PI) Preparedness and Response Plan (Plan) was written and promulgated under the authority granted the Mississippi State Department of Health (MSDH) as shown below:

- *Miss. Code Ann. Section 41-3-5* – The State Health Officer has authority for direction and control of resources to respond to a public health emergency.
- *Miss Code Ann. Section 41-23-5* – The Mississippi State Department of Health has the authority to investigate and control the causes of epidemic, infectious and other disease affecting the public health including the authority to establish, maintain, and enforce isolation and quarantine and in, pursuance thereof, to exercise such physical control over property and individuals as the department may find necessary for the protection of public health.
- *The State of Mississippi Comprehensive Emergency Management Plan* – This plan provides the organizational structure for emergency and disaster response at the local and state level, and coordination with the federal level.
- *United States Public Law 93-288* – The Robert T. Stafford Disaster Relief Act

The Plan was written in accordance with provisions highlighted in Sub-Section C of this Section regarding the Mississippi State Senior Advisory Committee (SAC) and will be effective upon submission by the SAC and approval by the State Health Officer of the State of Mississippi. This Plan will be executed upon order of the Governor, or his authorized representative.

Submitted:

Approved:

State Health Officer, Mississippi State Department of Health

B. References

Citing reference materials, including related plans of other levels of government, can be valuable for indicating what has influenced the writing of the Plan. Table 1 highlights relevant partners, resources, planning considerations, due process considerations, and issues of legal liability and immunity that may arise in the context of PI.

Table 1 – Legal Partners in PI Preparedness and Response				
Task	Public Health	Public Safety	Emergency Management	Hospitals
Ensure that public health personnel have a basic understanding of the intersection among federal, state, local, and tribal laws regarding quarantine and isolation as they relate to international airports and interstate border crossings.	X	X	X	
Where applicable, draft or update legal orders, motions, and templates requiring medical evaluation of non-compliant persons who meet the PI case definition and have symptoms of PI.	X			X
Ensure that legal counsel has reviewed the feasibility of requiring persons to self-monitor for medical conditions (e.g., temperature checks) and (where applicable) drafted legal orders or agreements.	X			
Ensure that legal counsel has reviewed the feasibility of issuing “exclusion” orders (i.e., excluding contacts from using public transportation, attending public meetings) and, where applicable, drafted templates and legal orders.	X	X	X	
Ensure the existence of a statute, regulation, or other administrative mechanism authorizing isolation/quarantine for PI.*	X	X		
Draft legal orders, motions, and templates for isolation/quarantine in homes, hospitals, or other designated facilities.	X	X	X	X
Ensure that legal counsel has reviewed the feasibility of using electronic methods to monitor suspected non-compliant individuals in home isolation and/or quarantine.	X	X		
Ensure that legal counsel has reviewed draft legal orders, motions, and templates to quarantine facilities and to credential ingress and egress into such facilities.	X	X	X	

Table 1 – Legal Partners in PI Preparedness and Response

Task	Public Health	Public Safety	Emergency Management	Hospitals
Ensure that legal counsel has reviewed the feasibility of using faith-based organizations to assist or provide services to persons in isolation and quarantine.	X			
Ensure that public health officials have reviewed the availability of workers' compensation and/or other forms of financial support for persons unable to return to work because of an isolation/quarantine order.	X			
Ensure that legal counsel has considered whether the health department should issue documents designed to assist with reintegration of persons subject to isolation/quarantine order (e.g., letter to employer or school explaining that patient is no longer infectious).	X			
Ensure that legal counsel has reviewed agreements relating to overtime and/or flexibility of hours for staff.	X	X	X	X
Ensure that legal counsel has a clear understanding of legal authorities relevant to environmental remediation of buildings.	X		X	X
Ensure that public health personnel have adequately coordinated PI planning efforts with tribal governments.	X			
Ensure that public health personnel have adequately coordinated PI planning efforts with military installations and personnel.	X			

*Judiciary partners may also be called upon to address these considerations as part of the affected community's response

C. Senior Advisory Committee (SAC)

1. Statement of Need

The Office of Grants and Training (OGT), Centers for Disease Control and Prevention (CDC), and HRSA [now under the Office of the Assistant Secretary for Preparedness and Response, (ASPR)] all require the establishment of a Senior Advisory Committee (SAC), comprised of senior officials overseeing assistance programs from these and other federal agencies providing homeland security assistance. As required by the OGT, CDC, and ASPR, the SAC was developed by the Mississippi State Department of Health to enhance integration of disciplines involved in homeland security, including public health and healthcare. *The SAC provides a forum to solicit public comment regarding emergency preparedness plans and their implementation.*

2. Planning Parameters

The Department of Health and Human Services' (HHS) Centers for Disease Control and Prevention (CDC) announced the availability of Budget Period 8 funding for continuation of the Public Health Emergency Preparedness (PHEP) Cooperative Agreement. The primary intent of this cooperative agreement is to fund the active participation of recipients in the immediate establishment, use, and continuous improvement of a national system of public health emergency preparedness that uses the CDC Preparedness Goals and associated measures to monitor public health system response performance.

Funds are intended to develop emergency-ready public health departments by upgrading, integrating and evaluating state and local public health jurisdictions' preparedness for and response to terrorism, pandemic influenza, and other public health emergencies with federal, state, local, and tribal governments, the private sector, and non-governmental organizations (NGOs). These emergency preparedness and response efforts are intended to support the National Response Plan (NRP)¹ and the National Incident Management System (NIMS)².

In addition, the activities described in this cooperative agreement guidance are designed to develop emergency-ready public health departments in accord with the National Preparedness Goal (NPG)³, the Public Health and Healthcare Supplement to the NPG⁴, and CDC's Preparedness Goals. The NPG contains three valuable components to help guide preparedness planning and implementation: the National Planning Scenarios, the Universal Task List (UTL), the Target Capabilities List (TCL)⁵. The Department of Homeland Security (DHS) coordinated the development of the NPG in concert with the HHS and other federal departments as well as with representatives of state, tribal and local public health departments and other stakeholders (e.g., healthcare, emergency management, law enforcement). All of these documents will be refined and extended periodically to capture lessons learned and to introduce new concepts as appropriate.

Public health emergency preparedness plans for development and/or revision shall be identified by programs from the OGT, HHS, CDC, ASPR and other federal agencies providing homeland security assistance. Additional plans may be identified as corollary to program-required plans. The Emergency Coordinating Officer (ECO) from the Mississippi State Department of Health will solicit plan development and/or revision through the State Emergency Coordinating Officers Quarterly Meeting. All State-designated ECOs should coordinate plan development; the Mississippi State Department of Health will retain emergency planners to facilitate solicited plans that support public health functions as delineated by the OGT, HHS, CDC, ASPR, and other federal agencies providing homeland security assistance.

¹ National Response Plan: http://www.dhs.gov/interweb/assetlibrary/NRP_FullText.pdf

² National Incident Management System <http://www.fema.gov/nims/>

³ Interim National Preparedness Goal: http://www.ojp.usdoj.gov/odp/docs/InterimNationalPreparednessGoal_03-31-05_1.pdf

⁴ Interim Public Health and Healthcare Supplement to the National Preparedness Goal: <http://www.hhs.gov/ophep/npgs.html>

⁵ Draft Target Capabilities List: Version 2.0; December 2005. U.S. Department of Homeland Security Office of Grants and Training (ATTN: Office for Policy, Initiatives, and Analysis) 810 7th Street, NW Washington, DC 20531. Version 2.0 of the Target Capabilities List will be made available on the OGT Secure Portal (<https://odp.esportals.com>) and the Lessons Learned and Information Sharing network (www.llis.gov)

As set forth in the Statement of Need, the SAC provides a forum to solicit public comment regarding emergency preparedness plans and their implementation to ensure ongoing public comment. As such, the SAC shall be the venue through which emergency preparedness plans are vetted.

3. SAC Membership

SAC membership must, at a minimum, include state officials directly responsible for the administration of OGT grants and CDC and HRSA cooperative agreements:

- State Administrative Agency (SAA);
- ASPR Program Director/Primary Investigator;
- ASPR Bioterrorism Hospital Coordinator; and
- CDC Program Director/Primary Investigator.

In addition, program representatives from the following entities will be considered for membership on the committee due to logical functional roles and resources:

- State Homeland Security Advisor;
- State Emergency Management Agency Director;
- State Public Health Officer;
- State Public Safety Officer;
- State EMS Director;
- State Trauma System Manager;
- State Citizen Corps POC;
- United States Coast Guard Area Command or Captain of the Port;
- Senior Security Officials from Major Transportation Systems; and
- Adjutant General.

SAC membership will be broadened to include members from additional disciplines such as medical examiners, legal counsel, agriculture, and finance, local jurisdictions, associations and regional working groups. The State Office for Aging or equivalent office should be engaged in addressing the emergency preparedness, response and recovery needs of the elderly.

4. SAC Structure

a. Working Groups

Solicitation of comment and dispensing of advice, on public health emergency preparedness plans shall be directed through function-focused working groups generated within the Senior Advisory Committee. For major public health emergencies, the following functions have been identified:

- Continuity of Critical Functions;
- Sustaining the Economy, Trade, and Business;
- State Workforce;

- Safety and Public Security; and
- Agriculture and Food Safety.
- Surveillance: Epidemiologic, Laboratory, Veterinary;
- Public Information;
- Communications;
- Responder Safety and Health;
- Community Mitigation, Isolation and Quarantine, Non-pharmaceutical Interventions, School Closures;
- Mass Prophylaxis and Mass Vaccination;
- Community-wide Healthcare Coalitions to Meet Medical Surge;
- Mass Care, Citizen Evacuation and Shelter-In-Place;
- Mass Fatality; and
- Mental Health.

A representative (designated Facilitator) from the Mississippi agency tasked as having primary roles and responsibilities in preparedness and response for the function shall lead work group efforts. Representation from all Mississippi agencies required for support in preparedness and response for the function, and other stakeholders, shall be considered for membership on the working group.

b. Coordinating Committee

Consensus on provisions set forth in plans shall be sought through a Coordinating Committee. The Coordinating Committee shall consist of:

- At least seven members, representing the diversity of governmental agencies, non-governmental agencies, Indian Nations, military, private sector partners, and faith-based organizations;
- Have a member who is familiar with issues related to vulnerable populations, including the elderly;
- Have a member trained in ethics;
- Have a member with legal training; and
- Have senior representation from the Mississippi State Department of Health.

The Coordinating Committee may include consultants in their discussions of individual plans to meet requirements for expertise or diversity. For continuity of planning initiatives, members of the Coordinating Committee shall fulfill a two-year term.

c. Meetings

Work groups shall meet quarterly. Representatives from MSDH shall present updated programmatic activities and content of developed and/or revised plan(s). Following presentations, members will convene within function-focused working groups to assist in generation of comments and advice for plan improvement for that function.

The Coordinating Committee shall meet biennially and provide consensus on provisions set forth in plans.

D. Record of Changes

The Plan will be reviewed on a biannual basis under the oversight of the SAC. The SAC will ensure that current emergency plans reflect lessons learned from response experiences (both exercises and actual responses). Changes to the Plan will be reflected within the Record of Changes shown in Attachment A.

E. Record of Distribution

Distribution of the Plan shall be performed in accordance with the Distribution Lists shown in Attachment B. Every effort shall be made to ensure that modifications and updates are distributed in 30 days.

II. PLAN PURPOSE AND SCOPE

This Plan establishes a framework for management of State-wide operations in response to a sudden, pervasive influenza associated illness with appropriate, structured and well-designed responses. It establishes policies and procedures by which the State shall coordinate local, State, and Federal preparedness and response efforts for PI; and identifies addresses, analyzes, and provides a broad series of guidelines for action in case the influenza pandemic threat is realized and covers all events and activities deemed by the State Health Officer, or his designee, to require a coordinated Statewide response.

The Plan embraces the National Response Plan (NRP) and the National Incident Management System (NIMS) as fundamental guidance for PI preparedness and response and is amended and updated to reflect evolving guidance and requirements of the NRP and NIMS. The State of Mississippi Comprehensive Emergency Management Plan (CEMP) and the MSDH Emergency Support Function (ESF)-8 Concept of Operations Plan for Public Health and Medical Emergencies (CONOPS Plan) provide an organizational structure to allow emergency medical services personnel and health care facilities to work together in a collaborative way and to provide assistance in situations where local resources are overwhelmed. This Plan is based on policies and procedures established within these two documents and serves as a Functional Annex to the CONOPS Plan.

The Plan is organized as follows:

- Functional Annex 7.0 – This public health focused Plan provides an overview of the State's approach to PI preparedness and response including planning situation and assumptions, State-wide roles and responsibilities (concept of operations), and general support requirements (administration and logistics).
- Additional Functional Annexes – Additional Functional Annexes provide specific information and direction, emphasizing responsibilities, tasks, and operational actions that pertain to the function. While the Functional Annexes name and describe the specific tasks, they do not describe detailed procedures to perform them. The detailed procedures shall be developed by the Mississippi primary and support agencies in the form of Interagency Coordination Procedures (ICPs), Standard Operating Procedures (SOPs), and Standard Operating Guides (SOGs). Functional Annexes describing specific aspects of PI planning and response include:
 - Preparedness in Non-Governmental, Business, and Industry;
 - Preparedness in Department of Education;
 - Preparedness in Institutes of Higher Learning;
 - Preparedness in Safety and Public Security;
 - Continuity of Critical Functions;
 - Sustaining the Economy, Trade and Business; and
 - Statewide Workforce.

III. SITUATION AND ASSUMPTIONS

A. Situation

PI represents a unique public health emergency, on the one hand, and a local/community disaster, on the other. Its occurrence is no longer considered contingent, but rather inevitable. To be sure, the timing of its advent, duration, and severity are as yet unpredictable. While the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and other legitimate epidemiology and health promotion/protection organizations have vigilantly monitored and intervened in the course of the Avian influenza affecting large regions of Asia, eastern Europe, and northern Africa; there may still be very little in the way of real warning of the actual emergence of PI. Expert consensus, however, suggests that a hiatus of one to six months, from the identification of a novel viral strain to widespread outbreaks in the United States, will likely pertain. Outbreaks will occur simultaneously and ubiquitously. And depending upon the severity and the “multi-modal” wave nature of the PI, the effects upon individual communities will be significant and enduring—almost certainly to extend for months and beyond the traditional parameters of health and physical well-being.

PI portends profound effects upon all elements and segments of society. A large number of cases will increase the burden to hospitals and other health care infrastructure already stressed by “normal” case-load volume and acuity. Mortality is characteristically increased and may paradoxically be focused upon the young and productive in the first three decades of life. Health and medical personnel, emergency first responders, and public works and services employees will not be immune; in fact, the nature of their work and contact will make them especially vulnerable.

As there is no pharmaceutical or other therapeutic intervention which constitutes a *cure* for PI (or any influenza, for that matter), medical strategy emphasizes the course of prevention, by immunization, and secondarily pursues control by timely initiation of neuraminidase-inhibiting antiviral compounds, by fastidious respiratory hygiene and personal protection, and by other non-pharmaceutical methods. Vaccine against a novel influenza strain, however, will be unavailable initially; and when it becomes available (based on conventional manufacturing technology and capability—at least four months into the pandemic), vaccine supplies will be very limited. Adequate supplies and efficacy against the novel viral strain of PI antivirals have **NOT** been established. In view of the situation with both vaccine and antiviral agents, mitigation of PI, particularly during the first wave (first 120 days)—on both the community and individual level—will depend heavily, if not exclusively, on non-pharmaceutical measures.

The Mississippi State Department of Health (MSDH) has assumed the leadership in developing contemporary, pandemic-specific elements of the Plan. In 2005, senior management of MSDH created the SAC of key individuals from other state agencies (finance and administration, mental health, education, institutions of higher learning, public safety, corrections, Mississippi Emergency Management Agency (MEMA), military, etc.) and from public/private collaborations in business, commerce, and industry. On May 1, 2006, Mississippi's Pandemic Summit was hosted by Governor Haley Barbour and MSDH; HHS Deputy Secretary Alex Azar participated. Subsequently SAC was charged with the task to initiate sector-specific PI planning. On January 25, 2007, many members (or their designees) of SAC were reassembled to begin the actual work of plan formulation, work which continues today.

B. Assumptions

The following general and Mississippi-specific assumptions have informed the development of the Plan:

- 1 All state agencies, businesses, other non-governmental organizations, school districts—in short, each aspect of the public and private sectors—will be adversely affected by PI; and all but critical missions and essential services may be suspended for an extended period of time (months).
- 2 As the pandemic will be ubiquitous; it will be folly to depend or rely upon outside aid and resources. Hence, as support and response during the pandemic must be primarily LOCAL; planning and preparedness must be LOCAL ventures during the pre-pandemic period.
- 3 Susceptibility to the PI subtype will be universal.
- 4 Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection.
- 5 Seasonality of a pandemic cannot be predicted with certainty.
- 6 Mississippi can not depend upon a lengthy “lead time” between determination of the advent of the pandemic (elsewhere in the world) and the first outbreak in Mississippi. There may be less than six weeks of warning from the time the pandemic is announced before it actual reaches Mississippi.
- 7 The pandemic may last up to 18 months and may occur in two or three waves, with both waxing and waning mortality and morbidity; though the first wave is likely to be the most challenging in these latter regards.
- 8 A “wave” of severe disease could last up to four months.
- 9 PI, like seasonal influenza, is transmitted principally by droplet vector, by aerosolization, and, probably to a slightly lesser extent, by extremity contact and central redirection to the mucosa of the oro/nasopharynx and conjunctiva.
- 10 Short of a quantum leap in current vaccine manufacturing technology and production capacity, vaccine to the novel pandemic viral strain will not be available for the first four months of the pandemic (the first wave), and then it will likely exist in only limited quantities requiring discerning allocation.
- 11 Antivirals (even the neurominidase-inhibiting agents) do not have proven efficacy against the novel viral strain (consider the emerging resistance of some H5N1 Avian influenza viral clades in Egypt to oseltamivir); even if it does have, its use is very time-sensitive (“golden period”); and even if it does have, the quantity of courses for treatment (much less prophylaxis) may be insufficient to be applicable to the broad population.
- 12 Antivirals are NOT indicated for very young infants.
- 13 As a result of the three immediately preceding assumptions, non-pharmaceutical interventions will emerge, almost by default, as a principal arm of mitigation strategy, particularly during the first wave.
- 14 At some point, isolation and quarantine may be a necessity. While a “voluntary” application of community mitigation techniques with hopefully high levels of “voluntary” compliance is the preferred

approach; a dire scenario (extremely unlikely) could necessitate mandatory implementation of isolation, quarantine, and social distancing.

- 15 Aggregate absenteeism for those who are ill, caring for the ill or for the “worried well” may exceed 50%, with time off work ranging from days to weeks, possibly months.
- 16 Employing State and county census data for the year 2005, reflecting a population of 2.9 million, and a 25% gross attack rate (1918-like scenario), Mississippi would observe, over an 8-week period (See Attachment C):
 - a) 646,220 individuals who become ill;
 - b) 323,110 who would seek out-patient care;
 - c) 68,416 who would ordinarily require conventional hospitalization
 - d) >14,000 who would need intensive or critical care;
 - e) >7,200 who would require mechanical ventilation; and
 - f) 15,635 who would die as a direct or indirect result of the pandemic.
- 17 Based on a March 2007 report issued by the Trust for America’s Health, Mississippi would experience a profound economic blow: a projected gross domestic product loss of \$4.9 billion, in the context of an annual 2005 (year of Hurricane Katrina) GDP of \$81.3 billion. This loss would amount to a nearly 6% decline, making it by percentage reduction the 7th hardest-hit state among the 50.

IV. CONCEPT OF OPERATIONS

The Office of the Governor will use the full spectrum of its authority and resources to accomplish assigned roles, responsibilities, functions, goals, and missions of the Plan. In accordance with responsibilities outlined in the HHS PI Plan (Part 2: Introduction, page I-4; www.hhs.gov/pandemicfluplan/part2.pdf [accessed 02/03/06]), Federal, State, and local roles during an influenza pandemic are the following:

A. Federal

The Federal Department of Health and Human Services will support affected states or jurisdictions during an influenza pandemic by:

- Conducting outbreak investigations, as requested;
- Conducting epidemiologic and laboratory-based studies ("special studies");
- Providing ongoing information from the national influenza surveillance system on the pandemic's impact on health and the healthcare system;
- Expanding supply of antiviral drugs by stimulating increased U.S. based production capacity;
- Expanding U.S.-based production capacity for pandemic vaccine and working with manufacturers to ensure that pandemic vaccine is produced at full capacity;
- Distributing public stocks of antiviral drugs and other medical supplies from the Strategic National Stockpile to the states;
- Distributing public stocks of vaccines, when they become available;
- Providing guidance on community containment strategies, including travel restrictions, school closing, and quarantine;
- Communicating with the public via the news media; and
- Monitoring the response.

B. State of Mississippi

To coordinate the PI response, responsibilities of the MSDH include:

- Enhancing disease surveillance to ensure early detection of the first cases of PI within the State or affected jurisdiction;
- Distributing public stocks of antiviral drugs and vaccines and providing local physicians and hospital administrators with updated guidance on clinical management and infection control as the situation unfolds;
- Preventing local disease transmission using a range of containment strategies;
- Providing ongoing communication with the public (about the response effort, including the purpose and duration of containment measures); and
- Providing psychological and social support services to emergency field workers and other responders.

C. Local Level

During a pandemic, local jurisdictions are responsible for coordinating health care activities within the community and should work with local health departments and hospitals to:

- Improve communication with medical care providers and health care organizations;
- Monitor local hospital resources (e.g., adult and pediatric hospital beds, intensive care unit beds, emergency department beds, medical supplies, respirators and other equipment, mortuary capacity);
- Address emergency healthcare staffing needs and other medical surge capacity issues;
- Encourage coordination among state and federal healthcare facilities, such as Veterans Administration hospitals, Indian Health service facilities, and Department of Defense hospitals;
- Conduct contingency planning with:
 - Private sector groups that support hospital functions, to ensure continuity of operations during the pandemic;
 - Public utilities to ensure continued service during the pandemic;
 - Local law enforcement agencies who can help maintain order if a hospital is overwhelmed by a large volume of patients (ill or worried about being ill);
 - Identify alternative care sites for patient care (child and adult) and sites for quarantine; and
 - Identify community-based organizations that can provide psychological and social support to healthcare workers, public health field workers, and other emergency responders.

D. Operating Parameters

The State of Mississippi adopted the National Incident Management System (NIMS) as the fundamental principle of emergency management, and utilizes the components of NIMS, namely, Incident Command System (ICS) and Unified Command (UC), to provide the consistent approach for emergency management by and between the Federal, State, Tribal, and local governments. The State of Mississippi government and agencies, as well as local jurisdictions, will strive to achieve interoperable communications to support essential functions and activities required in response to PI.

The Mississippi CEMP describes the State's approach to response and recovery activities related to emergencies and major disasters. It established the policies and procedures by which the State shall coordinate local, State, and Federal response to disasters that affect Mississippi. It utilizes the Emergency Support Function (ESF) concept to marshal and apply State resources and describes the responsibilities of State agencies in executing effective response and recovery operations. For PI, MSDH will be the lead coordinating agency for preparedness, response, and recovery actions under ESF 8, Public Health and Medical Services. Actions will be guided by the WHO phases linked to the six USG stages (See Attachment E).

The Plan uses performance measures, as prescribed by the Centers for Disease Control and Prevention (CDC), Atlanta, GA, designed to aid in preparedness and response efforts. These performance measures involve six concepts and nine critical tasks as shown below:

1. Prevent

- Increase the use and development of interventions known to prevent human illness from any kind of mass casualty threat.
- Decrease the time needed to classify health events as terrorism or naturally occurring, in partnership with other agencies.

2. Detect/Report

- Decrease the time needed to detect and report any agent in tissue, food, or environmental samples that threatens the public's health.
- Improve the timeliness and accuracy of information regarding threats to the public's health.

3. Investigate

- Decrease the time needed to identify causes, risk factors, and appropriate interventions for those affected by threats to the public's health.

4. Control

- Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health.

5. Recover

- Decrease the time needed to restore health services and environmental safety to pre-event levels.
- Increase the long-term follow-up provided to those affected by threats to the public's health.

6. Improve

- Decrease the time needed to implement recommendations from after-action reports following threats to the public's health.

V. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Statewide Command and Control

Statewide command and control mechanisms and parameters are defined in the CEMP in Sections III, Concept of Operations, Section IV, Local, State and Federal Relationships, and Section V, Organization and Assignment of Responsibilities. Specifically, the CEMP defines MEMA as the primary interface between local authorities and the state during an emergency. ESF 8, as an Annex to the CEMP, further defines MSDH as the responsible State authority for command and control of public health emergencies. MEMA and MSDH will coordinate State-level command and control during a PI incident.

B. Public Health Command and Control

Under the CEMP, MSDH is assigned primary responsibility for public health command and control. Specifically, MSDH assumes responsibility for command and control during a PI incident under ESF 8, Public Health and Medical Services.

The MSDH CONOPS Plan and this Plan establish the framework for managing MSDH operations in response to a sudden, pervasive influenza associated illness with appropriate, structured, and well-designed responses. The Plan identifies, addresses, analyzes, and provides a broad series of guidelines for action in case the influenza pandemic threat is realized and covers all events and activities deemed by the State Health Officer, or his designee, to require a coordinated agency response.

1. Situation

- PI occurs when “novel” Influenza A viruses bearing new surface proteins derive from animal influenza viruses emerge and spread globally among people. Pandemic viruses constitute new Influenza A viruses to which large portions of the world’s population lack preexisting protective antibody. Consequently, global and national levels of illness and deaths can be much higher and more severe.
- The emergence of a nationwide influenza pandemic, the need to vaccinate millions of persons as rapidly and safely as possible, and the devastating socioeconomic and mortality effects will pose a potentially overwhelming and unworkable burden on the usual sites for annual influenza vaccinations. Therefore, the efficient distribution of vaccine and/or antiviral agents at prepared PI administration sites is vital. An added crisis will exist when there is a vaccine shortage.
- This document is based upon the policies and procedures established in the MSDH CONOPS Plan.
- The response to PI will utilize much the same infrastructure as that needed for response to other major public health and medical emergencies.
- Existing departmental command system structures should be applied to PI. These include:
 - The MSDH CONOPS Plan; and
 - The MSDH Mississippi Health Response Team (MHRT) System Description.

- Any ESF 8 deployed field personnel or units are subordinate to the MSDH EOC and will stay in contact with them at all times.
- Statewide Mutual Aid Compact (SMAC) and Emergency Management Assistance Compact (EMAC) will be utilized for requests for emergency medical and health service resources exceeding local and regional capacities.

2. Assumptions

- All state agencies, businesses other non-governmental entities, school districts, every aspect of public and private sector will be adversely affected by the advent a PI and critical missions and essential services maybe suspended/terminated for a substantial period of time. These entities may not be able to rely on mutual aid and assistance from outside sources due to widespread illness.
- The pandemic may last up to 18 months.
- A large number of cases will increase the burden to hospitals and other health care infrastructure already stressed by “normal” case-load volume and acuity.
- ESF 8 will be the lead ESF in coordination of preparedness and response actions for an influenza pandemic.
- Support and response will be local.
- All actions and operations to protect public health during an influenza pandemic will be accomplished with a reduction in workforce by 50%.
- Federal stockpiles of antiviral medications will be shipped upon imminent threat of pandemic.
- Pre-pandemic strain of vaccine will be made available by the Federal government for protection of state critical infrastructure.
- Pandemic strain vaccine will be allocated to states *pro rata*. Manufacturing capacity will be the limiting factor for vaccine availability, thus necessitating a lengthy vaccine campaign by States.
- At some point, isolation and quarantine may be a necessity. While a “voluntary” application of community mitigation techniques with hopefully high levels of “voluntary” compliance is the preferred approach; a dire scenario (extremely unlikely) could necessitate mandatory implementation of isolation, quarantine, and social distancing.

3. Concept of Operations

Basic operational concepts are illustrated below:

- **Mississippi State Department of Health:** Conduct impact assessments for PI; manage information needed to support PI operations which includes incident management plan and development of response and recovery strategies.
- **Mississippi Emergency Management Agency:** Coordinate State and local assets to assist State and local officials in operations required for a PI response.
- **Mississippi Department of Human Services:** Coordinate efforts to provide basic human needs following PI.

- **Mississippi Healthcare Coalition / Mississippi Hospital Association:** Provide and coordinate local medical resources in response to PI to include population-based triage, medical surge capabilities, and emergency medical transportation.
- **Mississippi Department of Agriculture and Commerce:** Maintain plan for surveillance and mitigation of influenza disease in animals and coordinate communication of influenza disease outbreak in animals to public health.
- **Mississippi Board of Animal Health:** Conduct surveillance and coordinate mitigation of influenza disease in animals; communicate influenza disease outbreak in animals; and coordinate burial and disposal of animals affected by influenza.
- **Mississippi Department of Environmental Quality:** Coordinate the provision of State support to local governments in response to a PI outbreak.
- **Local Mortuary Services and Coroners:** Provide logistical and medical resource support to State and local government organizations in response to PI.
- **Mississippi Department of Mental Health:** Coordinate efforts to provide basic human mental health needs during and following an influenza pandemic.
- **Mississippi Military Department:** Provide military support to civil authorities including personnel, equipment, and sheltering resources.
- **Mississippi State Board of Pharmacy:** Provide logistical and medical resource support to State and local government organizations in response to PI.
- **Department of Rehabilitation Services-Vocational Rehabilitation:** Coordinate efforts to provide basic human needs to special needs populations following an influenza pandemic.
- **Mississippi Veterinary Medical Association:** Coordinate veterinary services and animal care with the Department of Agriculture and Commerce.
- **Division of Medicaid:** Coordinate efforts to provide basic human needs to special needs populations following an influenza pandemic.
- **Board of Medical Licensures:** Assist in recruitment and credential validation of physicians and other practitioners for pre-placement into the ESAR-VHP.
- **Board of Nursing:** Assist in recruitment and credentialing of nurses and volunteer nurses.
- **Mississippi Department of Education:** Coordinate educational needs, potentially long-term, of elementary and secondary students; coordinate mitigation strategies applicable to education systems.
- **Mississippi Institutes of Higher Learning:** Coordinate educational needs, potentially long-term, of community college and senior college students; coordinate mitigation strategies applicable to education systems.
- **Mississippi Department of Public Safety:** Coordinate and provide State telecommunications support; coordinate personnel and resources from State agencies to assist State and local government agencies in maintaining order, enforcing laws, controlling ingress and egress, and protecting life and property following an influenza pandemic.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak confirmed in at-risk country.

- The MSDH Office of Epidemiology will coordinate surveillance and epidemiological investigation activities, including implementing ongoing influenza surveillance.
- The MSDH Office of Emergency Planning and Response (OEPR) will review and update the Plan annually. Updates will be vetted through the SAC and reassessed by MSDH Policy/Evaluation.
- The Plan will be exercised as prescribed in MSDH preparedness guidance. Design of public health preparedness and response exercises will:
 - Be constructed so that skills utilized and tested in all disease investigation/ response exercises will further pandemic flu preparedness efforts;
 - Assist healthcare facilities test healthcare response issues at the local level; and
 - Build partnerships among healthcare and public health officials, community leaders, and emergency response workers.
- The MSDH OEPR will coordinate planning for the request and distribution of vaccines (see Section V, Subsection I) and medical countermeasures for PI, including antiviral medications, (see Section V, Subsection H) through the recommendations of the State Epidemiologist.
- The MSDH Office of Communications and the Office of Epidemiology will review PI public information templates annually, and as deemed appropriate, to ensure inclusion of most recent information and recommendations.

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak in at-risk country.

- The MSDH Legal Office will appraise legal issues that can affect planning, operations, healthcare staffing, and patient care.
- Using HHS guidelines for vaccine and antiviral priority lists, the State Epidemiologist will make recommendations and advise the Governor through the MSDH OEPR.
- The State Department of Agriculture and Commerce with the State Veterinarian's Office will advise MSDH of outbreaks of animal illness that can affect humans (i.e. avian influenza).

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The MSDH Office of Epidemiology will notify the State Health Officer (SHO) and MSDH OEPR of a credible threat, a potential emerging emergency or actual event of significance.
- The Director of Health Protection (DHP) will provide a situational update to the Core Notification Response staff.
- The DHP shall provide status updates of activities to the SHO.
- A novel virus alert will be issued to public health and medical entities using the Mississippi Health Alert Network (HAN).

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Confirmed human outbreak overseas.

- The MSDH Office of Epidemiology will notify the SHO and MSDH OEPR of a credible threat, a potential emerging emergency or actual event of significance.
- The DHP will consult with the State Epidemiologist and SHO for a transition from normal operations to a coordinated agency emergency response operation by the MSDH EOC. Depending on the situation, coordinated agency response may be Level III or Level IV.
- The DHP will provide a situational update to the Core Notification Response staff.
- The SHO, or his designee, will name an Incident Commander as well as a liaison and serve as the focal point for coordinating MSDH response activities with MEMA.
- The Incident Commander shall provide status updates of activities to the SHO.
- A novel virus alert will be issued to public health and medical entities using the Mississippi Health Alert Network (HAN).
- The MSDH Office of Epidemiology will notify district health departments and ask them to increase local surveillance and increase case detection among persons who recently traveled to the outbreak area and present with clinical illness possibly caused by the novel influenza virus.
- District health departments will notify county health departments and ask them to increase local surveillance and increase case detection among persons who recently traveled to the outbreak area and present with clinical illness possibly caused by the novel influenza virus.
- The Operations Section Chief will place the RSS Team on Alert or Stand-by status, as the situation dictates.
- The Operations Section Chief will notify POD Strike Team Leads to place POD Teams on Alert.
- The MSDH Office of Communications will implement its risk communications plan (see Section V, Subsection D) and link public information functions with federal and local counterparts in preparedness mode.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission confirmed in humans. Widespread human outbreaks confirmed in multiple locations overseas.

- The MSDH EOC will upgrade activities to a Level III response as recommended by the State Epidemiologist and/or SHO.
- The Liaison Officer will convene with the Planning/Intelligence Section Chief and the Safety/Medical Officer and meet with partners and stakeholders to review:
 - This Plan;
 - The First Responder Protection Plan; and
 - The MSDH Plan for Receiving, Distributing, and Dispensing Strategic National Stockpile Assets (MSDH SNS Plan).
- The Field Response Branch Director will call for inventory of antiviral supplies and other essential medications throughout the state.
- The RSS Team will be placed on Stand-by or Active Status.
- The Operations Section Chief will request Mississippi Health Response Teams (MHRTs) and POD Strike Team Leads to arrange for operations of PODs.
- Depending on availability of pre-pandemic strain vaccine, POD Teams will be placed on Stand-by or Active Status.
- The MSDH EOC will notify key state government officials and legislators of the need for additional monetary resources (if not already available).
- The Logistics Section Chief and District Health Offices will notify key officials and emergency management of need for additional resources, if necessary.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans. First human case in North America OR spread throughout United States.

- The MSDH EOC will upgrade to a Level II or Level I response through the recommendation of the SHO.
- As deemed appropriate, the Incident Commander may establish support cells for the purpose of coordinating activities assigned by the Incident Commander; all such support cells will coordinate operational information with the MSDH EOC.
- The Liaison Officer will convene with the Planning/Intelligence Section Chief and the Safety/Medical Officer and meet with partners and stakeholders to review and fully activate:
 - This Plan;
 - The First Responder Protection Plan; and
 - The MSDH SNS Plan.
- Depending on availability of vaccine, antivirals, and medical countermeasures, RSS Team will be placed on Active Status.
- Depending on availability of product, PODs will be activated for administration of pre-pandemic strain vaccine.
- The POD Operations Manager will report operational information routinely to Operations Section.
- The POD Operations Manager will coordinate activities with neighboring jurisdictions and with MSDH EOC.
- The MSDH EOC and the State EOC will coordinate response with neighboring states and Mississippi tribes.

- The ESF 8 Public Information Officer (PIO)/Emergency Communications Officer will initiate communication with local and national counterparts as directed by the Incident Commander.
- The ESF 8 PIO/Emergency Communications Officer will interface with appropriate counterparts at the national level.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

- The MSDH EOC will convene with the State Epidemiologist and other appropriate stakeholders to assess criteria for potential cessation of enhanced public health support and generate a demobilization plan to describe staged withdrawal of enhanced public health support.
- The Planning/Intelligence Section will submit an After Action Report (AAR) and revise the Plan as appropriate for subsequent waves.

h. Specific Agency Functions

Table 2 – Agency Command and Control Functions	
Agency	Functions
Mississippi State Department of Health	<ul style="list-style-type: none"> • Coordinate State-level response during a PI outbreak. • Conduct impact assessments for PI; manage information needed to support PI operations which includes incident management plan and development of response and recovery strategies.
Mississippi Emergency Management Agency	<ul style="list-style-type: none"> • Coordinate State and local assets to assist State and local officials in operations required for a PI response.
Mississippi Department of Human Services	<ul style="list-style-type: none"> • Coordinate efforts to provide basic human needs following PI.
Mississippi Healthcare Coalition / Mississippi Hospital Association	<ul style="list-style-type: none"> • Assist in hospital planning for medical surge as a result of PI. • Assist in hospital planning for alternate sites of medical care for patients ill with PI. • Aid MSDH in coordination of health care services during an influenza pandemic.

Table 2 – Agency Command and Control Functions

Agency	Functions
Mississippi Department of Agriculture and Commerce	<ul style="list-style-type: none"> • Maintain plan for surveillance and mitigation of influenza disease in animals. • Coordinate communication of influenza disease outbreak in animals to public health. • Coordinate burial and disposal of animal carcasses affected by influenza disease. • Inspect and certify quality of food to minimize the potential for transmission of influenza disease in animals to humans. • Provide vehicles and personnel to transport disaster victims to hospitals or other public health facilities.
Mississippi Board of Animal Health	<ul style="list-style-type: none"> • Coordinate burial and disposal of animal carcasses affected by influenza disease. • Review and authenticate medical and professional licenses and certification for in-state use for volunteers.
Mississippi Department of Environmental Quality	<ul style="list-style-type: none"> • Coordinate the provision of State support to local governments in response to a PI outbreak.
Local Mortuary Services and Coroners	<ul style="list-style-type: none"> • Designate at least one ECO to serve on the State Mass Fatality Task Force when activated. • Provide and coordinate victim identification and emergency services through Mass Fatality Task Force. • Recover in-home bodies of patients who died from PI for burial. • Arrange for transportation and storage of bodies through the Mass Fatality Task Force. • Assist in the dissemination of any information to the families of the deceased through the Mass Fatality Task Force.
Mississippi Department of Mental Health	<ul style="list-style-type: none"> • Coordinate efforts to provide basic human mental health needs during and following an influenza pandemic.

Table 2 – Agency Command and Control Functions

Agency	Functions
Mississippi Military Department	<ul style="list-style-type: none"> • Provide facility and staff security for Receiving, Storage, and Staging (RSS) site. • Provide facility and staff security for mass vaccination sites. • Transport civilian medical personnel to RSS and mass vaccination sites. • Provide logistical support such as transportation, water purification, and other as needed.
Mississippi State Board of Pharmacy	<ul style="list-style-type: none"> • Assist in recruitment of pharmacists and certified pharmacy technicians for pre-placement into the ESAR-VHP. • Provide certified personnel and emergency medication and pharmaceutical resources. • Review and authenticate medical and professional licenses and certification for in-state use for volunteers.
Department of Rehabilitation Services-Vocational Rehabilitation	<ul style="list-style-type: none"> • Coordinate efforts to provide basic human needs to special needs populations following an influenza pandemic.
Mississippi Veterinary Medical Association	<ul style="list-style-type: none"> • Coordinate veterinary services and animal care with the Department of Agriculture and Commerce.
Division of Medicaid	<ul style="list-style-type: none"> • Promote and disseminate as needed Medicaid customer service and assistance.
Board of Medical Licensures	<ul style="list-style-type: none"> • Assist in recruitment of physicians and other practitioners for pre-placement into the ESAR-VHP. • Assist with credentialing verification of medical practitioners.
Board of Nursing	<ul style="list-style-type: none"> • Assist in recruitment of nurses for pre-placement into the ESAR-VHP. • Provide credentialing and investigative services for volunteer nurses. • Provide guidance in placement of volunteer nurses during PI.
Mississippi Department of Education	<ul style="list-style-type: none"> • Maintain a plan, in coordination with MSDH, for PI mitigation actions within elementary and secondary education systems throughout Mississippi. • Coordinate with MSDH for closure of schools, if required, during PI. • Maintain a continuity of operations plan which addresses meeting education needs in the event of school closure.

Table 2 – Agency Command and Control Functions

Agency	Functions
Mississippi Institutes of Higher Learning	<ul style="list-style-type: none"> • Maintain a plan, in coordination with MSDH, for PI mitigation actions within community and senior college systems throughout Mississippi. • Coordinate with MSDH for closure of academic campuses, if required, during PI. • Maintain a continuity of operations plan which addresses meeting education needs in the event of academic campus closure.
Mississippi Department of Public Safety	<ul style="list-style-type: none"> • Provide facility and staff security for Receiving, Storage, and Staging (RSS) site. • Provide facility and staff security for mass vaccination sites. • Transport civilian medical personnel to RSS and mass vaccination sites.

5. MSDH Continuity of Operations Plan

Please reference the MSDH Continuity of Operations Plan.

C. Public Health Epidemiological and Laboratory Surveillance

As with Public Health Command and Control, the CEMP assigns primary responsibility for public health epidemiological and laboratory surveillance to MSDH. Specifically, MSDH performs epidemiological and laboratory surveillance relative to PI under ESF 8, Public Health and Medical Services.

The MSDH CONOPS Plan and this Plan establish the framework for managing MSDH operations in response to a sudden, pervasive influenza associated illness with appropriate, structured, and well-designed responses. The Plan identifies, addresses, analyzes, and provides a broad series of guidelines for action in case the influenza pandemic threat is realized and covers all events and activities deemed by the State Health Officer, or his designee, to require a coordinated agency response.

The purpose of this section is to:

- Describe preparedness efforts and response actions in providing State assistance and coordinating local resources in epidemiologic and laboratory surveillance relative to an outbreak of a pandemic strain of influenza;
- Set forth implementation steps for augmentation of epidemiologic and laboratory surveillance;
- Provide influenza specimen collection guidance; and
- Explicate influenza testing algorithms.

1. Situation

- MSDH coordinates its pandemic surveillance activities through use of sentinel physicians at approximately 48 sites. These sites are composed of adult and pediatric clinics, emergency rooms, college campus based clinics, and freestanding after hour clinics. Sentinel physicians are selected across the state at a proportion of one per 250,000 persons.
- Current statewide surveillance components include:
 - Virologic surveillance: Laboratory support is available through the Mississippi Public Health Laboratory (MPHL) and the virology lab at the University of Mississippi Medical Center. Suspected influenza positive specimens are submitted to the MPHL. Suspected influenza specimens are defined as specimens collected from patients displaying clinical symptoms of influenza-like illness or any specimens that test positive for influenza A or B by influenza rapid test kits. The specimens are tested for the presence of influenza A or B strains and all influenza A strains are sub-typed as H1, H3, H5, or H7. The MPHL identifies cases of human influenza virus infections by directly detecting influenza-specific RNA using reverse transcriptase-polymerase chain reaction (RT-PCR) assays developed and supported by the CDC. All positive influenza B strains and any positive influenza A subtype H1 or H3 are cultured for virus isolation. Currently, the MPHL sends the CDC specimen samples representative of pre-season, mid-season, and post-season influenza A and B specimens. The MPHL also sends the CDC any influenza A specimens that were unable to be sub-typed as H1, H3, H5, or H7 for further study.
 - Surveillance for influenza-like illness (ILI): Sentinel providers make weekly reports of patients with influenza like illness (ILI) to MSDH. They report their total number of patient visits for any reason each week and number of patients with influenza like illness. From these data, the percent of patient visits for ILI is calculated. Data are collated by age groups. These data and year round surveillance have helped define a baseline level of influenza activity and provide important surveillance for early detection of unusual occurrences of ILI in the state. Overall level of influenza activity is submitted weekly to the CDC Influenza Branch.
 - Early Aberration Reporting System (EARS): Data are sent electronically on a daily basis from hospital emergency departments. EARS allows for earlier detection of illnesses and outbreaks; follows the size, spread and tempo of outbreaks; and monitors disease trends. The near real-time data (24-hour turnaround) on symptoms aids in a more rapid response to potential public health problems, reducing morbidity and mortality.
- Within the MS Public Health Laboratory, the Molecular Diagnostics (MD) Division staff is cross-trained in all the influenza-specific testing procedures necessary for adequate influenza surveillance and pandemic responses.
- The five (5) members of the MD staff are proficient in identifying influenza A and B virus within various specimen types using real-time RT-PCR.
- The MD staff is trained to determine whether the circulating influenza A strains possess common hemagglutinin subtypes such as H1 and H3 or whether the circulating strains possess novel or avian hemagglutinin subtypes. The MD division staff is also trained to perform all necessary influenza culture activities.

- The MD division is located in a separate BSL-3 facility to allow testing isolation during a PI response.
- To ensure an adequate pandemic response, the MD division of the MPHL has developed optional influenza testing assays that allow equipment redundancy in case of equipment failure. All equipment is maintained as described in the manufacturer's maintenance manual to ensure that all instruments are in working order and all instruments have a service contract with the manufacturer. The MD staff has been trained in trouble-shooting instrument error codes to provide equipment expertise within the division.
- The MD division maintains a three (3) month supply of influenza test materials to ensure that the testing needs of a pandemic could be met. The influenza supply inventory is checked each month to ensure that it is maintained at a three (3) month supply.
- The MPHL works in conjunction with the MS Department of Health Information Technology (IT) division to ensure that all of the state hospitals, clinics, and other surveillance sites report influenza data using communication systems that are 100% compliant with Public Health Information Network (PHIN) standards.
- The Mississippi Veterinary Research and Diagnostic Laboratory (VRDL) tests for influenza in animals.
- Each flock is tested for avian influenza (AI) when it goes to market. On the average, this equates to screening each farm about every 7 weeks (range is from 6-9 weeks depending on the age at which the birds are marketed).
- The VRDL also tests backyard flocks (chickens, ducks, and geese) for avian influenza in a program that was an outgrowth of a program to perform surveillance for exotic Newcastle's disease.
- The VRDL participates in a USDA-approved protocol to test waterfowl for avian influenza.
- All positive AI results are reported to the State Veterinarian who would in turn report these to public health.

2. Assumptions

- MSDH approaches all disaster preparedness planning and response from an "all-hazards" approach. As a result, all policies and procedures reflect this planning strategy, and pandemic influenza preparedness and response is no exception. However, unique features of pandemic influenza include the immediate, state-wide impact (compared to the potentially more limited scope of a bioterrorism event), dispensing of stockpiled antiviral drugs, a potentially overwhelmed mortuary system, and the requirement for a sustained response over multiple waves of the influenza pandemic.
- To enhance surveillance activities, the MSDH Department of Epidemiology is researching just-in-time training for volunteers to aid in staffing hotlines. Cross-training of additional MSDH employees will also be undertaken to augment surveillance capabilities.
- Innovative approaches to staffing would include, but not be limited to, cross-training of staff within the various disciplines and specialties, 24/7 operations, use of volunteers as permitted by required skill levels, additional hires, and testing prioritizations.
- Since epidemiology and laboratory capacity will be in finite supply like other healthcare resources, pre-pandemic planning will focus on the most effective and efficient utilization of available staff,

space, equipment, and reagents since supplemental resources may not be immediately available due to national and global demands.

- Active epidemiological surveillance and reporting will be done in close coordination with schools and hospitals, physicians, and healthcare entities providing clinical care to pandemic influenza patients.
- Laboratory testing will focus on tracking the pandemic influenza virus and on guiding the multi-agency response within the state.
- Once pandemic influenza virus activity is detected in the state, active surveillance will be implemented and information will be provided to treating physicians, public health planners, and governmental leaders throughout the state to maximize the effectiveness of the response by all available electronic means (e.g., MSDH website, Health Alert Network [HAN]). Information will also be provided to the public through the media.
- In addition to active surveillance, daily laboratory testing and same-day reporting to submitters will be performed to track the pandemic virus activity within the state. It will not be within the capacity of the MPHL to test individual patients to guide their clinical management.

3. Concept of Operations

The State Epidemiologist will be in charge of the epidemiology functions specified in this annex and will either function as or designate an Influenza Surveillance Coordinator to oversee the surveillance function. The Public Health Laboratory Director and other laboratory supervisors will direct the laboratory functions specified in this annex in coordination with the Office of Epidemiology. Personnel within Epidemiology and the Public Health Laboratory will perform their assigned response functions under pre-existing supervisory relationships. Pre-established call-down procedures will be used to notify staff members of activation of the response plan.

All available means of communications including telephone, facsimile, and e-mail will be used to obtain information for analysis and dissemination back to the submitters. In addition to these mechanisms, the HAN and the MSDH website will be used to make this information widely available to all personnel with decision-making responsibilities in the pandemic influenza response.

Likewise, the website, HAN, telephone, e-mail, blast fax, and media releases would be used to communicate real-time information to all levels of MSDH leadership down to the county level, to the Office of Vital Statistics, to county medical examiners/coroners, to hospitals with assistance from the Mississippi Hospital Association, and to state-level leadership including the Mississippi Emergency Management Agency, the Mississippi Office of Homeland Security, and the Office of the Governor. The Incident Commander and SHO will convene with the Governor, or his designee, to recommend deployment of the Strategic National Stockpile. The Incident Commander or designee will coordinate with DHHS/CDC for mobilization of the Strategic National Stockpile if warranted and for possible implementation of state or regional travel restrictions. In addition, coordination will be conducted with Department of Defense installations in the state for inclusion in surveillance and response activities. All other coordination with additional federal agencies that will be involved in the pandemic response will be accomplished by the Incident Commander or designee. Coordination and communication between the ESF-8 Incident Commander and state-wide public health jurisdictions will be facilitated by the centralized organization of

the MSDH. Extensive pre-event planning and exercising are designed to address these requirements between and within other agencies and jurisdictions, including the local, state, and federal levels.

- **MSDH Department of Epidemiology** - Conduct human surveillance of pandemic influenza; conduct pandemic influenza impact assessments; use data to describe and monitor PI in Mississippi; set epidemiological priorities and assist in the planning, implementation, and evaluation of PI efforts; and manage information needed to support pandemic operations.
 - **MSDH Public Health Laboratory** - Perform all necessary influenza virus isolation and identification; determine whether the circulating influenza A strains possess common hemagglutinin subtypes or whether the circulating strains possess novel or avian hemagglutinin subtypes.
 - **Mississippi Hospitals and Sentinel Providers** - Conduct epidemiologic surveillance and coordinate mitigation of influenza disease in response to pandemic influenza; communicate influenza disease outbreak data to MSDH.
 - **Mississippi Clinical Laboratories** - Conduct laboratory surveillance in response to pandemic influenza.
 - **Mississippi Department of Education, Schools and Institutes of Higher Learning** – Conduct and report surveillance of influenza disease outbreak among the student population.
- **Mississippi Veterinary Research and Diagnostic Laboratory and Mississippi Board of Animal Health** - Conduct surveillance and coordinate mitigation of influenza disease in animals; communicate influenza disease outbreak in animals; and coordinate burial and disposal of animals affected by influenza.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak has occurred in an at-risk country.

- Continue virologic and sentinel provider surveillance.
- Establish deadlines for implementation and production of electronic syndromic surveillance.
- Develop protocols for monitoring influenza related deaths and hospitalizations.
- Adopt a data request form outlining type of data needed.
- Develop augmentation and surge capacity to rapidly test specimens for influenza and agents causative of community-acquired pneumonia.
- Augment veterinary surveillance.

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak confirmed in at-risk country.

- Develop plan for surveillance at ports, airports, and border jurisdictions.
- Develop policies and procedures for travel risks.
- MS Department of Agriculture with the State Veterinarian's Office will advise MSDH of outbreaks of animal illness that can affect humans.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected;
- Make recommendations for potential screening and/or travel restrictions from affected area; and
- Review action item checklist.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Confirmed human outbreak overseas.

- The CDC will issue recommendations for enhanced surveillance to identify patients at increased risk for infection with a novel virus. Based upon these recommendations, the MSDH Office of Epidemiology will:
 - Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected;
 - Distribute updated recommendations to healthcare providers;
 - Request enhanced influenza surveillance activities, including veterinary surveillance;
 - Request immediate notification from healthcare providers upon suspicion of a human case of infection with an avian or animal strain of influenza or with any other novel human influenza strain;
 - Report to the CDC any influenza cases that test positive for a novel influenza subtype, or meet the enhanced surveillance case definition in effect at that time and cannot be sub-typed in the state public health laboratory.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission in humans has occurred. Widespread human outbreaks have occurred in multiple locations overseas.

- The ESF 8 Operations Section will request continued enhanced surveillance activities.

- The ESF 8 Planning/Intelligence Section will establish regular communication with the Mississippi Hospital Association (MHA) and sentinel physicians to receive reports and discuss status of isolation capacity and overall bed capacity of hospitals and other healthcare facilities;
- The Mississippi Public Health Laboratory will implement expanded laboratory surveillance:
 - Notify public health and healthcare partners of most up-to-date CDC recommendations for specimen collection;
 - Work with the CDC to obtain and maintain reagents and supplies;
 - Enhance electronic reporting of influenza testing and results as directed by the CDC;
 - Review laboratory contingency plans for surge capacity.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans. First human case in North America OR spread throughout United States.

- The ESF 8 Operations Section will request continued enhanced surveillance activities and communicate to all partners the heightened need for timely and complete surveillance data;
- The ESF 8 Planning/Intelligence Section will evaluate surveillance data to:
 - Track the virus' introduction into local areas;
 - Identify population that are most affected;
 - Monitor the pandemic's impact on health;
 - Describe any unusual clinical syndromes;
 - Assess effectiveness of vaccination or treatment;
 - Forecast possible successive pandemic waves;
- The ESF 8 Logistics Section will monitor community impacts (e.g., absenteeism in the business and school sectors);
- The Mississippi Public Health Laboratory will activate plans for surge capacity.
- The Mississippi Public Health Laboratory will support local healthcare providers by providing:
 - Specimen submission forms that specify requisite accompanying clinical and epidemiologic data;
 - Test results with guidance for interpretation;
 - Guidance on the use of commercially available rapid diagnostic test for detection of influenza A;
 - Guidance on specimen submission to the Mississippi Public Health Laboratory;
- The Mississippi Public Health Laboratory will submit specimens to the CDC to enable monitoring for changes in the pandemic virus, including development of antiviral resistance;
- MSDH will provide mortality data as requested by the CDC;
- MSDH will consider community containment options recommended by the CDC and advise the Office of the Governor.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

- Scale back surveillance operations to interpandemic phase status;
- Evaluate surveillance activities utilized, assess level of surveillance possible to maintain, and address any identified deficiencies;
- Provide a retrospective characterization of the pandemic;
- Describe the effectiveness of recommended prevention and control measures.

h. Specific Agency Functions

Table 3 – Agency Epidemiological and Laboratory Surveillance Functions	
Agency	Functions
Mississippi Hospitals and Sentinel Providers	<ul style="list-style-type: none"> • Assist in ILI surveillance activities and provide clinical care to pandemic influenza patients
Mississippi Clinical Laboratories	<ul style="list-style-type: none"> • Submit clinical specimens for testing to Mississippi Public Health Laboratory
Mississippi Veterinary Research and Diagnostic Laboratory	<ul style="list-style-type: none"> • Provide laboratory testing for potential pandemic influenza viruses in wild and domestic bird populations
Mississippi Board of Animal Health	<ul style="list-style-type: none"> • Under the direction of the State Veterinarian, provide direction to all avian influenza surveillance and response plans

5. Programmatic Functions

a. Zoonotic Influenza Surveillance and Response

Mississippi participates in the National Poultry Improvement Plan (NPIP), a voluntary program administered cooperatively by the USDA, various states and the poultry industry to conduct surveillance for avian influenza in domestic poultry flocks in our state. The nation-wide program was first developed in 1935 to reduce and eradicate selected poultry diseases. Presently, over 95% of the U.S. breeding and hatchery industry participates in the NPIP. For surveillance purposes, one “flock” consists of the birds on one farm (average 4-6 chicken houses per farm, or approx. 150,000 birds). Each flock is tested for avian influenza (AI) when it goes to market. On the average, this equates to screening each farm approximately every 7 weeks (range is from 6-9 weeks depending on the age at which the birds are marketed). In the NPIP, serological testing for AI is performed on 11 birds per flock by the Mississippi Veterinary Research and Diagnostic Laboratory (VRDL) or by commercial labs (latter must be approved by State Veterinarian). This number of tests has been demonstrated statistically to reliably detect AI if it is present in a given flock. The VRDL tests specimens for AI by ELISA or agar gel (latter is also performed as a confirmatory test on all positive ELISAs). Both tests are used for screening purposes in order to divide the workload among available laboratory staff since these tests are performed in different areas of the lab. In 2006, approximately 90,000 samples were tested in Mississippi for AI.

The VRDL also participates in a USDA-approved protocol to test waterfowl for AI by PCR. The VRDL also tests backyard flocks (chickens, ducks, and geese) for AI in a program that was an outgrowth of a program to perform surveillance for exotic Newcastle’s disease.

Mississippi also participates in the screening programs for highly pathogenic H5N1 avian influenza in wild birds that are jointly conducted by the USDA APHIS Wildlife Services and the U.S. Department of the Interior’s U.S. Geological Survey and U.S. Fish and Wildlife Service. The plan targets wild bird species in North America that have the highest risk of being exposed to or infected with HPAI H5N1 because of their migratory patterns and their history of exposure to avian influenza. The key species that are monitored include wild ducks, geese, and shorebirds.

In addition to providing an early warning system for disease occurrence in U.S. wild birds and domestic poultry, these monitoring data are being used to create a national database that incorporates and tracks all avian influenza data collected from wild birds in the U.S. This information will be stored in a newly developed database called HEDDS (HPAI Early Detection Data System) that will be maintained by the U.S. Geological Survey. This database will be available to all agencies involved in avian influenza surveillance and response and will assist in tracking any future spread of avian influenza virus in the U.S.

The Office of the State Veterinarian, Board of Animal Health, Mississippi Department of Agriculture and Commerce (MDAC) maintains all avian influenza surveillance and response plans. In the event that AI is identified in Mississippi, the Office of the State Veterinarian will in turn immediately notify public health authorities to ensure that proper measures to protect human health are initiated.

b. Enhanced Human Surveillance

Once the first case is detected in North America, ILI reporting will be increased to a daily frequency. Surveillance nurses will continue to collect reports from all participating providers, either by fax, email or pick-up. Surveillance nurses will enter the ILI data daily into the BT/ILI system. The ILI data will be reviewed daily by Epidemiology staff in the Central Office to determine where increases of ILI activity are occurring. Appropriate influenza specimen collection will be enhanced. Information will be disseminated to all healthcare facilities on collecting appropriate influenza specimens. This will include which patients to collect specimens from and the information needed of these patients (i.e., signs and symptoms, travel history, etc.). Surveillance will be intensified in the outbreak area(s) to permit real-time reporting of cases since effective containment measures may slow the geographical spread and local intensity of the pandemic in its early phases. If the number of cases is manageable, individual case investigation and laboratory confirmation will be performed to permit appropriate case management that may include isolation and/or quarantine, contact tracing and monitoring, and the use of antiviral drugs for treatment of cases and targeted prophylaxis of contacts. Appropriate infection control measures in the healthcare setting will be instituted. Once the numbers of cases increase beyond the level at which effective contact tracing is possible, active surveillance will continue but the response will be characterized more by mass antiviral prophylaxis and treatment, social distancing, and possibly quarantine as warranted. As soon as vaccine is available, it will be added to the armamentarium of response strategies in accordance with the established administration plan.

Surveillance nurses will be contacted by the Epidemiology Office in the Central Office via phone and email to ask providers to enhance testing of appropriate patients. Providers will be notified by telephone, e-mail, HAN, blast fax, media releases, and updates on the MSDH website of enhanced surveillance testing recommendations. Surveillance nurses will contact their ILI providers by phone to encourage enhanced testing of patients. Surveillance nurses will also explain the appropriate way to collect specimens and from which patient specimens should be collected. HAN messages will be used to alert healthcare facilities, both participants in the ILI surveillance system and those not, to increase surveillance testing of ILI patients. There will also be testing recommendations on the State Department of Health's website for quick reference of proper collection techniques and appropriate patients to collect specimens. Also, the media, as a way to reach a larger audience, will be used to increase awareness of enhanced surveillance testing.

Healthcare providers will work with surveillance nurses and the Epidemiology office to coordinate testing for persons who meet the criteria in keeping with laboratory capacity and pandemic influenza surveillance needs. Communications between providers and MSDH will be via telephone, e-mail, blast fax, HAN. All suspected cases will be reported directly to the Office of Epidemiology.

c. Monitoring Community Impact of Influenza-Related Illness

The Mississippi State Medical Asset / Resource Tracking Tool (SMARTT) - The State of Mississippi will implement State Medical Asset/Resource Tracking Tool (SMARTT) based on the North Carolina/South Carolina SMARTT. This tracking tool will be managed by the Mississippi Office of Emergency Preparedness and Response (OEPR). This tool queries healthcare entities for resource and capability

information, providing information on bed capacity, pharmaceuticals, and personal protective equipment (PPE) available in the various healthcare settings across the state.

Interpandemic Phases 1 and 2 - During these phases, a heightened state of awareness will exist, and coordination will be accomplished with a number of entities to implement the SMARTT system for streamlined communication and resource tracking. These entities include Community Health Centers (CHCs), Emergency Medical Services (EMS), Rural Health Centers, University Health Centers, Psychiatric Hospitals, Long Term Care Facilities (LTCs), Assisted Living, Local Management Entities (LMEs), Local Health Departments (LHDs), School Health Centers, Home Care Agencies, and Home Health Agencies. OEPR will facilitate the development of plans addressing alternate means of transporting non-critically ill patients to medical facilities alleviating unnecessary surge in the EMS system. OEPR will facilitate the development of EMS System Continuity of Operations Plans and Surge Capacity Plans.

Pandemic Alert Phase 3 - Coordination will be accomplished with all relevant healthcare associations to disseminate current information and infection control guidelines for avian and pandemic influenza. The following partners will be notified of the pandemic alert via the SMARTT and/or association/organizational contacts: SHO, EMS medical directors, jurisdictional and commercial EMS operational programs, hospitals, CHCs, Rural Health Centers, University Health Centers, Psychiatric Hospitals, Long Term Care Facilities (LTCs), Assisted Living, Local Management Entities (LMEs), School Health Centers, Home Care Agencies, and Home Health Agencies. Regular coordination with the Mississippi Emergency Management Agency (MEMA) will be conducted to discuss and plan for preemptive logistical needs related to medical response statewide with emphasis on regional capabilities.

Pandemic Alert Phases 4 and 5 - The ESF-8 Operations Center may open in coordination with MEMA, and an Incident Action Plan (IAP) will be developed and disseminated through the SMARTT or associational/organizational contacts to all healthcare entities serviced by the system. EMS will be notified of hospital bed capacity in their area and asked to retrieve current staffing capability and quantity of Emergency Response Vehicles (ERVs). Hospitals will be notified of the following needs: increase reporting of available beds to every 12 hours if needed, ICU beds, ventilator beds, pediatric beds, isolation beds, and other specialty area beds.

Hospitals and EMS Systems will be reminded to establish open communication with their local Emergency Management and Local Health Department. Ongoing communications will be maintained with other key state agencies. An assessment of nursing homes, assisted living, group homes, and mental retardation group homes will be started in coordination with appropriate state agencies. Hospital pharmacy contacts will be alerted of the pending threat, and pharmacists will be advised to begin coordinating with hospital incident command for detailed information and communication of needs. Notices will be sent to hospitals to review plans for surge capacity, and requests will be made to establish plans for lines of communication between hospital Incident Command (IC) and appropriate public health jurisdictions.

Pandemic Phase 6 (without cases occurring in the United States) - Key partners will be notified of current threat and recommendation will be made to activate their facility's pandemic influenza response plan. Notification will also include recommendations for the enhancement of security at facilities.

Communications between home health, home care, and hospice providers and their local hospital command center will be initiated, and SMARTT will retrieve bed reports every 12 hours.

Situation reports and updates will be prepared by state-level ESF-8 on a 12-hour basis, and hospitals may activate their Hospital Incident Command System (HICS).

Pandemic Phase 6 (with cases occurring in the United States) - State ESF-8 Incident Command will monitor status of emergency facilities, hospital beds, other treatment sites, and medical equipment, coordinate the statewide system of emergency medical services, public safety (EMS operational program), and commercial ambulance services, and apprise planners of critical gaps in ability to provide emergency medical services. The state Emergency Operations Center (EOC) will most likely be activated when there are cases occurring in Mississippi. Once the State EOC is activated, the ESF-8 Incident Command will prepare IAP and situation reports for key decision-makers. Updated IAPs will be disseminated through the SMARTT to all served healthcare entities, and the SMARTT will retrieve bed reports every 8 hours as determined by ESF-8 lead. Assessment and reporting of influenza patients will be conducted by healthcare entities throughout the state. Any hospitals choosing to open Alternate Care Facilities for influenza assessment and treatment will be advised to coordinate this through their local health department and local emergency management. Hospitals opening Alternate Care Facilities will be noted using the Multi Hazard Threat database. Transportation routes to these sites will be shared with multi-jurisdictional EMS and trauma systems to ensure patient transport to the correct sites for care. Need for ACF for surge capacity and cohorting of patients with influenza symptoms will be monitored regionally and reported to the appropriate local public health jurisdiction. All healthcare facilities will be asked to activate their continuity of operations plans.

Analysis and Reporting of Pandemic Influenza Data to the CDC – The Mississippi SMARTT will track daily numbers and rates of newly hospitalized patients, which hospitals are seeing pandemic influenza patients, and numbers of hospital-associated deaths. Deaths occurring outside of the hospital and in other facilities will be reported to MSDH via Local Mortuary Services and Coroners' reports in accordance with the Mississippi List of Reportable Diseases and Conditions. MSDH is currently pursuing the development of a statewide electronic death reporting system. Epidemiologic and laboratory surveillance activities are described elsewhere in Section V-C. All outpatient, inpatient, laboratory, and mortality data will be collated on a daily basis by MSDH and reported to the CDC using established electronic reporting mechanisms.

d. MPHL Plan for Laboratory Surge Capacity for PI

The MPHL currently has eleven employees that are considered to be members a Bioterrorism response team. The members are considered to be "on-call" for all biological hazard events that includes a pandemic influenza response. Four members per week are "on-call" and are required to assist with any biological hazard response. The MS PHL has a lab-wide policy (HZ4-1-0) that is currently in the revision state that describes how call-down or "on-call" will be handled by the responsible personnel. A separate plan is being created that will define how the bioterrorism response team members will be expected to respond as necessary to a pandemic influenza event. All members of the bioterrorism response team will be expected to be "on-call" during a pandemic influenza response and will be trained as necessary on how to perform pandemic influenza testing by the current staff of the Molecular Diagnostics division.

The MPHL is currently developing plans to ensure effective and efficient use of existing laboratory facilities to allow for maximum surge capacity to test clinical specimens for pandemic influenza virus. The Molecular Diagnostics Division of the MPHL has redundant instrumentation for the identification of influenza A and B as well as 4 instruments that can be used specifically to identify avian influenza virus. In addition to the BSL-3 facility where the Molecular Diagnostics Division is currently located, another BSL-3 laboratory exists in the Underwood Building that could be used for the testing of pandemic influenza specimens if ample instrumentation and personnel permit. To address the contingencies that a pandemic would produce, the MPHL is developing an around-the-clock operational plan to support 24/7 influenza testing under severe surge demands. Other laboratory staff would be rotated through the Molecular Diagnostic Division as permitted by their technical skills, and cross-training of other laboratory staff will be implemented to the maximum feasible extent. Nonessential testing for non-influenza specimens would be curtailed to reserve maximum laboratory capacity for support of the pandemic response effort. As an additional measure, increased numbers of support staff would be provided to Molecular Diagnostics to assist with specimen processing, reporting of results, and other administrative functions to spare the molecular technologists to perform only their dedicated laboratory functions. Finally, pandemic influenza laboratory testing capacity must be considered a finite resource just as are antiviral drugs, pandemic influenza vaccine, human resources, and hospital beds to name a few. Therefore, great emphasis will be placed on controlling the submission of specimens for immediate testing to that number that will provide good virological and epidemiological tracking of the pandemic within the state, thereby permitting the most effective use of public health and other healthcare resources within the state to minimize the impact of this event in Mississippi.

The laboratory currently can forward avian influenza specimen-level data electronically via the LRN Results. The current laboratory information management system (LIMS) does not allow electronic transmittal of specimen-level data. Laboratory information will be provided to submitters by the most efficient and time-appropriate mechanism available. This will include but not necessarily be limited to telephone and fax communications.

The laboratory currently has a policy (CQ4-2-1) in place that defines how specimens are referred to other laboratories. See Attachments G – Policy CQ4-2-1, H – Influenza Testing Algorithm and I – Influenza Specimen Collection Guidelines.

D. Public Information and Communications

The purpose of this section is to describe preparedness efforts and response actions in providing State assistance and coordinating local public information and communications resources during an influenza pandemic; to provide guidance for coordinating public information and communications efforts with CDC and other state agencies; to maintain a public presence which will affirm public confidence in the state's public health system in the event of an influenza pandemic; to rapidly disseminate audience-appropriate public health information; to increase public knowledge of the influenza pandemic and self-protective measures; to rapidly address rumors, inaccuracies, and misperceptions, including stigmatization; and to add to the public's knowledge base by creating and distributing fact sheets, information and directions regarding the pandemic.

During an emergency, the MSDH spokesperson (the State Health Officer or his designee) is the chief person responsible for communicating health risk information to the public. The MSDH personnel listed in this section will coordinate with the state and local officials. The MSDH Director of Communications will be the designated ESF 8 PIO/Emergency Communications Officer for health related emergencies. This officer will direct public information activities from the EOC and coordinate with the JIC and event sites. The ESF 8 PIO/Emergency Communications Officer will report to the State Health Officer, the governor's office and MEMA.

The Director of Communications assigns and manages other public information staff and assures that all public information is timely, accurate, consistent and credible throughout the response. All public information must be cleared through the Director of Communications and approved by the State Health Officer prior to public dissemination. If the State activates a Joint Information Center (JIC) the Health PIO joins as the representative from the MSDH.

The Office of Communications has designated line and staff responsibilities, pre approved message maps, comprehensive state wide media listings and contact information, comprehensive database of community organizations, and extensive listing of volunteer public information officers to assist in the dissemination of information.

1. Situation

- Communities across the state and the country may be impacted simultaneously and the Office of Communications will need overflow capacity to handle two-way information flow to and from many areas statewide simultaneously including email, FAX, web, telephone, and other possible methods of communicating with remote or rurally located media outlets, medical facilities or clinics and special population spokespersons and community leaders.
- There could be significant disruption of public and privately owned critical infrastructure requiring improvisation by the Office of Communications staff to ensure messages reach targeted populations.
- MSDH may not be able to rely on resources from other states or the Federal government and is prepared with its own state-specific messages, printed materials, video production capacity, etc.
- Maintaining social order and compliance with health recommendations during a pandemic might require a greater number of public communications, disseminated more frequently, or through different channels than in normal circumstances.
- Providing services to isolated populations in rural Mississippi will be a crucial part of pandemic control and disseminating messages to these isolated areas may be technically challenging in a pandemic.

2. Assumptions

- Most individuals in Mississippi will voluntarily comply with disease control directives and measures during a public health emergency; the role of the Office of Communications will be to communicate

public health, disease containment and healthcare messages of the highest possible accuracy and timeliness.

- The MSDH will not be able to completely protect the public from PI. Individuals will need to take actions to protect themselves if a pandemic occurs, and it will be necessary for the Office of Communications to disseminate self-help information, protection procedures, self-care standards, etc. as widely as possible to the residents of the State during a pandemic.
- All available resources to support, service, and monitor a PI response within the State utilizing the command and control methods of the MSDH will be utilized.
- Signed Memorandums of Understanding (MOUs) with agencies and organizations to support or enhance communications infrastructure will be honored.
- Centers for Disease Control and Prevention (CDC) will make a number of materials available before and during an influenza pandemic, including:
 - Basic public information materials (such as question and answer sheets and fact sheets) on influenza, influenza vaccine, antiviral agents, and other relevant topics in various languages;
 - General preventive measure such as “do’s and don’ts” for the general public;
 - Information and guidelines for health care providers;
 - Training modules (Web-based, printed, and video);
 - Presentations, slide sets, videos, and documentaries; and
 - Symposia of surveillance, treatment, and prophylaxis.

3. Concept of Operations

- **MSDH Office of Communications / Director of Communications / Emergency Communications Manager:** Authorize dissemination of PI information to external media, internal stakeholders, and cooperating State and Federal agencies.
- **MSDH Health Informatics / Technology Infrastructure Support:** Coordinate and provide State telecommunications support to State and local pandemic response elements.
- **Information Technology Services:** Coordinate and provide all communication devices and parameters such as wireless connectivity capability, software packages, FAX software, email programs, and internet.
- **Mississippi Emergency Management Agency:** Coordinate public information dissemination via the Joint Information Center.
- **Capital Police:** Ensure safety of Communications personnel transported between MSDH EOC and JIC.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak confirmed in at-risk country.

- The OEPR has identified a Public Information Team to develop key information materials and review, revise, adapt, and distribute CDC materials as needed.
- The MSDH Office of Communications has identified and trained spokespersons (and backups) to work with the media and provide information to the public.
- The MSDH Office of Communications has identified the most effective communications channels for reaching different communities and distributing to local health departments and public information officers.
- The MSDH Office of Communications has developed a plan for coordination of messages between state and local public health officials and all involved partners.
- The MSDH Office of Communications has developed a plan to educate public health officials, elected and appointed officials, and the media about what information will and will not be available during a pandemic.
- The MSDH Office of Communications has developed a plan to educate stakeholders throughout the community (e.g., representatives from all levels of educational facilities, childcare and nursing home facilities, businesses, and faith-based organizations).

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak in at-risk country.

- Review and refine educational materials regarding the need for target groups for antivirals and the rationale for the groups currently recommended.
- Review and refine educational materials regarding the need for target groups for vaccine and the rationale for the groups currently recommended.
- The MSDH Office of Communications has developed a plan to activate the hot line and Web site to respond to pandemic inquiries, and assure that systems are in place to deal with anticipated public information surge capacities.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The Public Information Team will review CDC materials and will adapt, revise and distribute as needed.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Overseas human outbreak has been confirmed.

- The MSDH Office of Communications will implement its risk communications plan.

- The MSDH Office of Communications may activate the hotline, in accordance with the plan.
- The MSDH Office of Communications will disseminate information to the public and partners on an ongoing basis in accordance with a designated briefing plan.
- The MSDH Office of Communications will educate public health officials, elected and appointed officials, community health leaders, and the media about what information will and will not be available during a pandemic in accordance with the plan approved by the MSDH EOC and the Incident Commander.
- The MSDH Office of Communications will prepare spokespersons and ensure they are familiar with approved key messages.
- If the Joint Information Center (JIC) is established, the ESF-8 PIO/Emergency Communications Officer will ensure proper representation of ESF-8 is available.
- The ESF-8 PIO/Emergency Communications Officer will coordinate with federal partners, neighboring states and Mississippi Tribes.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission in humans. Widespread human outbreaks in multiple locations overseas.

- The MSDH Office of Communications will continue with its risk communications plan.
- If the JIC is established, the ESF-8 PIO/Emergency Communications Officer will ensure proper representation of ESF-8 is available.
 - JIC to disseminate information to public, partners, and the media on an ongoing basis according to risk communication plan.
 - JIC to monitor media coverage and address misinformation
- The ESF 8 PIO/Emergency Communications Officer or JIC will coordinate public information with federal partners, neighboring states and Mississippi Tribes.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans. First human case in North America OR spread throughout United States.

- If not already established, the MSDH EOC will request operations of the JIC.
- The JIC will review and modify messages and materials as needed.
- The JIC will continue to monitor media coverage and provide information to address misinformation.
- The JIC will continue to disseminate credible information as it becomes available to the public and all partners.
- The MSDH ESF-8 PIO/Emergency Communications Officer, in conjunction with the ESF-8 Operations Officer and Incident Commander, will coordinate with neighboring states and Mississippi Tribes.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

- The MSDH Office of Communications will participate in the evaluation of the pandemic response.
- Public awareness and communications strategy effectiveness will be measured through questionnaires and evaluations.
- Public education through media and community outreach activities will continue.
- The Interim Risk Communications plan will be reviewed and revised from lessons learned and AARs.

h. Specific Agency Functions

Table 4 – Agency Information and Communications Functions	
Agency	Functions
MSDH Health Informatics/ Technology Infrastructure Support	<ul style="list-style-type: none"> • Coordinate and provide State telecommunications support to State and local pandemic response elements.
Information Technology Services	<ul style="list-style-type: none"> • Keep statewide data network running. • Provide Internet service to MSDH. • Maintain viable telephone lines. • Provide personnel to maintain or restore above services.
Mississippi Emergency Management Agency	<ul style="list-style-type: none"> • Coordinate public information dissemination via the Joint Information Center.
Capital Police	<ul style="list-style-type: none"> • Ensure safety of Communications personnel transported between MSDH EOC and JIC

5. Programmatic Functions

a. Operational Plan for Two-Way Communication

Two-way communication will occur via the State Emergency Operations Center Interoperable Communications System.

Interoperable communications through the State Emergency Operations Center is currently through use of multiple and redundant communication systems (landline, cell phones, pagers, satellite phones) as well as equipment (FAX, internet). Utilization of these systems has enabled public health to communicate during disasters, but the advantages of a more robust system is understood and such a system is presently being procured and implemented for statewide interoperable communications.

The Mississippi Wireless Integrated Network (MSWIN) project will deploy a wireless voice and data capable infrastructure, which will provide all users a public-safety grade, statewide, interoperable, seamless

roaming radio system. This 700 MHz Public Safety System is intended to provide highly reliable, fast access, private (within groups and individuals) communications to a wide variety of users within the State.

A phased design and implementation process will be used in the deployment of the MSWIN. A three-phase approach using the Mississippi Highway Patrol (MHP) districts for MSWIN are as follows:

- Phase 1: MHP Districts 7, 8, and 9 (southern region)
- Phase 2: MHP Districts 1, 5, and 6 (central region)
- Phase 3: MHP Districts 2, 3, and 4 (northern region)

Total statewide implementation is desired within six years. Phase 2 detailed design will start nine months after the initiation of Phase 1 detailed design process. Phase 3 detailed design will start nine months after the initiation of the Phase 2 detailed design process.

The MSWIN shall meet the following minimum general requirements:

- Full compliance with Federal Communications Commission (FCC) Rules and Regulations.
 - FCC Licensing and Frequency Selection – The State has received grant of 700 MHz State licenses.
 - FCC Narrowbanding Requirement – The FCC in its Fifth Memorandum Opinion and Order, Sixth Report and Order, and Seventh Notice of proposed Rulemaking has identified a set of dates after which licensing, exclusive manufacturing of equipment and operation of 700 MHz, 12.5 KHz bandwidth equipment must cease operation.
- Centralized network monitoring, diagnostics, and control.
- Infrastructure equipped to be mobile data capable.
- Telecommunication Backbone Network (TBN) shall provide connectivity between radio frequency (RF) sites, wide area controller locations, and wireline dispatch points. The TBN may consist of a combination of leased and/or owned fiber and/or microwave equipment.
- Modular expandability to accommodate user population growth.

The MSWIN shall meet the following minimum performance requirements:

- System Coverage Requirements:
 - Radio Coverage Area (RCA) – The radio coverage area (RCA) for the MSWIN is defined as the geopolitical boundaries of the State of Mississippi.
 - Area Coverage Reliability (ACR) – Throughout the duration of the negotiated contract, the voice systems area coverage reliability shall be, public safety radio service 97% mobile ACR as defined by Technical Services Bulletin as published by the Telecommunications Industry Association (TSB)-88B or its most recent version.
 - Critical Coverage Locations – The State has identified critical coverage locations that must fall within the 97% ACR. During coverage tests, the system shall demonstrate radio performance in each of these locations.
- Features and Functionality:

- General – The System shall be configured to provide communications within the specified radio coverage area.
- Wide Area Operations – Subscriber units on the System will roam throughout the coverage area. The system shall provide automatic group call and individual call ability regardless of the radio(s) location and dispatcher knowledge of the radio(s) location. All call processing shall be automatic for all subscribers and groups in the system and must be transparent to the subscribers and require no manual intervention on the part of subscribers or dispatch personnel. The system shall provide uninterrupted communications (i.e. call in progress) as subscribers roam throughout the coverage area. The system shall be implemented such that radio communications can occur automatically among talk groups anywhere in the system and shall be unaffected by the mode of transmission (i.e. voice, data, or telephone interconnect).
- Telephone Interconnect – The System shall be equipped for telephone interconnect. Telephone interconnect shall provide direct dialing links between subscriber units and the public switched telephone network (PSTN) or corporate telephone network. The interconnect telephone shall operate as an integral element of the system to allow interconnect calls to the PSTN by subscriber unit, as well as calls from the PSTN to subscribers. Telephone interconnect features shall be grouped into three classes: system features, telephone subscriber features, and subscriber unit features.
 - Basic centralized telephone interconnect, with inbound and outbound calls supported.
 - Three (3) simultaneous calls.
 - ISDN interface to the PSTN.
 - Automatic line clearing.
 - Activity Reports showing operational statistics.
 - Basic telephone tones (ringing and busy).
 - System speed dialing.
 - Direct inward dialing (DID) of talk groups.
 - Subscriber Unit Features (Inbound to the PSTN)
 - Basic telephone tones (ringing and busy).
 - System speed dialing.
 - Least-cost routing (LCR).

A wide area network management system shall be furnished and installed at the MPB's facilities in Jackson Mississippi. A backup wide area network management system shall be furnished and installed at the Secondary Mississippi Department of Information Technology Services Control Center. Each of the network management systems shall be an integral part of the System and shall provide system supervisors access to databases for data entry and retrieval, record keeping, adjustment of the system operating parameters, and system usage. The network management computer system(s) shall be standard microcomputer equipment utilizing industry standard operating systems (e.g. Unix, Linux, or Microsoft), and application software to provide the required functionality.

b. PI Risk Communication Plan

Overview. The goal of Public Information is to gather, prepare, and distribute factual and timely health information to the media, providers, and the public. Information will reflect the data obtained from the primary research conducted within the state on the knowledge, attitudes, and beliefs of stakeholders and the public as it relates to health and health emergencies.

The Mississippi State Department of Health (MSDH) must be able to successfully inform the public regarding the risks associated with a PI outbreak. This plan is part of the overall Mississippi State Department of Health response plan for PI and All Hazards Emergency Response. MSDH will work through the Mississippi Emergency Management Agency (MEMA) and in coordination with the Governor's office.

This Risk Communication Plan has been developed by the Mississippi State Department of Health as part of the CDC work plan required by the Department of Health and Human Services Cooperative Agreement Award. This plan will evolve during the coming months, and will be exercised and updated as part of the MSDH PI preparedness and response program.

Key Steps in the Public Information Process

- Activating the MSDH Risk Communication Plan;
- Notifying key personnel through developed database;
- The Director of Communications will report to the Emergency Operation Center and staff including public information officers will be dispatched to the Joint Information Center and to event sites;
- Coordinating among agencies (regional and federal);
- Holding press conferences and media briefings;
- Developing and printing pamphlets and other materials to be disseminated to the public; and
- Establishing a call center utilizing the 24/7 hotline in three languages for the public and the medical community and continually updating the MSDH website.

Responsibilities. The Communications team would meet with the Mississippi State Department of health officials, gather information, and designate appropriate spokespersons. During an emergency, the MSDH spokesperson (the State Health Officer or his designee) is the chief person responsible for communicating health risk information to the public. The MSDH personnel listed in this section will coordinate with the state and local officials. The MSDH Director of Communications will be the designated ESF 8 PIO/Emergency Communications Officer for health related emergencies. This officer will direct public information activities from the EOC and coordinate with the JIC and event sites. The ESF 8 PIO/Emergency Communications Officer will report to the State Health Officer, the governor's office and MEMA. The Director of Communications will be responsible for gathering, preparing, and distributing all health information. With the help of MSDH's Health Alert Network (HAN) press releases and media advisories can be blast faxed throughout the state. HAN includes all Mississippi media, and over 6,000 hospitals, physicians, and first emergency responders. With the help of the MSDH print shop, additional copies of informational pieces can be produced at the rate of 300 pieces a minute or 300,000 per 24-hours.

The Director of Communications will work with the Mississippi Emergency Management System (MEMA), the Governor's Office, and MSDH first responders, Office of Epidemiology, the Office of Health Protection and local Health Officers in order to coordinate public messages.

Notification Procedures. The Plan outlines the notification procedures to be followed during a health emergency. According to these procedures, the Mississippi State Department of Health would notify the Mississippi Emergency Management Agency (MEMA) and the Governor's Office in the event of an emergency. A call down list (including the State Health Officer, Health Protection staff, Epidemiologists, 24-7 hotline volunteer operators, and MSDH print shop employees) would then be activated. First, all communications staff will be notified. The MEMA call down list of other agencies would be notified and other MSDH personnel as needed. MSDH's Health Alert Network includes all Mississippi media, and over 6,000 hospitals, physicians, and first emergency responders.

Establishing the Joint Information Center (JIC). In the event of a public health emergency, MEMA will establish an Emergency Operation Center at MEMA and the Joint Information Center (JIC) at MSDH and/or at the event site. Public Information Officers from all agencies participating in the response will come together at both locations to ensure the coordination and release of accurate and consistent information. Additional staff will mobilize and set up communications throughout the state. The JIC will be staffed 24-hours per day and will be in continuous communication with the EOC command center through a dedicated phone line and cell phones.

Staff Responsibilities. During an emergency, the MSDH spokesperson (the State Health Officer or his designee) is the chief person responsible for communicating health risk information to the public. The MSDH personnel listed in this section will coordinate with the state and local officials.

The MSDH Director of Communications will be the designated ESF 8 PIO/Emergency Communications Officer for health related emergencies. This officer will direct public information activities from the EOC and coordinate with the JIC and event sites. The ESF 8 PIO/Emergency Communications Officer will report to the State Health Officer, the governor's office and MEMA.

Other Staff Members Roles

- Emergency Communications Division Director – responsible for developing press releases, amending pre-prepared templates, and other risk communication materials and coordinating their approval and release.
- Call Center Specialists – responsible for updating the public information hotline and briefing the staff on recent news and information to be shared with the public.
- Website personnel - will be responsible for inserting pre-prepared PI and emergency preparedness pages and continually updating information.
- Community Health Information Officers (Central Office, District and County staff) – responsible for distributing health risk information by means other than the media to the community (e.g., flyers, community meetings).

Response Activities. The ESF 8 PIO/Emergency Communications Officer will be responsible for directing the following response activities:

- Evaluating the need to communicate risk information to the public;
- Issuing pre-prepared and new press releases;
- Organizing and implementing press briefings and press conferences;
- Developing materials templates that address agent and threat to health would be distributed to the public and posted on the MSDH web site (300,000 1-sided sheet can be produced in 24 hrs when printing at our internal print shop);
- Work with MEMA in coordinating the activation of communications systems (e.g., Emergency Alert System) and press releases;
- Monitoring media reports;
- Initiating rumor control activities;
- Activating the public call center and expanding capability of 24/7 hotline capacity; and
- Contacting the CDC Office of Communications.

Information Verification and Approval Procedures. There are two types of communications materials: medical and non-medical. Medical material is intended to communicate medical and scientific information, such as disease risks and information on drug treatments. Non-medical material includes logistics and other information, such as where the public should report to receive prophylaxis or the hotline phone number.

Procedures for reviewing, verifying, and approving medical and non-medical communications materials follow. These procedures will be refined and updated as necessary. Sample risk communication materials and resources follow in the next section.

Medical Material. These materials have been developed by the Communications Office in conjunction with MSDH medical professionals. This includes templates on the pandemic influenza viral strain and prophylaxis. Depending on the particular type of material and required expertise, material development and approval will be coordinated by the State Epidemiologist, State Pharmacy Director, Medical Director of Health Protection and the Director of the Office of Communications.

Following approval, the material will be disseminated to the Director of Communications for release or distribution.

NOTE: All template language is pre-approved so that in an event, the approval process is quick (adding agent, prophylaxis, dispensing site etc.)

Non-Medical Material. This material has been developed by the Communications Office in coordination and under the advisement of the appropriate and necessary MSDH staff.

Risk Communication Materials and Resources. The MSDH Communications Office has developed PI and emergency preparedness materials (a PI and emergency preparedness campaign). As part of the

CDC work plan, MSDH has permanent materials specific to a variety of emergency scenarios. Several types of public information material templates will be prepared in advance:

- Public announcements that inform and direct the public to the website and the 24/7 hotline for updates;
- Patient information sheets for specific agent or agents; and
- Media advisories of where and when updates will occur.

The following additional resources will be used during a health emergency:

- Web sites: sources of fact sheets and information on the pandemic influenza viral strain;
- CDC PI web site (www.pandemicflu.gov) and MSDH websites www.msdh.state.ms.us, www.pandemicflums.gov; and
- Emergency Alert System (EAS), which can be accessed through the MEMA.

Call Center. The Director of Communications will activate the full emergency operational aspects of the 24/7 hotline. During a health emergency, additional lines will be added and emergency messages in three different languages will be available. Designated staff will be mobilized to establish a temporary call center at the MSDH EOC.

Policies and Media Lists. The MSDH Office of Communications maintains written policies and procedures, and a list of statewide media contacts. This information will be updated as necessary.

Debriefing and Evaluation System. Key public health staff involved during an outbreak will perform an evaluation of emergency communications activities after the event has ended. The Director of Communications will be responsible for coordinating after-action reports and lessons-learned documents. At this time, the Director of the Office of Communications or her designee will evaluate all staffing levels for absences or incapacity and if needed appoint alternates from a pre-identified pool of MSDH employees or other resources as available.

c. Developing/Disseminating Essential Information to the General Public

When the CDC notifies the MSDH that a novel virus has emerged and the CDC declares the circulating strain a "disease of public health significance" that either has reached Mississippi or will soon be reaching the state, the Director of Communications will receive information from the State Health Officer on the MSDH entering emergency status. At that time, the Office of Communications will be declared to be in crisis mode by the Director of Communications or in her absence, the Emergency Communications Manager or Communications staffer will be totally devoted to the crisis.

The Director of Communications and/or Emergency Communications Manager will supervise all disaster coordination activities. All positions in the Office of Communications are cross-trained and all personnel are notified that they are on-call for their own position and their designated cross-trained back-up position.

At this time, the Director of the Office of Communications or her designee will evaluate all staffing levels for absences or incapacity and if needed appoint alternates from a pre-identified pool of MSDH employees or other resources as available.

Staff from the Office of Communications with MSDH-supplied cell phones/blackberries will be able to be contacted when the MSDH infrastructure support is operational. These staff include the Director of Communications, the Department Webmaster, and the Emergency Communications Manager. Additional staffers have their own personal cell phones which may or may not be functional in this emergency.

Resources are pre-prepared and on-hand ready for dissemination. Materials need only episode-specific information to be added to the existing templates. Pre-prepared materials include press releases, public service announcements, handouts on public precautionary measures, media alerts such as emergency templates, fact sheets, FAQ's and handouts. Additionally, the capacity to film and disseminate video and audio "clips" (sound bytes) is available in the Office of Communications and two persons are cross-trained in the operation of the equipment. Upon notification of crisis operations mode, the Office of Communications Graphic Arts and Art Department staff will notify the Print Shop to be ready to produce large quantities of printed materials for distribution. The print shop maintains sufficient stocks of raw materials to accomplish emergency printing runs.

Message maps and talking points for PI have been prepared. There are multiple backups: hard copy notebooks in four locations including off-site, hard disk copies ready to be copied onto any newly-acquired laptops, and message map templates already existing on the common shared drive in the Office of Communications and copied to the Office of Communications laptops.

The current MSDH web server and supporting network has shown the capability to handle at least four times its normal peak traffic during a representative emergency (Hurricane Katrina, 2005) without performance degradation. Web services will be migrated to higher-performance equipment in 2007, with a conservatively estimated capacity of twenty times normal traffic. In case of equipment failure or performance shortcomings, MSDH has the ability to switch to an alternate local server, supplement services with an additional server, or host the site from equipment at another state agency within 24 hours.

The Office of Communications will provide information to the media and general public through mass media distribution points. Additionally, persons who contact the MSDH Office of Communications with questions such as reporters or health care providers will either be provided with information or transferred to persons who can assist them.

Members of the public will be advised through all available news media, MSDH website, MSDH Hotline, email newsletters and bulletins on appropriate information, such as:

- Symptoms of influenza;
- The set up of Flu Clinics, locations, opening hours, what to bring, info needed;
- When and where to seek outpatient assessment (Flu Clinics instead of hospitals); and
- Precautions to take to limit transmission.

Traditional government communications capabilities presently in use in the MSDH Office of Communications will be utilized to contact media and other necessary populations. Should traditional methods be unavailable due to infrastructure failure such as lack of telephone lines, lack of email or internet resources or lack of FAX communication capabilities, the MSDH CIO and MSDH TIS Office will assign the Office of Communications to have priority for restoration of traditional services or will provide the Office of Communications with sufficient non-traditional hardware, software and technical support to achieve communications goals utilizing non-traditional resources such as EM2000, high frequency phones and radios and satellite networks and contacts and interface with amateur radio operators to augment established communications systems.

MSDH will activate the state Joint Information Center (JIC) if public information/media demands so necessitate. The JIC can be activated by a request from the State Health Officer (SHO) even if the state's Emergency Operations Center (EOC) has not been activated. The Director of Communications or her designee in conjunction with the State Health Officer will make the decision to activate the JIC.

If necessary during an influenza pandemic, a virtual JIC may be activated, rather than the traditional JIC. MSDH will talk live with reporters across the state through an audio conference. This system has been field-tested during Hurricane Katrina and Hurricane Ivan. This virtual JIC accomplishes two things – it limits the spread of the illness by not creating a mass gathering of reporters and it allows real-time communication with reporters across the state, rather than just Jackson-based reporters. Directions for the media to access this audio conference are already prepared and at hand in the Office of Communications templates.

Media and Public Communication tasks will be accomplished by the activation of the JIC. Supplemental staff, spokespersons, special population contacts, other agency personnel will be contacted and utilized as determined by the Director of the Office of Communications.

The JIC will publicize the MSDH and PI Web sites and continually post up-to-date information. Presentations and responses to state and national media will be the responsibility of the JIC and responses will be made as needed.

Work through the Joint Information Center will be coordinated through all partner agencies to maximize the information dissemination efforts.

The Director of Communications and/or Emergency Communications Manager supervises media representatives in the Office of Communications to develop, write, research and format according to Risk Communication principals all written and oral communications of information to all audiences during a pandemic. All informational activities are approved through the Director of Communications or the staff designee before dissemination. Media representatives will ensure the information will be the most accurate, consistent and timely available when notifying the public.

Mechanisms for communication with the public will vary depending on the phase of the

pandemic and its impact on Mississippi communities and methodology will be revised and adapted depending on circumstances to ensure the greatest possible message dissemination over the target area given the constraints of infrastructure disruption due to the pandemic.

The MSDH Office of Communications and its staff will continually strive to communicate with all essential partners in a timely manner, keeping them completely informed throughout the pandemic.

d. Developing/Disseminating Culturally-Appropriate/Language-Specific Information

The Director of the Office of Communications, the Manager of Emergency Communications and their designees will continually develop and disseminate culturally-appropriate and language-specific pandemic materials to Special Populations and to the public. Tools developed in the Office of Communications including special population partners, community leaders and translators will be utilized to the fullest extent.

Media Representatives will utilize basic communication materials (e.g., fact sheets, FAQs, and interviews utilizing pre-scripted talking points) on influenza, influenza vaccine, antiviral agents, and other relevant topics in multiple languages and media.

Prior to the outbreak of the pandemic in Mississippi, it is assumed (see Assumptions) that there will be a period of weeks or months when the pandemic is worldwide or nationwide without yet appearing in Mississippi. This time will be utilized by the MSDH Office of Communications to provide as much emergency preparatory information as possible to the general public on protective measures, preparedness steps and supplies, etc. Additionally, this preparatory time will be utilized by the Manager of Emergency Communications, Media Representatives or other Office of Communications staff as designated to re-contact all Special Populations community leaders and contacts to solidify all relationships, review probable responsibilities, review principles of Risk Communications with these leaders, provide guidance, preparatory materials and handouts, and to ensure the clear and rapid two-way flow of information between their communities and the Office of Communications.

Special populations, groups whose needs may not be fully addressed by traditional service providers or who feel they may not comfortably or safely access and use the standard resources offered in disaster preparedness, response, relief, and recovery will include persons with a functional disability such as blindness; persons who are deaf, blind-deaf, hard of hearing; persons with cognitive disorders, mobility limitations, a developmental disability, or mental illness; persons who may be limited or non-English speaking; persons who are geographically or culturally isolated including members of Tribal Nations, persons who are medically or chemically dependent, or homeless, persons with pets and/or service animals; older persons with disabilities/medical needs, and children.

A spreadsheet with email and telephone contact information of special populations community leaders, decision-makers, persons able to contact special populations and persons able to interface with isolated populations is maintained by the Office of Communications to enable important information to flow to these leaders without delay.

E. Preparedness in Healthcare

The purpose of this section is to describe preparedness efforts and response actions in providing State assistance and coordinating local resources in healthcare response to an outbreak of a pandemic strain of influenza.

1. Situation

- The initial response to an influenza pandemic will include medical care, community containment and personal protective measures, and targeted use of antiviral medications.
- As the Pandemic will be ubiquitous; it will be folly to depend or rely upon outside aid and resources. Hence, as support and response during the Pandemic must be primarily LOCAL; planning and preparedness must be LOCAL ventures during the pre-pandemic period.
- Employing State and county census data for the year 2005, reflecting a population of 2.9 million, and a 25% gross attack rate (1918-like scenario), Mississippi would observe, over an 8-week period (See Attachment C):
 - 646,220 individuals who become ill;
 - 323,110 who would seek out-patient care;
 - 68,416 who would ordinarily require conventional hospitalization
 - >14,000 who would need intensive or critical care;
 - >7,200 who would require mechanical ventilation; and
 - 15,635 who would die as a direct or indirect result of the pandemic.
- Hospital bed availability, volunteers and resources will be tracked via the Mississippi State Medical Asset Resource Tracking Tool (SMARTT), ESAR-VHP, and the RSS Inventory Management System.
- The MS Healthcare Emergency Licensure Program (MS-HELP) will be maintained and upgraded through contract with a local service company.

2. Assumptions

- There is currently a healthcare worker shortage, which will be exacerbated during a pandemic.
- Surge from influenza patients will not only fill, but exceed, hospitals capacity; furthermore, medical supplies will run out quickly.
- Alternate care sites and triage will, out of necessity, have to occur away from the hospitals.
- Strict adherence to Infection control practices must be abided.
- Non-primary care physicians will be asked to assist in treating the large number of patients.
- Priority groups will be used to determine distribution of scarce medical resources, including ventilators.
- Security will be needed at all healthcare facilities with resources providing care to influenza patients.
- Home care instructions may alleviate some of the medical surge.
- Persons who have had pandemic influenza and recovered, or other members of the community with no health background, could serve as patient attendants.
- Persons who contract influenza and survive will be immune and available to help with medical surge needs.

3. Concept of Operations

- **Mississippi State Department of Health:** Conduct impact assessments on hospitals and healthcare systems; manage information needed to support hospital and healthcare systems operations which includes incident management plan and development of response and recovery strategies.
- **Mississippi Emergency Management Agency:** Coordinate State and local assets to assist hospitals and healthcare systems in operations required for a PI response.
- **Mississippi Hospital Association:** Provide advocacy and consultation between the MSDH and individual hospitals and healthcare systems.
- **Board of Medical Licensure:** Assist in recruitment of physicians and other practitioners for pre-placement into the ESAR-VHP. Assist with credentialing verification of medical practitioners.
- **Mississippi Department of Environmental Quality:** Coordinate the provision of State support to hospitals and healthcare systems in response to a PI outbreak.
- **Local Mortuary Services and Coroners:** Provide logistical and medical resource support to hospitals and healthcare systems in response to PI.
- **Mississippi Department of Mental Health:** Coordinate efforts to provide basic human mental health needs following an influenza pandemic.
- **Mississippi Ambulance Services:** Provide and coordinate local medical resources in response to PI to include population-based triage, medical surge capabilities, and emergency medical transportation.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak confirmed in at-risk country.

- MSDH Hospital Preparedness Program and the Pandemic Influenza Preparedness Program under the CDC Cooperative Grant will facilitate hospital and healthcare systems pandemic influenza planning via the Mississippi Hospital Association (MHA).
- MSDH advocates planning for pandemic influenza by hospitals using the check sheets provided on www.pandemicflu.gov.
- Planning initiatives for surge capacity between MSDH and hospitals include State Medical Assistance Teams (SMATs), Regional Area Coordinators (RACs), and identification of healthcare volunteers for the ESAR-VHP system.
- Mississippi healthcare facilities will conduct hospital surveillance for influenza.

b. WHO Phase 3/HHS Stage 0 or 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak confirmed in at-risk country.

- MSDH to provide position/consensus statements on infection control precaution for hospitals and healthcare systems, monitoring health and reporting exposure of staff and patients within the healthcare system, and mitigating disease transmission in the healthcare setting.
- Hospitals and healthcare systems to engage in regional planning for the purposes of regional triage.
- Hospitals and healthcare systems to develop plans to monitor and report exposure and health status of staff and patients.
- MSDH to coordinate means of communication, timeframe of communications, and communication pathways for reporting pandemic influenza impact on hospitals and healthcare systems.
- MSDH and hospitals to engage in development of alternate care sites.
- Hospitals and healthcare systems to run FluAid and FluSurge programs and provide MSDH with projection of resource needs, including enumeration of antiviral regimens, personal protective equipment, ventilators (if available), and other medical support supplies.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The MSDH Office of Epidemiology will update healthcare providers of the region(s) where the novel influenza virus has been detected.
- The MSDH Office of Epidemiology will provide hospitals and healthcare systems updated case definitions, procedures for screening, infection control, laboratory testing, and recommended use of antiviral regimens.
- Representatives from hospitals and healthcare systems to review institution plans for pandemic influenza and communicate with partners on regional plans, if applicable.
- Hospitals and healthcare systems to provide MSDH with updated information on anticipated medical support material needs.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Confirmed human outbreak overseas.

- The MSDH Office of Epidemiology will:
 - Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected;
 - Distribute updated recommendations to healthcare providers;
 - Request enhanced influenza surveillance activities, including surveillance data on staff and patients; and

- Request immediate notification from healthcare providers upon suspicion of a human case of infection with an avian or animal strain of influenza or with any other novel human influenza strain.
- Hospitals and healthcare systems will
 - Review institution plans for pandemic influenza and communicate with partners on regional plans, if applicable.
 - Regularly review updates on case definitions, procedures for screening, infection control, laboratory testing, and treatment algorithms for PI.
 - Review systems for early detection and treatment of healthcare personnel who might be infected with the pandemic strain of influenza.
 - Reinforce infection control procedures to prevent the spread of influenza.
 - Notify MSDH of suspected novel influenza cases or fatalities.
 - Review institution plans to request and receive pandemic influenza support materials from MSDH.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission in humans. Widespread human outbreaks in multiple locations overseas.

- The ESF 8 Operations Section will request continued enhanced surveillance activities from hospitals and healthcare systems.
- The ESF 8 Planning/Intelligence Section will establish regular communication with the Mississippi Hospital Association (MHA) and sentinel physicians to receive reports and discuss status of isolation capacity and overall bed capacity of hospitals and other healthcare facilities.
- The Mississippi Public Health Laboratory will implement expanded laboratory surveillance and notify public health and healthcare partners of most up-to-date CDC recommendations for specimen collection.
- Hospitals and healthcare systems will
 - Regularly review updates on case definitions, procedures for screening, infection control, laboratory testing, and treatment algorithms for PI.
 - Review institution plans for pandemic influenza and communicate with partners on regional plans, including plans for alternate care sites, if applicable.
 - Notify MSDH of suspected novel influenza cases or fatalities.
 - Activate plans to request and receive pandemic influenza support materials from MSDH.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans confirmed. First human case in North America OR spread throughout United States.

- The ESF 8 Operations Section will request continued enhanced surveillance activities and communicate to all partners the heightened need for timely and complete surveillance data.
- The Mississippi Public Health Laboratory will support local healthcare providers by providing:

- Specimen submission forms that specify requisite accompanying clinical and epidemiologic data;
 - Test results with guidance for interpretation;
 - Guidance on the use of commercially available rapid diagnostic test for detection of influenza A;
 - Guidance on specimen submission to the Mississippi Public Health Laboratory.
- Hospitals and healthcare systems will regularly review updates on case definitions, procedures for screening, infection control, laboratory testing, and treatment algorithms for PI.
- Representatives from hospitals and healthcare systems to activate institution plans for pandemic influenza.
 - Implement activities to increase capacity, supplement staff, and provide supplies and equipment;
 - Post signs for respiratory hygiene/cough etiquette;
 - Maintain high index of suspicion that patients presenting with influenza-like illness could be infected with pandemic strain;
- If pandemic strain is detected in local patient, community transmission can be assumed and hospitals would activate all activities of their institutional PI plan:
 - Emergency Department
 - Establish segregated waiting areas for persons with symptoms of influenza;
 - Implement phone triage to discourage unnecessary ED/outpatient department visits;
 - Enforce respiratory hygiene/cough etiquette.
 - Access controls
 - Limit number of visitors to those essential for patient support;
 - Screen all visitors at point of entry to facility for signs and symptoms of influenza;
 - Limit point of entry to facility and assign clinical staff to entry screening.
 - Hospital admissions
 - Defer elective admissions and procedures until local epidemic wanes;
 - Discharge patients as soon as possible;
 - Cohort patients admitted with influenza;
 - Monitor for nosocomial transmission.
 - Staffing practices
 - Consider furlough or reassignment of pregnant staff and other staff at high risk for complications of influenza;
 - Consider reassigning non-essential staff to support critical hospital services or placing them on administrative leave; cohort staff caring for influenza patients;
 - Consider assigning staff recovering from influenza to care for influenza patients;
 - Implement system for detecting and reporting signs and symptoms of influenza is staff reporting for duty;
- Hospitals and healthcare systems to provide staff with antiviral prophylaxis, according to HHS recommendations.
- If nosocomial transmission is limited to only a small number of units in the facility, hospitals and healthcare systems will
 - Close units where there has been nosocomial transmission;

- Cohort staff and patients;
 - Restrict new admissions (except for other PI patients) to affected units;
 - Restrict visitors to the affected units to those who are essential for patient care and support.
- If widespread transmission in community and hospital, and patient admissions at surge capacity, hospitals and healthcare systems will
 - Redirect personnel resources to support patient care (e.g., administrative clinical staff, clinical staff working in departments that have been closed [e.g., physical/occupational therapy, cardiac catheterization]).
 - Recruit and/or request volunteers either in the community and/or within the ESAR-VHP system (e.g., retired nurses and physicians, clinical staff working in outpatient settings).
 - Consider placing on administrative leave all non-essential personnel who cannot be reassigned to support critical hospital services.
- Hospitals and healthcare systems to report PI cases or fatalities as requested by MSDH.
- Hospitals and healthcare systems to report atypical cases, breakthrough infections while on prophylaxis, or any other abnormal cases throughout the duration of the pandemic to MSDH.
- Hospitals, healthcare systems, and MSDH to coordinate mass mortality plans.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

h. Specific Agency Functions

Table 5 – Agency Healthcare Preparedness Functions	
Agency	Functions
MEMA	<ul style="list-style-type: none"> • Coordinate State and local assets to assist hospitals and healthcare systems in operations required for a PI response.
MHA	<ul style="list-style-type: none"> • Provide advocacy and consultation between the MSDH and individual hospitals and healthcare systems.
Board of Medical Licensure	<ul style="list-style-type: none"> • Assist in recruitment of physicians and other practitioners for pre-placement into the ESAR-VHP. • Assist with credentialing verification of medical practitioners.
Board of Nursing	<ul style="list-style-type: none"> • Assist in recruitment of nurses for pre-placement into the ESAR-VHP. • Provide credentialing and investigative services for volunteer nurses. • Provide guidance in placement of volunteer nurses during PI.

Table 5 – Agency Healthcare Preparedness Functions	
Agency	Functions
MS DEQ	<ul style="list-style-type: none"> Coordinate the provision of State support to hospitals and healthcare systems in response to a PI outbreak.
Mortuary/Coroner	<ul style="list-style-type: none"> Provide logistical and medical resource support to hospitals and healthcare systems in response to PI.
MDMH	<ul style="list-style-type: none"> Coordinate efforts to provide basic human mental health needs following an influenza pandemic.
Ambulance Services	<ul style="list-style-type: none"> Provide and coordinate local medical resources in response to PI to include population-based triage, medical surge capabilities, and emergency medical transportation.

5. Programmatic Functions

a. State Medical Assets Resource Tracking Tool (SMARTT)

Please reference Section V-C-5-c.

b. Expanding Healthcare Services to Alternate Care Sites

As lead agency for ESF8, the Mississippi State Department of Health (MSDH) has chosen Mississippi Community Colleges (MCC) as sites for Regional Special Medical Needs Shelters and as alternate care sites for Pandemic Influenza. MCC are chosen because of services already in place including: security, food service, separate water systems, allied health or nursing programs, and the fact that the community college locations are well known.

Community college presidents are contacted to gauge interest in the shelter/alternate care site project, and at that time a meeting is scheduled with the college staff and MSDH personnel to explain the project and tour the designated facility site. Requirements for a facility to be used for this purpose include a generator capable of providing power for patients and staff, an adequate kitchen area or plan for providing food for residents, handicap capabilities, handicap restroom facilities, and a climate controlled environment. After the facility inspection is complete, MSDH enters into a contract with the MCC to assist monetarily in bringing the facility up to standard. A Memorandum of Agreement (MOA) is also signed by both parties for the activation and operation of the shelter/care site.

Operation of the shelter/care site is the responsibility of the MSDH. There are two (2) teams designated in each of the nine Public Health Districts. Each team is comprised of two facility managers, two nurse managers, eight nursing staff, two logistics staff, four clerical staff, a social worker, an environmentalist, and a mental health worker from the Department of Mental Health. The MCC provides support staff, if available, for the operation and security of the site. All necessary supplies for the operation of the site,

including cots, medical supplies, office supplies, forms, etc. are stored at the MCC for convenience and to decrease the set-up time for opening. Pharmaceuticals to support alternate care sites will be obtained through state caches and federal assets received by the Division of the Strategic National Stockpile for pandemic influenza.

Currently, the MSDH has a MOA with seven (7) community colleges, and is in the process of obtaining a MOA with Hudspeth Regional Center. These eight (8) facilities will have a total capacity of approximately 1100 patients.

The MSDH plans to continue this initiative over the next three years to include MCC in the central and northern areas of the state in order to provide care for all disasters, natural and man-made.

c. MSDH Consensus Statement on Infection Control Precautions and Guidance for Mitigating Transmission within Healthcare Facilities

This section addresses modes of transmission of the virus, recommended infection control precautions, and when control precautions should be escalated according to triggers appropriate to the progression of the pandemic stages. Authoritative statements as to infection control precautions exist in several documents that are referenced below. Additionally, some portions of the documents are excerpted and appended. The referenced documents may be viewed in their entirety through the following web links:

- <http://www.pandemicflu.gov/plan/healthcare/hospitalchecklist.html>
- <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>
- <http://www.hhs.gov/pandemicflu/plan/sup3.html>
- <http://www.hhs.gov/pandemicflu/plan/sup4.html>
- <http://www.hhs.gov/pandemicflu/plan/sup5.html>

Surveillance and Detection. An important preliminary for infection control during the pre-pandemic period is for hospitals to set up syndromic surveillance systems. This will alert the facility as to the possible presence of a novel influenza virus. A plan for surveillance and detection of PI in hospital patients and staff should include:

- A method for performing and reporting syndromic surveillance for persons with influenza-like illness that has been tested and evaluated during the regular influenza season in preparation for using the system for PI surveillance. Hospital sites for syndromic surveillance should include the emergency department, hospital clinics, and occupational health. Surveillance reports are sent to hospital epidemiology/infection control personnel and to the local health authority. (The frequency of reporting should be determined by the local health authority and reflect the pandemic severity level, as well as any applicable federal or state recommendations.)
- Responsibility has been assigned for monitoring public health advisories (federal and state) and for updating the pandemic response coordinator and members of the PI planning committee when PI has been reported in the United States and is nearing the geographic area. (For more information see www.cdc.gov/flu/weekly/fluactivity.htm.)

- A written protocol has been developed for monitoring and reporting seasonal influenza-like illness among hospitalized patients, volunteers, and staff (e.g., weekly or daily number of patients and staff with influenza-like illness). (Having a system for tracking illness trends during seasonal influenza will ensure that the hospital can detect stressors that may affect operating capacity, including staffing and supply needs, during a pandemic.) Information on the clinical signs and diagnosis of influenza is available at www.cdc.gov/flu/professionals/diagnosis/.)
- A protocol has been developed for the evaluation and diagnosis of hospitalized patients and/or staff with symptoms of PI. Information on the clinical signs and diagnosis of influenza is available at www.cdc.gov/flu/professionals/diagnosis/.
- A protocol has been developed for the management of persons with possible PI who are seen in the emergency department, hospital clinics, or are transferred from another facility or referred for hospitalization by an admitting physician. The protocol includes criteria for detecting a possible case, the diagnostic work-up to be performed, infection control measures to be implemented, medical treatment, and directions for notifying infection control.
- Protocols include triggers for different levels of action that are based on the Pandemic Severity Index (See www.pandemicflu.gov or www.cdc.gov/flu/.)
- A system is in place to monitor for and internally review healthcare-associated transmission of seasonal influenza among patients and staff in the facility. Information used from this monitoring system is used to implement prevention interventions (e.g., isolation, cohorting). (This system will be necessary for assessing PI transmission.)

Infection Control Fundamentals

- **Modes of Transmission** – Despite the prevalence of influenza year after year, most information on the modes of influenza transmission from person to person is indirect and largely obtained through observations during outbreaks in healthcare facilities and other settings (e.g., cruise ships, airplanes, schools, and colleges); the amount of direct scientific information is very limited. However, the epidemiologic pattern observed is generally consistent with spread through close contact (i.e., exposure to large respiratory droplets, direct contact, or near-range exposure to aerosols). While some observational and animal studies support airborne transmission through small particle aerosols, there is little evidence of airborne transmission over long distances or prolonged periods of time (as is seen with *M. tuberculosis*). The relative contributions and clinical importance of the different modes of influenza transmission are currently unknown.
- **Droplet Transmission** (http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html) – Droplet transmission involves contact of the conjunctivae or the mucous membranes of the nose or mouth of a susceptible person with large-particle droplets containing microorganisms generated from a person who has a clinical disease or who is a carrier of the microorganism. Droplets are generated from the source person primarily during coughing, sneezing, or talking and during the performance of certain procedures such as suctioning and bronchoscopy. Transmission via large-particle droplets requires close contact between source and recipient persons, because droplets do not remain suspended in the air and generally travel only short distances (about 3 feet) through the air. Because droplets do not remain suspended in the air, special air handling and ventilation are not required to prevent droplet transmission. Based on epidemiologic patterns of disease transmission, large droplet transmission has been considered a major route of influenza

transmission. However, data directly demonstrating large droplet transmission of influenza in human outbreaks is indirect and limited.

- **Contact Transmission** (http://www.cdc.gov/ncidod/dhqp/gl_isolation_contact.html) – Direct-contact transmission involves skin-to-skin contact and physical transfer of microorganisms to a susceptible host from an infected or colonized person, such as occurs when personnel turn patients, bathe patients, or perform other patient-care activities that require physical contact. Direct-contact transmission also can occur between two patients (e.g., by hand contact), with one serving as the source of infectious microorganisms and the other as a susceptible host. Indirect-contact transmission involves contact of a susceptible host with a contaminated intermediate object, usually inanimate, in the patient's environment. Contact transmission of influenza may occur through either direct skin-to-skin contact or through indirect contact with virus in the environment. Transmission via contaminated hands and fomites has been suggested as a contributing factor in some studies. However, there is insufficient data to determine the proportion of influenza transmission that is attributable to direct or indirect contact.
- **Airborne Transmission** (http://www.cdc.gov/ncidod/dhqp/gl_isolation_airborne.html) – Airborne transmission occurs by dissemination of either airborne droplet nuclei or small particles in the respirable size range containing the infectious agent. Microorganisms carried in this manner—such as *M. tuberculosis*— may be dispersed over long distances by air currents and may be inhaled by susceptible individuals who have not had face-to-face contact with (or been in the same room with) the infectious individual. Organisms transmitted in this manner must be capable of sustaining infectivity, despite desiccation and environmental variation that generally limit survival in the airborne state. Preventing the spread of agents that are transmitted by the airborne route requires the use of special air handling and ventilation systems (e.g., negative pressure rooms). The relative contribution of airborne transmission to influenza outbreaks is uncertain. Evidence is limited and is principally derived from laboratory studies in animals and some observational studies of influenza outbreaks in humans, particularly on cruise ships and airplanes, where other mechanisms of transmission were also present. Additional information suggesting airborne transmission was reported in a Veterans Administration Hospital study that found lower rates of influenza in wards exposed to ultraviolet radiation (which inactivates influenza viruses) than in wards without UV radiation. Another study indicated that humidity can play a role in the infectivity of aerosolized influenza, although the influence of humidity on the formation of droplet nuclei was not evaluated.
- **Small Particle Aerosols** – There is no evidence that influenza transmission can occur across long distances (e.g., through ventilation systems) or through prolonged residence in air, as seen with airborne diseases such as tuberculosis. However, transmission may occur at shorter distances through inhalation of small-particle aerosols (droplet nuclei), particularly in shared air spaces with poor air circulation. An experimental study involving human volunteers found that illness could be induced with substantially lower virus titers when influenza virus was administered as a small droplet aerosol rather than as nasal droplets, suggesting that infection is most efficiently induced when virus is deposited in the lower rather than the upper respiratory tract. While this study supports the possibility of droplet nuclei transmission of influenza, the proportion of infections acquired through droplet nuclei—as compared with large droplet or contact spread—is unknown. It is likely that some aerosol-generating procedures (e.g., endotracheal intubation, suctioning, nebulizer treatment, bronchoscopy) could increase the potential for dissemination of droplet nuclei

in the immediate vicinity of the patient. (Although transmission of SARS-CoV was reported in a Canadian hospital during an aerosol-generating procedure [intubation], it occurred in a situation involving environmental contamination with respiratory secretions.) Although this mode of transmission has not been evaluated for influenza, additional precautions for healthcare personnel who perform aerosol-generating procedures on influenza patients may be warranted.

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

Control of Transmission in Healthcare Facilities. Outbreaks of influenza have been prevented or controlled through a set of well established strategies that include vaccination of patients and healthcare personnel; early detection of influenza cases in a facility; use of antivirals to treat ill persons and, if recommended, as prophylaxis; isolation of infectious patients in private rooms or cohort units; use of appropriate barrier precautions during patient care, as recommended for Standard and Droplet Precautions; and administrative measures, such as restricting visitors, educating patients and staff, and cohorting healthcare workers assigned to an outbreak unit.

These are the primary infection control measures recommended in this plan. They will be updated, as necessary, based on the observed characteristics of the PI virus.

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

Basic Infection Control Principles for Preventing Spread of PI in Healthcare Settings. The following infection control principles apply in any setting where persons with PI might seek and receive healthcare services (e.g. hospitals, emergency departments, out-patient facilities, residential care facilities, homes). Details of how these principles may be applied in each healthcare setting follow.

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

- Wear a surgical or procedure mask for close contact with infectious patients;
 - Use contact and airborne precautions, including the use of N95 respirators, when appropriate;
 - Wear gloves (gown if necessary) for contact with respiratory secretions; and
 - Perform hand hygiene after contact with infectious patients.
- Contain infectious respiratory secretions:
 - Instruct persons who have “flu-like” symptoms (see below) to use respiratory hygiene/cough etiquette; and
 - Promote use of masks by symptomatic persons in common areas (e.g., waiting rooms in physician offices or emergency departments) or when being transported (e.g., in emergency vehicles).

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

Infection Control Guidelines (Strict Adherence to Droplet Precautions)

Droplet precautions and patient placement - Patients with known or suspected pandemic influenza should be placed on droplet precautions for a minimum of 5 days from the onset of symptoms. Because immunocompromised patients may shed virus for longer periods, they may be placed on droplet precautions for the duration of their illness. Healthcare personnel should wear appropriate personal protective equipment (PPE). The placement of patients will vary depending on the healthcare setting (see setting-specific guidance).

- If the pandemic virus is associated with diarrhea, contact precautions (i.e., gowns and gloves for all patient contact) should be added.
- CDC will update these recommendations if changes occur in the anticipated pattern of transmission (www.cdc.gov/flu).
- A plan has been developed for triage (e.g., initial patient evaluation) and admission of patients during a pandemic that includes the following:
 - A designated location, separate from other clinical triage and evaluation areas, (utilizing the principles of social distancing) for the triage of patients with possible pandemic influenza;
 - Assigned responsibility to specifically-trained healthcare personnel overseeing the triage process;
 - Use of signage to direct and instruct patients with possible pandemic influenza on the triage process that is language, format (i.e., prepared for individuals with visual, hearing or other disabilities) and reading-level appropriate;
 - A telephone triage system for prioritizing patients who require a medical evaluation (i.e., those patients whose severity of symptoms or risk for complications necessitate being seen by a physician);

- Criteria for prioritizing admission of patients to those in most critical need;
- Coordination with local emergency medical services and 9-1-1 services for transport of suspected flu patients; and
- A method to specifically track admissions and discharges of patients with pandemic influenza.

Management of Infectious Patients

- Respiratory hygiene/cough etiquette - Respiratory hygiene/cough etiquette has been promoted as a strategy to contain respiratory viruses at the source and to limit their spread in areas where infectious patients might be awaiting medical care (e.g., physician offices, emergency departments). The impact of covering sneezes and coughs and/or placing a mask on a coughing patient on the containment of respiratory secretions or on the transmission of respiratory infections has not been systematically studied. In theory, however, any measure that limits the dispersal of respiratory droplets should reduce the opportunity for transmission. Masking may be difficult in some settings, e.g., pediatrics, in which case the emphasis will be on cough hygiene.
- The elements of respiratory hygiene/cough etiquette include:
 - Education of healthcare facility staff, patients, and visitors on the importance of containing respiratory secretions to help prevent the transmission of influenza and other respiratory viruses;
 - Posted signs in languages appropriate to the populations served with instructions to patients and accompanying family members or friends to immediately report symptoms of a respiratory infection as directed;
 - Source control measures (e.g., covering the mouth/nose with a tissue when coughing and disposing of used tissues; using masks on the coughing person when they can be tolerated and are appropriate);
 - Hand hygiene after contact with respiratory secretions; and
 - Spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible.
- Droplet precautions and patient placement - Patients with known or suspected PI should be placed on droplet precautions for a minimum of 5 days from the onset of symptoms. Because immunocompromised patients may shed virus for longer periods, they may be placed on droplet precautions for the duration of their illness. Healthcare personnel should wear appropriate PPE. The placement of patients will vary depending on the healthcare setting. If the pandemic virus is associated with diarrhea, contact precautions (i.e., gowns and gloves for all patient contact) should be added. CDC will update these recommendations if changes occur in the anticipated pattern of transmission (www.cdc.gov/flu).

Recommendations for Patient Cohorts

Hospitalization of pandemic influenza patients

- **Patient placement**
 - Limit admission of influenza patients to those with severe complications of influenza who cannot be cared for outside the hospital setting.
 - Admit patients to either a single-patient room or an area designated for cohorting of patients with influenza.
- **Cohorting**
 - Designated units or areas of a facility should be used for cohorting patients with pandemic influenza. During a pandemic, other respiratory viruses (e.g., non-pandemic influenza, respiratory syncytial virus, parainfluenza virus) may be circulating concurrently in a community. Therefore, to prevent cross-transmission of respiratory viruses, whenever possible assign only patients with confirmed pandemic influenza to the same room. At the height of a pandemic, laboratory testing to confirm pandemic influenza is likely to be limited, in which case cohorting should be based on having symptoms consistent with pandemic influenza.
 - Personnel (clinical and non-clinical) assigned to cohorted patient care units for pandemic influenza patients should not “float” or otherwise be assigned to other patient care areas. The number of personnel entering the cohorted area should be limited to those necessary for patient care and support.
 - Personnel assigned to cohorted patient care units should be aware that patients with pandemic influenza may be concurrently infected or colonized with other pathogenic organisms (e.g., *Staphylococcus aureus*, *Clostridium difficile*) and should adhere to infection control practices (e.g., hand hygiene, changing gloves between patient contact) used routinely, and as part of standard precautions, to prevent nosocomial transmission.
 - Because of the high patient volume anticipated during a pandemic, cohorting should be implemented early in the course of a local outbreak.
- **Patient transport**
 - Limit patient movement and transport outside the isolation area to medically necessary purposes.
 - Consider having portable x-ray equipment available in areas designated for cohorting influenza patients.
 - If transport or movement is necessary, ensure that the patient wears a surgical or procedure mask. If a mask cannot be tolerated (e.g., due to the patient’s age or deteriorating respiratory status), apply the most practical measures to contain respiratory secretions. Patients should perform hand hygiene before leaving the room.
- **Visitors**
 - Screen visitors for signs and symptoms of influenza before entry into the facility and exclude persons who are symptomatic.

- Family members who accompany patients with influenza-like illness to the hospital are assumed to have been exposed to influenza and should wear masks.
- Limit visitors to persons who are necessary for the patient's emotional well-being and care.
- Instruct visitors to wear surgical or procedure masks while in the patient's room.
- Instruct visitors on hand-hygiene practices.

Control of nosocomial pandemic influenza transmission

- Once patients with pandemic influenza are admitted to the hospital, nosocomial surveillance should be heightened for evidence of transmission to other patients and healthcare personnel (once pandemic influenza is firmly established in a community this may not be feasible or necessary).
- If limited nosocomial transmission is detected (e.g., has occurred on one or two patient care units), appropriate control measures should be implemented. These may include:
 - Cohorting of patients and staff on affected units;
 - Restriction of new admissions (except for other pandemic influenza patients) to the affected unit(s); and
 - Restriction of visitors to the affected unit(s) to those who are essential for patient care and support.
- If widespread nosocomial transmission occurs, controls may need to be implemented hospital wide and might include:
 - Restricting all nonessential persons; and
 - Stopping admissions not related to pandemic influenza and stopping elective surgeries.

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

Personal Protective Equipment

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

- Wear a mask when entering a patient's room. A mask should be worn once and then discarded. If PI patients are cohorted in a common area or in several rooms on a nursing unit, and multiple patients must be visited over a short time, it may be practical to wear one mask for the duration of the activity; however, other PPE (e.g., gloves, gown) must be removed between patients and hand hygiene performed.
- Change masks when they become moist.
- Do not leave masks dangling around the neck.
- Upon touching or discarding a used mask, perform hand hygiene.
- Gloves
 - A single pair of patient care gloves should be worn for contact with blood and body fluids, including during hand contact with respiratory secretions (e.g., providing oral care, handling soiled tissues). Gloves made of latex, vinyl, nitrile, or other synthetic materials are appropriate for this purpose; if possible, latex-free gloves should be available for healthcare workers who have latex allergy.
 - Gloves should fit comfortably on the wearer's hands.
 - Remove and dispose of gloves after use on a patient; do not wash gloves for subsequent reuse.
 - Perform hand hygiene after glove removal.
 - If gloves are in short supply (i.e., the demand during a pandemic could exceed the supply), priorities for glove use might need to be established. In this circumstance, reserve gloves for situations where there is a likelihood of extensive patient or environmental contact with blood or body fluids, including during suctioning.
 - Use other barriers (e.g., disposable paper towels, paper napkins) when there is only limited contact with a patient's respiratory secretions (e.g., to handle used tissues). Hand hygiene should be strongly reinforced in this situation.
- Gowns
 - Wear an isolation gown, if soiling of personal clothes or uniform with a patient's blood or body fluids, including respiratory secretions, is anticipated. Most patient interactions do not necessitate the use of gowns. However, procedures such as intubation and activities that involve holding the patient close (e.g., in pediatric settings) are examples of when a gown may be needed when caring for PI patients.
 - A disposable gown made of synthetic fiber or a washable cloth gown may be used.
 - Ensure that gowns are of the appropriate size to fully cover the area to be protected.
 - Gowns should be worn only once and then placed in a waste or laundry receptacle, as appropriate, and hand hygiene performed.
 - If gowns are in short supply (i.e., the demand during a pandemic could exceed the supply) priorities for their use may need to be established. In this circumstance, reinforcing the situations in which they are needed can reduce the volume used. Alternatively, other coverings (e.g., patient gowns) could be used. It is doubtful that disposable aprons would provide the desired protection in the circumstances where gowns are needed to prevent contact with influenza virus, and therefore

- should be avoided. There are no data upon which to base a recommendation for reusing an isolation gown on the same patient. To avoid possible contamination, it is prudent to limit this practice.
- Goggles or face shield - In general, wearing goggles or a face shield for routine contact with patients with PI is not necessary. If sprays or splatter of infectious material is likely, goggles or a face shield should be worn as recommended for standard precautions. Additional information related to the use of eye protection for infection control can be found at <http://www.cdc.gov/niosh/topics/eye/eye-infectious.html>.
 - PPE for special circumstances
 - PPE for aerosol-generating procedures - During procedures that may generate increased small-particle aerosols of respiratory secretions (e.g., endotracheal intubation, nebulizer treatment, bronchoscopy, suctioning), healthcare personnel should wear gloves, gown, face/eye protection, and a N95 respirator or other appropriate particulate respirator. Respirators should be used within the context of a respiratory protection program that includes fit-testing, medical clearance, and training. If possible and when practical, use of an airborne isolation room may be considered when conducting aerosol-generating procedures.
 - PPE for managing PI with increased transmissibility - The addition of airborne precautions, including respiratory protection (an N95 filtering face piece respirator or other appropriate particulate respirator), may be considered for strains of influenza exhibiting increased transmissibility, during initial stages of an outbreak of an emerging or novel strain of influenza, and as determined by other factors such as vaccination/immune status of personnel and availability of antivirals. As the epidemiologic characteristics of the pandemic virus are more clearly defined, CDC will provide updated infection control guidance, as needed.
 - Precautions for early stages of a pandemic - Early in a pandemic, it may not be clear that a patient with severe respiratory illness has PI. Therefore precautions consistent with all possible etiologies, including a newly emerging infectious agent, should be implemented. This may involve the combined use of airborne and contact precautions, in addition to standard precautions, until a diagnosis is established.
 - Caring for patients with PI
 - Healthcare personnel should be particularly vigilant to avoid:
 - Touching their eyes, nose or mouth with contaminated hands (gloved or ungloved). Careful placement of PPE before patient contact will help avoid the need to make PPE adjustments and risk self-contamination during use. Careful removal of PPE is also important.
 - Contaminating environmental surfaces that are not directly related to patient care (e.g., door knobs, light switches)
 - Hand hygiene - Hand hygiene has frequently been cited as the single most important practice to reduce the transmission of infectious agents in healthcare settings (see <http://www.cdc.gov/handhygiene/pressrelease.htm>) and is an essential element of standard precautions. The term “hand hygiene” includes both hand washing with either plain or antimicrobial soap and water and use of alcohol-based products (gels, rinses, foams) containing an emollient that do not require the use of water.

- If hands are visibly soiled or contaminated with respiratory secretions, wash hands with soap (either non-antimicrobial or antimicrobial) and water.
- In the absence of visible soiling of hands, approved alcohol-based products for hand disinfection are preferred over antimicrobial or plain soap and water because of their superior microbiocidal activity, reduced drying of the skin, and convenience.
- Always perform hand hygiene between patient contacts and after removing PPE.
- Ensure that resources to facilitate hand washing (i.e., sinks with warm and cold running water, plain or antimicrobial soap, disposable paper towels) and hand disinfection (i.e., alcohol-based products) are readily accessible in areas in which patient care is provided. For additional guidance on hand hygiene, see <http://www.cdc.gov/handhygiene/>.
- Disposal of solid waste - Standard precautions are recommended for disposal of solid waste (medical and non-medical) that might be contaminated with a PI virus:
 - Contain and dispose of contaminated medical waste in accordance with facility-specific procedures and/or local or state regulations for handling and disposal of medical waste, including used needles and other sharps, and non-medical waste.
 - Discard as routine waste used patient-care supplies that are not likely to be contaminated (e.g., paper wrappers).
 - Wear disposable gloves when handling waste. Perform hand hygiene after removal of gloves.
- Linen and laundry - Standard precautions are recommended for linen and laundry that might be contaminated with respiratory secretions from patients with PI:
 - Place soiled linen directly into a laundry bag in the patient's room. Contain linen in a manner that prevents the linen bag from opening or bursting during transport and while in the soiled linen holding area.
 - Wear gloves and gown when directly handling soiled linen and laundry (e.g., bedding, towels, personal clothing) as per standard precautions. Do not shake or otherwise handle soiled linen and laundry in a manner that might create an opportunity for disease transmission or contamination of the environment.
 - Wear gloves for transporting bagged linen and laundry.
 - Perform hand hygiene after removing gloves that have been in contact with soiled linen and laundry.
 - Wash and dry linen according to routine standards and procedures (www.cdc.gov/ncidod/hip/enviro/guide.htm).
- Dishes and eating utensils - Standard precautions are recommended for handling dishes and eating utensils used by a patient with known or possible PI:
 - Wash reusable dishes and utensils in a dishwasher with recommended water temperature (http://www.cdc.gov/ncidod/dhqp/gl_environmentinfection.html).
 - Disposable dishes and utensils (e.g., used in an alternate care site set-up for large numbers of patients) should be discarded with other general waste.
 - Wear gloves when handling patient trays, dishes, and utensils.
- Patient-care equipment - Follow standard practices for handling and reprocessing used patient-care equipment, including medical devices:

- Wear gloves when handling and transporting used patient-care equipment.
- Wipe heavily soiled equipment with an EPA-approved hospital disinfectant before removing it from the patient's room. Follow current recommendations for cleaning and disinfection or sterilization of reusable patient-care equipment.
- Wipe external surfaces of portable equipment for performing x-rays and other procedures in the patient's room with an EPA-approved hospital disinfectant upon removal from the patient's room.
- Environmental cleaning and disinfection - Cleaning and disinfection of environmental surfaces are important components of routine infection control in healthcare facilities. Environmental cleaning and disinfection for PI follow the same general principles used in healthcare settings.

Cleaning and Disinfecting Patient-Occupied Rooms⁶

- Wear gloves in accordance with facility policies for environmental cleaning and wear a surgical or procedure mask in accordance with droplet precautions. Gowns are not necessary for routine cleaning of an influenza patient's room.
- Keep areas around the patient free of unnecessary supplies and equipment to facilitate daily cleaning.
- Use any EPA-registered hospital detergent-disinfectant. Follow manufacturer's recommendations for use-dilution (i.e., concentration), contact time, and care in handling.
- Follow facility procedures for regular cleaning of patient-occupied rooms. Give special attention to frequently touched surfaces (e.g., bedrails, bedside and over-bed tables, TV controls, call buttons, telephones, lavatory surfaces including safety/pull-up bars, doorknobs, commodes, ventilator surfaces) in addition to floors and other horizontal surfaces.
- Clean and disinfect spills of blood and body fluids in accordance with current recommendations for Isolation Precautions (http://www.cdc.gov/ncidod/dhqp/gl_isolation.html).

Cleaning and Disinfection After Patient Discharge or Transfer

- Follow standard facility procedures for post-discharge cleaning of an isolation room.
- Clean and disinfect all surfaces that were in contact with the patient or might have become contaminated during patient care. No special treatment is necessary for window curtains, ceilings, and walls unless there is evidence of visible soiling.
- Do not spray (i.e., fog) occupied or unoccupied rooms with disinfectant. This is a potentially dangerous practice that has no proven disease control benefit.
- Postmortem care - Follow standard facility practices for care of the deceased. Practices should include standard precautions for contact with blood and body fluids.
- Laboratory specimens and practices - Follow standard facility and laboratory practices for the collection, handling, and processing of laboratory specimens.

Guidelines on Postmortem Care

⁶ www.cdc.gov/ncidod/hip/enviro/Enviro_guide_03.pdf

- A contingency plan has been developed for managing an increased need for post mortem care and disposition of deceased patients.
- An area in the facility that could be used as a temporary morgue has been identified.
- Logistical support for the management of the deceased has been discussed with local, state, tribal, or regional planning contacts and local coroners/medical examiners.
- Local morticians have been involved in planning discussions.
- Mortality estimates have been used to anticipate and supply needed body bags and shroud packs.
- Plans for expanding morgue capacity have been discussed with local, State, tribal and regional planning contacts.
- Follow standard facility practices for care of the deceased. Practices should include standard precautions for contact with blood and body fluids.

d. MSDH Guidance for Clinical Procedures for Initial Screening, Assessment and Management of Patients with PI

Overview. This guidance provides clinical procedures for the initial screening, assessment, and management of patients with suspected novel influenza during the Interpandemic and Pandemic Alert Periods and for patients with suspected PI during the Pandemic Period. The Appendices include information on the clinical presentation and complications of seasonal influenza, the clinical features of infection due to avian influenza A (H5N1) virus and previous PI viruses, and the management of patients with community-acquired pneumonia or secondary bacterial pneumonia during a pandemic. The guidance is current as of October 2005, and is subject to change as experience is gained.

During the Interpandemic and Pandemic Alert Periods, early recognition of illness caused by a novel influenza A virus strain will rely on a combination of clinical and epidemiologic features. During the Pandemic Period (in a setting of high community prevalence), diagnosis will likely be more clinically oriented because the likelihood will be high that any severe febrile respiratory illness is PI. During periods in which no human infections with a novel influenza A virus strain have occurred anywhere in the world (Interpandemic Period: Phases 1, 2; see Box 1), or when sporadic cases of animal-to-human transmission or rare instances of limited human-to-human transmission of a novel influenza A virus strain have occurred in the world (Pandemic Alert Period: Phases 3, 4), the likelihood of novel influenza A virus infection is very low in a returned traveler from an affected area who has severe respiratory disease or influenza-like illness. Since human influenza A and B viruses circulate worldwide among humans year-round, the possibility of infection with human influenza viruses is much higher and should be considered. Once local person-to-person transmission of a novel influenza A virus strain has been confirmed (Pandemic Alert Period: Phase 5), the potential for novel influenza A virus infection will be higher in an ill person who has a strong epidemiologic link to the affected area.

The following information is provided to assist clinicians in assessing the risk of novel influenza in persons with severe respiratory disease or influenza-like illness during the Interpandemic and Pandemic Alert Periods. Clinicians should recognize that human influenza A and B viruses and other respiratory viruses circulate year-round among people throughout the world, including in countries affected by outbreaks of avian influenza A viruses in poultry. Seasonal human influenza A and B community outbreaks occur in temperate climates of the northern and southern hemisphere, and human influenza activity may occur year-

round in subtropical and tropical regions. Outbreaks of human influenza can occur among travelers during any time of the year, including periods of low influenza activity in the United States (e.g., summer).

Phases 1, 2: Interpandemic Period. A novel influenza A virus has been detected in animals but not in humans. During these phases, the risk of human infection with a novel influenza A virus strain is extremely low. The risk of human infection with human influenza viruses or other viruses is much higher in persons living in or traveling to affected areas.

Phases 3, 4: Pandemic Alert Period. A novel influenza A virus has been detected in humans through sporadic animal-to-human transmission in an affected area (e.g., direct contact with infected poultry), and few cases of limited, local human-to-human transmission have occurred (small clusters of cases). During these phases, the risk of human infection with a novel influenza A virus strain is very low. The risk of human infection with human influenza viruses or other viruses is much higher in persons living in or traveling to affected areas.

Phase 5: Pandemic Alert Period. A novel influenza A virus has been detected in humans in larger clusters in an affected area, suggesting that the virus is becoming better adapted to spread among people. During this period, the risk of human infection with a novel influenza A virus strain is higher, depending on specific exposures, in persons living in or traveling to affected areas. Human infection with human influenza viruses or other viruses will occur and should still be considered.

This supplement is designed to serve as a guide for clinicians, with the understanding that the management of influenza is based primarily on sound clinical judgment regarding the individual patient as well as an assessment of locally available resources, such as rapid diagnostics, antiviral drugs, and hospital beds. Early antiviral therapy shortens the duration of illness due to seasonal influenza and would be expected to have similar effects on illness due to novel or PI viruses. Clinical management must also address supportive care and management of influenza-related complications.

CLINICAL GUIDELINES FOR THE INTERPANDEMIC AND PANDEMIC ALERT PERIODS

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

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

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

Given the large number of influenza-like illnesses that clinicians encounter during a typical flu season, laboratory evaluation for novel influenza A viruses during the Interpandemic and Pandemic Alert Periods is recommended only for:

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

Clinical Evaluation of Patients with Influenza-like Illness during the Interpandemic and Pandemic Alert Periods

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

- Acute (within 7 days of illness onset) and convalescent serum specimens (2–3 weeks after the acute specimen and at least 3 weeks after illness onset) should be obtained and refrigerated at 4°C or frozen at minus 20–80°C.
- RT-PCR testing is not available in hospital laboratories and must be performed at a qualified laboratory such as a state health department laboratory or the CDC Influenza Laboratory. Viral culture should be performed only at biosafety level 3 [BSL-3] with enhancements.
- Depending on the clinical presentation and the patient's underlying health status, other initial diagnostic testing might include:
 - Pulse oximetry;
 - Chest radiograph;
 - Complete blood count (CBC) with differential;
 - Blood cultures;
 - Sputum (in adults), tracheal aspirate, and pleural effusion aspirate (if an effusion is present) Gram stain and culture;
 - Antibiotic susceptibility testing (encouraged for all bacterial isolates);
 - Multivalent immunofluorescent antibody testing or PCR of nasopharyngeal aspirates or swabs for common viral respiratory pathogens, such as influenza A and B, adenovirus, parainfluenza viruses, and respiratory syncytial virus, particularly in children;
 - In adults with radiographic evidence of pneumonia, Legionella and pneumococcal urinary antigen testing;
 - If clinicians have access to rapid and reliable testing (e.g., PCR) for *M. pneumoniae* and *C. pneumoniae*, adults and children <5 yrs with radiographic pneumonia should be tested; and
 - Comprehensive serum chemistry panel, if metabolic derangement or other end-organ involvement, such as liver or renal failure, is suspected.

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

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

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

Exposure Risks. Exposure risks fall into two categories: travel and occupational.

Travel Risks. Persons have a travel risk if they have: 1) recently visited or lived in an area affected by highly pathogenic avian influenza A outbreaks in domestic poultry or where a human case of novel influenza has been confirmed, and either 2) had direct contact with poultry, or 3) had close contact with a person with confirmed or suspected novel influenza.

Direct contact with poultry is defined as: 1) touching birds (well-appearing, sick, or dead), or 2) touching poultry feces or surfaces contaminated with feces, or 3) consuming uncooked poultry products (including blood) in an affected area. Close contact with a person from an infected area with confirmed or suspected novel influenza is defined as being within 3 feet (1 meter) of that person during their illness.

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

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

Occupational Risks. Persons at occupational risk for infection with a novel strain of influenza include persons who work on farms or live poultry markets or who process or handle poultry infected with known or suspected avian influenza viruses, workers in laboratories that contain live animal or novel influenza viruses, and healthcare workers in direct contact with a suspected or confirmed novel influenza case.

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

Other avian influenza A viruses -- Although the epidemiologic criteria for novel influenza are based on recent human cases of avian influenza A (H5N1), they are intended for use in the evaluation of suspected cases of infection with any novel influenza A virus strain, including other avian influenza viruses. Other avian influenza A viruses that have caused human disease include the highly pathogenic viruses H7N7 and H7N3 and the low pathogenic viruses H9N2 and H7N2. Some of these human cases have occurred in Europe (Netherlands) and North America (Canada and the United States). Therefore, the same high-risk exposures defined above for avian influenza A (H5N1) also apply to other avian influenza A viruses. A strong epidemiologic link to an avian influenza outbreak in poultry—even in areas that have not experienced poultry outbreaks of avian influenza A (H5N1)—may raise the index of suspicion for human infection with avian influenza A viruses.

In the future, other animal hosts (in addition to poultry) or novel influenza A virus subtypes (in addition to H5N1) might become significantly associated with human disease. If such events occur, this guidance will be updated.

Initial Management of Patients Who Meet the Criteria for Novel Influenza. When a patient meets both the clinical and epidemiologic criteria for a suspected case of novel influenza, healthcare personnel should initiate the following activities:

- Implement infection control precautions for novel influenza, including Respiratory Hygiene/Cough Etiquette. Patients should be placed on Droplet Precautions for a minimum of 14 days, unless there is full resolution of illness or another etiology has been identified before that period has elapsed. Healthcare personnel should wear surgical or procedure masks on entering a patient's room, as per Droplet Precautions, as well as gloves and gowns, when indicated for Standard Precautions. Patients should be admitted to a single-patient room, and patient movement and transport within the hospital should be limited to medically necessary purposes.
- Notify the local and state health departments. Report each patient who meets the clinical and epidemiologic criteria for a suspected case of novel influenza to the state or district health department as quickly as possible to facilitate initiation of public health measures. Designate one person as a point of contact to update public health authorities on the patient's clinical status.
- Obtain clinical specimens for novel influenza A virus testing and notify the district and state health departments to arrange testing. Testing will likely be directed by public health authorities. Since the optimal specimens for detecting novel influenza A virus infections are currently unknown, if feasible, all of the following respiratory specimens should be collected for novel influenza A virus testing: nasopharyngeal swab; nasal swab, wash, or aspirate; throat swab; and tracheal aspirate (for intubated patients). Store specimens at 4°C in viral transport media until transported or shipped for testing. Acute (within 7 days of illness onset) and convalescent serum specimens (2–3 weeks after the acute specimen and at least 3 weeks after illness onset) should be obtained and refrigerated at 4°C or frozen at minus 20–80°C. Serological testing for novel influenza virus infection can be performed only at CDC.

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

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

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

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

- Evaluate alternative diagnoses. An alternative diagnosis should be based only on laboratory tests with high positive-predictive value (e.g., blood culture, viral culture, PCR, Legionella urinary antigen, pleural fluid culture, transthoracic aspirate culture). If an alternate etiology is identified, the possibility of co-infection with a novel influenza virus may still be considered if there is a strong epidemiologic link to exposure to novel influenza.
- Decide on inpatient or outpatient management. The decision to hospitalize a suspected novel influenza case will be based on the physician's clinical assessment and assessment of risk and whether adequate precautions can be taken at home to prevent the potential spread of infection. Patients cared for at home should be separated from other household members as much as possible.
- All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed with other household waste. Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical or procedure masks by the patient and/or caregiver during interactions may be of benefit. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap.
- Initiate antiviral treatment as soon as possible, even if laboratory results are not yet available. Clinical trials have shown that these drugs can decrease the illness due to seasonal influenza duration by several days when they are initiated within 48 hours of illness onset. The clinical effectiveness of antiviral drugs for treatment of novel influenza is unknown, but it is likely that the earlier treatment is initiated, the greater the likelihood of benefit. During the Pandemic Alert Period,

available virus isolates from any case of novel influenza will be tested for resistance to the currently licensed antiviral medications. See HHS Pandemic Influenza Plan, Supplement 7 for current antiviral information and treatment strategies.

- Assist public health officials with the identification of potentially exposed contacts. After consulting with state and local public health officials, clinicians might be asked to help identify persons exposed to the suspected novel influenza case-patient (particularly healthcare workers). In general, persons in close contact with the case-patient at any time beginning one day before the onset of illness are considered at risk. Close contacts might include household and social contacts, family members, workplace or school contacts, fellow travelers, and/or healthcare providers.

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

Management of Patients Who Test Positive for Seasonal Influenza. Many suspected novel influenza cases may be found to have seasonal human influenza, particularly during the winter season. It should be recognized that human influenza viruses circulate among people worldwide, including in affected areas with poultry outbreaks of avian influenza A viruses during non-seasonal influenza activity in the United States. For patients with confirmed seasonal influenza, maintain Standard and Droplet Precautions, and continue antiviral treatment for a full treatment course (e.g., 5 days).

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

Clinical Guidelines For The Pandemic Period. During the Pandemic Period, the primary goal of rapid detection is to appropriately identify and triage cases of PI. During this period, outpatient clinics and

emergency departments might be overwhelmed with suspected cases, restricting the time and laboratory resources available for evaluation. In addition, if the PI virus exhibits transmission characteristics similar to those of seasonal influenza viruses, illnesses will likely spread throughout the community too rapidly to allow the identification of obvious exposures or contacts. Evaluation will therefore focus predominantly on clinical and basic laboratory findings, with less emphasis on laboratory diagnostic testing (which may be in short supply) and epidemiologic criteria. Nevertheless, clinicians in communities without PI activity might consider asking patients about recent travel from a community with PI activity or close contact with a suspected or confirmed PI case.

Criteria for Evaluating Patients with Possible PI

Clinical Criteria. Suspected cases of PI virus infection should meet the criteria for ILI: temperature of $>38^{\circ}\text{C}$ plus either sore throat or cough. Since lower respiratory tract involvement might result in dyspnea (shortness of breath), dyspnea should be considered as an additional criterion. Therefore, the full clinical criteria are: fever plus one of the following: sore throat, cough, or dyspnea. Although past influenza pandemics have most frequently resulted in respiratory illness, the next PI virus strain might present with a different clinical syndrome. The initial diagnostic testing is as described above for the Interpandemic and Pandemic Alert Periods.

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

Initial Management of Patients Who Meet the Criteria for PI. When a patient meets the criteria for a suspected case of PI, healthcare personnel should initiate the following activities:

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

diagnostic testing might aid cohorting decisions, but may be optional in the setting of high local prevalence. Influenza diagnostic testing should be considered before initiating treatment with antivirals.

- As with seasonal influenza, RT-PCR and virus isolation from tissue culture will be the most accurate methods for diagnosing PI. Generally, specimens should include combined nasopharyngeal aspirates or nasal swabs, and throat swabs, stored at 4°C in viral transport media. During the Pandemic Period, BSL-2 conditions should be sufficient for viral culture of clinical specimens from suspected PI patients.
- Rapid diagnostic tests for influenza and immunofluorescence may be helpful for initial clinical management, including cohorting and treatment (see above). However, rapid influenza tests have relatively low sensitivity for detecting seasonal influenza, and their ability to detect PI viruses is unknown. The sensitivity of rapid diagnostic tests will likely be higher in specimens collected within two days of illness onset, in children, and when tested at clinical laboratories that perform a high volume of testing. Because during a pandemic a negative rapid test may be a false negative, test results need to be interpreted within the overall clinical context. For example, it may not be optimal to withhold antiviral treatment from a seriously ill high risk patient on the basis of a negative test; however, in a setting of limited antiviral drug availability, treatment decisions in less high risk situations could be based on test results. The risk of a false-negative test also must be taken into account in making cohorting decisions. Rapid diagnostic testing should not preclude more reliable testing, if available. Further information on rapid diagnostic testing can be found in the laboratory diagnostics portion of the plan.
- Decide on inpatient or outpatient management. The decision to hospitalize a suspected PI case will be based on the physician's clinical assessment of the patient as well as the availability of hospital beds and personnel. Guidelines on cohorting and infection control for admitted patients can be found in the infection control portion of the plan.
- An unstable patient will be considered a high priority for admission, but patients with high-risk conditions might also warrant special attention, such as observation or close follow-up, even if disease is mild. On the other hand, home management with follow-up might be appropriate for well-appearing young children with fever alone.
- Patients cared for at home should be separated from other household members as much as possible. All household members should carefully follow recommendations for hand hygiene, and tissues used by the ill patient should be placed in a bag and disposed with other household waste. Infection within the household may be minimized if a primary caregiver is designated; ideally, someone who does not have an underlying condition that places them at increased risk of severe influenza disease. Although no studies have assessed the use of masks at home to decrease the spread of infection, using a surgical or procedure mask by the patient or caregiver during interactions may be of benefit. Separation of eating utensils for use by a patient with influenza is not necessary, as long as they are washed with warm water and soap.

Clinical Management of PI Patients. In addition to use of antivirals, clinical management of severe influenza should address supportive care and the rapid identification and treatment of secondary complications. During the Pandemic Period, CDC may request virus isolates from persons who fail treatment or antiviral prophylaxis, as these strains may more likely be drug resistant. In addition, randomly collected isolates will be tested for resistance to establish nationwide rates.

Children aged < 18 years with suspected or confirmed PI should not be treated with aspirin or other salicylate-containing products because of an increased risk of Reye syndrome (characterized by acute encephalopathy and liver failure) in this age group.

The major clinical presentations and complications related to seasonal human influenza occur more commonly in persons with certain underlying medical conditions, such as chronic respiratory or cardiovascular disease and extremes of age. Limited data are available on risk factors and complications related to infection with novel influenza viruses, and these may change as individual strains evolve. In particular, post-influenza community-acquired pneumonia will likely be a commonly encountered complication, and clinicians will need to be aware of recommended methods for diagnosis and treatment found in the HHS Pandemic Influenza Plan, Supplement 5, Appendix 3.

e. MSDH Consensus Statement for Monitoring Health/Reporting Exposure in the Healthcare System

This section addresses MSDH recommendations as to monitoring the health of staff and patients as well as the recommendations regarding management of asymptomatic and symptomatic healthcare workers exposed to a novel virus.

Authoritative statements as to strategy to monitor health of staff and patients potentially exposed to Pandemic Influenza, exists in several documents that are referenced below. Additionally, some portions of the documents are excerpted and appended. The referenced documents may be viewed in their entirety through the following web links:

- <http://www.pandemicflu.gov/plan/healthcare/hospitalchecklist.html>
- <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>
- <http://www.hhs.gov/pandemicflu/plan/sup3.html>
- <http://www.hhs.gov/pandemicflu/plan/sup4.html>
- <http://www.hhs.gov/pandemicflu/plan/sup5.html>

Facility Access. Hospitals should determine in advance the criteria and procedures they will use to limit access to the facility if pandemic influenza spreads through the community.

- Define “essential” and “non-essential” visitors with regard to the hospital and the population served. Develop protocols for limiting non-essential visitors.
 - Criteria and protocols for modifying admission criteria on the basis of current bed capacity.
 - Criteria and protocols for closing the facility to new admissions and referrals to other facilities.
 - Criteria and protocols for limiting or restricting visitors to the hospital, including specific plans for communicating with patients’ families about hospital rules for visiting hospitalized family members.

- A contingency plan has been developed in the event of hospital quarantine in conjunction with local jurisdictions to ensure quarantine is enforced and necessary supplies, equipment, and basic necessities can be delivered and maintained.⁷
- Develop criteria or “triggers” for temporary closing of the hospital to new admissions and transfers. The criteria should consider staffing ratios, isolation capacity, and risks to non-influenza patients. As part of this effort, hospital administrators should: 1) determine who will make decisions about temporary closings and how and to whom these decisions will be communicated, and 2) consult with state and local health departments on their roles in determining policies for hospital admissions and transfers.
- Determine how to involve hospital security services in enforcing access controls. Consider meeting with local law enforcement officials in advance to determine what assistance, if any, they can provide. Note that local law enforcement might be overburdened during a pandemic and have limited ability to assist healthcare facilities with security services.
- Develop a plan for facility security during a pandemic that includes the following:
 - Hospital security personnel input into procedures for enforcing facility access controls.
 - Plans for facilitating identification (e.g., special badges) of non-facility healthcare personnel and volunteers by security staff and facilitating their access to the facility when deployed.
 - The identity of key and essential personnel who would have access to the facility during a pandemic.
 - Recruitment and training of additional security personnel (e.g., local police, national guard) that is coordinated by the local health authority.
 - Plans for establishing a controlled, orderly, flow of patients within the facility.

Detecting Persons Entering the Facility who may have PI

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

• ⁷ Hospital Pandemic Influenza Planning Check-List, <http://www.pandemicflu.gov/plan/healthcare/hospitalchecklist.html>

- During the peak of a pandemic, emergency departments and outpatient offices may be overwhelmed with patients seeking care. A “triage officer” may be useful for managing patient flow, including deferral of patients who do not require emergency care.
- Designate separate waiting areas for patients with influenza-like symptoms. If this is not feasible, the waiting area should be set up to enable patients with respiratory symptoms to sit as far away as possible (at least 3 feet) from other patients.

Strategy to Monitor Health of Staff and Patients

Triage, Clinical Evaluation and Admission Procedures. During the peak of a pandemic, hospital emergency departments and outpatient offices might be overwhelmed with patients seeking care. Therefore, triage should be conducted to: 1) identify persons who might have pandemic influenza, 2) separate them from others to reduce the risk of disease transmission, and 3) identify the type of care they require (i.e., home care or hospitalization)⁸.

- Develop a strategy for triage, diagnosis, and isolation of possible pandemic influenza patients. Consider the following triage mechanisms:
 - Using phone triage to identify patients who need emergency care and those who can be referred to a medical office or other non-urgent facility.
 - Assigning separate waiting areas for persons with respiratory symptoms.
 - Assigning a separate triage evaluation area for persons with respiratory symptoms.
 - Assigning a “triage coordinator” to manage patient flow, including deferring or referring patients who do not require emergency care⁹.
- Review procedures for the clinical evaluation of patients in the emergency department and in outpatient medical offices to facilitate efficient and appropriate disposition of patients.
- Review admission procedures and streamline them as needed to limit the number of patient encounters in the hospital (e.g., direct admission to an inpatient bed).
- Identify a “trigger” point at which screening for signs and symptoms of pandemic influenza in all persons entering the hospital will escalate from passive (e.g., signs at the entrance) to active (e.g., direct questioning). In addition to visual alerts, potential screening measures might include priority triage of persons with respiratory symptoms and telephone screening of patients with appointments.

Occupational Health. The ability to deliver quality health care is dependent on adequate staffing and optimum health and welfare of staff. During a pandemic, the healthcare workforce will be stressed physically and psychologically. Like others in the community, many healthcare workers will become ill. Healthcare facilities must be prepared to: 1) protect healthy workers from exposures in the healthcare setting through the use of recommended infection control measures; 2) evaluate and manage symptomatic and ill healthcare personnel; 3) distribute and administer antiviral drugs and/or vaccines to healthcare personnel, as recommended by HHS and state health departments; and 4) provide psychosocial services to health care workers and their families to help sustain the workforce.

⁸ HHS Pandemic Influenza Plan, Supplement 5, <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>

⁹ HHS Pandemic Influenza Plan, Supplement 4 and 5, <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>

Managing Ill Workers

- Establish a plan for detecting signs and symptoms of influenza in healthcare personnel before they report for duty.
- Develop policies for managing healthcare workers with respiratory symptoms that take into account HHS recommendations for healthcare workers with influenza (see www.cdc.gov/ncidod/hip/GUIDE/infectcont98.htm).
- Consider assigning staff who are recovering from influenza to care for influenza patients.
- **Time-off policies** -Ensure that time-off policies and procedures consider staffing needs during periods of clinical crisis.
- **Reassignment of high-risk personnel** - Establish a plan to protect personnel at high risk for complications of influenza (e.g., pregnant women, immunocompromised persons) by reassigning them to low-risk duties (e.g., non-influenza patient care, administrative duties that do not involve patient care) or placing them on furlough.
- **Psychosocial health services**¹⁰
 - Identify mental health and faith-based resources for counseling of healthcare personnel during a pandemic. Counseling should include measures to maximize professional performance and personal resilience by addressing management of grief, exhaustion, anger, and fear; physical and mental health care for oneself and one's loved ones; and resolution of ethical dilemmas.
 - Determine a strategy for supporting healthcare workers' needs for rest and recuperation.
 - Develop a strategy for housing and feeding healthcare personnel who might be needed on-site for prolonged periods.
 - Develop a strategy for accommodating and supporting staff who have child- or elder-care responsibilities.¹¹

MSDH Recommendations for Management of Asymptomatic Healthcare Workers

The MSDH recommends, consistent with statements from other sources as to management of asymptomatic persons exposed to Pandemic Influenza, that asymptomatic exposed healthcare workers be furloughed home for voluntary quarantine and self-monitoring of temperature for a period of one week.

MSDH Recommendations for Management of Symptomatic Healthcare Workers

The MSDH recommends, consistent with statements from other sources as to management of symptomatic persons exposed to Pandemic Influenza, that symptomatic exposed healthcare workers, unless ill enough to require hospitalization, be furloughed home for voluntary isolation and treatment with appropriate antivirals.

f. Recommendations for Use of Face Masks and Respirators within Healthcare Facilities

¹⁰ HHS Pandemic Influenza Plan, Supplement 11, <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>

¹¹ HHS Pandemic Influenza Plan, Supplement 3, <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>

This is discussed in the Medical Countermeasures Section and may be seen by referencing that Section V-H-5-d. Additionally, the reader is referred to the Interim Guidance on Planning for the Use of Surgical Masks and Respirators in Healthcare Settings during an Influenza Pandemic (<http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>).

g. MSDH Guidelines for Use of Antivirals and Pandemic Strain Vaccine

Guidelines for use of antivirals are provided in Section VI-H-5 (Distribution of Medical Countermeasures). Guidelines for use of Pandemic Strain Vaccine are provided in Section VI-I-5 (Public Health Vaccine Preparedness and Response).

F. Community-Wide Healthcare Coalitions

This section is currently under development.

G. Community Mitigation/Non-Pharmaceutical Interventions

The purpose of this Section is to describe preparedness efforts and response actions in providing State assistance and coordinating local resources in modalities for mitigating transmission of PI; present the Federal concept of a pandemic severity index; set forth Federal parameters for early, targeted, layered use of non-pharmaceutical interventions; provide MSDH consensus statements on isolation and treatment of ill persons, and quarantine of household contacts of ill individuals; proffer guidance for dismissal of schools and closure of child care programs; and, engage in policies regarding community social distancing.

1. Situation

- As there is no pharmaceutical or other therapeutic intervention which constitutes a *cure* for PI (or any influenza, for that matter), medical strategy emphasizes the course of prevention, by immunization, and secondarily pursues control by timely initiation of neuraminidase-inhibiting antiviral compounds, by fastidious respiratory hygiene and personal protection, and by other non-pharmaceutical methods.
- Vaccine against a novel influenza strain will be unavailable initially and when it becomes available (based on conventional manufacturing technology and capability—at least four months into the pandemic), supplies will be very limited.
- Adequate supplies and efficacy against the novel viral strain of neuraminidase inhibitors antivirals have **NOT** been established.
- In view of the situation with both vaccine and antiviral agents, mitigation of PI, particularly during the first wave (first 120 days)—on both the community and individual level—will depend heavily, if not exclusively, on non-pharmaceutical measures.
- Statutory authority is plentiful and robust for mandatory isolation and quarantine:
 - Mississippi Code: Sec. 41-3-15, 41-23-5, and 41-23-2 assign to the State Board of Health and/or the State Health Officer the authority to implement quarantines in the interest of public health; to implement isolation and quarantine in the face of epidemic communicable

- disease; and makes the willful violation of an isolation or quarantine order a felony, respectively.
 - o United States Code (42): 264, 243, and 5121 (Stafford Act) accords the Secretary of HHS/CDC the authority to apprehend and detain international or interstate travelers “reasonably” believed to represent a communicable disease threat to others, to assist states and local governments in the implementation and enforcement of isolation and quarantine, and in a state of emergency, to bypass state and local government in the direct implementation of isolation and quarantine, respectively.
 - o Executive Order by President George W. Bush, on April 1, 2005, includes novel or re-emergent influenza among the list of communicable diseases for which quarantine may be appropriate.
- Having considered the ethical and pragmatic issues and concerns for equity and balance between individual liberty and public interest, MSDH had embraced the primacy of “voluntary” compliance with unequivocal, decisive departmental recommendations of selected non-pharmaceutical interventions (NPIs).
- MSDH concurs with the rationale and coherence of the Federal Department of Health and Human Services (HHS) Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Non-pharmaceutical Interventions and has eagerly adopted the various elements, recognizing of course that it too is a work-in-progress, subject to review and to revision as new data and analysis indicate. Please see Section 5 below for specific data.

2. Assumptions

The following general and Mississippi-specific assumptions have informed the development of this Mississippi Community Mitigation Guidance:

- All state agencies, businesses, other non-governmental organizations, school districts—in short, each aspect of the public and private sectors—will be adversely affected by pandemic influenza; and all but critical missions and essential services may be suspended for an extended period of time (months).
- As the Pandemic will be ubiquitous; it will be folly to depend or rely upon outside aid and resources. Hence, as support and response during the Pandemic must be primarily LOCAL; planning and preparedness must be LOCAL ventures during the pre-pandemic period.
- Mississippi can not depend upon a lengthy “lead time” between determination of the advent of the Pandemic (elsewhere in the world) and the first outbreak in Mississippi.
- Depending upon the severity of the Pandemic, there may be precious little time separating “Alert” from “Standby” from “Activate”.
- The Pandemic may last up to 18 months and may occur in two or three waves, with both waxing and waning mortality and morbidity; though the first wave is likely to be the most challenging in these latter regards.
- A “wave” of severe disease could last up to four months.

- PI, like seasonal influenza, is transmitted principally by droplet vector, by aerosolization, and, probably to a slightly lesser extent, by extremity contact and central redirection to the mucosa of the oro/nasopharynx and conjunctiva.
- Short of a quantum leap in current vaccine manufacturing technology and production capacity, vaccine to the novel Pandemic viral strain will not be available for the first four months of the pandemic (the first wave), and then it will likely exist in only limited quantities requiring discerning allocation.
- Antivirals (even the neurominidase-inhibiting agents) do not have proven efficacy against the novel viral strain (consider the emerging resistance of some H5/N1 Avian influenza viral clades in Egypt to oseltamivir); even if it does have, its use is very time-sensitive ("golden period"); even if it does have, the quantity of courses for treatment (much less prophylaxis) may be insufficient to be applicable to the broad population.
- Antivirals are NOT indicated for very young infants.
- As a result of the three immediately preceding assumptions, non-pharmaceutical interventions will emerge, almost by default, as a principal arm of mitigation strategy, particularly during the first wave.
- While a "voluntary" application of community mitigation techniques with hopefully high levels of "voluntary" compliance is the preferred approach; a dire scenario (extremely unlikely) of apocalyptic levels of carnage could prevail, necessitating mandatory implementation of isolation, quarantine, and social distancing.
- Aggregate absenteeism for those who are ill, for those caring for the ill, or for the "worried well" may range between 40 – 50%.
- A veritable panoply of secondary and tertiary untoward/unintended consequences of treatment and containment policies is likely to ensue. The predictable more onerous and pernicious "outcomes" will require broad, imaginative input to attenuate this indirect negative impact of the Pandemic.
- Employing State and county census data for the year 2005, reflecting a population of 2.9 million, and a 25% gross attack rate (1918-like scenario), Mississippi would observe, over an 8-week period:
 - 646,220 individuals who become ill;
 - 323,110 who would seek out-patient care;
 - 68,416 who would ordinarily require conventional hospitalization
 - >14,000 who would need intensive or critical care;
 - >7,200 who would require mechanical ventilation; and
 - 15,635 who would die as a direct or indirect result of the pandemic!!!
- Based on a March 2007 report issued by the Trust for America's Health, Mississippi would experience a profound economic blow: a projected gross domestic product loss of \$4.9 billion, in the context of an annual 2005 (year of Hurricane Katrina) GDP of \$81.3 billion. This loss would amount to a nearly 6% decline, making it by percentage reduction the 7th hardest-hit state among the 50.

3. Concept of Operations

Community mitigation and non-pharmaceutical interventions requires assistance from a variety of agencies supporting ESFs 5, 6, 7, 8, 13, 14 and 15. Roles are identified below.

MEMA

- Maintain liaison with and cooperate with emergency management agencies and organizations of local jurisdictions and of other states, the federal government and the private sector in implementing programs for disaster mitigation/ prevention, preparedness, response, and recovery.
- Coordinate and release of any and all disaster/ emergency-related information to the public.

Mississippi Commission for Volunteer Services

- Assist in coordination of Mississippi Voluntary Organizations Active in Disasters and other non-governmental volunteer organizations and in donations management.

Mississippi Department of Archives and History

- Manage and preserve appropriate vital records.

Mississippi Department of Education

- In collaboration with MSDH, define strategy for dismissal or closure.
- Develop system(s) for notifying parents about: dismissal of students from classes or childcare, communication during dismissal, and re-opening.
- Provide multilingual support to affected population.
- Reallocate food supplies using available public school resources.

Mississippi Department of Environmental Quality

- Supply manpower to support health and human services functions.

Mississippi Department of Human Services

- Develop and implement special services for the aged and handicapped.
- Secure and distribute Disaster Assistance support including managing Individual and Household Grant Programs, financial resources and loans.

Mississippi Department of Marine Resources

- Assist in special and/or unique disaster and/ or emergency events that occur in or near the areas of DMR responsibility.
- Support law enforcement and security activities as appropriate.

Mississippi Department of Mental Health

- Provide mental health services to disaster victims as needed.

Mississippi Department of Public Safety

- Assume primary responsibility for law enforcement activities in disaster/emergency conditions.
- Provide Emergency and Disaster Medical and Mortuary support.
- In coordination with the MSDH, support Disaster Mortuary (DMORT) teams.

Mississippi Department of Rehabilitation Services

- Support efforts to relocate and shelter the special needs population.
- Provide personnel and resources to continue services for relocated clients.

Mississippi Department of Transportation

- Coordinate transportation requests from disaster areas and establish priorities for transportation.
- Establish transportations plans for receipt, coordination and/ or distribution of food, materials, and supplies.

Mississippi Department of Wildlife, Fisheries and Parks

- Assist law enforcement officials in emergency law enforcement duties.
- Assist with primary communications and provide back-up communications systems.

Mississippi Division of Medicaid

- Continue to provide medical support to existing recipients.
- Provide medical support to special needs population, especially those moved into temporary facilities as the result of an evacuation.

Mississippi Gaming Commission

- Advise the State EOC regarding temporary closure and re-opening orders for casinos.
- Provide information on status of the evacuation of patrons and employees.

Mississippi Institutions of Higher Learning

- In collaboration with MSDH, define strategy for dismissal or closure.
- Provide training, education, and technical support.
- Provide multilingual support and capabilities.
- Establish shelters at Institutions of Higher Learning properties that are stocked and equipped.

Mississippi Military Department

- Provide defense support to civil authorities.
- Assist with primary communications and provide back-up communications systems.
- Assist emergency transportation efforts.
- Assist in preparedness measures.
- Assist in commodity distribution.
- Assist in emergency law enforcement or security enforcement support.

Mississippi Office of the Governor

- Coordinate all non-Stafford Act response and recovery activities.
- Assist in coordinating the Joint Information Center emergency public information messages.
- Facilitate interaction with non-governmental organizations to include corporations, international aid and assistance.

Mississippi Public Broadcasting

- Provide emergency public information, training and education using available broadcasting resources.

- Augment communications emergency support functions including notification and warning.
- Provide communications support to facilitate the dissemination of public information.

Mississippi State Board for Community and Junior Colleges

- In collaboration with MSDH, define strategy for dismissal or closure.
- Provide vocational/ technical support as needed.
- Provide facilities, personnel and supplies for shelter support as needed.

MSDH

- Provide leadership in directing, coordinating, and integrating the overall State efforts to provide health, medical, public health, mortuary/victim identification, personnel, supplies, equipment, and some social services assistance to the affected area.
- Direct and coordinate regional and county facilities in providing medical and public health assistance.
- Provide information on any public health statements or precautions.
- Convene a meeting of ESF-8 partners to assess the situation and determine appropriate public health and medical actions.
- In collaboration with other departments and agencies, determine the thresholds for a comprehensive State government public health and medical response based on specific event information.
- Assist local, and public health and medical authorities with epidemic surveillance and coordination.
- Coordinate with MOHS and local officials on the messages released to the public to ensure that communications are consistent and accurate.
- Evaluate the incident with its partner organizations and make recommendations to the appropriate public health and medical authorities regarding the need for quarantine, shelter-in-place, or isolation to prevent the spread of disease.
- Work with local health and legal authorities to recommend the most feasible, effective, and legally enforceable methods of isolation and quarantine.

State of Mississippi Attorney General

- Act as counsel to state agencies regarding the legal aspects of emergency activities.
- Provide personnel to gather information for Disaster Assistance support.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak is confirmed in an at-risk country.

- The MSDH Office of Emergency Preparedness (OEPR) will identify and engage public health, state and local governmental agencies, nongovernmental agencies, Mississippi tribes, faith-based

communities, and other community stakeholders in non-pharmaceutical interventions preparedness planning and containment exercises.

- The MSDH OEPR will spearhead planning activities with its partners to address potential cascading effects as unintended consequence of the use of non-pharmaceutical interventions. Cascading effects include, but are not limited to:
 - Economic impact to families related to work absenteeism and interruption;
 - Potential disruption to all employers, including businesses and governmental agencies;
 - Decreased access to essential goods and services; and
 - Disruption of educational and other school-related activities.
- The MSDH Bureau of Planning and Preparedness (BEPP) will develop policy guidance and/or procedures for
 - Community and workplace-specific use of personal protective equipment;
 - Medical evacuation, care, maintenance, and monitoring of persons, self- or professionally designated to isolation or quarantine; and
 - Safe home management of ill persons, with inclusion of information for persons who live alone and may be unable to care for themselves if ill.
- The MSDH BEPP will investigate resources for provision of medical care, mental care, food, and services to persons in isolation and quarantine as well as other affected persons.

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak is confirmed in an at-risk country.

- The MSDH OEPR will spearhead planning activities with the education sector to:
 - Identify authorities responsible for dismissal and reopening of childcare programs, public and private schools, community colleges, and universities;
 - Address triggers for dismissal and reopening of educational facilities;
 - Develop strategies for dismissal or closure of schools;
 - Address continuity of education during a pandemic; and
 - Identify school-based services or activities that might be sustained during a pandemic.
- The MSDH OEPR will spearhead planning activities with the workplace and business sectors to:
 - Identify plans and guidance for canceling large public gatherings;
 - Develop guidance for distancing persons at the worksite;
 - Develop guidance to help local employers plan for increased absenteeism; and
 - Develop plan to identify ill individuals in the workplace and provide guidance regarding isolation and quarantine.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The MSDH OEPR will meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures.
- The MSDH will advocate/encourage infection control practices such as good hand hygiene and cough etiquette.
- The MSDH will coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes regarding non-pharmaceutical interventions.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Overseas human outbreak has been confirmed.

- The MSDH OEPR and the State Epidemiologist will review all CDC guidance on the Pandemic Severity Index.
- The MSDH OEPR and the State Epidemiologist will review any updated Federal interim recommendations on non-pharmaceutical interventions and community mitigation measures.
- The MSDH will meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures.
- The MSDH will advocate/encourage infection control practices such as good hand hygiene and cough etiquette.
- The MSDH will coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes regarding non-pharmaceutical interventions.
- For the most severe pandemics (Categories 4 and 5; see Attachment E), the MSDH CC will notify critical systems and personnel of impending activation.
- The MSDH CC will coordinate non-pharmaceutical interventions and community mitigation strategies with stakeholders, neighboring states, and Mississippi tribes.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission has occurred in humans. Widespread human outbreaks in multiple locations overseas have been confirmed.

- The MSDH CC will utilize the key steps in escalation of response as outlined by the Federal government, incorporating information from the Pandemic Severity Index and U.S. Government Stage (see Section 5 below).
- The MSDH CC will notify stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers.
- Critical systems and personnel will be placed on Alert Status with notification of impending activation of non-pharmaceutical interventions and community mitigation strategies.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission has occurred in humans. First human case confirmed in North America OR spread throughout United States.

- The MSDH CC will update stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers.
- Depending on Pandemic Severity Index, critical systems and personnel will be placed on Standby or Active Status for implementing non-pharmaceutical interventions and community mitigation strategies.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

The MSDH CC and the MSDH OEPR, with assistance from partner agencies, will evaluate overall success of non-pharmaceutical interventions and community mitigation strategies and submit these data for an After Action Report (AAR) and in preparation of subsequent waves.

h. Specific Agency Functions

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions	
Agency	Functions
MEMA	<ul style="list-style-type: none"> • Maintain liaison with and cooperate with emergency management agencies and organizations of other states, the federal government and the private sector in implementing programs for disaster mitigation/ prevention, preparedness, response, and recovery. • Identify the requirements of the state and the political subdivisions thereof for resources of all kinds required in the event of an emergency; plan for the procurement of such supplies, medicines, materials, manpower, and equipment to fulfill those requirements; and employ the property, services, and resources within the state as may be required. • Recommend and draft executive orders, proclamations, regulations, and agreements deemed necessary or appropriate to cope with emergency management needs including procurement of resources to respond to disasters and emergencies. • Establish and maintain a damage assessment, collection and reporting system. • Administer and direct federal and state disaster assistance programs. • Assume primary responsibility for the coordination and release of any and all disaster/ emergency-related information to the public.
Mississippi Commission for	<ul style="list-style-type: none"> • Assist in coordination of Mississippi Voluntary Organizations Active in Disasters and other non-governmental volunteer organizations.

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions

Agency	Functions
Volunteer Services	<ul style="list-style-type: none"> • Assist in coordination of donations management. • Coordinate ESF 6 and support ESFs 14 and 15.
Mississippi Department of Archives and History	<ul style="list-style-type: none"> • Manage and preserve appropriate vital records. • Support ESFs 7, 14, and 15.
Mississippi Department of Education	<ul style="list-style-type: none"> • Support emergency management activities through training, education and public information. • Acquire vehicles used for educational activities under normal circumstances to support emergency transportation efforts. • Provide multilingual support to affected population. • Provide shelter facilities and related food and supplies. • Reallocate food supplies using available public school resources. • Support ESFs 6, 7, 14 and 15.
Mississippi Department of Environmental Quality	<ul style="list-style-type: none"> • Provide resources for the delineation of incident site boundaries. • Supply manpower to support health and human services functions. • Support ESFs 5, 7, 8 and 15.
Mississippi Department of Human Services	<ul style="list-style-type: none"> • Provide emergency shelter, housing, food, clothing, and other special needs for persons evacuated from their residences or otherwise displaced. • Develop and implement special services for the aged and handicapped. • Secure and distribute Disaster Assistance support including managing Individual and Household Grant Programs, financial resources and loans. • Coordinate ESF 6 and support ESFs 5, 8, 14 and 15.
Mississippi Department of Marine Resources	<ul style="list-style-type: none"> • Protect coastal and inter-coastal waters as prescribed by existing laws and regulations. • Assist in special and/or unique disaster and/ or emergency events that occur in or near the areas of DMR responsibility. • Support law enforcement and security activities as appropriate. • Support ESF 15.
Mississippi Department of Mental Health	<ul style="list-style-type: none"> • Provide mental health services to disaster victims as needed including shelter, human needs, and crisis counseling. • Apply for and manage crisis counseling mental health grants. • Coordinate ESF 8 and support ESFs 6, 14 and 15.
Mississippi Department of Public Safety	<ul style="list-style-type: none"> • Assume primary responsibility for law enforcement activities in disaster/emergency conditions. • Coordinate statewide emergency law enforcement.

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions

Agency	Functions
	<ul style="list-style-type: none"> • Maintain law and order and provide for protection of life and property. • Provide communications support, including warnings; status of disaster and emergency; and termination of emergency conditions. • Provide transportation for disaster victims in need of medical care. • Provide Emergency and Disaster Medical and Mortuary support. • In coordination with the MS State Department of Health support Disaster Mortuary (DMORT) teams. • Coordinate ESFs 2 and 13 and support ESFs 5, 7, and 15.
Mississippi Department of Rehabilitation Services	<ul style="list-style-type: none"> • Support efforts to relocate and shelter the special needs population. • Provide personnel and resources to continue services for relocated clients. • Support ESFs 6 and 15.
Mississippi Department of Transportation	<ul style="list-style-type: none"> • Issue special road use permits. • Assist with primary communications and provide back-up communications systems. • Assist with the evacuation of threatened residents. • Coordinate transportation requests from disaster areas and establish priorities for transportation. • Establish transportations plans for receipt, coordination and/ or distribution of food, materials, and supplies. • Coordinate ESF13 and support ESFs 5, 7, 14 and 15.
Mississippi Department of Wildlife, Fisheries and Parks	<ul style="list-style-type: none"> • Assist law enforcement officials in emergency law enforcement duties. • Assist with primary communications and provide back-up communications systems. • Coordinate ESF 13 and support ESFs 5, 7, and 15.
Mississippi Division of Medicaid	<ul style="list-style-type: none"> • Continue to provide medical support to existing recipients. • Provide medical support to special needs population, especially those moved into temporary facilities as the result of an evacuation. • Support ESFs 8, 14 and 15.
Mississippi Gaming Commission	<ul style="list-style-type: none"> • Advise the State EOC regarding temporary closure and re-opening orders for casinos. • Provide information on status of the evacuation of patrons and employees. • Support ESFs 5, 13, 14 and 15
Mississippi Institutions of Higher Learning	<ul style="list-style-type: none"> • Provide training, education, and technical support. • Provide emergency information to the public.

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions

Agency	Functions
	<ul style="list-style-type: none"> • Provide multilingual support and capabilities. • Establish shelters at Institutions of Higher Learning properties that are stocked and equipped. • Support ESFs 6, 7, 8, 14 and 15.
Mississippi Military Department	<ul style="list-style-type: none"> • Provide defense support to civil authorities. • Assist with primary communications and provide back-up communications systems. • Assist emergency transportation efforts. • Assist in preparedness measures. • Assist in commodity distribution. • Assist in emergency law enforcement or security enforcement support. • Coordinate ESF 3 and support ESFs 5, 6, 7, 8, 13, 14 and 15.
Mississippi Office of the Governor	<ul style="list-style-type: none"> • Coordinate all non-Stafford Act response and recovery activities. • Assist in coordinating the Joint Information Center emergency public information messages. • Facilitate interaction with non-governmental organizations to include corporations, international aid and assistance. • Coordinate ESFs 14 and 15.
Mississippi Public Broadcasting	<ul style="list-style-type: none"> • Provide emergency public information, training and education using available broadcasting resources. • Augment communications emergency support functions including notification and warning. • Provide communications support to facilitate the dissemination of public information. • Support ESF 15.
Mississippi State Board for Community and Junior Colleges	<ul style="list-style-type: none"> • Provide vocational/ technical support as needed. • Provide facilities, personnel and supplies for shelter support as needed. • Support ESFs 6 and 15.
MSDH	<ul style="list-style-type: none"> • Coordinate assignment, reallocation and use of public and private emergency medical vehicles to evacuate the medical staff. • Provide leadership in directing, coordinating, and integrating the overall State efforts to provide health, medical, public health, mortuary/victim identification, personnel, supplies, equipment, and some social services assistance to the affected area. • Direct and coordinate regional and county facilities in providing medical and public health assistance.

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions

Agency	Functions
	<ul style="list-style-type: none"> • Coordinate emergency mortuary services. • Coordinate protective actions with all licensed medical facilities before, during, and following a disaster and/ or an emergency. • Coordinate with ESF #15 to organize and assign volunteer and donated health resources. • Issue directives for the acceptance, handling, and quarantine of food donations. • Coordinate evacuation, care, and sheltering of special needs shelters with ESF #6. • Facilitate identification of victims in emergency mortuary services by providing, body bags and other essential public health supplies to local authorities. • Provide information on any public health statements or precautions. • Convene a meeting of ESF-8 partners to assess the situation and determine appropriate public health and medical actions. • Coordinate overall public health and medical emergency response efforts across all State departments and agencies. • In collaboration with other departments and agencies, determine the thresholds for a comprehensive State government public health and medical response based on specific event information. • Perform targeted epidemiological investigation (e.g., contact tracing); • Perform intensified surveillance within healthcare settings for patients with certain clinical signs and symptoms; • Perform intensified collection and review of potentially related information (e.g., contacts with nurse call lines, laboratory test orders, school absences, and over-the-counter pharmacy sales) • Organize state public health and medical response assets (in conjunction with local officials) to include personnel, medical supplies, and materiel. • Assist local, and public health and medical authorities with epidemic surveillance and coordination. • Assess the need for increased surveillance and notify the appropriate public health officials with surveillance recommendations should increased surveillance in these localities be needed. • Coordinate with MOHS and local officials on the messages released to the public to ensure that communications are consistent and accurate. • Evaluate the incident with its partner organizations and make recommendations to the appropriate public health and medical authorities regarding the need for quarantine, shelter-in-place, or isolation to prevent

Table 6 – Agency Community Mitigation/Non-Pharmaceutical Interventions

Agency	Functions
	<p>the spread of disease.</p> <ul style="list-style-type: none"> • Work in a coordinated effort with MOHS/DHS/Border and Transportation Security/Customs and Border Protection (DHS/BTS/CBP) to identify and isolate persons, cargo, mail, or conveyances entering the State of Mississippi that may be contaminated. • Provide information and training, as appropriate, to MOHS/DHS/BTS/CBP personnel on employing “first responder” isolation protocols. • Work with local health and legal authorities to recommend the most feasible, effective, and legally enforceable methods of isolation and quarantine. • Coordinate ESFs 6 and 8. Support ESFs 5, 14 and 15.
<p>State of Mississippi Attorney General</p>	<ul style="list-style-type: none"> • Act as counsel to state agencies regarding the legal aspects of emergency activities. • Provide personnel to gather information for Disaster Assistance support. • Investigate and prosecute fraudulent activities and excessive charges for necessary services under emergency conditions. • Support ESFs 7, 13, 14 and 15.

5. Programmatic Functions

a. Pandemic Severity Index/Summary of Community Mitigation Strategy

Figure 1 – Pandemic Severity Index

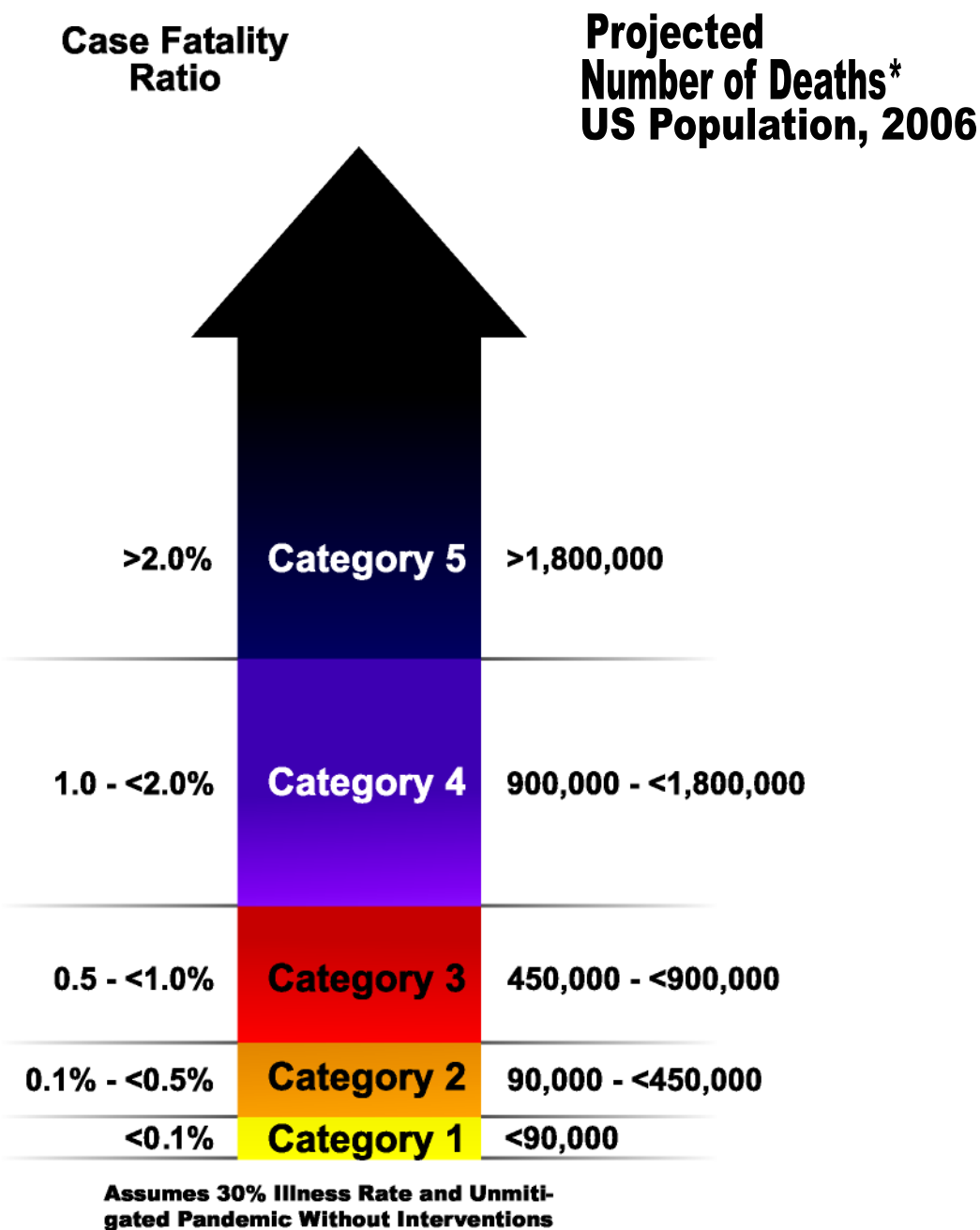


Table 8 – Summary of the Community Mitigation Strategy by Pandemic Severity

Interventions* by Setting	Pandemic Severity Index		
	1	2 and 3	4 and 5
Home Voluntary isolation of ill at home (adults and children); combine with use of antiviral treatment as available and indicated	Recommend†§	Recommend†§	Recommend†§
Voluntary quarantine of household members in homes with ill persons (adults and children); consider combining with antiviral prophylaxis if effective, feasible, and quantities sufficient	Generally not recommended	Consider**	Recommend**
School Child Social Distancing			
-dismissal of students from schools and school based activities, and closure of child care programs	Generally not Recommended	Consider: ~4 weeks††	Recommend:~12 weeks§§
-reduce out-of-school social contacts and community mixing	Generally not Recommended	Consider: ~4 weeks††	Recommend: ~12 weeks§§
Workplace/Community Adult Social Distancing			
-decrease number of social contacts (e.g. encourage teleconferences, alternatives to face-to-face meetings)	Generally not recommended	Consider	Recommend
-increase distance between persons (e.g., reduce density in public transit, workplace)	Generally not recommended	Consider	Recommend
-modify postpone, or cancel selected public gatherings to promote social distance (e.g., postpone indoor stadium events, theatre performances)	Generally not recommended	Consider	Recommend
-modify work place schedules and practices (e.g. tele-commute, staggered shifts)	Generally not recommended	Consider	Recommend

Legend

- Generally Not Recommended = Unless there is a compelling rationale for specific populations or jurisdictions, measures are generally not recommended for entire populations as the consequences may outweigh the benefits.
- Consider = Important to consider these alternatives as part of a prudent planning strategy, considering characteristics of the pandemic, such as age-specific illness rate, geographic distribution, and the magnitude of adverse consequences. These factors may vary globally, nationally, and locally.
- Recommended = Generally recommended as an important component of the planning strategy.
- *All these interventions should be used in combination with other infection control measures including hand hygiene, cough etiquette and personal protective equipment such as face masks. Additional information on infection control measures is available at www.pandemicflu.gov.
- †This intervention may be combined with the treatment of sick individuals using antiviral medications and with vaccine campaigns, if supplies are available.
- §Many sick individuals who are not critically ill may be managed safely at home. The contribution made by contact with asymptomatically infected individuals to disease transmission is unclear. Household members in homes with ill persons may be at increased risk of contracting pandemic disease from an ill household member. These household members may have asymptomatic illness and may be able to shed influenza virus that promotes community disease transmission. Therefore, household members of homes with sick individuals would be advised to stay home.
- **To facilitate compliance and decrease risk of household transmission, this intervention may be combined with provision of antiviral medications to household contacts, depending on drug availability, feasibility of distribution, and effectiveness; policy recommendations for antiviral prophylaxis are addressed in a separate guidance document.
- ††Consider short-term implementation of this measure—that is, less than 4 weeks.
- §§Plan for prolonged implementation of this measure—that is, 1 to 3 months; actual duration may vary depending on transmission in the community as the pandemic wave is expected to last 6-8 weeks.

Table 7 – Pandemic Severity Index			
Pandemic Severity Index	WHO Phase 6, U.S. Government Stage 3	WHO Phase 6, U.S. Government Stage 4 (First human case in the United States)	WHO Phase 6, U.S. Government Stage 5 (First laboratory confirmed cluster in MS or Memphis)
1	Alert	Standby	Activate
2 and 3	Alert	Standby	Activate
4 and 5	Standby	Standby/Activate	Activate

Legend:

- Alert: Notification of critical systems and personnel of their impending activation.
- Standby: Initiate decision-making processes for imminent activation, including mobilization of resources and personnel.
- Activate: Implementation of the community mitigation strategy.

b. MSDH Consensus Statement on Isolation and Treatment of Ill Persons

Isolation refers to the separation of persons who have a specific infectious illness from those who are healthy and to the restriction of their movement to stop the spread of that illness. Isolation permits the focused delivery of specialized health care to people who are ill, and it protects healthy people from becoming sick from the contagious illness of concern. Unfortunately, given the viral shedding that occurs during the incubation period or latent phase of influenza (before individuals have symptoms which suggest the illness), isolation loses some of its effectiveness in attenuating spread of influenza. People in isolation may be cared for in their homes (ideally), in hospitals, or in designated healthcare facilities or alternate care sites. Isolation (in various degrees of completeness) is a standard procedure used in hospitals today (e.g., with tuberculosis, MRSA, VRE). In most cases, isolation is voluntary; although many levels of government (see the above concluding “Planning Assumptions”) have basic statutory and/or executive authority to compel isolation of sick individuals to protect the public.

Home care/self-isolation will be the predominant mode of care for most people infected with influenza, whether seasonal or Pandemic. The case definition for presumptive/definitive diagnosis and clinical management diverges depending on whether presentation occurs in the interpandemic or pandemic period. [See Figures 1 and 2 from HHS Pandemic Influenza Plan, Supplement 5]. During the Pandemic Alert Phases (WHO 3, 4, and 5), individuals should discuss with their health care providers specific recommendations for vaccination, use of antivirals, and use of personal protective devices (masks/respirators). Local health officials are trained on diagnosis in early and later stages of pandemic as part of network associations with public health, development of epidemiologic investigation teams, and educational campaigns created through pandemic influenza preparedness efforts by the MSDH Department of Epidemiology.

MSDH heartily recommends the excellent resources available to assist individuals and families with preparing for an influenza pandemic. A wealth of lay- (and professional-) friendly material, guides, and checklists is easily accessed at <http://www.pandemicflu.gov/>.

Simple, straight-forward steps that individuals and families may take to prevent the spread of respiratory illnesses will apply to PI as well; and they are worthy of emphasis and reiteration:

- Avoid close contact with people who are sick (3-feet radius rule).
- Wash hands after any certain or questionable contact (as often as hourly otherwise).
- Cover mouth and nose with a tissue when coughing or sneezing.
- If sick, STAY at home and keep at least 3 feet away from others.

Individuals who are able to be cared for at home should:

- Receive NI antivirals within 48 hours of onset of symptoms, unless contraindicated.
- Get plenty of rest.
- Drink a lot of fluids (32 to 128 oz/day).
- Avoid using alcohol and tobacco.
- Consider taking over-the-counter medications to relieve the symptoms of influenza, but Aspirin should NOT be given to children under 12 out of concern for Reye's syndrome.
- Stay home and avoid contact with other people; avoid use of common linens/towels, etc. Laundry and meal utensils do not, however, require special or separate attention, beyond that ideal in normal circumstances (detergent, appropriately warm/hot water, etc.)
- Cover nose and mouth with a tissue when coughing or sneezing, and dispose of it properly and expeditiously.

In an influenza pandemic, some individuals who are cared for at home may develop complications. In this event, these persons should seek medical care immediately. Further, guidance may be sought through established communications networks at the Mississippi State Department of Health which include website reportable methodology, a hotline with recorded messages, and a secondary hotline to directly answer questions and screen ill persons. Hotlines may be facilitated through remote locations enabling public health staff to answer questions from home. Individuals with complications from pandemic influenza should alert healthcare personnel of pertinent symptoms prior to transport or upon arrival so that proper protective and control precautions can be taken (e.g., provision of a mask, direction of the patient to a separate and sequestered area for triage and evaluation.) Information regarding when and how to seek emergency and non-emergency medical care and will be provided to the public by MSDH for immediate, wide distribution. Message maps have been developed by the Department of Communications and venues include cable companies, utilization of crawl lines on television, and digital communications through the Mississippi Public Broadcast.

The Warning Signs to seek urgent, out-of-home care:

- In children, would include:

- High or prolonged fever (T > 103 degrees F; or T > 101 continuously over 12 hours, despite acetaminophen)
- Fast breathing (tachypnea) or trouble breathing (dyspnea)
- Bluish skin coloration (cyanosis)
- Inadequate fluid intake or inability to hold down oral intake, indirectly indicated by marked reduction in urination frequency and volume
- Alteration in mental status, level of consciousness, somnolence, unabated irritability
- Seizures
- Initial improvement of symptoms followed by return of fever and worsened cough
- Deterioration in underlying chronic medical conditions (e.g., heart or lung disease, diabetes mellitus)
- In adults, would include:
 - High or prolonged fever (T > 104 degrees F or T > 101 continuously, unabated, despite acetaminophen or NSAID, for 24 hours)
 - Tachypnea, hyperpnea, dyspnea
 - Pain or pressure in the chest
 - Near-fainting or fainting (syncope)
 - Confusion
 - Severe or persistent vomiting; dehydration.

Effective isolation recommendations are exquisitely dependent upon the ability to identify and diagnose rapidly and accurately. Pursuant to this goal MSDH Epidemiology and Public Health Laboratories are collaborating to enhance the early detection capability. The cadre of ILI sentinel providers is being augmented constantly and ILI data are reported year-round. 50,000 flu kits have been distributed throughout the state, to the 9 public health districts and 82 counties. An Early Aberration Reporting System (EARS) is near complete implementation within hospitals state-wide. Emphasis has been placed upon reporting of influenza-related demise, regardless of age. MSDH is partnering with the Mississippi Hospital Association (MHA) to accomplish state-wide uniformity of messaging and public information dissemination as to the significant alterations in physician- and self-referral for hospitalization which will occur with a PSI 2, 3, 4, or certainly 5 Pandemic; i.e., avoid presentation to the hospital if at all possible. The MHA has a sophisticated communications system which can be utilized to inform, update, and advise every hospital throughout Mississippi. This system, supplemented by the Health Alert Network, public education and information campaigns, and a statewide reverse 911 system provide the strategy for public health and hospitals to advise non-acute patients with influenza like illness to remain at home during a pandemic.

Pamphlets with succinct messaging have been produced and will be directed to health care providers of Mississippi. MSDH aggressively promoted the "professional piece" of the pandemic plan from "sponsor/patron" booths during the Young Physician Section CME program and the immediately following Annual Session of the Mississippi State Medical Association held May 29 – June 3, 2007. (ESAR-VHP and state Medical Assistance Teams were showcased and advocated.) Two hours of didactic presentation occurred during the plenary sessions of this meeting focusing on Pandemic influenza and Mississippi's plan of preparation and response.

Every attempt will be made to utilize traditional venues for those persons homebound to receive antivirals and symptomatic treatment. These include outlets at retail pharmacies, home health and hospice services, and outpatient clinic settings. Personal and professional caregivers, as well as local pharmacists, are familiar with their homebound populations; those homebound frequently have local contacts that coordinate receipt of medication. State caches of antivirals and support medications will be available within the outpatient setting.

Those in isolation may report health status and status of any contacts aiding in home care to the MSDH via a key-coded telephone system. The key-coded system would also offer the option to report to a staff member of the MSDH.

c. Voluntary Quarantine of Household Contacts of Ill Individuals

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed (or are suspected of exposure) to an infectious agent and therefore may become infectious. Like isolation, quarantine is a public health technique intended to halt or at least blunt the spread of the contagious disease of concern. Quarantine will likely have its greatest impact for suppressing the spread of PI in initial cluster outbreak.

MSDH regional PI planning coordinators have targeted community, neighborhood-watch, and faith-based organizations as vehicles and channels through which MSDH catalyzes a system and network for the monitoring and support of quarantined but not yet ill household contacts. This corps of volunteers may become instrumental in the support of the isolated ill; yet it is doubtful that this group can be called upon for first-line monitoring of those same individuals.

d. MSDH Guidance for Dismissal of School and Closure of Child Care Programs

This very important public health example of “social distancing” exploits the recognition of the very salient role that young people--children particularly--play in the viral illness victim and culprit cycle. Children suffer from less-well developed, more naïve immune systems, handle secretions less skillfully, and shed virus more readily and abundantly than do their adult counterparts. The proximity issues and social structure of school and day care/child care further exacerbate the transmissibility of viral illness. Couple these observations with the contraindication of vaccine and antivirals in the very young infant, and the role children play in both acquisition and spread of viral illness is further compounded and complicated.

The schema of the Interim Guidance (and the Mississippi graded response) takes into account the gravity of school and day care program closure. Currently, only the more severe PSI 4 or 5 pandemic would definitely activate suspension of these programs, while consideration would be given to a shorter suspension of these activities in the face of a PSI 2 or 3 Pandemic. Hence there will likely be a great role to be played by encouragement of good hygiene, respiratory etiquette, and common courtesy—certainly among the middle school and more advanced levels of the educational system. Making hand-washing more convenient, if not unavoidable, is a recognized functional goal in Mississippi. Securing and preventing access to public water fountains will be an element of Pandemic spread attenuation. Moreover, the mantra of “stay home if one is sick” will clearly apply to both the student body and the staff.

In contemplation of the eventuality of a Department of Health recommendation to close schools, MSDH has participated in the working groups developed within the Department of Education (Office of Safe and Orderly Schools/Division of School Safety) and the Institutions of Higher Learning. It has expressed the public health perspective regarding the role that suspension of classes would be expected to play in the blunting of Pandemic spread. Avenues of real-time communication among MSDH, the Governor's Office, and these educational agencies to establish the readiness levels of "alert", "standby", and "activate" have been designated. Authorities responsible for the actual implementation of any MSDH recommendation to suspend K – 12 and collegiate classes have been identified and specifically associated with the pertinent institution and/or school district.

Twenty-four "school closure" table-top exercises were conducted throughout Mississippi. Target audiences were school administration, staff, parents, and community/civic leadership and other stakeholders. In addition to the mechanics of school closure, it is hoped that input and insight will be gained at the local levels to address satisfactorily the bevy of secondary and tertiary suboptimal consequences of intermediate- to longer-term school suspension. These exercises were designed as an occasion for the presentation, demonstration, and perhaps modification of designs to maintain educational continuity and to fulfill contractual agreements with the USDA to provide nutritional supplementation to a significant proportion of Mississippi children.

In-service training of MSDH employees assigned to child-care licensure in mid-February 2007 addressed PI and its impact upon day care program operation. These employees will be MSDH's frontline liaison with child care program owners and operators. MSDH is sensitive to the profound inconvenience and disruption which will result from extended child care program closure. While MSDH is not yet in possession of breakthrough solutions, it is committed to facilitating the assembly of interested and expert parties (including the parents themselves) for the dialogue which will be necessary for the genesis of good ideas and workable alternatives. To this end, MSDH has sought the counsel of Cathy W. Grace, Ed.D., Director of the National Center on Rural Early Childhood Learning Initiatives, based at Mississippi State University, and the participation of the Southern Early Childhood Association, based in Little Rock, Arkansas.

A proposed comprehensive informational campaign includes abstraction and circulation of relevant portions regarding dismissal of students as an open letter to students, parents, and/or guardians, for daycare, pre-school, Head Start, public and private K – 12, community colleges, and colleges and universities (public and private). In this original communication, advertise and sponsor a series of "town hall" meetings to provide background info and to respond to questions, concerns, and complaints. A Mississippi ETV 30- or 60-minute televised program explaining the plan and its rationale would be a valuable resource—including re-airing.

This same original "letter", with URL links, DVD titles, etc. could then be mailed/circulated upon individual new enrollment and with ensuing academic years. Such a plan of comprehensive informational "blitz" would mandate the collaboration and cooperation with the Governor's office, the State Dept. of Education (and regional educational consortia), Mississippi Private School Association, Community College Board, the Board of Institutions of Higher Learning, and state Licensure Board (MSDH), and perhaps others. The

basic content of the “pandemic school/childcare dismissal” message would be posted/reviewed/revised on each above agency’s website.

Based upon “triggers” (to be determined; but NO LATER than WHO Phase 6/HHS Stage 3), upon “Alert” a 2nd letter and coordinated television programming indicating the imminent likelihood of actual school/childcare dismissal would be disseminated. After dismissal, further communication—including notification of school/childcare re-opening and appropriate reassurance and rationale—would occur via mass email; PSAs, and above cited websites; and the additional “vehicles” selected for continuity of curriculum and educational process (e.g., lessons delivered/retrieved with school bus “runs”).

MSDH Division of Communications will develop several age-range-specific versions of a Pandemic Preparation “Tool-Kit” designed to promote understanding and the indicated adjustments to the coming pandemic, as it (pandemic) impacts “every” aspect of day-to-day life. Age appropriate personal hygiene and “courtesies”—including effective hand-washing and respiratory etiquette would occupy a central place within these tool-kits, as would the basic “LAY” development of “isolation”, “quarantine”, and “social-distancing”. These toolkits would also be distributed upon new enrollment; and re-distributed upon substantive revisions and with each subsequent academic year, within reason. (Good stewardship would identify/develop processes to prevent exhaustive redundant/duplicative distribution within families. Moreover, the production and distribution of a DVD devoted to the impact of Pandemic Influenza upon childcare and the Mississippi educational mission, which represents the real partnership between the Department of Education, early childhood development professionals, and MSDH would be of immense value.

Pending the attainment of the appropriate legal/statutory citations from the state code, we’ve seen the emergence of the consensus, that the Governor in a declared state of emergency can close (and, by extrapolation, re-open) schools and other institutions. In a health-based state of emergency, *presumably* the governor’s order would be occasioned by the recommendation from the state health officer. At this juncture, based upon the wagered scenarios offered by WHO/CDC, we do not envision “mandatory” orders but rather strong, specific, unambiguous recommendations emanating from the state health officer, comporting with “best practice” and “guidelines” from CDC, ASTHO, etc. If this “intensive voluntary” posture is pursued, indubitably best, consistent results would occur with co-ordination/consultation with the state superintendent of education, executive director and chairperson of IHL, and similar administrative authorities at the head of the several components of the childcare and educational institutions of Mississippi.

What is not at all well worked out at this point is the situation of institutions which are at or near the borders of our state. One could imagine a situation in which our triggers are not in synch with the triggers of Louisiana, for instance; or that the inciting verifiable cluster of novel influenza has not occurred contemporaneously with that same phenomenon in a contiguous state. At a minimum, we need a policy or a stance which allows MSDH and the appropriate other agencies already delineated to foster conversations and arrangements among the childcare and educational facilities near the state line to enter into MOUs with similar institutions within contiguous counties (or parishes), but belonging to our adjoining, neighbor states. Triggers invoked by geographic regions, rather than state lines, are also being considered.

Re-opening triggers (as a basis for an **across the board “fiat”**) will depend upon a number of factors, including but not necessarily limited to PSI; first versus subsequent waves; availability/efficacy of antivirals; availability, efficacy, and penetration of strain-specific vaccine; etc.—all of which will impact the effective Reproduction number associated with the specific pandemic rendition. To be sure, surveillance, confirmation of acquired immunity (efficacy of vaccine or recovery from actual infection), a closer perusal of the St. Louis mortality data vs. invocation of social distancing (Spanish flu of 1918), a detailed examination of the school attendance/absenteeism records from 1918/1919, and mathematical modeling could inform our derivation of “sector”-wide reopening triggers. It seems to me that at a minimum we will need to determine that the number of remaining susceptible individuals is below that Re threshold required to perpetuate the epidemic.

Daycare could be restored on a case by case basis, given evidence of individual immunity; and depending upon the cost-effectiveness of such a decision. Schools and institutions of higher learning could follow a somewhat analogous approach, but reimbursement issues, like that based upon “average daily attendance” would potentially require specific legislative attention (public) and/or Boards of Trustees’ action (where private institutions are concerned).

e. MSDH Policies on Community Social Distancing

Whereas isolation, quarantine, and contact management strategies are directed at individuals; broader community containment measures may be applied to groups of persons during outbreaks such as PI when transmissibility is high and the consequences of the disease are grave (including death). Historically, such a thrust has taken the form of whole community quarantine, or *cordon sanitaire*; but these days “social distancing” is more likely to be invoked. “Social distancing” is community or sector-level action to restrict or eliminate crowding or, social proximity; examples include school closure, event cancellation, “snow days”, priority stratification, and restricted access to mass or public transit.

Invocation of social distancing requires fewer resources than necessary to activate, enforce, and maintain community-level quarantine. In addition, as “snow days” are a somewhat familiar concept in most communities, implementation can occur expeditiously. Implementation of community-wide quarantine, on the other hand, can be resource intensive. Snow days and other measures to increase social distance are therefore the preferred community-level responses, with quarantine reserved for situations in which less drastic, less restrictive measures have not been successful in containing an outbreak. Unfortunately, with PI the concept of “snow days” would require metamorphosis into “snow months”!

During the Pandemic alert period (WHO Phases 3, 4, and 5), delivery of message maps to the public on the constructs of social distancing, voluntary quarantine, and self-isolation ideally will occur. It is reasonable to hope then that familiarization with community mitigation methods and subsequent buy-in by citizen stakeholders will accrue, prior to the “trigger” for activation during the actual Pandemic phase.

Despite outreach measures directed to the various community and civic groups and faith-based organizations, MSDH is in the incipient stages of galvanizing local communities and marshalling the public will and resources for high levels of compliance with contingent recommendations for social distancing. Added dimension and emphasis will be accorded this issue as planning evolves.

H. Distribution of Medical Countermeasures

The purpose of this section is to describe preparedness efforts and response actions in providing State assistance and coordinating local resources in response to public health and medical care needs resulting from an outbreak of a pandemic strain of influenza. Furthermore, medical guidance from the Mississippi State Department of Health for use of antiviral medications during an influenza pandemic is set forth.

1. Situation

There are four licensed prescription medications with antiviral activity against influenza viruses that are commercially available in the United States. Based upon pharmacology and antiviral mechanism of action, these four drugs are classified into two categories:

- *Adamantanes* which include amantadine (Symmetrel®) and rimantadine (Flumadine®), and;
- *Neuraminidase inhibitors* which include oseltamivir (Tamiflu®) and zanamivir (Relenza®).

Administration of oseltamivir does not interfere with the development of antibodies to influenza viruses after administration of trivalent inactivated influenza vaccine. Therefore, persons receiving prophylaxis can continue to receive oseltamivir during the period between vaccination and the development of immunity. Whether oseltamivir can interfere with the immune response elicited by a live-attenuated pandemic vaccine is unknown.

2. Assumptions

- In the likelihood that an effective vaccine is unavailable, antiviral agents could potentially play a valuable role as the only virus-specific intervention during the initial response to an influenza pandemic.
- Mississippi, through the MSDH SNS Plan, has the capability to distribute on-hand antiviral medications from the Receiving, Staging, and Storage (RSS) site to end-point dispensing sites within 24 hours of notification of need.
- Appropriate use of antiviral agents in treatment and post-exposure prophylaxis during an influenza pandemic may reduce morbidity and mortality and diminish the overwhelming demands that will be placed on the healthcare system. Thus, they may also reduce social disruption and economic loss caused by an influenza pandemic.
- Antivirals might also be used in limited, highly selective (prophylactic) attempts to contain small disease clusters and potentially slow the spread of novel influenza viruses.
- The overarching limitation to antiviral use in a pandemic is inadequate availability. Existing production capacity for influenza antiviral drugs is less than will be needed to provide prophylaxis or treatment for the entire population. The current supply of antiviral medication in the Strategic National Stockpile is limited.
- Prioritization within priority groups for treatment will likely be necessary given the limited supply of antivirals.

- The need for antiviral prophylaxis may decrease once an effective PI vaccine becomes available for use among healthcare workers and other groups receiving prophylactic antivirals.

3. Concept of Operations

Policies and statements regarding appropriate use of antivirals, facemasks, respirators, and ventilators may be found in this document and will be updated with evolving medical information on pandemic influenza or with assessment of any interim or emergent Federal guidance.

Distribution of medical countermeasures will be implemented through the MSDH SNS Plan; major players are outlined below:

- RSS Warehouse Facility and Staff: Provide the foundation for all warehouse activities for distribution of medical countermeasures, including receiving, storing, staging and distribution.
- MSDH RSS Team: Process orders for distribution of medical countermeasures; manage Federally received medical countermeasures supply inventory.
- MS Department of Public Safety: Lead agency for security of medical countermeasures during storage at RSS site and during transport from RSS to end recipient.
- MS Military Department: Maintain plans for securing, storing, and transport of medical countermeasures at RSS site and in transit.
- MS Hospital Association: Coordinate hospital preparedness for receiving medical countermeasures during a pandemic; provide Treatment Center Coordinator to the SNS Technical Advisory Unit at the MSDH EOC.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak in at-risk country.

- Antivirals will not be distributed or administered for pandemic purposes during this period.
- The MSDH OEPR will review annually, and as deemed necessary, the Plan for allocation and distribution of medical countermeasures (antivirals, facemasks, respirators, and ventilators); the updates will be reviewed by the State Epidemiologist and MSDH Department of Policy/Evaluation.
- The MSDH OEPR will review, exercise, and modify medical countermeasures distribution plans on a periodic basis and as needed.

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak in at-risk country.

- The MSDH OEPR and the State Epidemiologist will review national recommendations for priority groups for antivirals and develop state-specific modifications or refinements for target groups.
- The MSDH OEPR and the State Epidemiologist will develop specific definitions for target groups for antivirals, identifying occupational categories and sub-categories, as needed, within each broad target and estimating the size of relevant target groups.
- The MSDH OEPR and the State Epidemiologist will develop plans for distribution of antivirals, facemasks and respirators, and ventilators.
- The MSDH OEPR and the State Epidemiologist will create, review, and refine educational materials regarding the need for target groups for antivirals and the rationale for the groups currently recommended.
- The MSDH OEPR and the State Epidemiologist will develop a system to report and investigate adverse events following administration of antiviral medications.
- The MSDH OEPR and the State Epidemiologist will coordinate distribution plan with neighboring states and Mississippi tribes.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The MSDH OEPR and State Epidemiologist will meet with partners and stakeholders to review the major elements of the plan for distribution of medical countermeasures.
- The MSDH OEPR, through guidance by the State Epidemiologist, will modify the plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability.
- The State Epidemiologist will review current CDC prophylaxis and treatment guidelines for antivirals and determine options for antiviral use.
- The State Epidemiologist will provide the most up-to-date information to the medical community and other stakeholders regarding antivirals, facemasks, respirators and ventilators.
- The MSDH OEPR will conduct training for public health staff and partners involved in distributing and administering antivirals, and ensure redundancy of knowledge and responsibility for pandemic activities.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Confirmed human outbreak overseas.

- The MSDH OEPR and State Epidemiologist will meet with partners and stakeholders to review the major elements of the state's antiviral distribution plan MSDH SNS Plan.

- The MSDH OEPR, through guidance by the State Epidemiologist, will modify the plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability.
- The State Epidemiologist will update Standing Orders for administration of antivirals for PI (see Attachment K) based on any new recommendation from the Federal government, as needed.
- Federal counterparts will determine when to activate the SNS to begin the distribution of critical medical materiel based on the WHO Phase characterization and the severity of disease; the MSDH OEPR will frequently communicate with the CDC regarding imminent deployment of DSNS assets.
 - If large quantities of antivirals are available, the MSDH CC Logistics Section will begin call-down to ensure that human resources and logistics are in place to begin distribution of antivirals, taking into account the need for additional staff due to illness.
- RSS Team on Alert or Stand-by status, as the situation dictates.
- The MSDH OEPR and State Epidemiologist will notify the medical community about the status of the plan and the expected availability of antivirals.
- The MSDH will coordinate with bordering jurisdictions and Mississippi tribes.
- The State Epidemiologist will provide individual providers and other stakeholders with most up-to-date information regarding:
 - Interim recommendations for priority groups;
 - Distribution and/or administration of unlicensed antivirals under IND or EUA provisions, if necessary, and;
 - Data collection on antiviral drug use, drug-related adverse events, and drug resistance.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission in humans. Widespread human outbreaks in multiple locations overseas.

- The MSDH OEPR and the State Epidemiologist will modify the plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability.
- The State Epidemiologist will update Standing Orders for administration of antivirals for PI based on any new recommendation from the Federal government, as needed.
- Federal counterparts will determine when to activate the SNS to begin the distribution of critical medical materiel based on the WHO Phase characterization and the severity of disease; the MSDH OEPR will frequently communicate with the CDC regarding imminent deployment of DSNS assets.
 - If large quantities of antivirals are available, the MSDH CC Logistics Section will begin call-down to ensure that human resources and logistics are in place to begin distribution of antivirals, taking into account the need for additional staff due to illness.
 - Upon recommendation by the CDC for deployment of antivirals and other medical countermeasures to the States, the MSDH CC will fully activate the plan for distribution of antivirals (MSDH SNS Plan).
- Depending on availability of pre-pandemic strain vaccine, antivirals and medical countermeasures, RSS Team will be placed on Stand-by or Active Status.

- The MSDH OEPR will notify the medical community about the status of the plan and the expected availability of antivirals and medical countermeasures.
- The MSDH will coordinate with bordering jurisdictions and Mississippi tribes.
- The State Epidemiologist will provide individual providers and other stakeholders with most up-to-date information regarding:
 - Interim recommendations for priority groups;
 - Distribution and/or administration of unlicensed antivirals under IND or EUA provisions, if necessary; and
 - Data collection on antiviral drug use, drug-related adverse events, and drug resistance.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans. First human case in North America OR spread throughout United States.

- The MSDH CC will continue full activation of the plan for distribution of antivirals (MSDH SNS Plan), as appropriate for receiving antivirals and other medical countermeasures from the DSNS.
- The State Epidemiologist will continue to review current CDC prophylaxis and treatment guidelines for antivirals and determine options for antiviral use.
- The State Epidemiologist will continue to provide individual providers and other stakeholders with the most up-to-date information.
- The State Epidemiologist will update Standing Orders for administration of antivirals for PI based on any new recommendation from the Federal government, as needed.
- The MSDH CC will confer with the CDC on the number of antiviral regimens Mississippi will receive and date of receipt.
- The MSDH CC will fully activate the plan for distribution of antivirals, including monitoring of drug use, drug-related adverse events, and drug resistance.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

- Prepare for a second wave
- Inventory antivirals and medical countermeasure supplies
- The MSDH CC and the MSDH OEPR, with assistance from partner agencies, will evaluate overall success of antiviral drug administration and response activities and submit this data for an After Action Report (AAR).

h. Specific Agency Functions

Table 8 – Agency Medical Countermeasures Functions	
Agency	Functions
RSS Warehouse Facility	<ul style="list-style-type: none"> • Provide adequate warehouse space for distribution of medical countermeasures for PI and

Table 8 – Agency Medical Countermeasures Functions

Agency	Functions
and Staff	<p>compliant with Federal and State regulations for distribution of pharmaceuticals.</p> <ul style="list-style-type: none"> • Provide personnel to perform duties for storage, staging, and distribution of SNS assets as outlined in the MSDH SNS Plan. • Provide material handling equipment for warehouse movement of SNS medical assets. • Provide tractor trailers to transport SNS medical assets, including refrigerated trailers for transport of temperature sensitive materiel. • Have redundant plans for generator power, fuel for vehicles, and maintenance for vehicles. • Care and feed plan for all personnel required for storage, staging, and distribution of SNS assets. • Contingency plans for office materials to support the inventory management system.
Mississippi Department of Public Safety	<ul style="list-style-type: none"> • Coordinate with the Mississippi Military Department on security issues during storage, staging, and distribution of medical countermeasures for PI within Mississippi. • Complete a security assessment for all RSS sites for incorporation into a Field Operations Guide. • Develop plans for protection and security of RSS personnel, facility, and medical countermeasures for PI once within the jurisdiction of the State. • Develop contingency plans for crowd control and breach of security at the RSS. • Develop contingency plan for evacuation of RSS. • Develop plans for security of medical countermeasures for PI during transportation from the RSS to various end-point locations around the State. • Coordinate planning with State representative from the U.S. Marshals Service. • Coordinate with MSDH on pre- and onsite credentialing of personnel required for storage, staging, and distributing medical countermeasures for PI.
Mississippi Military Department	<ul style="list-style-type: none"> • Coordinate with the Mississippi Department of Public Safety on security issues during storage, staging, and distribution of medical countermeasures for PI within Mississippi. • Complete a security assessment for all RSS sites for incorporation into a Field Operations Guide. • Develop plans for protection and security of RSS personnel, facility, and medical countermeasures for PI once within the jurisdiction of the State. • Develop contingency plans for crowd control and breach of security at the RSS. • Develop contingency plan for evacuation of RSS. • Develop plans for security of medical countermeasures for PI during transportation from the RSS to various end-point locations around the State. • Coordinate planning with State representative from the U.S. Marshals Service. • Coordinate with MSDH on pre- and onsite credentialing of personnel required for storage, staging, and distributing medical countermeasures for PI.
Mississippi Hospital Association	<ul style="list-style-type: none"> • Develop treatment center specific plans for receiving medical countermeasures for PI: <ul style="list-style-type: none"> ○ Identify strategies to cope with medical surge of PI patients; ○ Report expected number of patients they can potentially treat for PI; ○ Utilize medical countermeasures for PI received by the State for treatment of ill persons; ○ Report location at each center for delivery of medical countermeasures and identify 24/7/365 point of contact(s) for receiving materiel; ○ Ensure means for off-loading materiel, document transfer of custody; and proper storage and inventory of materiel; • Provide MHA representative to the MSDH EOC for the SNS Technical Advisory Unit. • Provide case-count, epidemiological, intelligence, and inventory information to the Treatment Center Coordinator within the SNS Technical Advisory Unit of the MSDH EOC.

5. Programmatic Functions

a. Allocation of Antivirals

Situation and Assumptions:

- MSDH would request that medical countermeasures (antivirals, masks, respirators, etc) shipments be sent to the designated RSS site.
- MSDH would use the RSS distribution system as outlined by the MSDH SNS Plan.
- Critical infrastructure would receive pre-pandemic strain vaccine, if available and medically advised.
- No pandemic strain vaccine available

Scenario 1: Increased and sustained human-to-human transmission (WHO Phase 6) / Cases in US (HHS Stage 4 or 5) / sporadic reporting in Mississippi

- Case investigation for contact identification.
- Isolate cases and provide antiviral treatment.
- Quarantine asymptomatic contacts and provide post-exposure antiviral prophylaxis for contacts.
- Monitor cases for disease improvement.
- Monitor contacts for disease development; provide treatment if symptoms develop.
- Antivirals to be distributed with epidemiological surveillance team (they will have received pre-pandemic strain vaccine).
- Heighten surveillance for disease incidence in critical infrastructure given pre-pandemic strain vaccine; isolate and provide antiviral treatment if symptomatic.

Scenario 2: Increased and sustained human-to-human transmission (WHO Phase 6) / Cases in US (HHS Stage 4 or 5) / limited transmission in Mississippi

- Isolation and treatment of cases by local medical doctor.
- MSDH to provide guidelines for reporting, monitoring, specimen collection.
- Heightened surveillance by local providers.
- Distribution of antivirals to local providers in affected area(s).

Scenario 3: Increased and sustained human-to-human transmission (WHO Phase 6) / Cases in US (HHS Stage 4 or 5) / widespread transmission in Mississippi.

- Apportioned distribution of antivirals to local hospitals and clinics.
- Apportionment will be based on quantity specified on application form.
- MSDH to provide guidelines for reporting, monitoring, specimen collection.

b. Clinical Recommendations for Antiviral Use

This section is consistent at the time of its preparation with guidance contained in the U.S. Department of Health and Human Services Pandemic Influenza Plan posted at www.pandemicflu.gov. It will be updated as additional federal guidance is received.

Use of antiviral drugs during an influenza pandemic will fall into three categories: **pre-exposure prophylaxis, post-exposure prophylaxis, and treatment of influenza illness.** Part 2, Supplement 7, of the HHS plan, addresses these uses of antiviral drugs. Because of the limited global capacity to manufacture antiviral drugs, federal guidance currently emphasizes their use for treatment of influenza illness. In addition, the use of antivirals for prophylaxis will be constrained by increasing risk of side effects with prolonged use and the potential emergence of drug-resistant variants of the pandemic strain, particularly with long-term use of M2 inhibitors (amantadine and rimantadine). Fortunately, the need for antiviral prophylaxis may decrease once an effective PI vaccine becomes available for use among healthcare workers and other groups receiving prophylactic antivirals.

According to current federal planning guidance, **pre-exposure prophylaxis** would be used primarily in the following three groups:

- 1 Health care workers in emergency departments, intensive care units, dialysis centers, and EMS providers since these groups are most critical to an effective healthcare response and have limited surge capacity;
- 2 Outpatients who are in the highest risk groups for hospitalization and death;
- 3 Other health care workers with direct patient contact to decrease absenteeism and preserve optimal function of the health care system.

Post-exposure prophylaxis might be useful in the following settings:

- 1 Attempts to control small, well-defined disease clusters, for example, outbreaks in long-term care facilities;
- 2 For the protection of individuals with a known recent exposure to a pandemic virus, for example, household contacts of PI patients.

Additional consideration regarding the use of antivirals for prophylaxis:

- 1 If a pandemic virus is susceptible to M2 ion channel inhibitors, amantadine and rimantadine should be reserved for prophylaxis, although drug resistance may emerge quickly;
- 2 The number of persons who receive prophylaxis with oseltamivir should be minimized, primarily to extend supplies available to treat persons at highest risk of serious morbidity and mortality. If sufficient antiviral supplies are available, prophylaxis should be used only during peak periods of virus circulation to protect small groups of front-line healthcare workers and other providers of essential community services prior to availability of vaccine;
- 3 Strategies for antiviral prophylaxis may be revised as the pandemic progresses, depending on supplies, on what is learned about the pandemic strain and on when a vaccine becomes available.

The use of antivirals in the **treatment** of influenza illness is discussed in detail below.

NATIONAL VACCINE ADVISORY COMMITTEE (NVAC) RECOMMENDATIONS ON PANDEMIC ANTIVIRAL DRUG USE¹².

On July 19, 2005, NVAC voted unanimously in favor of the antiviral drug use priority recommendations described here and summarized in Table D-2. These votes followed deliberations of a Working Group, which included as consultants representatives of public and private sector stakeholder organizations and academic experts. There was limited staff level participation from DoD, DHS, and VA. Several ethicists also served as consultants to the Working Group. The Mississippi State Department of Health has chosen to adopt these recommendations for planning purposes and will incorporate any additional federal guidance as it becomes available.

The recommendations were made considering pandemic response goals, assumptions on the impacts of a pandemic, and after thorough review of past pandemics, annual influenza disease, data on antiviral drug impacts, and recommendations for pandemic vaccine use.

Recommendations were made to guide planning needed for effective implementation at state and local levels. The committee recognizes that recommendations will need to be reconsidered at the time of a pandemic when information on the available drug supply, epidemiology of disease, and impacts on society are known.

The committee considered the primary goal of a pandemic response to decrease health impacts including severe morbidity and death. Minimizing societal and economic impacts were considered secondary and tertiary goals.

Critical Assumptions. Assumptions regarding groups at highest risk during a pandemic and impacts on the healthcare system and other critical infrastructures are the same as those underlying the vaccine priority recommendations. Additional assumptions specific for antiviral drugs included:

- Treatment with a neuraminidase inhibitor (oseltamivir [Tamiflu®] or zanamivir [Relenza®]) will be effective in decreasing risk of pneumonia, will decrease hospitalization by about half (as shown for interpandemic influenza), and will also decrease mortality.
- Antiviral resistance to the adamantanes (amantadine and rimantadine) may limit their use during a pandemic.
- The primary source of antiviral drugs for a pandemic response will be the supply of antiviral drugs that have been stockpiled. Before annual influenza seasons about 2 million treatment courses of oseltamivir are available in the U.S. U.S.-based production of oseltamivir is being established; expected capacity is projected at about 1.25 million courses per month.
- Treating earlier after the onset of disease is most effective in decreasing the risk of complications and shortening illness duration. Generally, treatment should be given within the first 48 hours.

¹² From HHS Pandemic Influenza Plan, Part 1, Appendix D

- Assumptions for the amount of antiviral drug needed for defined priority groups is based on the population in those groups and assumptions that 35% of persons in the priority groups will have influenza-like illness and 75% will present within the first 48 hours and be eligible for treatment. For persons admitted to the hospital, the committee assumed that 80% would be treated, as the 48-hour limit may sometimes be relaxed in more ill patients.
- Unlike vaccines, where each tier would be protected in turn as more vaccine is produced, for antiviral drugs, the number of priority groups that can be covered would be known at the start of the pandemic based on the amount of drug that is stockpiled. Additional supply that would become available during the pandemic could provide some flexibility.

Table 9 – Antiviral Drug Priority Group Recommendations*

Group		Estimated Population (millions)	Strategy**	# Courses (millions)		Rationale
				For Target Group	Cumulative	
1	Patients admitted to hospital***	10.0	T	7.5	7.5	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 service (EMS) providers	9.2	T	2.4	9.9	Healthcare workers are required for quality medical care. There is little surge capacity among healthcare sector personnel to meet increased demand.
3	Highest risk outpatients—immuno-compromised persons and pregnant women	2.5	T	0.7	10.6	Groups at greatest risk of hospitalization and death; immuno-compromised 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	3.3	T	0.9	11.5	Groups are critical for an effective public health response to a pandemic.

Table 9 – Antiviral Drug Priority Group Recommendations*

Group		Estimated Population (millions)	Strategy**	# Courses (millions)		Rationale
				For Target Group	Cumulative	
5	Increased risk outpatients—young children 12-23 months old, persons >65 yrs old, and persons with underlying medical conditions	85.5	T	22.4	33.9	Groups are at high risk for hospitalization and death.
6	Outbreak response in nursing homes and other residential settings	NA	PEP	2.0	35.9	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	1.2	P	4.8	40.7	These groups are most critical to an effective healthcare 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 HCW without direct patient contact	10.2	T	2.7	43.4	Infrastructure groups that have impact on maintaining health, implementing a pandemic response, and maintaining societal functions.
9	Other outpatients	180	T	47.3	90.7	Includes others who develop influenza and do not fall within the above groups.
10	Highest risk outpatients	2.5	P	10.0	100.7	Prevents illness in the highest risk groups for hospitalization and death.
11	Other HCWs with direct patient contact	8.0	P	32.0	132.7	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. Post-exposure 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.

Definitions and Rationale for Draft Priority Groups

1 Persons admitted to hospital with influenza infection

- a) Definition - Persons admitted to acute care facilities (traditional or non-traditional with a clinical diagnosis of influenza; laboratory confirmation not required). Excludes persons admitted for a condition consistent with a bacterial super infection (e.g., lobar pneumonia developing late after illness onset) or after viral replication and shedding has ceased (e.g., as documented by a negative sensitive antigen detection test)
- b) Strategy - Treatment within 48 hours of symptom onset.
- c) Rationale - This group is at greatest risk for severe morbidity and mortality. Although there are no data to document the impacts of antiviral drug treatment among persons who already suffer more severe influenza illness, benefit is biologically plausible in persons with evidence of ongoing virally mediated pathology (e.g., diffuse pneumonia, ARDS). Providing treatment to those who are most ill is also consistent with standard medical practices, would be feasible to implement, and would be acceptable to the public.
- d) Population size - The number of persons admitted to hospital in an influenza pandemic would vary substantially depending on the severity of the pandemic and on the ability to expand inpatient capacity, if needed.
- e) Unresolved issues - More specific guidance should be provided to healthcare workers on implementing antiviral treatment, including when and when not to treat. In some persons with severe illness, the ability to take oral medication or its absorption may be important issues. For infants <1 year old admitted to hospital, decisions about whether to treat with antiviral drugs may depend on the child's age and potential risk versus benefit as the neuraminidase inhibitors are not licensed for use in infants. If possible, data on time from symptom onset to hospital admission, current use of antiviral drug treatment among inpatients, and its impacts should be collected during inter pandemic influenza seasons.

2 Healthcare workers and emergency medical service providers who have direct patient contact

- a) Definition - Persons providing direct medical services in inpatient and outpatient care settings. Includes doctors, nurses, technicians, therapists, EMS providers, laboratory workers, other care providers who come within 3 feet of patients with influenza, and persons performing technical support functions essential to quality medical care.
- b) Strategy - Treatment within 48 hours of symptom onset.

- c) Rationale - Maintaining high quality patient care is critical to reduce health impacts of pandemic disease and to prevent adverse outcomes from other health conditions that will present for care during the pandemic period. Treatment of healthcare providers will decrease absenteeism due to influenza illness and may decrease absenteeism from fear of becoming ill, given the knowledge that treatment can prevent serious complications of influenza. Good data exist documenting the impacts of early treatment on duration of illness and time off work, and on the occurrence of complications such as lower respiratory infections. Treating healthcare providers is feasible to implement, especially for inpatient care providers who can be provided drugs through the occupational health clinic. It also would be acceptable to the public, who would recognize the importance of maintaining quality healthcare and would understand that persons with direct patient contact are putting themselves at increased risk.
 - d) Population size - There are about 12.6 million persons designated as healthcare workers by the Bureau of Labor Statistics and about 820,000 EMS providers. Among HCWs, two-thirds are estimated to provide direct patient care services.
 - e) Unresolved issues - Further work is needed to hone definitions and estimate population sizes. Implementation issues include the approach to identifying healthcare providers who would be eligible for treatment and where the treatment would be provided, particularly for outpatient care providers.
- 3 Outpatients at highest risk for severe morbidity or mortality from influenza infection
- a) Definition - The Advisory Committee on Immunization Practices defines groups at high risk (or increased risk) of complications from influenza infection during annual outbreaks based on age (6-23 months and >65 years) and underlying illnesses. Among this population of about 88 million persons, some can be identified who are at highest risk of severe disease and death. These include persons with hematopoietic stem cell transplants (HSCT) and solid organ transplants; those with severe immuno-suppression due to cancer therapy or hematological malignancy; persons receiving immunosuppressive therapy for other illnesses (e.g., rheumatoid arthritis); persons with HIV infection and a CD4 count <200; persons on dialysis; and women who are in the second or third trimester of pregnancy.
 - b) Strategy - Treatment within 48 hours of symptom onset.
 - c) Rationale - Of the large group of persons who are at increased risk of severe disease or death from influenza, these groups represent the population at highest risk and who are least likely to be protected by vaccination. Studies show that neuraminidase inhibitor therapy decreases complications and hospitalizations from influenza in high-risk persons and one unpublished study shows a significant decrease in mortality among patients who have undergone a hematopoietic stem cell transplant.
 - d) Population size - About 150,000 persons have had an HSCT or solid organ transplant. Assuming that the period of severe immunosuppression after a cancer diagnosis lasts for 1 year, the population targeted with non-skin, non-prostate cancers would equal the incidence of about 1.35 million persons. Based on a birth cohort of 4.1 million, a 28-week risk period during the second and third trimesters, and an 8-week pandemic outbreak in a community, there would be about 400,000

pregnant women included in this risk group. Further work is needed to estimate the size of other immunosuppressed groups.

- e) Unresolved issues - Specific definition of included groups and population sizes.

4 Pandemic health responders, public safety workers, and key government decision-makers

- a) Definition - Public health responders include those who manufacture vaccine and antiviral drugs; persons working at health departments who are not included as healthcare workers; and those who would be involved in implementing pandemic vaccination or other response components. Public safety workers include police, fire, and corrections personnel. Key government decision-makers include chief executives at federal, state, and local levels.
- b) Strategy - Treatment within 48 hours of symptom onset.
- c) Rationale - Preventing adverse health outcomes and social and economic impacts in a pandemic depend on the ability to implement an effective pandemic response. Early treatment of pandemic responders will minimize absenteeism and ensure that vaccination and other critical response activities can be maintained. Implementing early treatment for public health workers and vaccine manufacturers is feasible at workplace settings. Public safety workers prevent intentional and unintentional injuries and death, are critical to maintaining social functioning, and will contribute to a pandemic response, for example by ensuring order at vaccination clinics. A small number of decision-makers at federal, state, and local levels are needed to for an effective pandemic response.
- d) Population size - An estimated 40,000 workers who produce pandemic vaccine and antiviral drugs in the U.S.; ~300,000 public health workers who would not be included in the HCW category; 3 million public safety workers; and a small number of government decision-makers.
- e) Unresolved issues - Need to define the exact composition and size of this group.

5 Outpatients at increased risk of severe morbidity or mortality from influenza

- a) Definition - For planning purposes, this group would include those currently designated as high-risk groups, except for those who have been categorized as being at highest-risk and included in a separate category. This increased-risk group includes persons 6-23 months and >>65 years old, or who have underlying illnesses defined by the ACIP as associated with increased risk. Definition of this group may change based on the epidemiology of the pandemic.
- b) Strategy - Treatment within 48 hours of symptom onset.
- c) Rationale - Early treatment has been shown to significantly decrease lower respiratory infections and to reduce the rate of hospitalization in elderly and high-risk populations. By extrapolation and based on the results of one small uncontrolled study, significant reductions of mortality can be expected as well. As these risk groups are familiar to the public given recommendations for annual vaccination, communication would be easy and acceptability high.
- d) Population size - About 85.5 million persons are included in this group. Although all are at increased risk of annual influenza compared with the healthy under-65 year old population, there are different levels of increased risk for severe complications and death within this category.

Further stratification may be possible based on several parameters including number of underlying conditions; recent hospitalization for a high-risk condition, pneumonia, or influenza; and age.

- e) Unresolved issues - Stratifying this group into those at greater and lesser risk may be important if antiviral supplies are limited. Implementing treatment will be challenging given that it should be provided at the initial point of care to accrue the greatest benefit from early therapy.

6 Outbreak control

- a) Definition - Use of antiviral drugs to support public health interventions in closed settings where an outbreak of PI is occurring.
- b) Strategy - Treatment of cases and post-exposure prophylaxis of contacts (once daily antiviral medication for 10 days).
- c) Rationale - Influenza outbreaks in nursing homes are associated with substantial mortality and morbidity. Nursing home residents also are less likely to respond to vaccination. Post-exposure prophylaxis has been shown to be effective in stopping influenza outbreaks in closed settings.
- d) Population size - The number of outbreaks that may occur during a pandemic is unclear. Measures should be implemented to prevent outbreaks including limiting visitors, vaccination of staff, furloughing non-critical staff, and screening and exclusion for illnesses consistent with influenza.
- e) Unresolved issues - Should this policy also be implemented in prisons or other settings where explosive spread of illness may occur but the risk for severe complications is not high?

7 Healthcare workers in ER, ICU, EMS, and dialysis settings

- a) Definition - Includes all staff in these settings who are required for effective functioning of these health care units.
- b) Strategy – Prophylaxis
- c) Rationale - Optimally effective functioning of these units is particularly critical to reducing the health impacts of a pandemic. Prophylaxis will minimize absenteeism in these critical settings.
- d) Population size - Need to obtain population estimates.
- e) Unresolved issues - Population sizes

8 Pandemic societal responders and healthcare workers who have no direct patient contact

- a) Definition - This group includes persons who provide services that must be sustained at a sufficient level during a pandemic to maintain public well-being, health, and safety. Included are workers at healthcare facilities who have no direct patient contact but are important for the operation of those facilities; utility (electricity, gas, and water), waste management, mortuary, and some transport workers.
- b) Strategy - Treatment within 48 hours of symptom onset.
- c) Rationale - Maintaining certain key functions is important to preserve life and decrease societal disruption. Heat, clean water, waste disposal, and corpse management all contribute to public health. Ensuring functional transportation systems also protects health by making it possible for

people to access medical care and by transporting food and other essential goods to where they are needed.

- d) Population size - Within these broad categories, there are about 2 million workers at healthcare facilities who have no direct patient contact; 730,000 utility workers; 320,000 waste management workers; 62,000 in mortuary services; and 2.3 million in transportation. Not all occupations within these categories would be classified as pandemic societal responders. Estimates are that 35% of this population will develop illness and present within 48 hours of onset regardless of pandemic severity.
- e) Unresolved issues - Need to stratify within these groups to identify who fills specific pandemic societal response functions and to assess whether those functions could still operate if a substantial proportion of the workforce became ill during a 6-8 week pandemic outbreak within a community. Implementation issues need to be addressed, especially with respect to how persons would be identified as falling within this priority group when presenting for treatment and where that treatment would be provided.

9 Other outpatients

- a) Definition - Includes persons not in one of the earlier priority groups.
- b) Strategy - Treatment within 48 hours of illness onset.
- c) Rationale - Treatment reduces the risk of complications and mortality, reduces duration of illness and shortens time off work, and decreases viral shedding and transmission. If sufficient antiviral supplies are available, providing treatment to all who are ill achieves equity and will be most acceptable to the public.
- d) Population size - There are an estimated 180 million persons who are not included in previously targeted groups.
- e) Unresolved issues - Consider whether there are any strata that can be defined within this population.

Additional NVAC Recommendations on Antiviral Drugs for PI. In addition to recommendations for priority groups, NVAC unanimously adopted the following recommendations:

- Sufficient drugs should be stockpiled to address top priorities. NVAC recommends that the minimum stockpile size be about 40 million courses, allowing coverage of the top 7 priority groups.
- Oseltamivir should be the primary drug stockpiled, but some zanamivir also should be obtained as it is effective against some oseltamivir-resistant strains, may be preferred for treatment of pregnant women, and supporting two manufacturers enhances security against supply disruptions. Approximately 10% of the stockpile should be zanamivir if feasible and cost effective. No additional adamantanes should be stockpiled.
- Antiviral drugs can also be used as part of an international effort to contain an initial outbreak and prevent a pandemic. Use to slow disease spread early in a pandemic may be useful but requires large amounts of drug.
- Critical research should be conducted to support development and implementation of recommendations for PI antiviral drug use, including:

- Impact of treatment at hospital admission on outcome
- Optimal treatment dose for H5N1 and other potential pandemic strains
- Sensitivity and use of rapid diagnostic tests for H5N1 and other influenza strains with pandemic potential
- Safety and pharmacokinetics of oseltamivir among infants <1 year old
- Investigation of the impact of other drugs (new antiviral agents and other classes such as statins) on influenza
- Additional work with public and private sector groups should be done to further hone definitions of target groups and their estimated population sizes, and to provide further guidance on antiviral drug distribution and dispensing.

Summary of Public Health Roles and Responsibilities for Clinical Guidelines (Adapted from HHS Pandemic Influenza Plan, Part 2, Supplement 5)

Interpandemic and Pandemic Alert Periods

- Healthcare providers:
 - Be aware of case definitions; procedures for screening, infection control, and laboratory testing; and antiviral regimens for influenza A (H5N1) and other novel influenza viruses.
 - Notify health departments about suspected/confirmed novel influenza cases and fatalities.
 - Collect recommended specimens for diagnosis of novel influenza, and forward specimens to designated state and federal laboratories.
- State and local public health agencies:
 - Help educate healthcare providers about novel and PI.
 - Provide or facilitate testing and investigation of suspected novel influenza cases.
 - Conduct follow-up of suspected novel influenza cases.

Pandemic Period

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

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

Rationale. Healthcare providers play an essential role in the detection of an initial case of novel or PI in a community. If implemented early, identification and isolation of cases may help slow the spread of influenza within a community. Clinical awareness of novel or PI disease can also benefit the individual patient, as rapid diagnosis and initiation of treatment can avert potentially severe complications. Detection is complicated, however, by the lack of specific clinical findings and commercially available laboratory tests that can rapidly distinguish novel or PI from seasonal influenza. In addition, neither the clinical characteristics of a novel or PI virus strain nor the groups at highest risk for complications can necessarily be defined beforehand. Therefore, clinicians face significant challenges in: 1) quickly identifying and triaging cases, 2) containing the spread of infection, 3) beginning an efficient and comprehensive workup, 4) initiating antiviral and other supportive therapy, and 5) anticipating clinical complications.

c. Plan for Monitoring Antiviral Safety and Efficacy and Reporting of Adverse Events

Every attempt will be made to utilize traditional, as well as augmented, venues for monitoring antiviral safety and efficacy and reporting of adverse events. Healthcare providers at all levels will be educated on the adverse effects profile for each antiviral medication and therefore can educate their patients on signs and symptoms indicating the need to seek medical follow-up for any untoward effects. Information on these agents is available via traditional outlets such as retail pharmacies; furthermore, a simple drug information sheet has been developed by MSDH as is accessible in print or on our website.

A public information campaign will inform those receiving antiviral treatment or prophylaxis on the subject of self-monitoring for efficacy and will provide reporting procedures for adverse effects. Multiple modes of communication will be utilized, including, but not limited to, local media, use of crawl-lines, and communications via church leaders and advocacy groups. Those receiving treatment or prophylaxis may report health status to the MSDH via a key-coded telephone system. The key-coded system would also offer the option to report to a staff member of the MSDH.

As pharmacists are sentinel in monitoring medication outcomes, the pharmacy community, through the aid of the Mississippi Board of Pharmacy, will be engaged via continuing education conferences regarding use of antivirals during pandemic influenza and the need to monitor safety and efficacy. Adverse events will be entered into the Federal MedWatch program.

d. Plan for Allocation of Masks and Respirators

This section is currently under development.

e. Plan for Allocation of Ventilators

This section is currently under development.

I. Public Health Vaccine Preparedness and Response

The purpose of this Section is to describe preparedness efforts and response actions in providing State assistance and coordinating local resources in allocation and distribution of both pre-pandemic strain and pandemic strain vaccines in the event of an outbreak of a pandemic strain of influenza; describe implementation steps for vaccination sites; and establish monitoring parameters and guidelines for vaccine safety and efficacy.

1. Situation

- The initial response to an influenza pandemic will include medical care, community containment and personal protective measures, and targeted use of antiviral medications.
- Vaccine may serve as a tool in the preventive strategy during a pandemic. Vaccination is the primary intervention to decrease the health impacts of an influenza pandemic. The overall impact of vaccination during a pandemic depends on how rapidly a PI vaccine becomes available, its effectiveness in preventing infection and disease, its supply, and the ability to allocate and administer it.
- A limited amount of avian influenza A (H5N1) vaccine is being stockpiled by the Federal government and will be considered for early use in the event of an H5N1 pandemic.
- Development of vaccines against other strains with pandemic potential is also being considered by the Federal government.
- In contrast to annual influenza vaccine, delivery of pandemic vaccine may encompass an expanded target population, possibly to include the entire U.S. population.
- Under current manufacturing processes, a monovalent vaccine directed against the circulating pandemic virus strain of influenza should begin to be available within 4 to 6 months after identification of the new pandemic virus strain. It is also possible that no PI vaccine will be available.
- Because a relative shortage of vaccine should be anticipated especially early in the pandemic, it will be necessary to target initial doses of vaccine to designated groups deemed high-risk and/or to emergency responders.
- The public, including the health care community, will need to be educated regarding the rationale for targeted allocation of vaccine. The need to ration vaccine will require substantial public education and adequate security measures.
- To ensure optimal use of a new PI vaccine, monitoring of vaccine adverse events will be necessary and data will be collected on vaccine effectiveness, vaccine supply and distribution, vaccine coverage.

2. Assumptions

- A vaccine against PI will likely require two doses, administered at least a month apart, to provide a level of immunity comparable to that obtained with seasonal influenza vaccines. If two doses are required to achieve immunity, it will be necessary to ensure that vaccinated persons return for the second dose.
- The success of the PI vaccination program will be determined in large part by the strength of state and local vaccination programs and public information efforts during the interpandemic period to create:

- Increased acceptance of and public confidence in any flu vaccine;
- Increased vaccine production by manufacturers to meet the demand, and;
- Stronger distribution channels.

3. Concept of Operations

- MSDH Department of Pharmacy or RSS Warehouse Facility: Provide equipment and human resources for receiving, storing, and distribution of pandemic strain vaccine.
- MSDH Department of Immunizations: Track vaccine supply and distribution; collect and collate vaccine data from providers; report data to Federal authorities via the Countermeasures and Response Administration (CRA) system.
- MSDH County and District Health Offices: Provide human resources for administration of pandemic strain vaccine.
- MSDH Bureau of Emergency Planning and Preparedness: Recruit, train, and retain volunteer healthcare professionals via ESAR-VHP to aid in administration of pandemic strain vaccine.
- MS DPS or MS Military Department: coordinate security issues during storage, staging, distribution, and administration of pandemic strain vaccine.

4. Phased Actions

Phased actions based on WHO and HHS protocols are provided below. A phased action matrix is also provided in Attachment F.

a. WHO Phases 1 and 2/HHS Stage 0

Conditions: Inter-pandemic period. New domestic animal outbreak in at-risk country.

- The MSDH OEPR, in conjunction with the State Epidemiologist and the Department of Communicable Diseases will prepare materials in efforts to:
 - Enhance levels of seasonal influenza vaccination in groups at risk for severe influenza in order to increase vaccination coverage levels.
 - Enhance levels of seasonal influenza vaccination in healthcare workers.
 - Enhance levels of pneumococcal polysaccharide vaccination among those for whom it is recommended with the aim of reducing the incidence and severity of secondary bacterial pneumonia.
 - Increase vaccine acceptability through public education targeted at familiarizing people with the safety profile and benefits of vaccination.
 - Develop strategies for vaccinating hard-to-reach populations.
- The MSDH OEPR, in conjunction with the State Epidemiologist and the Department of Communicable Diseases will review, exercise, and modify vaccine distribution plans on a periodic basis and as needed.

- The MSDH OEPR, in conjunction with the State Epidemiologist and the Department of Communicable Diseases will review annually, and as deemed necessary, the plan for allocation and distribution of mass vaccinations.

b. WHO Phase 3/HHS Stage 0

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. New domestic animal outbreak in at-risk country.

- The MSDH OEPR, in conjunction with the State Epidemiologist and the Department of Immunizations will prepare for vaccination of target groups by:
 - Reviewing national recommendations for PI vaccination and developing state-specific modifications or refinements in priority groups;
 - Developing specific definitions for priority groups, identifying occupational categories and sub-categories, as needed, within each broad priority;
 - Estimating the size of relevant priority groups, and;
 - Creating, reviewing, and refining educational materials regarding the need for priority groups and the rationale for the groups currently recommended.
- The MSDH OEPR, State Epidemiologist, and the Department of Immunizations will coordinate the vaccine distribution plan with neighboring states and Mississippi tribes.
- The MSDH OEPR and the Department of Immunizations will implement a call-back system or immunization registry that would:
 - Inform vaccinated persons of the need for a second vaccination;
 - Track vaccine supply and distribution, and;
 - Collect data, as required by the Federal government, from individual providers; collate data at the local and state level; and report the data to federal authorities on a scheduled routine basis.
- The MSDH OEPR and the Department of Immunizations will develop a system to report and investigate adverse events following immunization with a PI vaccine.

c. WHO Phase 3/HHS Stage 1

Conditions: Pandemic Alert Period. Novel influenza virus identified but virus not well adapted to humans. Suspected human outbreak overseas.

- The MSDH Department of Immunizations will meet with partners and stakeholders to review the major elements of the plan for mass vaccination.
- The MSDH Department of Immunizations and the State Epidemiologist will modify the plan for mass vaccination to account for possible updated federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability.
- The MSDH Department of Immunizations will notify the medical community about the status of the plan and the expected availability of vaccines.
- The MSDH OEPR and Department of Immunizations will review Administration Orders, as approved by the State Health Officer, for PI vaccine administration.

- The MSDH OEPR will meet with partners and stakeholders to review the major elements of the state's vaccine distribution plan (MSDH SNS Plan).
- If deemed necessary, the MSDH will conduct training for public health staff and partners involved in distributing and administering vaccines, and ensure redundancy of knowledge and responsibility for pandemic activities.
- The MSDH Department of Immunizations will provide individual providers and other stakeholders with most up-to-date information regarding:
 - Interim recommendations for vaccine target groups;
 - Distribution and/or administration of unlicensed vaccinations under IND or EUA provisions, and;
 - Data collection on vaccine effectiveness, vaccine supply and distribution, vaccine coverage, and vaccine safety.

d. WHO Phase 4 or 5/HHS Stage 2

Conditions: Pandemic Alert Period. Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans. Confirmed human outbreak overseas.

- The MSDH OEPR will meet with partners and stakeholders to review the major elements of the plan for mass vaccination.
- The MSDH OEPR and State Epidemiologist will modify the plan for mass vaccination to account for possible updated federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability.
- The MSDH OEPR will notify the medical community about the status of the plan and the expected availability of vaccines.
- The State Epidemiologist will review Standing Orders for PI vaccine administration.
- The MSDH OEPR will meet with partners and stakeholders to review the major elements of the state's vaccine distribution plan (MSDH SNS Plan).
- If deemed necessary, the MSDH Department of Immunizations will conduct training for public health staff and partners involved in distributing and administering vaccines, and ensure redundancy of knowledge and responsibility for pandemic activities.
- The State Epidemiologist will provide individual providers and other stakeholders with most up-to-date information regarding:
 - Interim recommendations for priority groups;
 - Distribution and/or administration of unlicensed vaccinations under IND or EUA provisions, and;
 - Data collection on vaccine effectiveness, vaccine supply and distribution, vaccine coverage, and vaccine safety.

e. WHO Phase 6/HHS Stage 3

Conditions: Pandemic Alert Period. Increased and sustained transmission confirmed in humans. Widespread human outbreaks confirmed in multiple locations overseas.

- The State Epidemiologist will continue to provide individual providers and other stakeholders with the most up-to-date information.
- If either pre-pandemic strain or pandemic strain vaccine is available in large quantities, the MSDH CC Logistics Section will begin call-down to ensure that human resources and logistics are in place to begin vaccination, taking into account the need for additional staff due to illness.
 - Review HHS guidance for pre-pandemic vaccine and make recommendations and advise Governor as appropriate
 - Prepare to vaccinate using pre-pandemic vaccine
- The MSDH EOC will coordinate planned activities with neighboring states and Mississippi tribes.

f. WHO Phase 6/HHS Stage 4 or 5

Conditions: Pandemic Period. Increased and sustained transmission in humans. First human case in North America OR spread throughout United States.

- The State Epidemiologist will update Administration Orders for PI vaccine based on any new recommendation from the Federal government and approved by the State Health Officer.
- The MSDH CC will obtain Vaccine Information Statement from the CDC, including translations for non-English readers.
- The State Epidemiologist will confer with the CDC on the number of PI vaccine doses Mississippi will receive and date of receipt.
- The MSDH CC will fully activate the plan for vaccination, including distribution, administration, monitoring of vaccine distribution and administration, and vaccination tracking, appropriate storage and handling, and safety monitoring.
- The MSDH CC, in coordination with the State Epidemiologist, will ensure completion of vaccination of target groups.
- The SHO and the State Epidemiologist will advise as to when to phase-in vaccination of the rest of the population.

g. HHS Stage 6

Condition: Recovery and preparation for subsequent waves.

- Prepare for a second pandemic wave:
 - Inventory PI vaccine, pharmaceuticals, and supplies;
 - Evaluate vaccination protocols and procedures;
 - Critique and improve vaccination and distribution sites; and
 - Document personnel available to work in second wave vaccination clinics.
- The MSDH CC and the MSDH OEPR, with assistance from partner agencies, will evaluate overall success of vaccination effort and response activities and submit this data for an After Action Report (AAR).

h. Specific Agency Functions

Table 10 – Agency Vaccine Preparedness Functions	
Agency	Functions
MSDH Department of Immunizations	<ul style="list-style-type: none"> • Conduct training for public health staff and partners involved in distributing and administering vaccines, and ensure redundancy of knowledge and responsibility for pandemic activities. • Track vaccine supply and distribution; • Collect and collate vaccine data from providers; • Report data to Federal authorities via the Countermeasures and Response Administration (CRA) system. • Facilitate reporting of adverse effects from vaccine administration via VAERS.
MSDH County and District Health Offices	<ul style="list-style-type: none"> • Provide human resources for administration of pandemic strain vaccine.
MSDH Bureau of Emergency Planning and Preparedness:	<ul style="list-style-type: none"> • Recruit, train, and retain volunteer healthcare professionals via ESAR-VHP to aid in administration of pandemic strain vaccine.
MSDH Department of Pharmacy or RSS Warehouse Facility and Staff	<ul style="list-style-type: none"> • Provide adequate warehouse space for distribution of pandemic strain vaccine and comply with Federal and State regulations for distribution of pharmaceuticals. • Provide personnel to perform duties for storage, staging, and distribution of SNS assets as outlined in the MSDH SNS Plan. • Provide cooler containers for cold chain transport of vaccine • Provide tractor trailers to transport SNS medical assets, including refrigerated trailers for transport of temperature sensitive materiel. • Have redundant plans for generator power, fuel for vehicles, and maintenance for vehicles.

Table 10 – Agency Vaccine Preparedness Functions

Agency	Functions
Mississippi Department of Public Safety or Mississippi Military Department	<ul style="list-style-type: none"> • Coordinate security issues during storage, staging, and distribution of pandemic strain vaccine within Mississippi. • Develop plans for protection and security of personnel, facility, and vaccine once within the jurisdiction of the State. • Develop contingency plans for crowd control and breach of security at the MSDH Department of Pharmacy or RSS. • Develop contingency plan for evacuation of Department of Pharmacy or RSS. • Develop plans for security of vaccine during transportation from the RSS to various end-point locations around the State. • Coordinate planning with State representative from the U.S. Marshals Service. • Coordinate with MSDH on pre- and onsite credentialing of personnel required for storage, staging, and distributing vaccine.

5. Programmatic Functions

a. Plan for Allocation of Vaccine

Plans for allocation of pre-pandemic strain and pandemic strain vaccination are developed, revised, and maintained through the PI Vaccine Preparedness and Response Work Group. The PI-VPR work group is comprised of members of the public health immunizations and emergency preparedness staffs. Comment on emergency preparedness plans and their implementation is vetted through the SAC.

Estimates of weekly allocation for Mississippi of pandemic strain vaccine were calculated using CDC guidance dated December 11, 2006: Pandemic Influenza Vaccination: A Guide for State, Local, Territorial, and Tribal Planners (Section 1A). Given estimates of weekly allocation and confirmation of capacity by both the MSDH Department of Pharmacy and designated RSS sites for Mississippi to receive and cold store 45,000 pandemic strain vaccines packaged in multi-dose vials, Mississippi will receive pre-pandemic and pandemic strain vaccine centrally for subsequent distribution for administration. Implementation steps for operations of selected sites for vaccine distribution are described in Section VI-I-B.

Table 11 – Agency Vaccine Preparedness Functions

Year and Formulation	2-Dose Course per Month Manufactured	% Population Vaccinated per Month	Estimated Weekly Allocation of Vaccine ¹³
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¹³ Based on vaccine availability assumptions (CDC guidance) and population size for Mississippi [monthly allocation divided by 4; 2-dose courses]

2006			
90 mcg/dose	1.4M	0.5	3,750
30 mcg/dose	4.2M	1.5	11,250
10 mcg/dose	12.6M	4.5	33,750
2008			
90 mcg/dose	5.6M	2.0	15,000
30 mcg/dose	16.8M	6.0	45,000
10 mcg/dose	50.4M	18.0	135,000

In keeping with the assumptions of vaccine administration, namely, vaccine pharmacologically serves as a primary intervention to decrease the health impacts of influenza and during an influenza pandemic may serve as a tool in disease mitigation, allocation of vaccine was determined for three scenarios.

- Scenario 1: Widespread outbreak in multiple locations overseas; pre-pandemic strain vaccine available, but NO pandemic strain vaccine available.
 - Vaccinate critical infrastructure personnel with pre-pandemic strain vaccine.
 - Verification of critical infrastructure personnel through annually updated roster (and updated upon initial identification of widespread outbreak overseas) and at site through employment badge/MS driver's license.
 - Assumptions:
 - Pre-pandemic strain vaccine confers some immunologic protection against the pandemic strain causing disease;
 - Pre-pandemic strain vaccine will be distributed by CDC at HHS Stage 3; and
 - Critical infrastructure personnel will receive pre-pandemic strain vaccination by pre-determined prioritization.
- Scenario 2: Increased and sustained human-to-human transmission; case (or small cluster) identified in Mississippi [focal point]; pre-pandemic strain vaccine given to critical infrastructure (see above); pandemic strain vaccine available.
 - Isolation and antiviral treatment of cases.
 - Case investigation for contact identification.
 - Quarantine asymptomatic contacts.
 - Vaccinate population in closest proximity in ever widening circles.
 - For those in outer circle(s), use layered and targeted community mitigation/non-pharmaceutical interventions as appropriate for their proximity to case.
 - Assumptions:
 - Critical infrastructure personnel will have received pre-pandemic strain vaccine;
 - Pandemic vaccine will be available; and
 - Mississippi to receive 45,000 doses per week.
 - Heighten surveillance for disease incidence in critical infrastructure given pre-pandemic strain vaccine (may have to move this group up in priority to receive pandemic strain vaccine).

- Scenario 3: Increased and sustained human-to-human transmission; NO cases in MS OR widespread cases in MS [no focal point]; pre-pandemic strain vaccine given to critical infrastructure (see above), AND pandemic strain vaccine available.
 - Vaccinate by **target group** according to any new Federal guidance.
 - Verification of patients with co-morbid conditions that place at risk for complications of influenza: current medication bottles or valid prescription.
 - Assumptions:
 - Critical infrastructure personnel will have received pre-pandemic strain vaccine;
 - Pandemic vaccine will be available; and
 - MS to receive 45,000 doses per week.
 - Heighten surveillance for disease incidence in critical infrastructure given pre-pandemic strain vaccine (may have to move this group up in priority to receive pandemic strain vaccine).

Using the Vaccination Target Groups as set forth in the Federal Interagency Working Group's Draft Guidance on Allocating and Targeting Pandemic Influenza (October 17, 2007), the Mississippi State Department of Health will quantify persons within these target groups. Target groups will enable flexibility in assigning rank or priority to cohorts with similar risk factors deemed highest in regards to evolving epidemiologic data during a PI incident.

Table 12 – Vaccination Target Groups						
Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Not Targeted	
Category	Target Group	Estimate Number	Severe	Moderate	Less Severe	
Homeland and National Security	Deployed and mission critical personnel	700,000	Tier 1	Tier 1	Tier 1	
	Essential support & sustainment personnel	650,000	Tier 2	Tier 2	Tier 2	
	Intelligence services	150,000				
	Border protection personnel	100,000				
	National Guard personnel	500,000				
	Other domestic national security personnel	50,000				
	Other active duty & essential support	1,500,000	Tier 3	Tier 3	Not targeted	
Health care and Community Support Services	Public health personnel	300,000	Tier 1	Tier 1	Tier 1	
	Inpatient health care providers	3,200,000				
	Outpatient and home health providers	2,000,000				
	Health care providers in Long Term Care Facilities (LTCFs)	800,000				
	Community support & emergency mgt.	600,000	Tier 2	Tier 2	Not targeted	
	Other important health care personnel	500,000	Tier 3	Tier 3	Not targeted	
Critical Infrastructure	Emergency Medical Service personnel	2,000,000	Tier 1	Tier 1	Tier 1	
	Law enforcement personnel					
	Fire services personnel					
	Mfrs of pandemic vaccine & antivirals	50,000				
	Key government leaders	50,000				
	Electricity sector personnel	1,900,000 to 4,400,000	Tier 2	Tier 2	Not targeted	
	Natural gas personnel					
	Communications personnel					
	Water sector personnel					
	Critical government personnel					
General Population	Transportation sector personnel	1,400,000 to 3,500,000	Tier 3	Not targeted	Not targeted	
	Food and agriculture sector personnel					
	Banking and finance personnel					
	Pharmaceutical sector personnel					
	Chemical sector personnel					
	Oil sector personnel					
	Postal and shipping personnel					
	Other important government personnel					
	Pregnant women	3,100,000	Tier 1	Tier 1	Tier 1	
	Infants & toddlers 6–35 mo old	10,300,000				
	Household contacts of infants < 6 mo	4,300,000	Tier 2	Tier 2	Tier 2	
	Children 3–18 yrs with high risk condition	6,500,000				
	Children 3–18 yrs without high risk	58,500,000	Tier 3	Tier 2	Tier 3	
	Persons 19–64 with high risk condition	36,000,000	Tier 4	Tier 3	Tier 2	
	Persons >65 yrs old	38,000,000				
	Healthy adults 19–64 yrs old	121,800,000	Tier 5	Tier 4	Tier 4	

Figure 2 – Vaccination Tiers and Target Groups for a Severe Pandemic

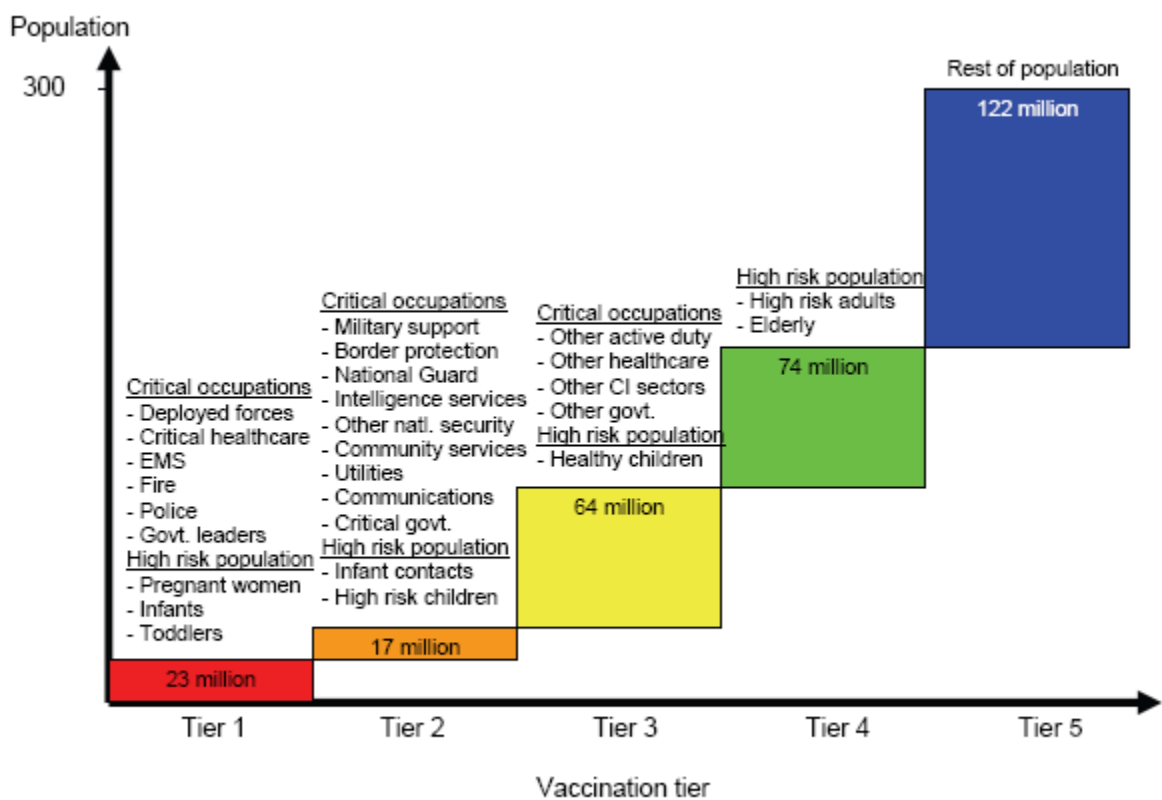


Figure 2 illustrates how vaccination is administered by tiers until the entire U.S. population has had the opportunity to be vaccinated, and how tiers integrate target groups across the four categories balancing vaccine allocation to occupationally defined groups and the general population.

b. Operating Sites for Vaccine Receipt/Distribution

Receipt, Storage and Distribution of Pre-Pandemic Strain and Pandemic Strain Vaccine. Estimates of weekly allocation for Mississippi of pandemic strain vaccine were calculated using CDC guidance dated December 11, 2006: *Pandemic Influenza Vaccination: A Guide for State, Local, Territorial, and Tribal Planners (Section 1A)* and are outlined in Section “a” above. Given estimates of weekly allocation and confirmation of capacity by both the MSDH Department of Pharmacy and designated RSS sites for Mississippi to receive and cold store 45,000 pandemic strain vaccines packaged in multi-dose vials, Mississippi will receive pre-pandemic and pandemic strain vaccine centrally for subsequent distribution for administration.

The MSDH Department of Pharmacy has a staff of 17 personnel and 45 volunteers for receiving, storing, and distribution of vaccine. Alternatively, RSS operations could be activated; adequate staff and storage is documented within the MSDH SNS Plan. Personnel within the MSDH Immunizations Division will utilize

the VACMAN database management system for management and control of vaccine inventory. Standard operating procedures (SOPs) for receiving, storing, distributing, and inventory of vaccine are described in Attachment J.

Distribution of vaccine will follow procedures as set forth within the MSDH SNS Plan. The MSDH SNS Plan identifies staffing for all functions of distribution; details chain of custody; and contains plans for security, credentialing, and communications. Functions are exercised annually, at a minimum, and just-in-time training is facilitated through job action sheets and augmented via routine briefings. To ensure vaccine cold chain is maintained, distribution of vaccine from the MSDH Department of Pharmacy or the RSS site will be in agency-approved cooler containers or on refrigerated trucks. Agency studies indicate vaccines shipped in cooler containers with ice packs maintain appropriate temperature control for 36 to 48 hours.

Administration Sites for Pre-Pandemic and Pandemic Strain Vaccine. Considering data from seasonal influenza clinics, geographic distribution for Mississippi, and estimated weekly allocation of pandemic strain vaccine, need for 12 vaccination teams has been preliminarily determined. Vaccination teams would use operational plans as put forth in the MSDH SNS Plan. Teams could work as individual units to geographically cover all of Mississippi or teams could be combined to be directed at containment strategy.

Table 13 – Vaccine Administration Site Data

Data Point	Conclusion
Historical Data/Projections	
Data from seasonal flu clinics	Vaccinate ~1000 people / hr Staff requirements: 20 nurses and 20 support staff Clinic runs for about 6 hours
Historical data from other outbreaks	Staff requirements generally were 1 support staff per 4 nurses
Geographic distribution across state	9 PH districts Consider extra team more densely populated area (Desoto county, Hinds county and on coast)
Estimated weekly allocation of pandemic strain vaccine	Used 45,000 2-dose course / week
Resource Calculations	
At 1000 vaccinations / hour	Would take 45 hours to administer 45,000 vaccines
If worked 6 hour "shifts"	Could administer 45,000 vaccines using about 8 "teams" for an ~6 hour vaccination campaign
Staff for 8 teams at requirement of 1 support to 4 nurses	160 nurses and 40 support persons

Table 13 – Vaccine Administration Site Data

Data Point	Conclusion
If we wanted to increase to 12 teams to accommodate geography could we still go with 160 nurses and 40 support persons?	This would make 12 teams of 15 nurses and 3 to 4 support persons (each team administering 3,750 vaccines in ~6 hours); goal is to recruit a minimum of 180 nurses and optimally ~400 nurses to allow for attrition.

The MSDH will utilize PODs for PI vaccination sites. Currently MSDH has MOUs with 142 POD sites and an MOU with the Department of Education authorizing use of public schools as additional POD sites, if necessary. Criteria for POD selection from these sites would be made upon emerging outbreak and include, among other considerations, immediate availability of site, area(s) of case identification, and walking distance for sites located in highly populated areas. Alternate POD sites such as closed PODs, mobile PODs, and drive-through POD designs are currently being investigated. Case containment strategies could be accomplished utilizing either a stationary POD or mobile POD concepts.

POD operations are conducted under ICS, which include staffing for medical, non-medical, security, transportation, and logistics. Each POD composes a POD Field Operations Guide specifying quantities of personnel required for POD operations, POC, and back-up information. Personnel for medical management positions within the POD have been identified through staff at the MSDH. Each county recruits personnel, including pre-identified volunteers, to support additional operations of the POD. MSDH maintains this roster which includes contact information, professional background, and identifies geographic areas the volunteers have elected to participate.

At current projections for Mississippi to receive 45,000 vaccines per week, a 20-month campaign would be required to vaccinate Mississippi's population of nearly 3 million. Early in the pandemic, supply of pre-pandemic strain or pandemic strain vaccine will fall short of demand. To ensure careful allocation of vaccine, it is likely that administration of vaccine will be tasked, at this point, solely to public health personnel. Over time, as larger segments of the population have been vaccinated, vaccine may be distributed to private sector partners for administration. Private sector partners are tracked via the Provider Enrollment Form (see Attachment K for Forms) and agree to follow policies and procedures as circumscribed by MSDH.

The MSDH will utilize agency approved cooler containers at all administration sites to ensure maintenance of cold chain. Vaccines are shipped in cooler containers with ice packs and agency studies indicate appropriate temperature controls for 36 to 48 hours. It is anticipated that pandemic strain vaccine shipped will be administered within 6 to 8 hours; any vaccine projected to NOT be administered within 36 hours will be repackaged in an alternate cooler container with ice packs or returned to the MSDH Department of Pharmacy or RSS site prior to expected loss of temperature control.

Patient demographic data and vaccine data will be collected at the administration site(s) on a scanable health information form (see Attachment K for Forms). Forms are collected at administration sites and scanned at district and state public health offices into a single data repository. This repository provides the

means for tracking initial and second doses of vaccine administered and follow-up for persons not documented as having received the second dose. A link from MSDH's database to CDC's Countermeasures and Response Administration database enables reporting to the CDC.

The safety and efficacy of the influenza vaccine will be monitored through proper vaccine storage and administration, timing and spacing of the second influenza dose, observation of precautions and contraindications as identified in the package insert, management of vaccine side effects, reporting of suspected side effects within VAERS, and educating patients and parents about vaccine benefits and risk (see Section "c" below). A vaccine safety coordinator has been assigned within the MSDH Department of Epidemiology.

c. Monitoring Vaccine Safety and Efficacy and Reporting Adverse Events

The safety and efficacy of the influenza vaccine will be monitored through proper vaccine storage and administration, timing and spacing of the second influenza dose, observation of precautions and contraindications as identified in the package insert, management of vaccine side effects, reporting of suspected side effects within VAERS, and educating patients and parents about vaccine benefits and risk.

Influenza Vaccine Storage and Administration. To ensure the safety of the influenza vaccine, the vaccine administrators will inspect vaccine upon delivery and monitor the refrigerator to ensure the maintenance of cold chain, draw up vaccine into syringes only prior to administration, rotate the vaccine stock to ensure vaccine is used within the appropriate date, and record appropriate administration information (i.e. site of administration, Lot Number, etc.)

Timing and Spacing. The second influenza dose will be administered no sooner than the spacing time identified in the influenza vaccine package insert.

Contraindications and Precautions. Each recipient of the flu vaccine will be screened prior to administration of the vaccine.

Managing Vaccine Side Effects. Protocol as identified in the Mississippi State Department of Health Public Health Nursing manual will be used in the event of an anaphylactic reaction. Emergency bag(s) containing Epinephrine and equipment for airway management will be readily available at each administration site.

Reporting Adverse Reactions. The National Childhood Vaccine Injury Act of 1986 mandated that healthcare providers who administer vaccines and licensed vaccine manufacturers report certain adverse health events following specific vaccinations. The Vaccine Adverse Event Reporting System (VAERS) is a national reporting system jointly administered by CDC and FDA. The Reportable Events Table (RET) reflects what is reportable by law (42USC 300aa-25) to the Vaccine Adverse Event Reporting System (VAERS) including conditions found in the manufacturers package insert. In addition, individuals are encouraged to report any clinically significant or unexpected event (even if the individual is not certain the vaccine caused the event) for any vaccine, whether or not it is listed on the RET. Manufacturers are also required by regulation (21CFR600.80) to report to the VAERS program all adverse events made known to

them for any vaccine. This table may be found at the following web site:

<https://secure.vaers.org/VaersHelp.html>

The Vaccine Adverse Event Report System (VAERS) will be used to report all reportable events following influenza vaccine administration. Events described in the manufacture's package insert as contraindications to additional doses of influenza vaccine are events that trigger the completion of the VAERS document. These events include but are not limited to anaphylaxis and anaphylactic shock, brachial neuritis, encephalopathy, significantly decreased level of consciousness, chronic encephalopathy, and or arthralgia. The interval from vaccination to the occurrence of the event is defined in the package insert.

Instructions on completing the form and or VAERS on-line help may be found at <https://secure.vaers.org/VaersHelp.html>. The VAERS form should be completed as soon as the occurrence is realized. These data will be used to increase understanding of adverse events following vaccination and will become part of the CDC Privacy Act System 09-20-0136, "Epidemiologic Studies and Surveillance of Disease Problems." Information identifying the person who received the vaccine or that person's legal representative will not be made available to the public, but may be available to the vaccine or legal representative. The completed document should be forwarded to the Immunization Branch of Mississippi State Department of Health for electronic transmission to CDC to <https://secure.vaers.org/VaersDataEntryIntro.htm>. The MSDH Immunization Branch will also enter the data into the MSDH Immunization VAERS Data Base.

J. Mass Fatality Management

Reference Functional Annex 4.0, Mass Fatality Plan

K. Preparedness in Agriculture and Food

This section is currently under revision.

L. Non-Public Health PI Annexes

These Annexes are developed in coordination with the Emergency Coordinating Officers from governmental agencies, non-governmental agencies, businesses, tribal and military and vetted through the SAC. This entire section is under development.

1. Preparedness in Schools and Institutes of Higher Learning

a. Policy/Process for School Closure and Communication Plans for this Decision

b. Education and Social Services in the Face of School Closures

2. Preparedness in Public Safety and Security

- a. Coordination of Law Enforcement

3. Employers and Workforce Policy

- a. Mitigating the Impact of an PI on Workers in the State
- b. Assisting Employers in the State
- c. Employment Policies during PI
- d. Human Resource Policies for State Employees

4. Sustaining Critical Infrastructure

- a. Sustaining/Supporting Critical Infrastructure Sectors and Key Assets
- b. Working with the Private Sector to Ensure Continuity of Operations for Critical Essential Services

Ensure that Critical Infrastructure Operations are as "Near Normal" as Possible for Social and Economic Well-Being

5. Communications

6. Compliance

State Plans Must Conform to All NRP / NIMS Requirements

7. International Issues

State Advisories Regarding Diplomatic Missions (parameters are undefined at this time)

8. Mental Health Preparedness and Response

9. Coordination with Tribal Nations, Military Installations and other Special Populations

VI. ADMINISTRATION AND LOGISTICS

Administrative and logistics functions and assignments are set forth in the Mississippi Comprehensive Emergency Management Plan (CEMP). The CEMP describes the State of Mississippi's approach to response and recovery activities related to emergencies and major disasters and establishes policies and procedures by which the State shall coordinate local, State, and Federal response to disasters that affect Mississippi. It also utilizes the Emergency Support Function (ESF) concept to marshal and apply State resources and describes the responsibilities of State agencies in executing effective response and recovery operations.

The CEMP Basic Plan establishes fundamental policies and assumptions for statewide emergency management, outlines the State's vulnerabilities to potential hazards, establishes a comprehensive emergency management concept of operations, and outlines Federal, State, and local relationships and responsibilities. The Basic Plan includes planning assumptions, roles and responsibilities, a concept of operations and incident management actions which incorporate NIMS principles. Thus, overarching administrative and logistics functions are thoroughly identified within the CEMP Basic Plan.

The second section of this CEMP contains guidance for Emergency Support Functions (ESFs). It identifies the specific activities required to support each numbered function and specifies the agencies and organizations that are responsible for performing those activities. Thus, the ESFs defined within the CEMP further identify and delineate administrative and logistics function. Detailed procedures to support each ESF have been developed by the primary ESF and support agencies in the form of Interagency Coordination Procedures (ICPs), Standard Operating Procedures (SOPs), and Standard Operating Guides (SOGs).

The third section of the CEMP contains the Support Annexes that describe the framework through which State, local, and tribal entities, volunteer and non-governmental organizations coordinate and execute the common functional processes and administrative requirements necessary for efficient and effective incident management.

The fourth and concluding section of the CEMP contains Incident Annexes, which deal with specific catastrophic and unique hazards. These annexes address special considerations and priorities generated by particular hazards affecting the State and the corresponding actions required to cope with them.

VII. PLAN DEVELOPMENT, MAINTENANCE AND EXECUTION

A. Plan Development

The Mississippi State Department of Health has assumed leadership in developing contemporary, pandemic-specific elements of the Plan. In 2005, MSDH senior management created the SAC consisting of key individuals from other state agencies (finance and administration, mental health, education, institutions of higher learning, public safety, corrections, MEMA, military, etc.) and from public/private collaborative efforts in business, commerce, and industry. On May 1, 2006, Mississippi's Pandemic Summit was hosted by Governor Haley Barbour and MSDH; HHS Deputy Secretary Alex Azar participated. Subsequently SAC was charged with the task to initiate sector-specific PI planning. On January 25, 2007, many members (or their designees) of SAC were reassembled to begin the actual work of plan formulation, work which continues today.

The process for developing the MS PI Plan is based on a review of Federal PI Guidance, both disseminated directly to States via the Public Health Preparedness and PI Cooperative Grant and planning tools and supplemental direction gleaned from electronic resources. The below list of resources is not intended to be exhaustive, but includes:

- Pandemic Influenza Plan, Department of Health and Human Services, November 2005
- National Strategy for Pandemic Influenza, Homeland Security Council, November 2005
- Implementation Plan for the National Strategy for Pandemic Influenza, Homeland Security Council, May 2006
- Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Non-pharmaceutical Interventions, Department of Health and Human Services, Centers for Disease Control and Prevention, February 2007
- Interim Public Health Guidance for the Use of Facemasks and Respirators in Non-Occupational Settings During an Influenza Pandemic, Department of Health and Human Services, Centers for Disease Control and Prevention, May 2007
- Pandemic Influenza Operational Plan, Department of Health and Human Services, July 2007
- FluAid 2.0 Software and Manual to Aid State and Local-level Public Health Officials Plan, Prepare, and Practice for the Next Influenza Pandemic, National Vaccine Program Office, National Center for Infectious Diseases, Centers for Disease Control and Prevention
(<http://www.pandemicflu.gov/plan/tools.html>)
- FluSurge 2.0 Software to Estimate the Impact of an Influenza Pandemic on Hospital Surge Capacity, Centers for Disease Control and Prevention
(<http://www.pandemicflu.gov/plan/tools.html>).

B. Plan Maintenance

The Plan will be reviewed on a biannual basis under the oversight of the SAC. The SAC will ensure that current emergency plans reflect any new Federal PI guidance and lessons learned from Mississippi

exercise response experiences. The Plan will be updated periodically as required to incorporate new Presidential or State directives or legislative changes.

MSDH, through the SAC, is responsible for coordinating updates and modifications, as well as changes to the Functional Annexes, appendices, and SOPs. All agencies will be responsible for the development and maintenance of their respective segments of the plan as set forth earlier in the section titled Organization and Assignment of Responsibilities.

C. Plan Execution

This Plan will be effective upon submission by the SAC and approval by the State Health Officer. The Plan will be executed upon order of the Governor or his authorized representative.

ACRONYM LIST

AAR	After Action Report
ASPR	Assistant Secretary for Preparedness and Response
AI	Avian Influenza
BSL-3	Bio-Safety Level 3
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare and Medicaid Services
CHC	Community Health Center
CBC	Complete Blood Count
CEMP	Comprehensive Emergency Management Plan
CONOPS	Concept of Operations
COOP	Continuity of Operations
HHS	Department of Health and Human Services
DHS	Department of Homeland Security
DHA	District Health Administrator
DHP	Director of Health Protection
DHP	Director of Health Protection
DOC	Director of the Office of Communications
EARS	Early Aberration Reporting System
EAS	Emergency Alert System
EMAC	Emergency Management Assistance Compact
EMS	Emergency Medical Services
ERV	Emergency Response Vehicle
ESAR-VHP	Emergency System for Advance Registration of Volunteer Health Professionals
ESF	Emergency Support Function
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEDDS	HPAI Early Detection Data System

HSCT	Hematopoietic Stem Cell Transplants
HICS	Hospital Incident Command System
HRSA	Health Resources and Services Administration
HSPD	Homeland Security Presidential Directive
IAP	Incident Action Plan
ICU	Intensive Care Unit
ICS	Incident Command System
ILI	Influenza-Like Illness
IT	Information Technology
INRP	Homeland Security's Initial National Response Plan
ICP	Interagency Coordination Procedure
JIC	Joint Information Center
JTTF	Joint Terrorism Task Force
LHD	Local Health Department
LME	Local Management Entities
LTC	Long Term Care
MEMA	Mississippi Emergency Management Agency
MOU	Memorandum of Understanding
MHRT	Mississippi Health Response Team
MDAC	Mississippi Department of Agriculture and Commerce
MHP	Mississippi Highway Patrol
MSWIN	Mississippi Wireless Integrated Network
MSDH CONOPS	Mississippi State Department of Health Concept of Operations Plan for Public Health and Medical Emergencies
MSDH EOC	Mississippi State Department of Health Emergency Operations Center
MSDH	Mississippi State Department of Health
NPIP	National Poultry Improvement Plan
NPG	National Preparedness Goal
NIMS	National Incident Management System
NGO	Non-Governmental Organizations
NRP	National Response Plan
OEPR	Office of Emergency Planning and Response
OGT	Office of Grants and Training

PPE	Personal Protective Equipment
SAC	Senior Advisory Committee
PI	Pandemic Influenza
POC	Point of Contact
POD	Point of Dispensing
PEP	Post-Exposure Prophylaxis
PHEP	Public Health Emergency Preparedness
PIO	Public Information Officer
RAC	Regional Advisory Committee
RCA	Radio Coverage Area
RSS	Receiving, Staging, and Storage
RET	Reportable Events Table
RT-PCR	Reverse Transcriptase-Polymerase Chain Reaction
SC	Supporting Cells
SEOC	State Emergency Operations Center
SHO	State Health Officer
SMAT	State Medical Assistance Team
SNS	Strategic National Stockpile
SOG	Standard Operating Guide
SOP	Standard Operating Procedure
SAA	State Administrative Agency
SHO	State Health Officer
SMARTT	State Medical Asset / Resource Tracking Tool
SMAC	Statewide Mutual Aid Compact
TCL	Target Capabilities List
OEPR	Office of Emergency Planning and Response (MSDH)
UC	Unified Command
UTL	Universal Task List
USDA	United States Department of Agriculture
VAERS	Vaccine Adverse Event Reporting System
VRDL	Veterinary Research and Diagnostic Laboratory
WHO	World Health Organization

ATTACHMENTS

Attachment A – Record of Changes

Attachment B – PI Plan Distribution List

Attachment C – Estimating the Potential Impact of PI on the State of Mississippi

Attachment D – MSDH Incident Command Structures

Attachment E – WHO Pandemic Phases and HHS USG Response Stages

Attachment F – Phased Action Matrix

Attachment G – MPHL PI Response Plan

Attachment H – MPHL Influenza Testing Algorithms

Attachment I – MPHL Influenza Specimen Collection Guidelines

Attachment J – Standard Operating Procedures for Managing Pre-Pandemic and Pandemic Strain Vaccine

Attachment K – Vaccine Forms

Attachment A – Record of Changes

[illegible]

Attachment B – PI Plan Distribution List

Primary Distribution List (FOUO Document)			
Copy Number	Individual's Name and Title/Organization's Name	Date of Transmittal	Date of Receipt

Secondary Distribution List (Public Document)			
Copy Number	Individual's Name and Title/Organization's Name	Date of Transmittal	Date of Receipt

Attachment C – Estimating the Potential Impact of PI on the State of Mississippi

Background and Purpose

FluAid 2.0, produced by the Centers for Disease Control and Prevention (CDC), provides estimates of the total numbers of deaths, hospitalizations, and outpatient visits *before* interventions are applied. FluSurge 2.0 (CDC) compares the number of persons hospitalized, the number of persons requiring intensive care unit (ICU) care, and the number of persons requiring ventilator support during a pandemic with existing hospital capacity. The illustrations of the potential impact of the next influenza pandemic contained in this report are intended to help Mississippi's public health officials and policy makers plan, prepare and practice for the next influenza pandemic.

Disclaimers

Much of the material within this report, including some verbiage, is provided with permission by the CDC's FluAid 2.0 and FluSurge 2.0 programs. The numbers contained in this report should be treated as illustrations of what *could* happen (with unknown probability of actual occurrence). The numbers in this report, therefore, are intended solely as a guide to help public health officials and policy makers plan and prepare. This report is considered to represent technical help to the Mississippi State Department of Health; it is not considered a publication of any form. The mention of any specific, commercially available product is merely to inform the reader of methods used to produce the results presented. Such mention of specific products does not constitute any endorsement.

Methodology

Mississippi state and county census data for the year 2005 were obtained by the Mississippi State Department of Health, Vital Statistics Bureau. Census data were stratified by age: less than 20 years, 20 – 64 years, and 65 years or greater. Statewide available hospital resources (non-ICU beds, ICU beds, and mechanical ventilators) were obtained from the Mississippi Hospital Association and the Mississippi State Department of Health, Bureau of Licensure and Certification.

Estimates of deaths, hospitalizations, and outpatient clinical visits for Mississippians were obtained using the FluAid 2.0 software program (available online from the Centers for Disease Control and Prevention, Atlanta, Georgia; <http://www.cdc.gov/flu/tools/fluaid/>). The following definitions are used with the FluAid 2.0 software:

- High Risk – Persons with a pre-existing medical condition (e.g., asthma, diabetes mellitus) that makes them more susceptible to developing medical complication due to influenza.
- Clinical Illness (used in gross attack rate) – A case of influenza that causes some measurable economic impact, such as one-half day of work lost, or a visit to a physician's office.
- Hospitalization – Those who are hospitalized due to influenza-related illness but who survive the illness.

Percentages used in estimates of deaths, hospitalizations, and outpatient visits are national estimates based on the CDC's Advisory Committee on Immunization Practices (ACIP) definition of groups of people considered to be at high risk for complications due to influenza. (CDC, 1999) (Tables C1 and C2). Gross attack rate was set at 25%. Estimates for the 1968-type scenario were primarily generated using rates of influenza-related illness measured during the 1960s and 1970s. Estimates for a 1918-type scenario were generated using rates of influenza-related morbidity and mortality from the influenza pandemic of 1918. (Tables C3 – C6).

Estimates for number of hospitalizations within FluSurge 2.0 are based on death rates and hospitalizations rates provided by FluAid 2.0. Other data are calculated using the assumptions listed in Table C6. Additionally, an influenza pandemic with an 8-week duration and a 25% gross clinical attack rate were employed.

Results

Mean, or most-likely, estimated numbers of deaths, hospitalizations, and outpatient visits are presented in Tables C8 and C9. As expected, persons within the high risk group for complications of influenza infection carry the burden of numbers of deaths and hospitalizations (data not shown).

Discussion

Given the inherent uncertainties associated with trying to estimate the potential impact of the next influenza pandemic, it is recommended to avoid the temptation to use the software to obtain a single set of estimates. Yet, preliminary single set estimates can provide planners with a sense of the overwhelming resources required to respond to an influenza pandemic event. With this in mind, some general concepts can aid decisions surrounding limited resources. First, hospitals must have plans in place in the event that numbers of persons requiring ICU care and mechanical ventilation exceeds resources. Second, the burden on hospitals will be tremendous; yet, one cannot overlook the overall healthcare strain placed by potentially hundreds of thousand of persons seeking outpatient care. Lack of access to outpatient care will only drive persons to seek hospital care, intensifying the health burden at those facilities. And finally, it is predicted that persons with high risk for complications of influenza infection will carry the burden of numbers of deaths and hospitalizations; public information campaigns for rigorous adherence to non-pharmaceutical interventions *directly* targeted for those populations should be put in place.

The FluAid 2.0 software only provides estimates of the total impact; e.g., “after the event” estimates. The model is not an epidemiological model, and cannot describe when or how persons will become ill. This lack is due to the difficulty of mathematically modeling the epidemiology of influenza (see Cliff and Haggett, 1993 for further discussion).

Individuals categorized as “high risk” are those who have a pre-existing medical condition (e.g., asthma, diabetes mellitus) that makes them more susceptible to developing medical complication due to influenza. High risk does not mean that those persons are more likely to contract a case of influenza. It means that if they do have a case of influenza, they are more likely to have an adverse health outcome than those considered “non-high risk.” Age by itself was not used as a high risk condition. The term “hospitalizations”

as used in FluAid refers to final health outcome; that is, those who are admitted to the hospital due to influenza-related illness but who survive. It is reasonable to assume that some portion of those whose ultimate influenza-related health outcome will be death will die in hospital. Those death-in-hospital cases are in addition to the FluAid 2.0 calculated hospitalizations.

The potential severity of the next influenza pandemic, whatever scenario is considered, can be judged by comparing the estimates presented in the tables with the impact of influenza during a “typical influenza season.” In the United States during a non-PI season, influenza will cause an average of 36,000 excess deaths (Thompson WW, et al. JAMA 2003;289:179-186.). Similarly, from 1990 through 1995, the annual total number of influenza-related excess hospitalizations in the US ranged from 114,000 to 200,000 (Simonsen L, et al. Infect Dis 2000; 181:831-837). The number of influenza-related outpatient visits during a non-PI season is more difficult to measure. The CDC’s annual surveillance of physician visits from influenza-like illnesses records that approximately 2% - 3% of all physician visits during the winter months are for influenza-like illnesses.

Constructing a worst-case scenario using data from the 1918 influenza pandemic means that death-rate data used have a unique pattern that has not been since seen. Specifically, the death rates among men aged 20-44 years of age were about equal to those recorded among children less than 5 years old and adults aged more than 65 years. Typically, death rates among healthy adults aged 20-44 years of age are less than a quarter of the death rates among either the very young or those 65 years of age or older.

Conclusion

Much of what will define the impact of the next influenza pandemic is unknown and the existing data often relate to non-pandemic situations. Even those data obtained from pandemics may not be reliable predictors of the impact of the next pandemic. Therefore, it is encouraged that the reader be realistic when interpreting the results obtained from this software. Although decision makers, the media, and the public may expect a single estimate of impact, a degree of uncertainty must always be voiced. Preliminary estimates, though, can empower planners with some general concepts to aid decisions required to respond to an influenza pandemic event.

Table C1 – Persons Considered High Risk for Complications due to Influenza (ACIP)

- Persons aged 65 or older
- Residents of nursing homes or other chronic care facilities that house person with chronic medical conditions
- Adults and children who have chronic disorders of the pulmonary or cardiovascular systems, including those with asthma
- Adults and children who require regular medical follow-up or hospitalization because of chronic metabolic disease (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications)
- Children and teenagers (aged 6 months to 18 years) who are receiving long-term aspirin therapy and therefore might be at risk for Reye syndrome after influenza
- Women who will be in the second or third trimester of pregnancy during the influenza season

Table C2 – FluAid 2.0 High Risk Percentages by Age Group	
Age (years)	Percentage (%)
0-18	6.4
19-64	14.4
65 or greater	40

Table C3 – FluAid 2.0 Death Rates per 1,000 by Age and Risk Group						
Risk/Age	1968-type scenario			1918-type scenario		
	Minimum	Mean (Most Likely)	Maximum	Minimum	Mean (Most Likely)	Maximum
High Risk						
0-18 years	0.126	0.220	7.65	1.036	1.808	62.883
19-64 years	0.100	2.910	5.72	0.822	23.920	47.018
64 + years	2.760	4.195	5.63	22.687	34.483	46.279
Non-High Risk						
0-18 years	0.014	0.024	0.125	0.115	0.197	1.028
19-64 years	0.025	0.037	0.090	0.206	0.304	0.740
65 + years	0.280	0.420	0.540	2.302	3.452	4.439

Table C4 – FluAid 2.0 Hospitalization Rates per 1,000 by Age and Risk Group						
Risk/Age	1968-type scenario			1918-type scenario		
	Minimum	Mean (Most Likely)	Maximum	Minimum	Mean (Most Likely)	Maximum
High Risk						
0-18 years	2.10	2.90	9.00	17.262	23.838	73.980
19-64 years	0.83	2.99	5.14	6.823	24.578	42.251
64 + years	4.00	8.50	13.00	32.880	69.870	106.86
Non-High Risk						
0-18 years	0.20	0.50	2.90	1.644	4.110	23.838
19-64 years	0.18	1.465	2.75	1.480	12.042	22.605
65 + years	1.5	2.25	3.00	12.330	18.495	24.66

Table C5 – FluAid 2.0 Outpatient Visits per 1,000 by Age and Risk Group (1968 scenario*)			
Risk/Age	Minimum	Mean (Most Likely)	Maximum
High Risk			
0-18 years	289	346	403
19-64 years	70	109.5	149
65 + years	79	104.5	130
Non-High Risk			
0-18 years	165	197.5	230
19-64 years	40	62.5	85
65 + years	45	59.5	74

Table C6 – Methodology for Calculation Outpatient Visits for a 1918-Type Scenario	
1.	Total number of symptomatic cases, by age group were calculated: total population in age group x gross clinical attack rate of 25%
2.	Residual total number of outpatients plus those ill, but who seek no medical care was calculated: total number of outpatients + ill, no medical care = total symptomatic cases – deaths – hospitalizations.
3.	It is assumed that 50% of total number of outpatients plus those ill, but who seek no medical care will contribute to outpatient visits.

Table C7 – Underlying Assumptions within FluSurge 2.0	
Parameter	Measure
Average length of non-ICU hospital stay for influenza-related illness	5 days
Average length of ICU stay for influenza-related illness	10 days
Average proportion of admitted patients needing ICU care	15%
Average proportion of influenza deaths assumed to be hospitalized	70%
Daily percentage increase in cases arriving compared to previous day	3%

Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario)			
County	Deaths	Hospitalizations	Outpatient Visits
Adams	23	97	4302
Alcorn	26	108	4715
Amite	10	42	1794
Attala	15	59	2618
Benton	5	24	1053
Bolivar	23	106	5203
Calhoun	11	46	1958

Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario)

County	Deaths	Hospitalizations	Outpatient Visits
Carroll	7	32	1385
Chickasaw	13	55	2580
Choctaw	7	29	1282
Claiborne	6	31	1549
Clarke	12	53	2367
Clay	14	62	2849
Coahoma	17	76	3930
Copiah	19	83	3918
Covington	14	59	2723
Desoto	80	372	18387
Forrest	49	215	10060
Franklin	7	25	1125
George	13	59	2858
Greene	8	38	1759
Grenada	16	68	3064
Hancock	34	143	6241
Harrison	125	551	26003
Hinds	152	683	33540
Holmes	13	55	2856
Humphreys	6	29	1424
Issaquena	1	6	255
Itawamba	16	70	3127
Jackson	87	385	18229
Jasper	12	53	2437
Jefferson	6	26	1267
Jeff Davis	9	39	1765
Jones	45	196	8866
Kemper	7	30	1373
Lafayette	26	117	5451
Lamar	25	122	5986
Lauderdale	54	225	10370
Lawrence	9	39	1809
Leake	14	63	3024
Lee	51	224	10575
Leflore	23	100	4911
Lincoln	23	100	4540
Lowndes	38	168	8050
Madison	51	232	11320
Marion	18	74	3387

Table C8 – FluAid 2.0 Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi Counties (1968-like scenario)

County	Deaths	Hospitalizations	Outpatient Visits
Marshall	22	101	4783
Monroe	26	114	5047
Montgomery	9	37	1585
Neshoba	20	84	4021
Newton	15	66	3006
Noxubee	8	34	1644
Oktibbeha	25	117	5507
Panola	22	99	4751
Pearl River	35	154	7054
Perry	8	35	1632
Pike	26	114	5300
Pontotoc	19	82	3779
Prentiss	18	76	3427
Quitman	6	26	1283
Rankin	82	371	17634
Scott	19	81	3862
Sharkey	4	16	805
Simpson	19	80	3752
Smith	11	47	2153
Stone	10	42	1995
Sunflower	18	88	4343
Tallahatchie	9	41	1909
Tate	17	75	3568
Tippah	15	64	2837
Tishomingo	15	61	2560
Tunica	6	27	1393
Union	18	78	3586
Walthall	11	46	2076
Warren	31	138	6605
Washington	36	160	7992
Wayne	13	60	2858
Webster	8	31	1351
Wilkinson	7	30	1375
Winston	15	61	2662
Yalobusha	10	41	1797
Yazoo	18	80	3786
Totals	1891	8326	392003
Statewide Estimates	1902	8323	392010

**Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi,
1918-like scenario**

County	Deaths	Hospitalizations	Outpatient Visits
Adams	195	801	3514
Alcorn	213	890	3861
Amite	84	343	1465
Attala	120	493	2168
Benton	47	194	860
Bolivar	192	862	4302
Calhoun	92	375	1597
Carroll	63	263	1135
Chickasaw	105	452	2119
Choctaw	58	240	1047
Claiborne	57	256	1278
Clarke	106	438	936
Clay	117	505	2341
Coahoma	143	630	3238
Copiah	158	684	3233
Covington	113	483	2237
Desoto	659	3066	15263
Forrest	397	1763	8307
Franklin	50	211	921
George	107	481	2363
Greene	69	311	1458
Grenada	132	557	2513
Hancock	279	1168	5115
Harrison	1031	4530	21447
Hinds	1248	5621	27734
Holmes	105	460	2355
Humphreys	53	233	1173
Issaquena	10	46	211
Itawamba	133	568	2569
Jackson	710	3160	15058
Jasper	104	439	1999
Jefferson	46	213	1050
Jeff Davis	75	318	1449
Jones	378	1605	7278
Kemper	59	250	1126
Lafayette	212	966	4517
Lamar	216	1002	4968

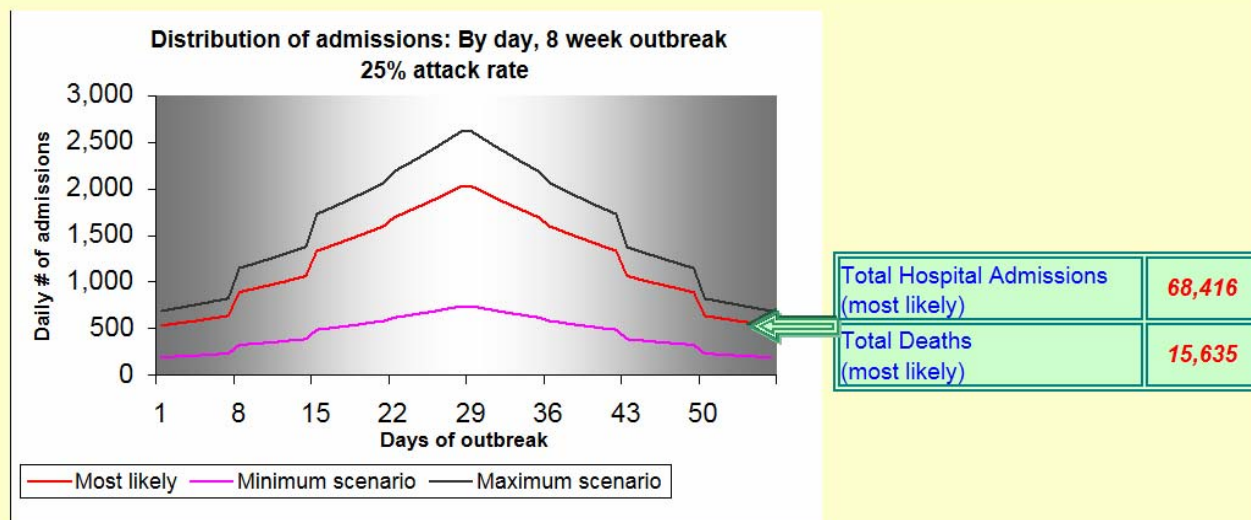
Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi, 1918-like scenario

County	Deaths	Hospitalizations	Outpatient Visits
Lauderdale	439	1853	5984
Lawrence	77	326	1487
Leake	123	525	2483
Lee	418	1837	8722
Leflore	185	818	4052
Lincoln	193	824	3730
Lowndes	315	1381	6690
Madison	414	1898	9380
Marion	144	607	2631
Marshall	186	829	3950
Monroe	222	932	4122
Montgomery	74	300	1292
Neshoba	163	699	3307
Newton	131	544	2458
Noxubee	65	280	1352
Oktibbeha	207	959	4573
Panola	184	812	3919
Pearl River	291	1259	5808
Perry	65	284	1345
Pike	225	942	4400
Pontotoc	154	671	3113
Prentiss	150	630	2809
Quitman	50	218	1055
Rankin	668	3057	14618
Scott	154	671	3180
Sharkey	30	134	664
Simpson	152	658	3088
Smith	91	388	1768
Stone	78	343	1648
Sunflower	153	713	3605
Tallahatchie	77	331	1571
Tate	139	611	2942
Tippah	123	521	2330
Tishomingo	124	503	2087
Tunica	49	223	1155
Union	151	648	2949
Walthall	90	375	1700
Warren	255	1127	5450

**Table C9 – Estimates of Deaths, Hospitalizations and Outpatient Visits in Mississippi,
1918-like scenario**

County	Deaths	Hospitalizations	Outpatient Visits
Washington	298	1320	6594
Wayne	114	499	2355
Webster	63	256	1102
Wilkinson	58	248	1131
Winston	120	496	2176
Yalobusha	80	333	1471
Yazoo	148	653	3124
Totals	15626	68413	319575
Statewide Estimates	15635	68416	323110

Table C10 – FluSurge 2.0 Comparison of Number of Persons Hospitalized, Requiring Intensive Care Unit (ICU) Care and Ventilator Support During a Pandemic with Existing Hospital Capacity



Pandemic Influenza Impact / Weeks		1	2	3	4	5	6	7	8	9	10
Hospital Admission	Weekly admissions	4,105	6,842	10,262	12,999	12,999	10,262	6,842	4,105		
	Peak admissions/day				2,026	2,026					
Hospital Capacity	# of influenza patients in hospital	3,017	5,029	7,544	9,555	9,894	8,697	6,669	4,375		
	% of hospital capacity needed	29%	48%	73%	92%	95%	84%	64%	42%		
ICU Capacity	# of influenza patients in ICU	616	1,306	2,005	2,649	2,867	2,789	2,216	1,530		
	% of ICU capacity needed	71%	151%	232%	306%	331%	322%	256%	177%		
Ventilator Capacity	# of influenza patients on ventilators	308	653	1,003	1,324	1,433	1,394	1,108	765		
	% usage of ventilator	45%	96%	148%	195%	211%	206%	163%	113%		
Deaths	# of deaths from influenza			938	1,564	2,345	2,971	2,971	2,345	1,564	938
	# of influenza deaths in hospital			657	1,094	1,642	2,079	2,079	1,642	1,094	657

Notes: 1. All results showed in this table are based on most likely scenario.

2. Number of influenza patients in hospital, in ICU, and number of influenza patients on ventilators are based on maximum daily number in a relevant week.

3. Hospital capacity used, ICU capacity used, and % usage of ventilator are calculated as a percentage of total capacity available (see manual for details).

4. The maximum number of influenza patients in the hospital each week is lower than the number of weekly admissions because we assume a 5-day stay in general wards (see manual for details).

Attachment D – MSDH Incident Command Structures

Figure D1 – Basic ICS Structure

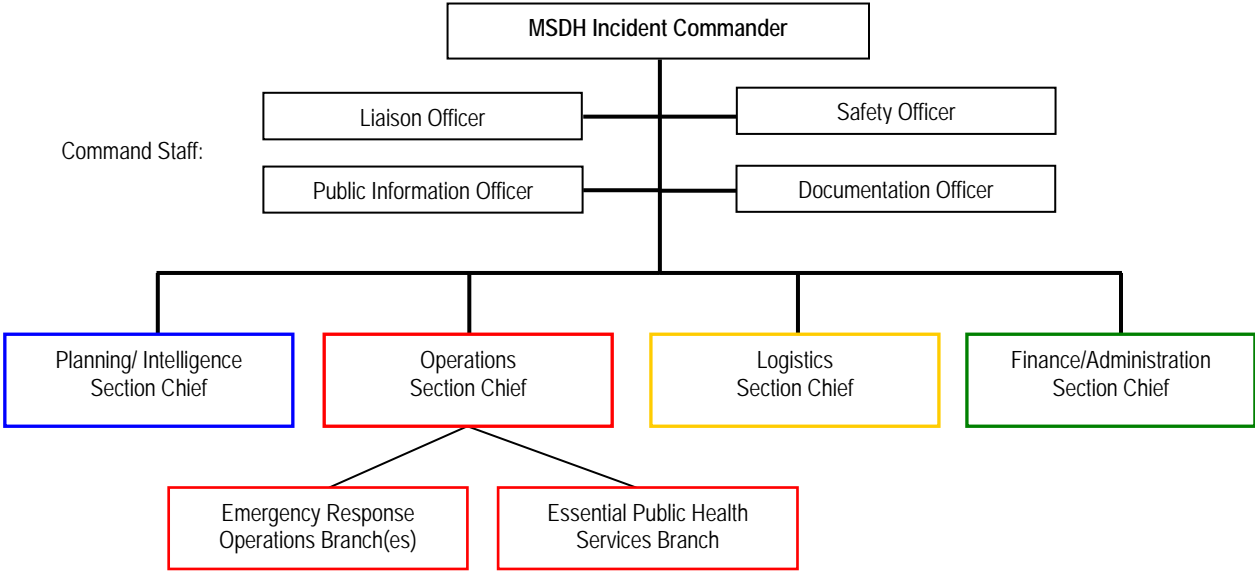


Figure D2 - Planning/Intelligence Section

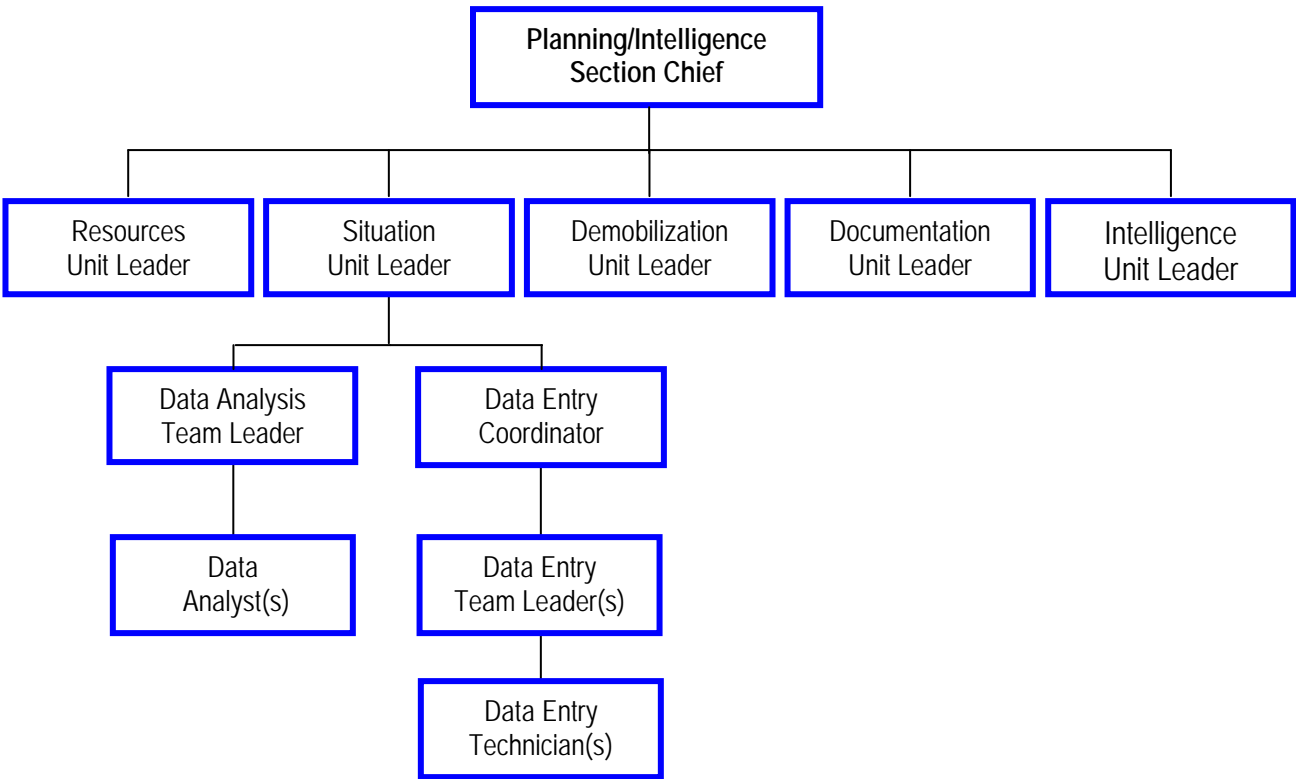


Figure D3 - Functional Roles in the Operations Section

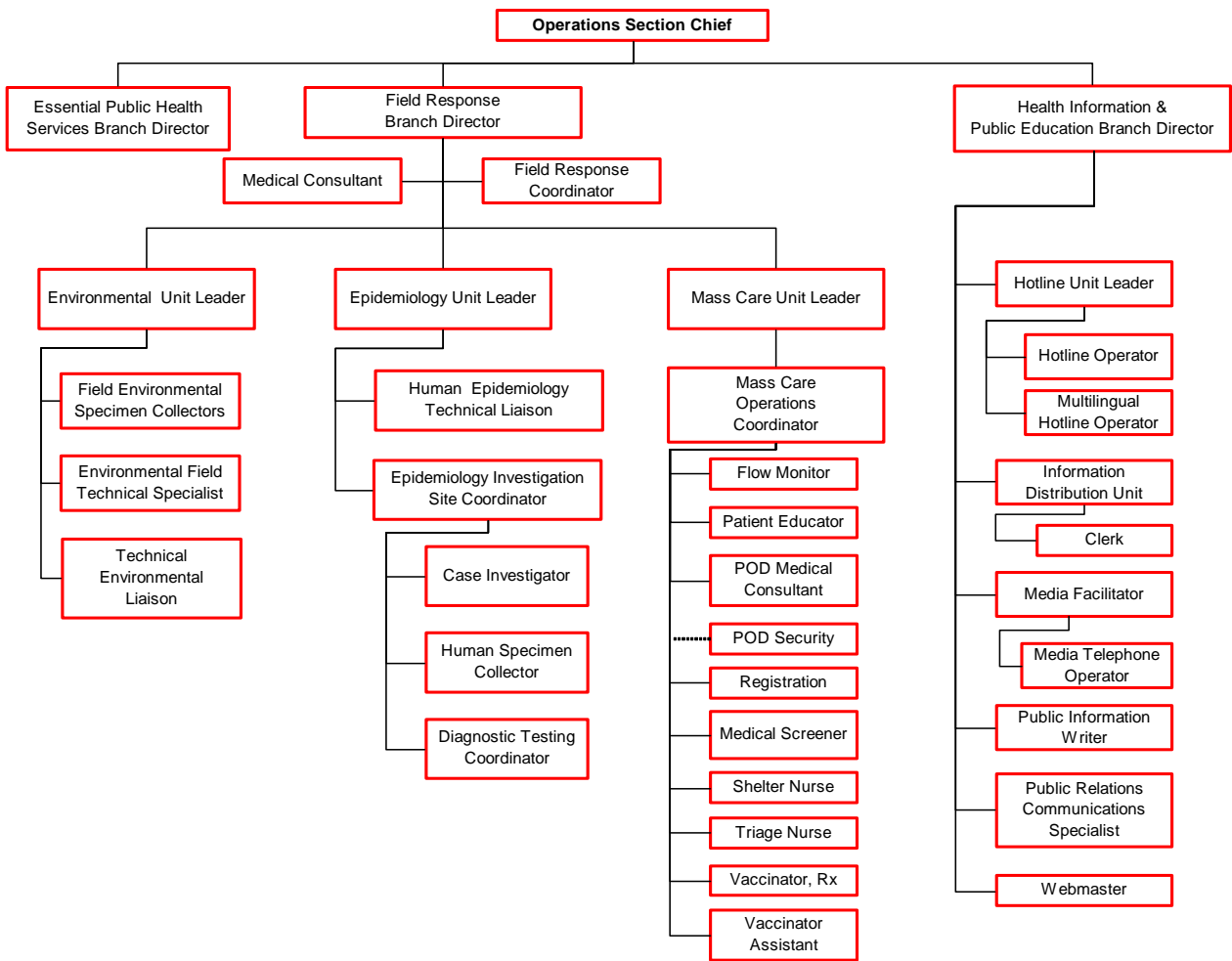


Figure D4 – Logistics Section

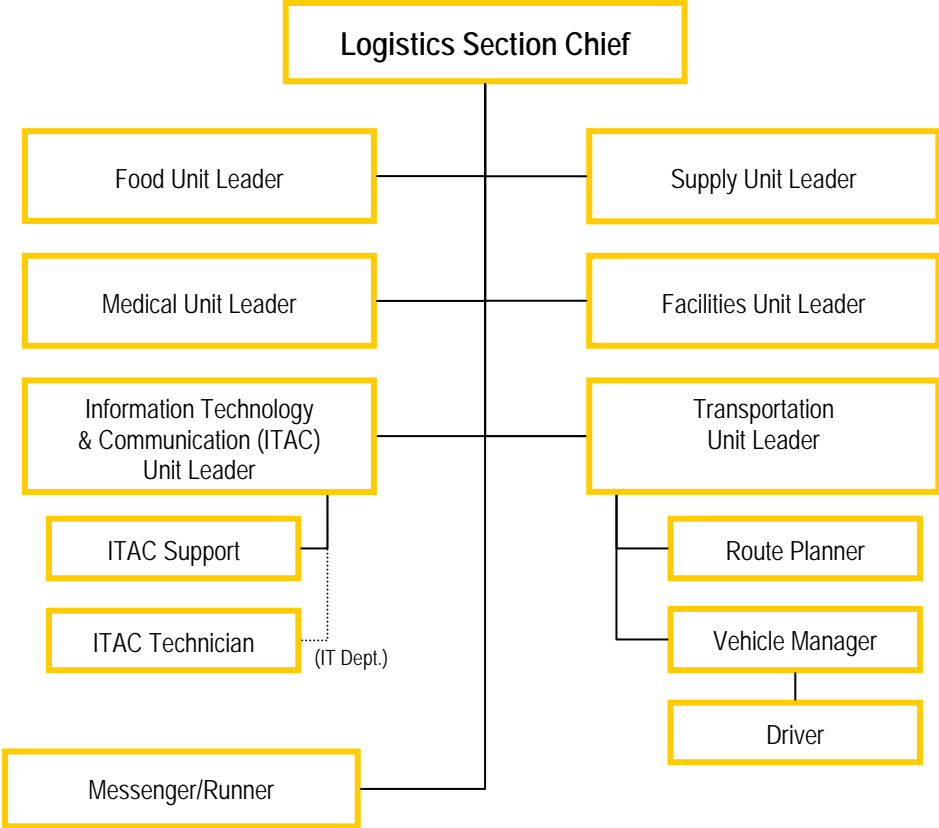
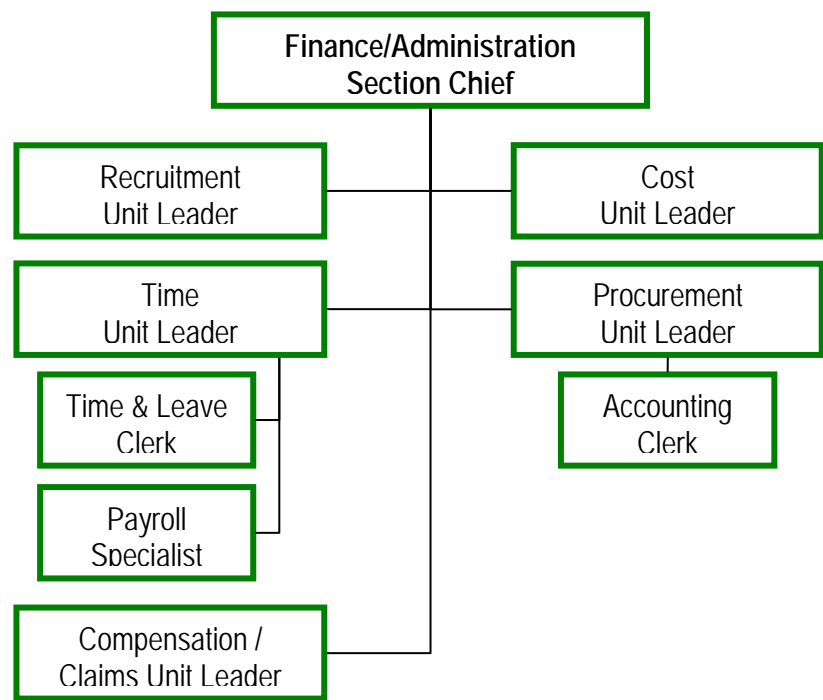


Figure D5 – Finance/Administration Section



Attachment E – WHO Pandemic Phases and HHS USG Response Stages

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

Attachment F – Phased Action Matrix

<p>Interpandemic Period</p> <p>WHO Phases 1 and 2: Influenza subtype in animals that may pose risk of human disease</p> <p>HHS Stage 0: New domestic animal outbreak in at-risk country</p>	Public Health Command and Control	Epidemiology and Lab Surveillance	Vaccine Preparedness and Response	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	Define intra-agency roles in pandemic influenza planning and response	Continue virologic and sentinel provider surveillance	Increase vaccine acceptability through public education targeted at familiarizing people with the safety profile and benefits of vaccination	Antivirals will not be distributed or administered for pandemic purposes during this period	Identify a Public Information Team to develop key information materials and review, revise, adapt, and distribute CDC materials as needed	Identify and engage public health, state and local governmental agencies, nongovernmental agencies, Mississippi tribes, faith-based communities, and other community stakeholders in non-pharmaceutical interventions preparedness planning and containment exercises
	Clarify contacts in and establish liaisons between MSDH and partner agencies	Establish deadlines for implementation and production of electronic syndromic surveillance	Enhance levels of seasonal influenza vaccination and pneumococcal polysaccharide vaccination	Review national recommendations for priority groups and developing state-specific modifications or refinements in priority groups	Identify and train spokespersons (and backups) to work with the media and provide information to the public	Spearhead planning activities with its partners to address potential cascading effects as unintended consequence of the use of non-pharmaceutical interventions
	Establish and/or clarify roles and responsibilities of MSDH and partner agencies during pandemic influenza planning and response	Develop protocols for monitoring influenza related deaths and hospitalizations	Develop strategies for vaccinating hard-to-reach populations	Review, exercise, and modify medical countermeasures distribution plans on a periodic basis and as needed.	Identify the most effective communications channels for reaching different communities	Develop policy guidance and/or procedures
	Train MSDH personnel in ICS and NIMS	Develop augmentation and surge capacity to rapidly test specimens for influenza and agents causative of community-acquired pneumonia	Develop a system to report and investigate adverse events following immunization		Develop a plan to educate public health officials, elected and appointed officials, and the media	Community and workplace-specific use of personal protective equipment
	Conduct exercises to prepare MSDH and partner agencies and to identify and address any deficiencies	Coordinate surveillance and reporting of animal influenza illness between MSDH and MS Department of Agriculture			Develop a plan for coordination of messages between state and local public health officials, and all involved partners	Medical evacuation, care, maintenance, and monitoring of persons, self- or professionally designated to isolation or quarantine
	Review and revise pandemic influenza plan annually				Develop a plan to educate stakeholders throughout the community	Safe home management of ill persons, with inclusion of information for persons who live alone and may be unable to care for themselves if ill
						Investigate resources for provision of medical care, mental care, food, and services to persons in isolation and quarantine as well as other affected persons

Pandemic Alert Period WHO Phase 3: Novel influenza virus identified but virus not well adapted to humans HHS Stage 0: New domestic animal outbreak in at-risk country	Command and Control	Surveillance	Vaccine Distribution and Use	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	MSDH Legal Office to appraise legal issues that can affect planning, operations, healthcare staffing, and patient care	MS Department of Agriculture with the State Veterinarian's Office will advise MSDH of outbreaks of animal illness that can affect humans	Develop plan for distribution of pre-pandemic strain vaccine and pandemic strain vaccine	Review national recommendations for priority groups for antivirals and develop state-specific modifications or refinements for target groups.	Create, review, and refine educational materials regarding the need for target groups for antivirals and the rationale for the groups currently recommended.	Spearhead planning activities with the education sector
		Develop plan for surveillance at ports, airports, and border jurisdictions	Coordinate the vaccine distribution plan with neighboring states and Mississippi tribes	Develop specific definitions for target groups for antivirals, identifying occupational categories and sub-categories, as needed, within each broad target and estimating the size of relevant target groups.	Create, review, and refine educational materials regarding the need for target groups for vaccine and the rationale for the groups currently recommended.	Spearhead planning activities with the workplace and business sectors
		Develop policies and procedures for travel risks	Implement a call-back system or immunization registry	Develop plan for distribution of antivirals, facemasks and respirators, and ventilators	Create, review, and refine educational materials for use of facemasks	
			Develop a system to report and investigate adverse events following immunization with a pandemic influenza vaccine.	Develop a system to report and investigate adverse events following administration of antiviral medications.	Develop a plan to activate the hot line and Web site to respond to pandemic inquiries	

<p>Pandemic Alert Period</p> <p>WHO Phase 3: Novel influenza virus identified but virus not well adapted to humans</p> <p>HHS Stage 1: Suspected human outbreak overseas</p>	Command and Control	Surveillance	Vaccine Distribution and Use	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	Notification of a credible threat, a potential emerging emergency or actual event of significance	Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected	Review the major elements of the plan for mass vaccination with partners and stakeholders	Review the major elements of the plan for distribution of medical countermeasures.	Review CDC materials and adapt, revise, and distribute as needed.	Meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures
	DHP to provide situational update to Core Notification Response Staff	Prepared to implement screening and/or travel restrictions from affected area	Update plan for mass vaccination to account for federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability	Modify plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability.	Provide the most up-to-date information to public, medical community, and stakeholders	Advocate/encourage infection control practices such as good hand hygiene and cough etiquette
	DHP to provide status updates of activities to the SHO		Provide medical community and other stakeholders with most up-to-date information, including expected availability of vaccine	Provide the most up-to-date information to the medical community and other stakeholders regarding antivirals, facemasks, respirators and ventilators.		Coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes
	Novel virus alert to be issued to public health and medical entities via HAN		Conduct training, if necessary, for those involved in distributing and administering vaccine	Conduct training for public health staff and partners involved in distributing and administering antivirals, and ensure redundancy of knowledge and responsibility for pandemic activities.		

<p>Pandemic Alert Period</p> <p>WHO Phases 4 or 5: Small cluster(s) of human-to-human transmission but virus not well adapted to humans OR virus is becoming increasingly better adapted to humans</p> <p>HHS Stage 2: Confirmed human outbreak overseas</p>	Command and Control	Surveillance	Vaccine Distribution and Use	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	Notification of a credible threat, a potential emerging emergency or actual event of significance	Update public health and healthcare providers of the region(s) where the novel influenza virus has been detected	Review major elements of plan for mass vaccination with partners and stakeholders	Review the major elements of the plan for distribution of medical countermeasures	Review CDC materials and adapt, revise, and distribute as needed	Review all CDC guidance on the Pandemic Severity Index
	Possible transition to a coordinated agency emergency response operation by the MSDH EOC (Level III or IV)	Distribute updated recommendations to healthcare providers	Update plan for mass vaccination to account for federal interim recommendations on priority groups, projected vaccine supplies, and timelines for availability	Update plan for distribution of antivirals to account for possible updated federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability	Implement risk communications plan.	Review any updated Federal interim recommendations on non-pharmaceutical interventions and community mitigation measures
	The MSDH will name an Incident Commander as well as a liaison and serve as the focal point for coordinating MSDH response activities with MEMA.	Request enhanced influenza surveillance activities (public health and private health care), including veterinary surveillance	Provide medical community and other stakeholders with most up-to-date information, including expected availability of vaccine	Review current CDC prophylaxis and treatment guidelines for antivirals and determine options for antiviral use	If JIC is established, ensure proper representation of ESF 8 is available	Meet with partners and stakeholders to review major elements of non-pharmaceutical interventions and community mitigation measures
	Novel virus alert to be issued to public health and medical entities via HAN	Request immediate notification from healthcare providers upon suspicion of a human case of infection with an avian or animal strain of influenza or with any other novel human influenza strain	Conduct training, if necessary, for public health staff and partners involved in distributing and administering vaccines	Provide the most up-to-date information to the medical community and other stakeholders regarding antivirals, facemasks, respirators and ventilators.	Coordinate public information with neighboring states and Mississippi Tribes	Coordinate with businesses engaged in transportation or travel, bordering jurisdictions and Mississippi tribes regarding non-pharmaceutical interventions
		Report to CDC any influenza cases that test positive for a novel influenza subtype or meet the enhanced surveillance case definition	The Operations Section Chief will notify POD Strike Team Leads to place POD Teams on Alert.	The Operations Section Chief will place the RSS Team on Alert or Stand-by status, as the situation dictates.		For the most severe pandemics (Categories 4 and 5: see Attachment E), the MSDH CC will notify critical systems and personnel of impending activation

<p>Pandemic Period</p> <p>WHO Phase 6: Increased and sustained human transmission in the general public</p> <p>HHS Stage 3: Widespread human outbreaks in multiple locations overseas</p>	Command and Control	Surveillance	Vaccine Distribution and Use	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	MSDH EOC activities to a Level III response	Continue enhanced surveillance activities	If pre-pandemic vaccine is available in large quantities, begin call-down to ensure that human resources and logistics are in place to begin vaccination	Modify the plan for distribution of antivirals to account for possible updated Federal interim recommendations on priority groups, projected antiviral supplies, and timelines for availability.	Review CDC materials and adapt, revise, and distribute as needed	utilize the key steps in escalation of response as outlined by the Federal government, incorporating information from the Pandemic Severity Index and U.S. Government Stage
	Review all applicable plans	Establish regular communication with the MHA and sentinel physicians to receive reports and discuss status of isolation capacity and overall bed capacity of hospitals and other healthcare facilities	Review HHS guidance for pre-pandemic vaccine and make recommendations and advise Governor as appropriate	If large quantities of antivirals are available, begin call-down to ensure that human resources and logistics are in place to begin distribution of antivirals	Implement risk communications plan.	notify stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers
	Inventory antiviral supplies and other essential medications throughout the state	Implement expanded laboratory surveillance	Prepare to vaccinate using pre-pandemic vaccine	Notify the medical community about the status of the plan and the expected availability of antivirals and medical countermeasures.	If JIC is established, ensure proper representation of ESF 8 is available	Critical systems and personnel will be placed on Alert Status with notification of impending activation of non-pharmaceutical interventions and community mitigation strategies
	Convene with the Office of the Governor		Request MHRTs and District Health Officers to arrange for operations of PODs for pre-pandemic vaccine administration	Provide individual providers and other stakeholders with most up-to-date information	JIC to disseminate information to public, partners, and the media on an ongoing basis according to risk communication plan.	
	Notify key officials and emergency management of need for additional resources, if necessary		Place POD Operations Managers on Alert	Depending on availability of pre-pandemic strain vaccine, antivirals and medical countermeasures, RSS Team will be placed on Stand-by or Active Status	JIC to monitor media coverage and address misinformation	
	MSDH to coordinate with bordering jurisdictions and Mississippi tribes.		Depending on availability of pre-pandemic strain vaccine, POD Teams will be placed on Stand-by or Active Status.		Coordinate public information with neighboring states and MS Tribes	

Pandemic Period WHO Phase 6: Increased and sustained human transmission in the general public HHS Stage 4 or 5: First human case in North America OR Spread throughout United States	Command and Control	Surveillance	Vaccine Distribution and Use	Medical Countermeasures	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	Upgrade MSDH EOC to a Level II or Level I response	Evaluate surveillance data for trends and public health impact	Update standing orders for pandemic influenza vaccine administration based on any new recommendation from the Federal government	Update Standing Orders for administration of antivirals for pandemic influenza based on any new recommendation from the Federal government, as needed.	Request operations of JIC, if not already established	Update stakeholders, neighboring states, and Mississippi Tribes of Pandemic Severity Index and review non-pharmaceutical interventions and community mitigation strategies, including triggers
	Review and fully activate all applicable plans	Monitor health trends in persons receiving pre-pandemic strain vaccine	Obtain Vaccine Information Statement from the CDC	Confer with the CDC on the number of antiviral regimens Mississippi will receive and date of receipt	JIC to disseminate information to public, partners, and the media on an ongoing basis according to risk communication plan.	Depending on Pandemic Severity Index, critical systems and personnel will be placed on Standby or Active Status for implementing non-pharmaceutical interventions and community mitigation strategies
	Establish additional support cells for the purpose of coordinating activities WHO 6/ HHS 4 activity	Monitor Community impacts (e.g., absenteeism in business and school sectors)	Confer with the CDC on the number of pandemic influenza vaccine doses Mississippi will receive and date of receipt	Fully activate the plan for distribution of antivirals	JIC to monitor media coverage and address misinformation	
	MSDH EOC will coordinate response with neighboring states and Mississippi Tribes	Provide mortality data as requested by the CDC	Fully activate the plan for vaccination	Activate RSS for distribution of medical countermeasures and vaccine	The JIC will continue to disseminate credible information as it becomes available to the public and all partners	
		Consider community containment options recommended and advise the Governor	Activate PODs for distribution of pre-pandemic strain and pandemic strain vaccine depending on availability of product	Monitor of drug use, drug-related adverse events, and drug resistance.	Coordinate public information with neighboring states and MS Tribes	
		Activate plans for laboratory surge capacity				
		Provide clinical laboratory guidance for local healthcare providers				
		Submit specimens to the CDC				

HHS Stage 6: Recovery and preparation for subsequent waves	Command and Control	Surveillance	Vaccine Distribution and Use	Antiviral Drug Distribution and Use	Public Information	Community Mitigation / Non-pharmaceutical Interventions
	Convene with appropriate stakeholders to assess criteria for potential cessation of enhanced public health support and generate a demobilization plan to describe staged withdrawal of enhanced public health support	Scale back surveillance operations	Prepare for a second wave	Prepare for a second wave	Measure public awareness and communications strategy effectiveness	Evaluate overall success of non-pharmaceutical interventions and community mitigation strategies and submit these data for an After Action Report (AAR) and in preparation of subsequent waves.
	Submit an AAR and revise the plan as appropriate	Evaluate surveillance activities	Inventory pandemic vaccine, pharmaceuticals, and supplies	Inventory antivirals and medical countermeasure supplies	Continue public education through media and community outreach activities	
		Provide a retrospective characterization of the pandemic	Evaluate vaccination protocols and procedures	Evaluate overall success of antiviral and medical countermeasures administration and response activities and submit this data for an AAR	Review and revise Interim Risk Communications plan from lessons learned and AARs.	
		Describe effectiveness of recommended prevention and control measures	Document personnel available to work in second wave vaccination clinics			
			Evaluate overall success of vaccination effort and response activities and submit this data for an AAR			

Attachment G – MS PHL PI Response Plan



MISSISSIPPI DEPARTMENT OF HEALTH

Mississippi Public Health Laboratory Pandemic Influenza Response Plan June 26, 2006

The Mississippi Public Health Laboratory (MPHL) actively participates in a statewide influenza surveillance system in conjunction with the Mississippi State Department of Health (MSDH) Office of the State Epidemiologist, all county health departments, the Centers for Disease Control and Prevention (CDC) in Atlanta, GA, and the World Health Organization (WHO). Currently, Mississippi has 37 influenza surveillance sites dispersed throughout the state. These sites consist of various Hospital Emergency Departments (EDs), state university campus clinics, and Health Care Clinics that voluntarily submit suspected influenza positive specimens for diagnostic testing. Suspected influenza specimens are defined as specimens collected from patients displaying clinical symptoms of influenza-like illness or any specimens that test positive for influenza A or B by influenza rapid test kits. The suspected influenza positive specimens are submitted to the MPHL through the influenza surveillance system by the county health departments and with the approval of the MSDH Office of the State Epidemiologist. The specimens are tested for the presence of influenza A or B strains and all influenza A strains are subtyped as either H1 or H3. If the patient is suspected to be at risk for avian influenza infection and the sample is influenza A positive, the specimen can be further subtyped as either H5 or H7. The MPHL identifies cases of human influenza virus infections by directly detecting influenza-specific RNA using real-time reverse transcriptase-polymerase chain reaction (RT-qPCR) assays developed and supported by the CDC. All specimens that test positive for influenza A subtype H1 or H3 virus or for influenza B virus by RT-qPCR are cultured for virus isolation. Samples representative of pre-season, early season, mid-season, and late season influenza A positive specimen and all positive influenza B specimens are sent to the CDC. The MPHL also sends the CDC any influenza A specimens that were unsubtypable as H1 or H3 for further study. The CDC uses the information collected from the Mississippi surveillance program for vaccine development and also for national influenza surveillance information to document the predominant circulating influenza strains within the United States.

The MPHL and MSDH Office of the State Epidemiologist will continue to participate in a statewide influenza surveillance program. In the event of pandemic influenza, the current surveillance program will be upgraded to the pre-pandemic influenza plan (Novel/Avian Influenza Surveillance Algorithm), which should provide additional real-time awareness of any actively circulating pandemic influenza strains and subtypes. During the pre-pandemic plan, additional surveillance sites will be added to the surveillance program throughout the state based on population per capita information within each Mississippi County. The MPHL will continue to only test specimens pre-approved by the MSDH Surveillance System. For laboratory personnel protection, the MPHL will **not** perform novel/avian influenza virus isolation in cell culture during a pandemic response due to the infection potential of live virus incubation. The MPHL will provide all

influenza data to the MSDH surveillance program and the CDC for statistical analysis and appropriate information dissemination throughout the state and nation.

Once pandemic influenza has been documented within Mississippi, the influenza surveillance system will downgrade into a pandemic influenza plan (pandemic influenza surveillance algorithm). Influenza surveillance will continue throughout the state but the actual number of suspected influenza specimens submitted for testing will be limited based on all prior influenza information collected within the submitting surveillance sites, districts or counties. In addition to submission changes, the MPHL will alter the current influenza protocol to focus more on the actively circulating pandemic influenza strains. Specimens will be tested first for the presence of the pandemic influenza strain. Any specimens negative for the pandemic influenza strain or subtype will then be tested for the presence of all other above stated influenza strains or subtypes.

The MPHL performs influenza diagnostic testing and cultures for surveillance purposes only. Clinicians should treat patients based on the presence of influenza-like illness symptoms rather than treating based on the MPHL diagnostic testing results. Clinical laboratories with suspected pandemic influenza specimens should contact the Office of the State Epidemiologist immediately. Specimens should be sent directly to the MPHL for further testing. **DO NOT PERFORM A CULTURE ON SUSPECTED SPECIMENS UNTIL AVIAN INFLUENZA THREAT IS INVESTIGATED AND RULED OUT.**

Clinics interested in becoming voluntary surveillance sites must meet the following criteria: the clinic/hospital must provide primary care and can include clinics involved in family practice and internal medicine and/or be an emergency room, an urgent care center, a college/university student health center and/or a health maintenance organization. Questions about influenza surveillance or submissions should be directed to the Office of the State Epidemiologist at 601-576-7725. Questions about laboratory testing for influenza surveillance should be directed to the Mississippi Public Health Laboratory at 601-576-7582. More information about influenza may be found at www.msdh.state.ms.us/msdhsite/_static/44,0,122,278.html.

MISSISSIPPI DEPARTMENT OF HEALTH

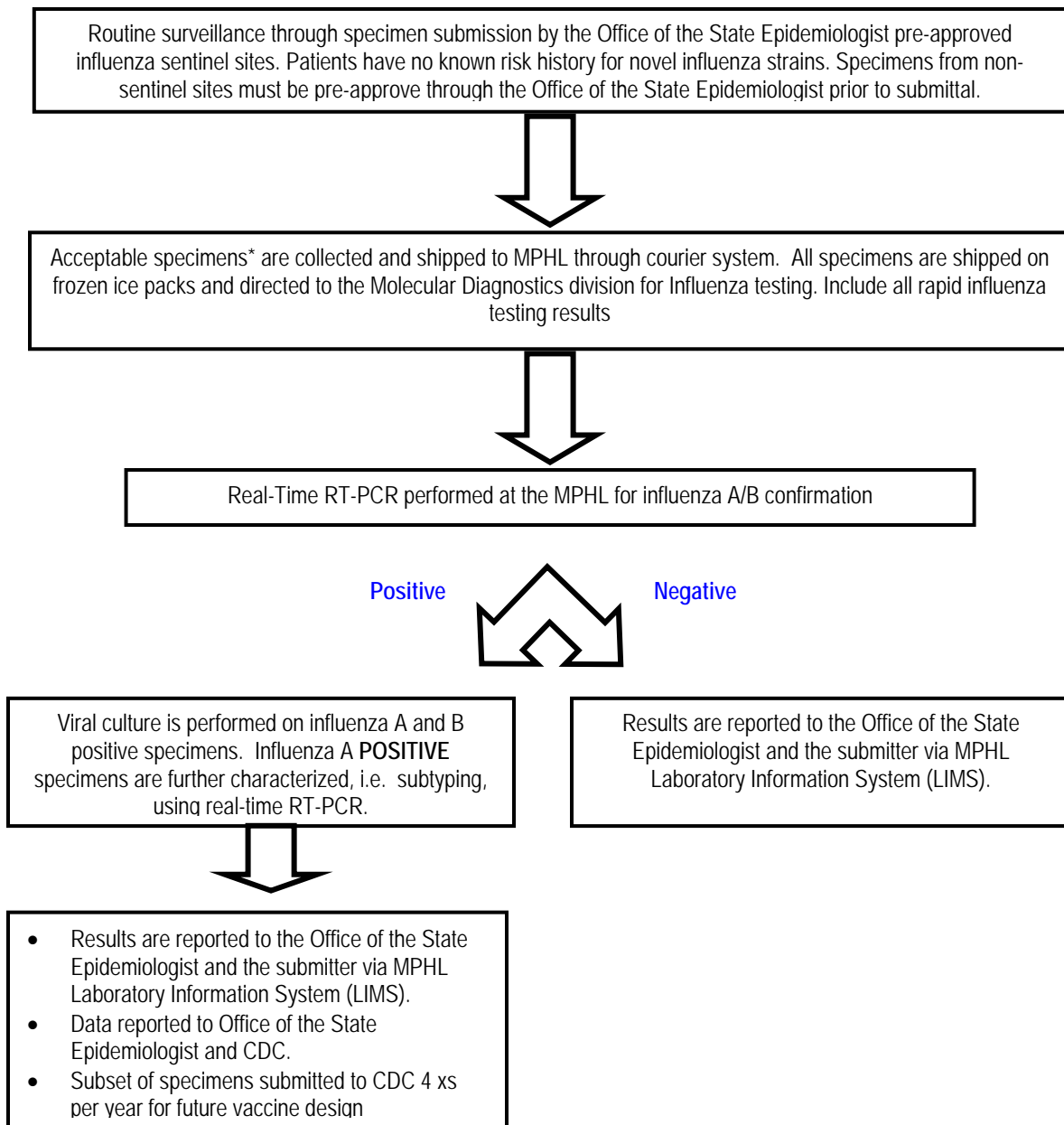
www.HealthyMs.com

1-866-HLTHY4U

1-866-458-4948

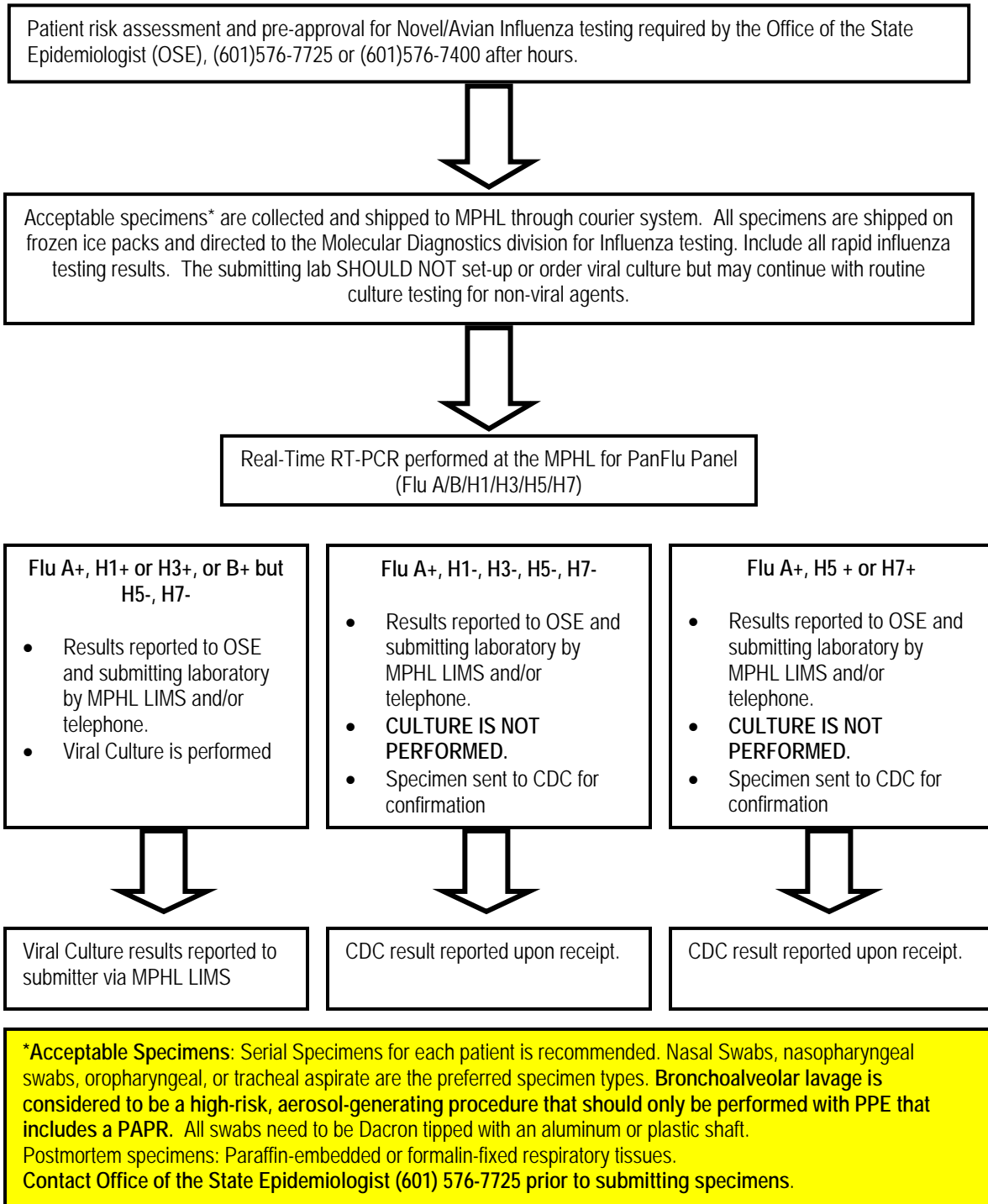
Attachment H – MS PHL Influenza Testing Algorithms

Seasonal Influenza Surveillance Algorithm Mississippi Public Health Laboratory Instructions for Influenza Sentinel Site Specimen Submittal



*Acceptable Specimens: Nasal swabs, naso/oropharyngeal washes or swabs, bronchoalveolar lavage, pleural fluids, tracheal aspirates, and sputum. All swabs should be Dacron tipped and have a plastic or aluminum shaft. **Sputum specimens are not cultured.**
Postmortem specimens: Paraffin-embedded or formalin-fixed respiratory tissues.
Contact Office of the State Epidemiologist (601)576-7725 prior to submitting specimens.

Novel/Avian Influenza Surveillance Algorithm
Mississippi Public Health Laboratory
Instructions for Pre-Approved Specimen Submittal for Novel/Avian Influenza Testing



PI Surveillance Algorithm
Mississippi Public Health Laboratory

Instructions for Pre-Approved Specimen Submittal for H5 PI Testing

Acceptable specimens* are collected and shipped to MPHL through courier system. All specimens are shipped on frozen ice packs and directed to the Molecular Diagnostics division for Influenza testing. Include all rapid influenza testing results. The submitting laboratory should not set-up or order viral cultures but may continue with routine culture testing for alternative non-viral agents.

H5 Real-Time RT-PCR performed at the MPHL or lab specified by MPHL

H5-

H5+

- Results reported to Office of the State Epidemiologist and submitter by LIMS and/or telephone.
- Further testing performed for influenza A/B/H1/H3.

- Result reported via MPHL LIMS and/or telephone to Office of the State Epidemiologist and submitter.
- Specimens sent to CDC for confirmation.
- **VIRAL CULTURE IS NOT PERFORMED.**

Viral Culture and/or further testing results reported to submitter and the Office of the State Epidemiologist by MPHL LIMS.

Results confirmed at CDC upon request of CDC

***Acceptable Specimens:** Serial Specimens for each patient is recommended. Nasal Swabs, nasopharyngeal swabs, oropharyngeal, or tracheal aspirate are the preferred specimen types. **Bronchoalveolar lavage is considered to be a high-risk, aerosol-generating procedure that should only be performed with PPE that includes a PAPR.** All swabs need to be Dacron tipped with an aluminum or plastic shaft. Postmortem specimens: Paraffin-embedded or formalin-fixed respiratory tissues. Contact Office of the State Epidemiologist (601)576-7725 prior to submitting specimens.

Attachment I – MS PHL Influenza Specimen Collection Guidelines

GUIDELINES FOR COLLECTING AND SHIPPING SPECIMENS FOR INFLUENZA A (H5N1) DIAGNOSTICS

(Adapted from the 2005 US Department of Health and Human Services Pandemic Influenza Plan)

SPECIMEN COLLECTION

I. RESPIRATORY SPECIMENS

Eight types of respiratory specimens may be collected for viral and/or bacterial diagnostics:

1) nasopharyngeal wash/aspirates, 2) nasopharyngeal swabs, 3) oropharyngeal swabs, 4) bronchoalveolar lavage, 5) tracheal aspirate, 6) pleural fluid tap, 7) sputum, and 8) autopsy specimens. Nasopharyngeal wash/aspirates are the preferred specimen type for children aged <2 years. Respiratory specimens are optimally collected within the first 3 days of illness onset.

Multiple specimen types over multiple days are recommended for Influenza A (H5N1) testing.

******Mississippi State Department of Health MUST BE NOTIFIED ABOUT ANY CASE OF SUSPECT AVIAN INFLUENZA A (H5N1)******

A. Collecting specimens from the upper respiratory tract

- Nasopharyngeal wash/aspirate
 - Have the patient sit with head tilted slightly backward.
 - Instill 1 ml–1.5 ml of sterile saline (pH 7.0) into one nostril. Flush a plastic catheter or tubing with 2 ml–3 ml of saline. Insert the tubing into the nostril parallel to the palate. Aspirate nasopharyngeal secretions. Repeat this procedure for the other nostril.
 - Collect the specimens in sterile vials.
 - For shipping, use cold packs to keep the sample at 4°C.
- Nasopharyngeal or oropharyngeal swabs
 - Use only sterile dacron or rayon swabs with plastic/metal shafts.
 - To obtain a nasopharyngeal swab, insert a swab into the nostril parallel to the palate. Leave the swab in place for a few seconds to absorb secretions. Swab both nostrils.
 - To obtain an oropharyngeal swab, swab the posterior pharynx and tonsillar areas, avoiding the tongue.
 - Place each swab immediately into two separate sterile vials containing 2 ml of viral transport media. Break the applicator sticks off near the tip to permit tightening of the cap.
 - For shipping, use cold packs to keep the sample at 4°C.

B. Collecting specimens from the lower respiratory tract

- Bronchoalveolar lavage, tracheal aspirate, or pleural fluid tap
 - During bronchoalveolar lavage or tracheal aspirate, use a double-tube system to maximum shielding from oropharyngeal secretions.
 - Place the unspun fluid in sterile vials with external caps and internal O-ring seals. If there is no internal O-ring seal, then seal tightly with the available cap and secure with Parafilm®.
 - For shipping, use cold packs to keep the sample at 4°C.
- Sputum
 - Educate the patient about the difference between sputum and oral secretions.
 - Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile screw-cap sputum collection cup or sterile dry container.
 - For shipping, use cold packs to keep the sample at 4°C.

II. AUTOPSY SPECIMENS

Immunohistochemical (IHC) staining for influenza A (H5) viruses can be performed on autopsy specimens at the Centers for Disease Control and Prevention. Viral antigens may be focal and sparsely distributed in patients with influenza, and are most frequently detected in respiratory epithelium of large airways. Larger airways (particularly primary and segmental bronchi) have the highest yield for detection of influenza viruses by IHC staining. Collection of the appropriate tissues ensures the best chance of detecting the virus by (IHC) stains.

- If influenza is suspected, a minimum total of 8 blocks or fixed-tissue specimens representing samples from each of the following sites should be obtained and submitted for evaluation:
 - Central (hilar) lung with segmental bronchi
 - Right and left primary bronchi
 - Trachea (proximal and distal)
 - Representative pulmonary parenchyma from right and left lung

In addition, representative tissues from major organs should be submitted for evaluation. In particular, for patients with suspected myocarditis or encephalitis, specimens should include myocardium (right and left ventricle) and CNS (cerebral cortex, basal ganglia, pons, medulla, and cerebellum). Specimens should be included from any other organ showing significant gross or microscopic pathology.

Specimens may be submitted as:

- Fresh-frozen unprocessed tissue in 10% neutral buffered saline, or
- Tissue blocks containing formalin-fixed, paraffin-embedded specimens, or
- Unstained sections cut at 3 microns placed on charged glass slides (10 slides per specimen)
- Specimens should be sent at room temperature (NOT FROZEN).
- Fresh-frozen unfixed tissue specimens may be submitted for RT-PCR.

- Include a copy of the autopsy report (preliminary, or final if available), and a cover letter outlining a brief clinical history and the submitter's full name, title, complete mailing address, phone, and fax numbers.

SHIPPING INSTRUCTIONS

Any suspect influenza specimen should be packaged, labeled, and shipped as a UN3373 BIOLOGICAL SUBSTANCE, CATEGORY B. Specimens can be shipped via FedEx, United States Postal Service (USPS), or the State Courier system. Package should be shipped by the fastest means possible. **Transit time of less than 24 hours will optimize virus detection.**

To submit specimens to MPHL:

- Complete a MS health Department Influenza testing form 930 for each specimen with the following information: patient's name, age, date of onset of illness, type of specimen, date collected, travel/ exposure history, and clinical symptoms.
- Specimens should be sent by MPHL courier or by Priority Overnight Shipping for receipt within 24 hours.

Attachment J –Standard Operating Procedures for Managing Pre-Pandemic and Pandemic Strain Vaccine

- **RECEIVE AND STORE PRE-PANDEMIC AND PANDEMIC STRAIN VACCINE**

- Formally accept custody of vaccine from national vendors; transfer documents will include the following:
 - shipping documents
 - a custody transfer form
- Verify quantity of vaccine;
- Offload vaccine from ground transportation vehicles;
- Store vaccine within a secure and temperature-appropriate facility;

Vaccine storage and temperature control: Vaccine in staging, storage, and in transit must remain at appropriate temperatures to ensure its potency. Storage and handling guidance received from the manufacturer will be reviewed and held in compliance. As reference, for seasonal influenza brands of trivalent inactivated influenza vaccine (TIV) should be stored at 35° – 46°F and live attenuated influenza vaccine (LAIV) should be stored at 5°F or colder in a frost-free freezer that has a separate door. Refrigeration is available at the MSDH Department of Pharmacy (walk-in refrigerator) and at each RSS site. Appropriate manual, electro-mechanical or electronic temperature and humidity recording equipment, devices, and/or logs shall be utilized to document proper storage of vaccine. Temperature data shall be recorded daily.

- **APPORTION VACCINE**

- The MSDH CC will communicate apportionment of vaccine to the MSDH Immunizations Division.
- The MSDH Immunizations Department will enter apportionment into the VACMAN database management system.
- Orders will be generated from the VACMAN database management system.
- Packing lists will be forwarded to the MSDH Department of Pharmacy/RSS Task Force Leader and given to support staff for picking.
- Vaccine will be placed by personnel within the MSDH Department of Pharmacy/RSS in frost-free cooler containers approved for transfer of vaccine by MSDH.

- **STAGE AND LOAD VACCINE**

- Cooler containers will be staged at the MSDH Department of Pharmacy/RSS staging area for delivery to various delivery sites.
- The packing list will be forwarded from support staff to a licensed pharmacist for verification of vaccine to be shipped.
- After verification, cooler containers are loaded onto transportation vehicles.

- **TRANSPORT OF VACCINE TO DISPENSING SITES AND TREATMENT CENTERS**

- The priority of shipping will consider critical needs, distance or time to dispensing sites, and number of vehicles available
- Entities involved in coordination of transportation

- MSDH CC: will convey critical needs and distance or time to dispensing sites; coordinates with DPS CC on route accessibility
- DPS (see MSDH SNS Plan): Provides escorts for vehicles; escort units will verify transport and arrival times and locations with MHP HQ's CC; coordinates with MSDH CC on route accessibility
- MSDH Director of Pharmacy or RSS Task Force Leader: communicates with MSDH CC
- MSDH logistics support staff: communicates with MSDH Director of Pharmacy/RSS Task Force Leader; Oversees Distribution/Transportation Functions, and provides reports of number of vehicles available.
- The MSDH logistics support staff has the following responsibilities:
 - Tracking and monitoring all vehicles and shipments (this requires communications with the vehicle operators)
 - Coordinating to delineate routes
 - Ensuring that all vehicles are fueled and maintained
 - Coordinating with law enforcement so that roads can be cleared or vehicles can be escorted
 - Routinely report to the MSDH Director of Pharmacy on the status of deliveries
- The primary method of transporting vaccine to the delivery sites will be cargo vans and trucks.
- Cooler containers may be shipped on standard (no refrigeration) cargo vans or trucks.
- Refrigerated trucks are available through an MOU with the RSS sites for transport of large quantities of vaccine.
- Requests for additional transportation support may be made through the MSDH CC; the MSDH CC would then request support through the Mississippi Emergency Management Agency in procedures outline in the Mississippi Comprehensive Emergency Plan.
- Helicopter transportation will be the alternate method of transportation in the event that traffic or other situations prohibit the use of trucks.
- Security requirements for transportation (see MSDH SNS Plan)
 - Minimum of two (2) officers per vehicle
 - Minimum of two escort vehicles from RSS site to dispensing site base on shipment size and location
 - Include Map with primary and secondary route
 - All escort units will verify Transport and arrival times and locations with MHP HQ's CC
- Communications requirements for transportation (see MSDH SNS Plan)
 - Communications equipment will include radios provided by the agency carrying out this function
 - Information on the frequencies and call signs to be used by trucks has been prepared by MSDH
 - Communications with helicopters will be through the HMARS or other state emergency frequencies that by prior coordination will be given to the agency providing air assets to the incident

- **TRANSFER SNS MATERIELS TO DISPENSING SITES AND TREATMENT CENTERS**
 - Drivers will obtain signatures on the delivery documents (packing lists/bills of ladle/vaccine transfer form) that accompany vaccine and return those documents to the MSDH Director of Pharmacy/RSS Task Force Leader.
- **INVENTORY MANAGEMENT**
 - Inventory of receipt and distribution of vaccine will be managed using the VACMAN database management system.
 - On-hand inventory and shipping reports will be generated and submitted to the MSDH CC.

Attachment K – Vaccine Forms

Form 1 – Provider Enrollment Form

Form 2 – Pandemic Influenza Strain Vaccine Order and Doses Administered Form

Form 3 – Acknowledgement of Vaccine Transfer and Receipt

Form 4 – Vaccine Return and Wastage Form

Form 5 - Standing Orders for Use of Antiviral Agents for Pandemic Influenza

Form 6 – Point of Distribution (POD) Health Information Form

Form 7 – Patient Information for Inactivated Pandemic Influenza Vaccine

Form 8 – Patient Information for Tamiflu®--Oseltamivir phosphate

Form 9 – Patient Information for Relenza®--Zanamivir for inhalation

Form 10 – PI Mass Vaccination POD Health Care Instructions for Individuals NOT Receiving Vaccine

Form 11 – VAERS Form

Form 1 – Provider Enrollment Form



MISSISSIPPI STATE DEPARTMENT OF HEALTH Strategic National Stockpile (SNS) and Pandemic Influenza Programs

☐ SNS Program ☐ Pandemic Influenza Program (Treatment Center Use) ☐ Both

☐ Initial Enrollment ☐ Renewal

Facility _____

Address _____

Street

City

State

Zip Code

County

Telephone ____ (____) _____ Fax ____ (____) _____

• Facility Contact's Name _____
Last *First*

Phone: _____ E-Mail: _____

• Facility Contact's Name _____
Last *First*

Phone: _____ E-Mail: _____

Facility's Medical Provider Number (if applicable) _____

Coordinating Physician's Name: _____ Medical License # _____

To participate in the SNS Program and/or the Pandemic Influenza Program and receive, free of cost, Federal Strategic National Stockpile antibiotics, vaccine and medical supplies through the Mississippi State Department of Health, I agree to the following conditions, on behalf of myself and all the practitioners, nurses and others associated with this hospital, nursing home, medical office, group practice, managed care organization, community/migrant/rural clinic, health department, other health delivery facility, detention facility, mental health facility, prison, home health agency, or business of which I am the [please circle] **CEO, Business Manager, Minister, or physician-in-chief or equivalent:**

Mississippi State Department of Health

4/12/2007

Form No. _____

- I agree to provide the MSDH with the number of staff and clients to receive medication and/or vaccine; this information will be updated annually upon renewal of Provider Enrollment.
- I agree to have a coordinating physician who will oversee the dispensing of medications and/or administration of vaccine. The physician does not have to be on-site, but staff will work under his/her direction.
- The facility will follow the same treatment algorithms as used in the standing orders for the state.
- A representative from the facility, with proper identification, will pick up medications, vaccines, and/or supplies for clients and staff from the pre-designated Point-of-Dispensing (POD) site. The facility will provide MSDH with the name of the representative designated to pick up medications and/or vaccine prior to pick up.
- Upon arrival to the designated POD site, the representative will present two personal ID's, one issued by the facility, and a picture ID issued by the state.
- The representative will sign for all medications, vaccines and/or supplies received.
- The facility will notify MSDH when supplies reach the facility and if there are any discrepancies between the order and delivery.
- The facility will be responsible for administration of the medication/vaccine, distribution of information sheets, and collection of completed health information forms. Health information forms will be returned to MSDH within 48 hours for patient tracking.
- The facility agrees to make no charge for the medication/vaccine or for any of the services provided as a part of the administration of the medication/vaccine.
- For the purpose of State and/or Federal Laws and regulations, 12. I will:
 - Maintain and make available all records to the Mississippi State Department of Health, the U.S. Department of Health and Human Services, and/or their assignees or agents;
 - Comply with Presidential Executive Order No. 12549, Certification Concerning Debarment and Suspension.
- The State may terminate this agreement at any time for failure to comply with these requirements and I may terminate this agreement at any time for personal reasons.

Signature of Administrative Representative for Facility

Date

Signature of Coordinating Physician

Date

This record is to be submitted to and kept on file at the Mississippi State Department of Health, and must be updated in accordance with State policy.

staff/employees/faculty _____

staff/employee/faculty's family members _____

patient beds _____

enrolled students _____

enrolled Student's family members _____

TOTAL Number of Persons needing medications/vaccinations _____

For State Use Only Section:

<p>Date Certified for SNS _____ <div style="text-align: center;"> _____ / _____ / _____ Month Day Year </div> <p>Date Certified for Pandemic Influenza _____ <div style="text-align: center;"> _____ / _____ / _____ Month Day Year </div> </p></p>	<p>Person Approving Application</p> <p>_____</p> <p>Print</p> <p>_____</p> <p>Signature</p>
---	---

Original Copy to be kept on file at MSDH District Office
 Copy to be sent to SNS Program at MSDH Central Office
 Copy to be given to Facility

Form 2 – Pandemic Influenza Strain Vaccine Order and Doses Administered Form
Mississippi Pandemic Influenza Preparedness and Response Program

[illegible]

Form 3 – Acknowledgement of Vaccine Transfer and Receipt

Mississippi State Department of Health Acknowledgment of Vaccine Transfer and Receipt

I hereby Acknowledge *Transfer* of the following Vaccine(s):

Vaccine (s)	Doses	Lot No. (s)	Expiration Date(s)

from _____ County Health Department or CHC Clinic/VFC Clinic/CHIP Clinic/Other Facility. (Please circle one)

Signature of Person Transferring Vaccine:

Title: _____

Telephone Number: _____

Date: _____

For County Health Departments:

The Immunization Rep. approved this transfer of vaccine on _____

I hereby Acknowledge *Receipt* of the following Vaccine(s):

Vaccine (s)	Doses	Lot No. (s)	Expiration Date(s)

for _____ County Health Department or CHC Clinic/VFC Clinic/CHIP Clinic/Other Facility. (Please circle one)

Signature of Person Receiving Vaccine:

Title: _____

Telephone Number: _____

Date: _____

Upon Receipt of the VACCINE, please return a copy of this form to the District Immunization Representative (Health Depts. only), attach a copy to the Monthly Inventory Report or Vaccine Order Form (VFC Providers only) and send to:

MISSISSIPPI STATE DEPARTMENT OF HEALTH
IMMUNIZATION PROGRAM
POST OFFICE BOX 1700
JACKSON, MISSISSIPPI 39215-1700



ACKNOWLEDGMENT OF VACCINE TRANSFER AND RECEIPT FORM FORM NO. 95

PURPOSE

The Acknowledgment of Vaccine Transfer and Receipt Form is to be used to document all vaccine transfers. This form is used to facilitate the monthly transfer and receipt of vaccine inventory for each health department clinic. Vaccines may be transferred within a district with prior approval of the Immunization Representative, Epidemiology Nurse or District Supervising Nurse. Any other transfers must have prior approval of the Immunization Program and the District Administrator. Any transfer of vaccine requires a copy of the Vaccine Transfer and Receipt Form to be placed in the shipping container.

The Immunization Program may request that vaccine be returned to the Pharmacy. Such transfers are coordinated with the Immunization Representative who will communicate with the District Administrator and county staff. The physical transfer of the vaccine may actually be performed by the Immunization Representative or designee.

INSTRUCTIONS

Acknowledge Transfer - County/Clinic: Enter type of vaccine(s), the number of doses, the lot number(s), expiration date(s) (mo/dy/yr) and the County/Clinic/Other Facility name the vaccine is being transferred from.

Signature Verifying Transfer: A signature is required by both parties involved in the transfer process. Enter the signature of the Nurse, etc. that verifies transfer of the vaccine, his/her title telephone number and date (mo/dy/yr).

County Health Departments: The date (mo/dy/yr) the transfer was approved by the Immunization Representative should be recorded here.

Acknowledge Receipt - County/Clinic: Enter type of vaccine(s), the number of doses, the lot number(s), expiration date(s) (mo/dy/yr) and the County/Clinic/Other Facility name the vaccine is being received on behalf of.

Signature Verifying Receipt: A signature is required by both parties involved in the transfer process. Enter the signature of the Nurse, etc. that verifies receipt of the vaccine, his/her title telephone number and date (mo/dy/yr).

OFFICE MECHANICS AND FILING

The original copy of the form should be attached to the county transferring the vaccine Form 130 Monthly Inventory Report and a copy should be attached to the county that received the vaccine Form 130 Monthly Inventory Report and submitted to the Immunization Program. A copy of this completed form should be retained by both counties for their records and filed at the clinic.

RETENTION PERIOD

District Office - Retain a copy for three (3) years and then discard. An Audit must have been released three years.

County Health Department Clinic - Retain a copy for three years and then discard.

Division of Immunization - Retain a copy for three (3) years and then discard.

Revised 01/16/02

Form 4 – Vaccine Return and Wastage Form



MISSISSIPPI STATE DEPARTMENT OF HEALTH

Vaccine Return and Wastage Form

Mississippi State Department Of Health
Immunization Program
570 East Woodrow Wilson
P. O. Box 1700
Jackson, Mississippi 39215-1700

1. Clinic Name	2. PEN
3. Address	
City	ZIP
4. Telephone Number	

Instructions -

This form should be used to return vaccine that has expired, is contaminated, left out of the refrigerator, drawn up but not used, etc.

- ✓ Package the vaccine to protect it from breakage (no coolant is necessary), include this completed form with the vaccine and return to the Mississippi State Department of Health Pharmacy at: 3156 Lawson Street
Jackson, Mississippi 39213
- ✓ Send a copy to Mississippi State Department of Health Immunization Program at: P. O. Box 1700
Jackson, MS 39215-1700
- ✓ Keep a copy for your files.

Vaccine Return and Wastage Form					

Contact Name (signature)

Date

Distribution

White Copy - Immunization Program
Canary Copy - Immunization Program (Pharmacy - Returns Only)
Pink Copy - VFC Provider

MISSISSIPPI STATE DEPARTMENT OF HEALTH

Revised 1/16/02

VACCINE RETURN/WASTAGE FORM

PURPOSE

The Vaccine Return/Wastage Form is used to document the amount of vaccine that has been wasted and is being return by each VFC Provider and the reason for its return to the Pharmacy, **NOT TO THE IMMUNIZATION PROGRAM.**

VFC clinic staff should consult the assigned Immunization Nurse Consultant or VFC Coordinator when there is a need to return any vaccine. Vaccine **must** be return to the Pharmacy.

Every dose of vaccine that is wasted **must** be documented by the VFC clinic staff on a Vaccine Return/Wastage Form which is submitted with the Vaccine Order and Monthly Doses Administered (Form 969). VFC staff **must** make every effort to minimize vaccine lost/wastage through proper storage, handling and administration. The clinic will be financially responsible for annual vaccine lost/wastage greater than 5% in the clinic.

Diluent is not a stock item that may be ordered from the pharmacy. However, diluent is sent out with specific vaccine orders to be reconstituted with that vaccine product only. If diluent is wasted for any reason, there is no stock in the pharmacy to replace it. It is important to keep extra diluent not administered.

INSTRUCTIONS

RETURN: A Vaccine Return/Wastage Form should be completed and enclosed in a shipping container with the vaccine to be returned. The VFC staff actually packing the vaccine for return to the pharmacy should check with the Immunization Nurse Consultant or the VFC Coordinator about the proper shipping instructions. The Immunization Program staff is available for consultation if needed.

The shipping requirements outlined in the "Recommendations for Handling and Storage of Selected Biologicals" should be followed when transferring vaccine.

WASTAGE: If vaccine wastage is due to a defective vaccine vial or tubex, document the specific problem encountered on the Vaccine Return/Wastage Report. If greater than 3 tubexes or 3 vials of vaccines are discovered to be defective, please notify the Immunization Nurse Consultant or the VFC Coordinator. The Immunization Nurse Consultant will evaluate other clinics for defective vaccine products and report unusual findings to the Immunization Office. A defective vaccine tubex or vial should be disposed of in a sharps container; do not return to the pharmacy. Contact the Immunization Nurse Consultant or the VFC Coordinator for instructions on disposal of defective vaccine tubexes or vials.

1. **Clinic Name:** Enter the name of the VFC clinic that is returning or wasted the vaccine.
2. **Pin:** Enter the clinic's assigned PIN number.
3. **Address:** Enter the complete address (street, city and zip code) of the clinic.
4. **Telephone Number:** Enter the telephone number of the person completing this report.

All other columns are to be completed by vaccine type as follows:

5. **Vaccine:** Enter the name of the vaccine that is being returned or that was wasted.
6. **Number of Doses:** Enter the number of doses of vaccine that is being returned or were wasted.
7. **Expiration Date:** Enter the expiration date (mo/dy/yr) of the vaccine that is being returned or was wasted.
8. **Lot Number:** Enter the lot number of the vaccine that is being returned or was wasted.
9. **Reason for Return/Wastage:** Enter the reason the vaccine is being returned or was wasted.
10. **Nurse Signature:** Enter the signature of the Nurse that is returning the vaccine or that wasted the vaccine.

Date: Enter the date the form was completed.

Contact name: Enter the signature of the person completing this report.

OFFICE MECHANICS AND FILING

RETURN: The original of the form should be returned with the vaccine shipment, a copy attached to the Vaccine Order and Monthly Doses Administered Form (Form 969) and forwarded to the Immunization Program and a copy should be maintained by the clinic.

WASTAGE: The original copy of the form should be attached to the VFC clinic's Vaccine Order and Monthly Doses Administered Form (Form 969) and forwarded to the Immunization Program and a copy should be maintained by the clinic.

RETENTION PERIOD

Division of Immunization - Retain a copy for three (3) years and then discard.

Form 5 - Standing Orders for Use of Antiviral Agents for Pandemic Influenza

I direct Registered Professional Nurses (RNs) employed by, or serving as volunteers for, the Mississippi State Department of Health and working within the geographic area stated in the collaborative practice agreement, to dispense medications to individuals presenting for prophylactic therapy or treatment for a pandemic strain of influenza.

All medications must be dispensed in accordance with the following prophylactic and treatment guidelines and within the restrictions of the guidelines of the Strategic National Stockpile program.

HHS PANDEMIC INFLUENZA PLAN: Part 2 Supplement 7: S7-18, 19.*					
RECOMMENDED DAILY DOSAGE OF ANTIVIRALS FOR TREATMENT AND PROPHYLAXIS OF A PANDEMIC STRAIN OF INFLUENZA					
Antiviral Agent	Age Groups (years)				
	1-6	7-9	10-12	13-64	≥ 65
Amantadine^a					
Treatment, influenza A	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	100 mg twice daily ^c	100 mg twice daily ^c	≤ 100 mg/day
Prophylaxis, influenza A	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	100 mg twice daily ^c	100 mg twice daily ^c	≤ 100 mg/day
Rimantadine^d					
Treatment, ^e influenza A	NA ^f	NA	NA	100 mg twice daily ^{c,g}	100 mg/day
Prophylaxis, influenza A	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	5 mg/kg body weight/day up to 150 mg in two divided doses ^b	100 mg twice daily ^c	100 mg twice daily ^c	100 mg/day ^h
Zanamivirⁱ					
Treatment, influenza A and B	NA	10 mg twice daily	10 mg twice daily	10 mg twice daily	10 mg twice daily
Prophylaxis, ^j influenza A and B		10 mg ONCE daily (see footnote j)	10 mg ONCE daily	10 mg ONCE daily	10 mg ONCE daily
Oseltamivir					
Treatment, ^k influenza A and B	Dose varies by child's weight ^l	Dose varies by child's weight ^l	Dose varies by child's weight ^l	75 mg twice daily	75 mg twice daily
Prophylaxis, influenza A and B	Dose varies by child's weight ^l	Dose varies by child's weight ^l	Dose varies by child's weight ^l	75 mg ONCE daily	75 mg ONCE daily

* Table adapted to include new FDA-approved indications and dosages.

^aThe drug package insert should be consulted for dosage recommendations for administering amantadine to persons with creatinine clearance ≤50 mL/min/1.73m².

^b5 mg/kg body weight of amantadine or rimantadine syrup = 1 tsp/2.2 lbs.

^cChildren aged ≥ 10 years who weigh <40 kg should be administered amantadine or rimantadine at a dosage of 5 mg/kg body weight/day.

^dA reduction in dosage to 100 mg/day of rimantadine is recommended for persons who have severe hepatic dysfunction or those with creatinine clearance ≤ 10 mL/min. Other persons with less severe hepatic or renal dysfunction taking 100 mg/day of rimantadine should be observed closely, and the dosage should be reduced or the drug discontinued, if necessary.

^eApproved by FDA only for treatment among adults.

^fNot applicable

^gRimantadine is approved by FDA for treatment among adults. However, certain experts in the management of influenza consider it appropriate for treatment among children. (See American Academy of Pediatrics, 2003 Red Book.)

^hOlder nursing-home residents should be administered only 100 mg/day of rimantadine. A reduction in dosage to 100 mg/day should be considered for all persons ages ≥ 65 years if they experience possible side effects when taking 200 mg/day.

ⁱZanamivir administered via inhalation using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of the correct use of the device.

^jZanamivir is approved for prophylaxis in adults and pediatric patients 5 years of age and older. Relenza® package insert. GlaxoSmithKline Inc., Triangle Park, N.C. 03/29/06.

^kA reduction in the dose of oseltamivir is recommended for persons with creatinine clearance <30 mL/min.

^lSee below. Tamiflu® package insert. Roche Pharmaceuticals Inc., Nutley, N.J. 12/21/05.

Recommended oral dose of Tamiflu® oral suspension for pediatric patients 1 year and older or adult patients who cannot swallow a capsule.			
Body Weight in kg	Body Weight in lbs	Recommended Dose	Number of Bottles Needed to Obtain the Recommended Dose
Treatment			
≤ 15 kg	≤ 33 kg	30 mg twice daily for 5 days	1
>15 kg to 23 kg	>33 lbs to 51 lbs	45 mg twice daily for 5 days	2
>23 kg to 40 kg	>51 lbs to 88 lbs	60 mg twice daily for 5 days	2
>40 kg	>88 lbs	75 mg twice daily for 5 days	3
Prophylaxis			
≤ 15 kg	≤ 33 kg	30 mg ONCE daily for 10 days	1
>15 kg to 23 kg	>33 lbs to 51 lbs	45 mg ONCE daily for 10 days	2
>23 kg to 40 kg	>51 lbs to 88 lbs	60 mg ONCE daily for 10 days	2
>40 kg	>88 lbs	75 mg ONCE daily for 10 days	3

Review of this order, and agency policies and procedures related to carrying out this order, shall occur at least once every year.

This order will terminate on _____

Physician

Date of Signature

RN (Agent of the LPHA)

Date of Signature

Form 6 – Point of Distribution (POD) Health Information Form

Pandemic Strain of Influenza Vaccine Administration Form

DATE: ____/____/____ SSN# Number: _____ ☐ Passport ☐ Drivers License ☐

Name: _____ Age: _____ Date of Birth: _____

Address: _____ City _____ State _____

Telephone Number: Home: _____ Mother's SSN#: _____

Parent Name if Different from Child (under age 18) _____

Clinic Code: _____

CONTRAINDICATIONS TO INFLUENZA VACCINE:

SECTION I

Are you allergic to eggs?	Yes ____	No ____
Have you had any significant reactions to flu vaccine in the past that required you to see a doctor? i.e.; Guillaine-Barre syndrome	Yes ____	No ____
Do you have a moderate or severe illness today? i.e.; fever	Yes ____	No ____

EVALUATION FOR ASSISTANCE:

SECTION II

Do you have anyone with you today that needs assistance?	Yes ____	No ____
If YES to any of the above questions, then mark form Blue and direct individual to the Blue Vaccination Table.		

INDIVIDUAL ACCEPTS VACCINATIONS

Prior to administration of the vaccine(s) checked above, a copy of the Vaccine Information Statement for each vaccine was provided to me. I was given the opportunity to ask questions regarding the vaccine(s) and agree to its administration.

Signature (Self or Guardian) Date

INDIVIDUAL DECLINES VACCINATIONS

The risk and benefit of the use of medications to treat influenza have been explained to me. I decline medication at this time.

Signature Date

Do Not Write Below This Box

Influenza Vaccine

Lot # _____
Injection site: Right ____ Arm ____
 Left ____ Thigh ____
Manufacturer: GSK ____ Sanofi ____ Chir ____ Other ____
Vaccine Information Statement Date: ____/____/____

Prior to administration of the vaccine(s) checked above, a copy of the Vaccine Information Statement for each vaccine was provided to the client or representative of the child to whom the vaccine was administered. The clinic or his/her representative was given the opportunity to ask questions regarding the vaccine.

Signature of Vaccine Administrator/Title Date

Form 7 – Patient Information for Inactivated Pandemic Influenza Vaccine

Vaccine Information Statement (VIS)

THIS IS THE FIRST VACCINATION IN A SERIES OF TWO (2) VACCINATIONS.

WHEN TO RETURN: ONE (1) MONTH

WHERE TO RETURN: THIS POINT-OF-DISTRIBUTION (POD) CLINIC

Why get vaccinated? Influenza (“flu”) is a contagious disease. It is caused by the influenza virus, which spreads from person to person through coughing or sneezing. Vaccination is one of the most effective ways to minimize suffering and death from influenza.

Inactivated Pandemic Influenza Vaccine

This area has intentionally been left blank

Reasons NOT to get vaccinated:

- If you have any severe (life-threatening) allergies. Allergic reactions to influenza vaccine are rare.
- If you have a severe egg allergy. Influenza vaccine virus is grown in eggs. People with a severe egg allergy should not get the vaccine.
- A severe allergy to any vaccine component is also a reason to not get the vaccine.

Who should get inactivated pandemic influenza vaccine?

- Anyone who does not have a severe egg allergy or a severe allergy to influenza vaccine.
- Vaccination is the primary intervention to decrease the health impacts of an influenza pandemic. Due to the serious health, social, and economic impact of a pandemic outbreak of influenza, persons who might not be candidates for seasonal influenza vaccine will be candidates for the pandemic vaccine; i.e., patients with other current infections; children under the age of 6 months; pregnant women, regardless of gestational stage.

What are the risks from inactivated pandemic influenza vaccine?

- A vaccine, like any medicine, could possibly cause serious problems, such as severe allergic reactions.
- The virus in inactivated pandemic influenza vaccine has been killed, so you cannot get pandemic influenza from the vaccine.
- Mild problems may include:
 - Soreness, redness, or swelling where the shot was given
 - Fever
 - Aches

If these problems occur, they usually begin soon after the shot and last 1-2 days.

- Severe problems may include:
 - Life-threatening allergic reactions from vaccines may occur within a few minutes to a few hours after the shot.

What if there is a severe reaction?

What should I look for?

- Any unusual condition, such as a high fever or behavior changes.
- Signs of a serious allergic reaction can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness.

What should I do?

- Call your doctor, or get the person to a doctor right away.
- Tell our doctor what happened, the date and time it happened, and when the vaccination was given.
- Ask your doctor, nurse, or health department to report the reaction by filing a Vaccine Adverse Event Reporting System (VAERS) form. Or you can file this report through the VAERS web site at www.vaers.hhs.gov, or by calling 1-800-822-7967. *VAERS does not provide medical advice.*

Form 8 – Patient Information for Tamiflu®--Oseltamivir phosphate

TAMIFLU IS NOT A SUBSTITUTE FOR A FLU VACCINATION. WHEN A FLU VACCINATION BECOMES AVAILABLE YOU WILL BE TOLD WHERE TO GO TO GET THE FLU VACCINATION.

Information to the patient:

You have been provided a limited supply of medicine. Local emergency health workers or your healthcare provider will inform you if you need more medicine after you finish this supply. If so, upon your follow-up visit, you will be told how to get more medicine. You will be told if no more medicine is needed. You may also be switched from this medicine to a different medicine based on laboratory tests. Do not share this medicine with your family members or pets.

What is Tamiflu®?

Tamiflu is a medicine for the treatment of influenza (flu, infection caused by influenza virus) and for reducing the chance of getting the flu in community and household settings. Tamiflu attacks the influenza virus and stops it from spreading inside your body.

Tamiflu is for treating adults and children age 1 and older with the flu whose flu symptoms started within the last day or two. Tamiflu can also reduce the chance of getting the flu in people age 1 and older who have a higher chance of getting the flu because they spend time with someone who has the flu. Tamiflu can also reduce the chance of getting the flu if there is a flu outbreak in the community.

Reasons NOT to take this medicine:

- If you are allergic to Tamiflu
- Tamiflu is normally not recommended for use during pregnancy or nursing, as the effects on the unborn child or nursing infant are unknown.
- Tamiflu is not recommended for use in children younger than 1 year of age.

How should I take Tamiflu®?

- If you have the flu: Take Tamiflu twice a day for 5 days, once in the morning and once in the evening. You should complete the entire treatment of 10 doses (capsules or liquid), even if you feel better.
- To prevent the flu: Take Tamiflu once a day for 10 days or for as long as directed.
- You may take this medicine with or without food, but food may help you avoid stomach upset.
- If you are taking Tamiflu liquid, you will be given a dosing dispenser marked with three possible doses. Follow your instructions on which dose to take or how to combine them for the proper dose for you. Instructions are given below on how to use the dispenser; ask your healthcare provider if you have any questions.

What do I do if I miss a dose?

- Take a missed dose as soon as you remember, unless it is 2 hours or less before your next dose.
- Do not take a double dose or extra doses.
- If you miss several doses, tell your health care professional and follow the advice given to you.

Side Effects

- Call your doctor immediately if you have an allergic reaction: itching or hives, swelling in face or hands, swelling or tingling in the mouth or throat, tightness in chest, trouble breathing.
- The most common side effects of Tamiflu are nausea and vomiting. These are usually mild to moderate. They usually happen in the first 2 days of treatment. Taking Tamiflu with food may reduce the chance of getting these side effects.

How and where should I store Tamiflu?

- Tamiflu capsules should be stored at room temperature below 77 F and kept in a dry place. Keep this medication out of reach of children.
- Tamiflu suspension should be stored under refrigeration at 36 to 46 F. Do not freeze.

Tamiflu liquid dosing instructions for patients:

1. Shake closed bottle well for about 5 seconds before each use.
2. Remove child-resistant cap.
3. Before inserting the tip of the oral dispenser into bottle adapter, push the plunger completely down toward the tip of the oral dispenser. Insert tip firmly into opening of the bottle adapter.
4. Turn the entire unit (bottle and dispenser) upside down.
5. Pull the plunger out slowly until the desired amount of medication is withdrawn into the oral dispenser. The 75 mg dose is obtained by filling the dispenser twice, once to the 30 mg graduation, and a second fill to the 45 mg graduation.
6. Turn the entire unit right side up and remove the oral dispenser slowly from the bottle.
7. Dispense directly into mouth. Do not mix with any liquid prior to dispensing.
8. Close bottle with child-resistant cap after each use.
9. Disassemble oral dispenser, rinse under running tap water and air dry prior to next use.

Form 9 – Patient Information for Relenza®--Zanamivir for inhalation

RELENZA IS NOT A SUBSTITUTE FOR A FLU VACCINATION. WHEN A FLU VACCINATION BECOMES AVAILABLE YOU WILL BE TOLD WHERE TO GO TO GET THE FLU VACCINATION.

Information to the patient:

You have been provided a limited supply of medicine. Local emergency health workers or your healthcare provider will inform you if you need more medicine after you finish this supply. If so, upon your follow-up visit, you will be told how to get more medicine. You will be told if no more medicine is needed. You may also be switched from this medicine to a different medicine based on laboratory tests. Do not share this medicine with your family members or pets.

What is Relenza®?

Relenza is a medicine for the treatment of influenza (flu, infection caused by influenza virus) and for reducing the chance of getting the flu in community and household settings. Relenza attacks the influenza virus and stops it from spreading inside your body.

Relenza is for treating adults and children age 7 and older with the flu whose flu symptoms started within the last day or two. Relenza can also reduce the chance of getting the flu in people age 5 and older who have a higher chance of getting the flu because they spend time with someone who has the flu. Relenza can also reduce the chance of getting the flu if there is a flu outbreak in the community.

Reasons NOT to take this medicine:

- If you have chronic lung disease such as asthma or chronic obstructive pulmonary disease.
- If you are allergic to Relenza.
- Relenza is normally not recommended for use during pregnancy or nursing, as the effects on the unborn child or nursing infant are unknown.
- Relenza is not recommended for treatment of influenza in children younger than 7 years of age or for prevention of influenza in children younger than 5 years of age.

Important safety information about Relenza:

- Some patients have had wheezing or serious breathing problems when they used Relenza.
- If you develop worsening respiratory symptoms such as wheezing or shortness of breath, stop using Relenza and contact your healthcare provider right away.
- If you have chronic respiratory disease such as asthma and chronic obstructive pulmonary disease and your healthcare provider has prescribed Relenza, you should have a fast-acting, inhaled bronchodilator available for your use.
- IF YOU ARE SCHEDULED TO USE AN INHALED BRONCHODILATOR AT THE SAME TIME AS RELENZA, USE THE INHALED BRONCHODILATOR **BEFORE** USING RELENZA.

How should I take Relenza®?

- Relenza is packaged in medicine disks called ROTODISKS® and is inhaled by mouth using a delivery device called a DISKHALER®. Each Rotodisk contains 4 blisters. Before taking Relenza, read the "Patient Instructions for Use." Children who use Relenza should always be supervised by an adult who understands how to use Relenza.
- If you have the flu: Inhale 2 inhalations of Relenza (1 blister per inhalation) twice a day for 5 days, once in the morning and once in the evening. Take 2 doses on the first day of treatment whenever possible if there are at least 2 hours between doses.

- To prevent the flu: Inhale 2 inhalations of Relenza (1 blister per inhalation) once a day for 28 days or for as long as directed.

What do I do if I miss a dose?

- Take a missed dose as soon as you remember, unless it is 2 hours or less before your next dose.
- Do not take a double dose or extra doses.
- If you miss several doses, tell your health care professional and follow the advice given to you.

Side Effects

- Some patients have had breathing problems while taking Relenza. If you have trouble breathing or have wheezing after your dose of Relenza, stop taking Relenza and get medical attention.
- The most common side effects of Relenza are headaches; diarrhea; nausea; vomiting; nasal irritation; bronchitis; cough; sinusitis; ear, nose and throat infections; and dizziness.
- Other side effects that have been reported, but were not as common, include rashes and allergic reactions.

How and where should I store Relenza?

- Relenza should be stored at room temperature below 77 F and kept in a dry place.
- Relenza is not in a childproof container. Keep this medication out of reach of children.
- Discard the Diskhaler after finishing your treatment.

Form 10 – PI Mass Vaccination POD Health Care Instructions for Individuals NOT Receiving Vaccine

STAY INFORMED

- You may get more information on pandemic influenza from your local area hotline: 1-800-123-4567.
- Other sources of information are the Mississippi State Department of Health website: www.healthy4u.gov or the Federal government: www.pandemicflu.gov.

MONITOR FOR SYMPTOMS

- Monitor for symptoms **TWICE A DAY**.
 - Early signs of flu are fever, sore throat, cough, or shortness of breath.
- **If you develop symptoms of the flu, contact your healthcare provider immediately.**
- Information about new signs or symptoms of this flu will be provided through the above listed resources.
- Information about when you may stop monitoring for symptoms will also be available through the above listed resources.

PROTECT YOURSELF

- Keep your distance: have vaccinated persons provide care for those ill from the flu; avoid crowds; limit travel; travel to and from work during off-peak hours, if possible.
- Cover your cough and sneeze: cover your mouth and nose with a tissue; never reuse a tissue; put your tissue in the trash can; if you do not have a tissue, cough or sneeze into your upper sleeve, not your hands.
- Wash your hands: wash your hands with warm, soapy water for at least 10-15 seconds OR use a hand sanitizer after coughing or sneezing.
- Keep living and work areas clean: clean area with household detergents (dishwashing liquid, laundry detergent, hand soap), sanitize surfaces with bleach or alcohol.


PREPARE FOR A POSSIBLE EXTENDED STAY AT HOME

- Store a two week supply of water and food.
- Ask your doctor, insurance company, and pharmacist if you can get an extra supply of your regular prescription drugs.
- Have nonprescription drugs and other health supplies on hand, including pain relievers, stomach remedies, cough and cold medicines, fluids with electrolytes, and vitamins.
- Talk with family members and loved ones about how you or they would be cared for if you or they got sick.
- Talk with family members and loved ones about other items you may need during your stay at home.

Form 11 – VAERS Form

WEBSITE: www.vaers.hhs.gov E-MAIL: info@vaers.org

FAX: 1-877-721-0366

 <p>VACCINE ADVERSE EVENT REPORTING SYSTEM 24 Hour Toll-Free Information 1-800-822-7967 P.O. Box 1100, Rockville, MD 20849-1100 PATIENT IDENTITY KEPT CONFIDENTIAL</p>		<p>For CDC/FDA Use Only</p> <p>VAERS Number _____</p> <p>Date Received _____</p>																										
<p>Patient Name:</p> <p>_____ Last First M.I.</p> <p>Address</p> <p>_____ _____ _____</p> <p>City State Zip</p> <p>Telephone no. (____) _____</p>		<p>Vaccine administered by (Name):</p> <p>_____ _____</p> <p>Responsible Physician _____</p> <p>Facility Name/Address</p> <p>_____ _____ _____</p> <p>City State Zip</p> <p>Telephone no. (____) _____</p>																										
<p>Form completed by (Name):</p> <p>_____ _____</p> <p>Relation <input type="checkbox"/> Vaccine Provider <input type="checkbox"/> Patient/Parent to Patient <input type="checkbox"/> Manufacturer <input type="checkbox"/> Other</p> <p>Address (if different from patient or provider)</p> <p>_____ _____ _____</p> <p>City State Zip</p> <p>Telephone no. (____) _____</p>		<p>1. State</p> <p>2. County where administered</p> <p>3. Date of birth 4. Patient age</p> <p>____/____/____ _____</p> <p>mm dd yy mm dd yy</p>																										
<p>5. Sex <input type="checkbox"/> M <input type="checkbox"/> F</p> <p>6. Date form completed</p> <p>____/____/____</p> <p>mm dd yy</p>		<p>7. Describe adverse event(s) (symptoms, signs, time course) and treatment, if any</p> <p>_____ _____ _____ _____ _____ _____</p>																										
<p>8. Check all appropriate:</p> <p><input type="checkbox"/> Patient died (date ____/____/____)</p> <p><input type="checkbox"/> Life threatening illness</p> <p><input type="checkbox"/> Required emergency room/doctor visit</p> <p><input type="checkbox"/> Required hospitalization (____ days)</p> <p><input type="checkbox"/> Resulted in prolongation of hospitalization</p> <p><input type="checkbox"/> Resulted in permanent disability</p> <p><input type="checkbox"/> None of the above</p>		<p>9. Patient recovered <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN</p> <p>10. Date of vaccination</p> <p>____/____/____</p> <p>mm dd yy AM</p> <p>Time _____ PM</p>																										
<p>11. Adverse event onset</p> <p>____/____/____</p> <p>mm dd yy AM</p> <p>Time _____ PM</p>		<p>12. Relevant diagnostic tests/laboratory data</p> <p>_____ _____ _____</p>																										
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a. _____	_____	_____	_____	_____	_____																							
b. _____	_____	_____	_____	_____	_____																							
<p>15. Vaccinated at:</p> <p><input type="checkbox"/> Private doctor's office/hospital <input type="checkbox"/> Military clinic/hospital</p> <p><input type="checkbox"/> Public health clinic/hospital <input type="checkbox"/> Other/unknown</p>		<p>16. Vaccine purchased with:</p> <p><input type="checkbox"/> Private funds <input type="checkbox"/> Military funds</p> <p><input type="checkbox"/> Public funds <input type="checkbox"/> Other/unknown</p>																										
<p>17. Other medications</p> <p>_____ _____ _____</p>		<p>18. Illness at time of vaccination (specify)</p> <p>_____ _____ _____</p>																										
<p>19. Pre-existing physician-diagnosed allergies, birth defects, medical conditions (specify)</p> <p>_____ _____ _____</p>		<p>20. Have you reported this adverse event previously?</p> <p><input type="checkbox"/> No <input type="checkbox"/> To health department</p> <p><input type="checkbox"/> To doctor <input type="checkbox"/> To manufacturer</p>																										
<p>21. Adverse event following prior vaccination (check all applicable, specify)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Adverse Event</th> <th>Onset Age</th> <th>Type Vaccine</th> <th>Dose no. in series</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> In patient</td> <td>____</td> <td>____</td> <td>____</td> </tr> <tr> <td><input type="checkbox"/> In brother or sister</td> <td>____</td> <td>____</td> <td>____</td> </tr> </tbody> </table>		Adverse Event	Onset Age	Type Vaccine	Dose no. in series	<input type="checkbox"/> In patient	____	____	____	<input type="checkbox"/> In brother or sister	____	____	____	<p>Only for children 5 and under</p> <p>22. Birth weight _____ lb. _____ oz.</p> <p>23. No. of brothers and sisters _____</p>														
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<input type="checkbox"/> In patient	____	____	____																									
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<p>Only for reports submitted by manufacturer/immunization project</p> <p>24. Mfr./imm. proj. report no. _____</p> <p>25. Date received by mfr./imm.proj. _____</p>		<p>26. 15 day report?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>																										
<p>27. Report type</p> <p><input type="checkbox"/> Initial <input type="checkbox"/> Follow-Up</p>		<p>Health care providers and manufacturers are required by law (42 USC 300aa-25) to report reactions to vaccines listed in the Table of Reportable Events Following Immunization. Reports for reactions to other vaccines are voluntary except when required as a condition of immunization grant awards.</p>																										

Form VAERS-1(FDA)

GENERAL

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

SPECIFIC INSTRUCTIONS

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

- Item 7: Describe the suspected adverse event. Such things as temperature, local and general signs and symptoms, time course, duration of symptoms, diagnosis, treatment and recovery should be noted.
- Item 9: Check "YES" if the patient's health condition is the same as it was prior to the vaccine, "NO" if the patient has not returned to the pre-vaccination state of health, or "UNKNOWN" if the patient's condition is not known.
- Item 10: Give dates and times as specifically as you can remember. If you do not know the exact time, please and 11: indicate "AM" or "PM" when possible if this information is known. If more than one adverse event, give the onset date and time for the most serious event.
- Item 12: Include "negative" or "normal" results of any relevant tests performed as well as abnormal findings.
- Item 13: List ONLY those vaccines given on the day listed in Item 10.
- Item 14: List any other vaccines that the patient received within 4 weeks prior to the date listed in Item 10.
- Item 16: This section refers to how the person who gave the vaccine purchased it, not to the patient's insurance.
- Item 17: List any prescription or non-prescription medications the patient was taking when the vaccine(s) was given.
- Item 18: List any short term illnesses the patient had on the date the vaccine(s) was given (i.e., cold, flu, ear infection).
- Item 19: List any pre-existing physician-diagnosed allergies, birth defects, medical conditions (including developmental and/or neurologic disorders) for the patient.
- Item 21: List any suspected adverse events the patient, or the patient's brothers or sisters, may have had to previous vaccinations. If more than one brother or sister, or if the patient has reacted to more than one prior vaccine, use additional pages to explain completely. For the onset age of a patient, provide the age in months if less than two years old.
- Item 26: This space is for manufacturers' use only.