



Public Health Preparedness and  
Response  
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# Pandemic Influenza Response Plan

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Public Health Preparedness and Response RECORD OF CHANGES

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DATE	DESCRIPTION OF CHANGE	AFFECTED SECTION
June 30, 2019	Plan rewrite	All

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## TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b>	<b>3</b>
<b>INTRODUCTION</b>	<b>8</b>
<b>PURPOSE</b>	<b>9</b>
<b>FEDERAL RESPONSIBILITIES</b>	<b>9</b>
<b>STATE RESPONSIBILITIES</b>	<b>9</b>
<b>ASSUMPTIONS</b>	<b>10</b>
<b>WDH INCIDENT MANAGEMENT, AUTHORITY, AND ACTIVITIES</b>	<b>11</b>
Activities by Pandemic Interval	12
Wyoming Pandemic Intervals 1 and 2	12
Wyoming Pandemic Interval 3	13
Wyoming Pandemic Intervals 4 and 5	13
<b>LABORATORY TESTING, SURVEILLANCE, AND EPIDEMIOLOGIC RESPONSE</b>	<b>13</b>
Existing Surveillance System and Routine Epidemiologic Response	13
Passive Surveillance of Confirmed Cases	13
Influenza-like Illness Sentinel Surveillance Network (ILINet)	13
Pediatric Deaths	14
Epidemiologic Investigations and Outbreak Control	14
Current Laboratory Testing	14
Deaths from Influenza and Pneumonia	15
Animal Surveillance.	15
Activities by Wyoming Pandemic Interval	15
Wyoming Interval 1	15
Wyoming Interval 2	15
Wyoming Interval 3	17
Wyoming Interval 4	18
Wyoming Interval 5	18
Deceleration	19

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Preparation	19
Influenza Death Surveillance During a Pandemic	20
<b>INFLUENZA DISEASE CONTROL AND PREVENTION</b>	<b>20</b>
Isolation, Quarantine, and Community Mitigation Activities	20
Wyoming Intervals 3 and 4	21
Wyoming Interval 5	23
Deceleration	23
Preparation	24
Infection Control	24
Mask and respirator use in non-healthcare settings during a pandemic	25
Protection for Workforce Sustainability	27
<b>VACCINE DELIVERY</b>	<b>27</b>
Annual Vaccination Campaign	27
Influenza and Pneumococcal Vaccine Distribution	27
Vaccine Management During a Pandemic Response	27
Personnel	28
Allocation	29
Ordering and Distribution	29
Storage and Handling	30
Transportation of Vaccine to Sites Identified by Counties	30
Vaccination Clinics	31
Data Collection and Accountability	32
Target Recipient Groups	32
Estimates of and Plans to Vaccinate Priority Group Members	33
Education Regarding the Priority Groups List	34
<b>ANTIVIRAL AGENTS/MEDICAL COUNTERMEASURES</b>	<b>34</b>
Background Information on Antiviral Agents	34
Strategies for Antiviral Drug Use	35

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Activities by Wyoming Pandemic Interval	37
Wyoming Intervals 1 and 2	37
Wyoming Interval 3	37
Wyoming Intervals 4 and 5	38
State Purchase of Antivirals (State Stockpile):	38
SNS Stockpile	38
<b>HEALTHCARE SURGE CAPACITY</b>	<b>38</b>
Estimate of Need for Healthcare Services	39
Evaluation of Existing Healthcare Infrastructure and EMS	39
Maintenance of Healthcare Services (see Appendix H for more detailed guidance)	40
Strategic National Stockpile (SNS) Ventilator Guidance	41
<b>COMMUNICATIONS</b>	<b>42</b>
<b>APPENDICES</b>	<b>42</b>
Appendix A: Pandemic Influenza Working Group and Stakeholders	43
Wyoming Department of Health Pandemic Influenza Working Group Members	43
Pandemic Influenza Stakeholders	43
Representatives from the following:	43
Appendix B: Pandemic Influenza Planning Roles	45
Federal Planning Roles	45
Wyoming Department of Health Planning Roles	45
Local Planning Roles	45
Appendix C: Pandemic Planning Guidance for Local Public Health	47
Command and Control	47
Wyoming Interval 1	47
Wyoming Interval 2	47
Wyoming Intervals 3-5 and Deceleration Interval	47
Wyoming Preparation Interval	48
Surveillance	48

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Wyoming Interval 1	48
Wyoming Interval 2	48
Wyoming Intervals 3-5 and Deceleration Interval	48
Wyoming Preparation Interval	48
Vaccine Management	48
Wyoming Interval 1	48
Wyoming Intervals 2-5 and Deceleration Interval	48
Wyoming Preparation Interval	49
Antiviral Management	49
Wyoming Interval 1	49
Wyoming Intervals 2-5 and Deceleration Interval	49
Wyoming Preparation Interval	50
Emergency Response	50
Wyoming Interval 1	50
Wyoming Intervals 2-5 and Deceleration Interval	50
Wyoming Preparation Interval	50
Communications	50
Wyoming Interval 1	50
Wyoming Intervals 2-5 and Deceleration Interval	50
Wyoming Preparation Interval	51
Appendix D1: Public Health Ordered Isolation Letter to Suspected and Confirmed Novel Influenza Cases	52
Appendix D2: Voluntary Isolation Letter for Novel Influenza Cases	55
Appendix E: Quarantine Instructions for Contacts of Novel Influenza Cases	57
Appendix F: Vaccination Tiers and Population Groups	59
Appendix G: Antiviral Drug Priority Group Recommendations*	60
Appendix H: Guidelines for Healthcare Facilities Management	62
Appendix I: Individual and Family Preparedness*	70
Appendix I: School Preparedness*	77



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## INTRODUCTION

Pandemic influenza is considered to be a relatively high probability event; however, pandemics are difficult to predict and may occur with very little warning. Most experts believe there will be one to six months between the identification of a novel influenza virus and the time widespread outbreaks begin to occur in the United States. Outbreaks are expected to occur simultaneously throughout the country, preventing relocation of human and material resources. The effect of influenza on individual communities will be relatively prolonged. Due to the prolonged nature of a pandemic influenza event, the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and the Wyoming Department of Health (WDH) have developed pandemic phases and intervals in order to facilitate coordinated plans (Table 1).

**Table 1: Pandemic Influenza Phases and Intervals**

<i><b>WHO Phase</b></i>	<i><b>Wyoming Interval</b></i>	<i><b>Description</b></i>
<i>Interpandemic Phase</i>	1	No new influenza virus subtypes have been detected in humans.
<i>Alert Phase</i>	2	A novel influenza virus is known to have caused infection in humans (but NOT in U.S.), resulting in sporadic cases or small clusters, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.
<i>Pandemic Phase</i>	3	Limited transmission in U.S. states excluding WY, or widespread transmission in other countries. May include isolated sporadic cases in WY, without evidence of transmission.
	4	Widespread transmission in U.S. states excluding WY. May include limited transmission in WY.
	5	Increased and sustained transmission in WY population.
	Deceleration	Rates of pandemic influenza infection are decreasing.
<i>Transition</i>	Preparation	Pandemic influenza cases have ceased, or occur only sporadically.



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## PURPOSE

This plan provides a framework for WDH for detecting and responding to an influenza pandemic. This plan will be reviewed and updated biennially, or if significant weaknesses are identified during an actual response or as the result of an exercise. **NOTE: In the event of a pandemic, the judgments of the public health leadership, based on the epidemiology of the outbreak, the extent of population infection, and national guidance, may alter or override anticipated strategies and plans.**

## FEDERAL RESPONSIBILITIES

The federal government is responsible for nationwide coordination of the pandemic influenza response. Specific areas of responsibility include the following:

- Surveillance in the U.S. and globally
- Epidemiologic investigation in the U.S. and globally
- Development and use of diagnostic laboratory tests and reagents
- Development of reference strains and reagents for vaccines
- Vaccine evaluation and licensure
- Determination of populations at highest risk and strategies for vaccination and antiviral use
- Assessment of measures to decrease transmission (such as travel restrictions, isolation, and quarantine)
- Deployment of federally purchased vaccine
- Deployment of antiviral agents in the Strategic National Stockpile (SNS)
- Evaluation of the efficacy of response measures
- Evaluation of vaccine safety
- Deployment of the Commissioned Corps Readiness Force and Epidemic Intelligence Service officers
- Medical and public health communications nationally

## STATE RESPONSIBILITIES

States are responsible for the coordination of the pandemic influenza response within and between their jurisdictions. Specific areas of responsibility include the following:

- Influenza surveillance in Wyoming
- Epidemiologic investigations in Wyoming
- Implementation of control measures in Wyoming
- Specialized testing at the Wyoming Public Health Laboratory (WPHL)
- Vaccine and antiviral distribution
- Medical and public health communications within Wyoming
- Identification of public and private sector partners needed for effective planning and response
- Development of key components of pandemic influenza preparedness plan (surveillance, vaccine and antiviral distribution, disease control, and communications) following guidance provided by the Department of Health and Human Services (HHS) in the national Pandemic Influenza Plan 2017 Update located [here](#).
- Integration of pandemic influenza planning with other planning activities conducted under Centers for Disease Control and Prevention's (CDC) Public Health Emergency

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Preparedness (PHEP) Cooperative Agreement and Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program Cooperative Agreement.

- Coordination with local jurisdictions to ensure the development of local plans as called for by the state plan and provision of resources, such as templates, to assist in the planning process
- Development of data management systems needed to implement components of the plan
- Assistance to local jurisdictions in exercising plans
- Coordination with adjoining jurisdictions

## **ASSUMPTIONS**

- A novel influenza virus strain will likely emerge in a country other than the United States, but a novel strain could emerge first in the U.S.
- The pandemic may occur during time periods not normally associated with the usual influenza season, and the pandemic strain may attack categories of people at different rates than those which normally occur during the influenza season.
- There may be as little as one to six months warning before outbreaks begin in the U.S. if the pandemic emerges outside this country.
- Although there may be isolated pockets, the pandemic could affect all areas of the state.
- When the pandemic occurs, vaccines and antiviral medicines will be in short supply and will have to be allocated on a priority basis.
- Given current vaccine technology, a pandemic vaccine might not be available for up to six months.
- A second dose of vaccine may be required to develop immunity to the novel virus.
- In a pandemic, vaccine purchase and distribution options include:
  - Public sector purchase and distribution of all pandemic influenza vaccine.
  - A mixed public-private system where public sector supply may be targeted to specific priority groups (e.g., health care workers and those providing essential public safety services) and those who may be underserved by the current system.
  - Maintenance of the current, largely private, system.
- The federal government has assumed responsibility for devising a liability program for vaccine manufacturers and persons administering the vaccine.
- Secondary bacterial infections following influenza illness may stress antibiotic supplies.
- Response to the demand for services may require non-standard approaches, including:
  - Discharge of all but critically ill hospital patients.
  - Expansion of hospital capacity by using all available space and less than code beds.
  - Increase of patient-to-hospital staff ratio.
  - Recruitment of volunteers who can provide custodial and other non-medical services under the general supervision of health and medical workers.
  - Relaxation of practitioner licensure requirements as deemed appropriate.
  - Utilization of general purpose and special needs shelters, such as the Wyoming Medical Stations, as temporary health facilities.
- Educating the public about the rationale for priority groups for antivirals and vaccine will be an important aspect of public education.
- There will be widespread circulation of conflicting information, misinformation, and rumors. Communication must be coordinated among all relevant agencies to ensure consistent messages to the general public.

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## WDH INCIDENT MANAGEMENT, AUTHORITY, AND ACTIVITIES

The WDH Director (or designee) is responsible for officially activating the Wyoming Pandemic Influenza Response Plan during an influenza pandemic. The WDH Emergency Operations Plan (EOP) describes the WDH Incident Management System that will be implemented in the event of a public health emergency, including an influenza pandemic. The WDH Director will decide when to activate the Incident Management System based on current information and recommendations from the State Health Officer (SHO) and the State Epidemiologist.

1. WDH Incident Management Team (IMT) will be activated as warranted by interval development.
2. Pandemic Influenza Working Group provides subject matter experts to oversee the planning, response and mitigation efforts and ensure that this plan is developed, reviewed, and periodically revised. During a pandemic response, the working group becomes an augmentation for the IMT, filling roles within the incident management team as required by the incident's progress. The working group may need to be expanded to include other subject matter experts as a pandemic situation develops. Current group members are listed in Appendix A.
  - a. **Powers of the State Health Officer (SHO)** - During a pandemic influenza response the SHO may implement the following activities as prescribed by the referenced statutes:
3. Quarantine and Isolation - W.S. 35-1-240
  - a. The WDH, through the SHO, or under his/her direction and supervision, has the power to establish, maintain and enforce isolation and quarantine, and in pursuance thereof, and for such purpose only, to exercise such physical control over property and over the persons of the people within this state as necessary for the protection of the public health (W.S. 35-1-240). Any person who has been quarantined may appeal to the district court at any time for release from the quarantine (W.S. 35-4-112).
4. Closing of Public Buildings and Events - W.S. 35-1-240
  - a. The SHO has the authority to close theaters, schools, and other public places, and to forbid gatherings of people when necessary to protect the public health (W.S. 35-1-240).
5. Mandatory Vaccination W.S. 35-4-113
  - a. In most cases, the SHO does not have the authority to subject any person to any vaccination or medical treatment without the consent of that person (W.S. 35-4-113). However, during a public health emergency, the SHO may subject a person to vaccination or medical treatment without consent in the following circumstances:
    - i. If the parent, legal guardian or other adult person authorized to consent to medical treatment of a minor child cannot be located and consulted and the vaccination of or medical treatment for the minor child is reasonably needed to protect the public health or protect the minor child from disease, death, disability or suffering;
    - ii. If the person authorized to consent on behalf of an incompetent person cannot be located and consulted and the vaccination of or medical treatment for the incompetent person is reasonably needed to protect the

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- public health or protect the incompetent person from disease, death, disability or suffering.
  - iii. If a person withholds or refuses consent for himself, a minor or other incompetent when the vaccination or medical treatment is reasonably needed to protect the health of others from a disease carrying the risk of death or disability, then the person for whom the vaccination or medical treatment is refused may be quarantined by the SHO.
6. Liability - W.S. 35-4-114(a)
- a. During a public health emergency declared by the Governor (W.S. 35-4-115(a)(i)) any healthcare provider or other person who in good faith follows the instructions of the SHO is immune from any liability arising from complying with those instructions (W.S. 35-4-114). This immunity does not apply to acts or omissions constituting gross negligence or willful or wanton misconduct.
7. Temporary Practice Licenses – W.S. 35-4-114(b) and (c)
- a. If necessary during a declared public health emergency, the state health officer may issue temporary practice licenses to health care providers who are retired, who have an inactive license, or who are licensed in another state without a Wyoming license pending action on an application for issuance of a temporary license by the appropriate licensing board pursuant to the subsection. All temporary health care provider licenses issued by the state health officer under subsection (b) of this section shall terminate automatically upon declaration of the governor, pursuant to W.S. 35-4-115(a) (i), that the public health emergency has ended.
8. Fatality Management - W.S. 35-1-240 and W.S. 35-1-241
- a. The WDH through the SHO is given the statutory “power and duty ... To regulate the disposal, transportation, interment, and disinterment of the dead.” [35-1-240 (a) (viii)]. In addition, WY Statute 35-1-241 details powers of the SHO during a public health emergency regarding the dead. Refer to the Mass Fatality Management Plan and Appendix J for further details.

One of the mitigation strategies the WDH will likely employ during a pandemic is to discourage large public gatherings. This advice would apply to large gatherings at memorial services or funerals. However, WDH does not have intentions of preventing family members from attending a small memorial service or funeral for loved ones, although it is possible public health officials would take such action if the situation suggested it was necessary to protect public health.

WDH will offer guidance to healthcare facilities, morgue/mortuary staff, and the public on ways to safely handle the bodies of those deceased from pandemic influenza (see Appendix K).

## **Activities by Pandemic Interval**

### **1. Wyoming Pandemic Intervals 1 and 2**

- a. WDH has established a Pandemic Influenza Working Group.
- b. WDH has developed this response plan as an annex to the department's existing EOP.
- c. WDH Public Health Preparedness and Response Unit (PHPR) maintains lists of partners, resources, and facilities to be utilized during a public health emergency.
- d. WDH will continue to coordinate planning activities with bordering jurisdictions, including counties, states, and unique populations (such as American Indian

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nations and Military Installations). Additionally, WDH advises local health departments to contact and coordinate their activities with international airports, F.E. Warren Air Force Base, and the tribes on the Wind River Indian Reservation.

- e. WDH is working with local public health and emergency management agencies to assist with the development of local pandemic plans. WDH has developed and distributed two documents to assist counties in their planning process: Pandemic Influenza Planning Roles (Appendix B) and Pandemic Planning Guidance for Local Public Health (Appendix C).

## **2. Wyoming Pandemic Interval 3**

- a. Consider convening the Working Group, and other partners and stakeholders to review plan.
- b. Notify local jurisdictions and encourage them to review their pandemic response plans and current capabilities.
- c. Through the Health Care Coalitions, encourage hospitals to review their surge capacity and infection control plans.
- d. Coordinate with other states and federal agencies and bordering jurisdictions.
- e. Consider activating IMT.

## **3. Wyoming Pandemic Intervals 4 and 5**

- a. Meet with partners and stakeholders as appropriate to review and update the plan.
- b. Notify key government officials and legislators of the need for additional monetary resources and other additional resources as needed.
- c. Coordinate with other states, federal agencies, and bordering jurisdictions.
- d. Monitor staffing and other agency resource needs.
- e. Document expenses related to the pandemic response.
- f. Consider activating IMT.

# **LABORATORY TESTING, SURVEILLANCE, AND EPIDEMIOLOGIC RESPONSE**

## **Existing Surveillance System and Routine Epidemiologic Response**

The Infectious Disease Epidemiology Unit (ID Epi) conducts surveillance, epidemiologic investigation, and implementation of control measures during yearly influenza seasons. ID Epi works closely with the WPHL for routine and outbreak-related influenza testing.

### **1. Passive Surveillance of Confirmed Cases**

- a. Laboratory confirmed influenza and influenza-associated deaths are reportable conditions to WDH. Reports are received from physicians, hospitals, and laboratories. Rapid test, and real-time reverse transcriptase polymerase chain reaction (rRT-PCR) positive results are reported through this system.

### **2. Influenza-like Illness Sentinel Surveillance Network (ILINet)**

- a. ID Epi enrolls an average of 30 healthcare providers (ILINet sentinel sites) each year participating in the U.S. Outpatient Influenza-like Illness Surveillance Network coordinated by the CDC. This system consists of two components:

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- i. Influenza-Like Illness Reporting: The influenza sentinel sites report influenza-like illness (ILI) morbidity data directly to the CDC via internet or fax on a weekly basis starting in early October. Influenza sentinel sites are asked to continue to report ILI throughout the year. The weekly transmission includes the number of patients seen for ILI during the week in four age categories (0-4 years, 5-24 years, 25-64 years and 65+ years) and the total number of patients seen for any reason during the week.
  - ii. Submission of Laboratory Samples: The influenza sentinel sites are asked to submit nasal, nasopharyngeal, and/or throat swab specimens from a sample of their patients presenting with ILI to the WPHL for influenza testing and typing; nasopharyngeal swabs are preferred. Both positive and negative results are reported to the ID Epi. WPHL reports results to the submitting ILINet sentinel provider.

### **3. Pediatric Deaths**

- a. ID Epi investigates all reports of deaths in patients < 18 years old with evidence of influenza virus infection using CDC-provided materials.

### **4. Epidemiologic Investigations and Outbreak Control**

- a. IID Epi routinely investigates clusters and outbreaks of influenza in specialized populations (schools, long-term care facilities, hospitals, etc.). Pharmaceutical and non-pharmaceutical control measures are recommended and implemented as part of the outbreak investigations.

## **Current Laboratory Testing**

The WPHL currently provides specimen collection kits and protocols to each of the ILINet sentinel providers to ensure the safe, proper collection and transport of influenza specimens during the influenza season (October – May). These collection kits are prepackaged and shipped to the ILINet sentinel sites at the beginning of the influenza season, and are continually re-supplied to the ILINet sentinel providers as they submit specimens through the season. ILINet sentinel sites may ship flu specimens via the state courier free of charge. If they choose to use USPS or an overnight delivery service, they will be responsible for the cost of shipping. One exception has been made for the Mammoth Clinic in Yellowstone to use a laboratory FedEx account as they do not have access to any courier in their area. All shipments must comply with current DOT/IATA shipping regulations

In addition to seasonal influenza surveillance, any licensed healthcare provider that suspects a novel flu strain or has presumptively identified a suspect cluster of influenza-like illness (ILI), may make a request through ID Epi to submit influenza specimens throughout the year. If sufficient justification exists, ID Epi will contact the WPHL and collection kits will be sent to the provider for controlled collection and shipment of specimens to the laboratory for testing.

Currently, specimens are received, accessioned, and screened by rRT-PCR for types A (subtypes H1 and H3) and B (subtypes Victoria and Yamagata). If the specimen is type B, WPHL reports the results to ID Epi and conducts no further testing. All unusual subtypes by rRT-PCR will be reported by WPHL to CDC via the Emergency Response Hotline (770-488-7100).

Laboratory biosafety procedures

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- a. Laboratory staff involved in accessioning, processing, and analysis of potential influenza virus samples will be monitored for presentation of ILI during the period of the influenza season when positive samples are being submitted. All laboratory staff in the microbiology section are offered the current vaccine.
  - b. Laboratory staff involved in molecular analysis will ensure that enhanced biosafety level 2 procedures are followed for all sample processing by following the WPHL Biosafety Plan and the Risk Assessment for Influenza.

Currently the influenza laboratory staff includes four trained personnel that rotate through influenza testing on a weekly period. WPHL would assess capability of applicable personnel when a need for surge capacity arises.

## **Deaths from Influenza and Pneumonia**

The Vital Statistics Services (VSS) of the WDH reports the total number of deaths processed each week as well as the number of those deaths attributable to pneumonia and influenza to ID Epi.

## **Animal Surveillance.**

The WDH State Public Health Veterinarian participates in and maintains ongoing communication with the Wyoming State Veterinary Laboratory (WSVL), Wyoming Department of Game and Fish (WGFD), US Fish and Wildlife Services (USFWS), the Wyoming State Veterinarian, The Wyoming Livestock Board, and others. The WDH State Public Health Veterinarian will work with these entities to investigate zoonotic influenza cases in accordance with the National Association of State Public Health Veterinarians (NASPHV) Guidance for State and Local Health Departments for the Investigation of Human Infections with Novel Influenza A Viruses at the Animal-Human Interface. This document can be found at:

<http://nasphv.org/Documents/NASPHVJointGuidanceOnNovelFluResponse2012.pdf>

## **Activities by Wyoming Pandemic Interval**

### **1. Wyoming Interval 1**

- a. Maintain the routine network of ILINet sentinel providers and attempt to expand to at least one physician or clinic for each county.
- b. WPHL has implemented rRT-PCR for preliminary detection of influenza virus strains in clinical specimens. rRT-PCR is performed on the original patient specimen. Turn-around time can be within 24 hours. rRT-PCR can identify the virus type as either type A or B, and subtype as H1, H3, or Victoria and Yamagata, respectively, the currently circulating subtypes, and H5 and H7 the avian strain.
- c. Maintain an aberration detection system (syndromic surveillance) that monitors daily patient load to detect variation in emergency outpatient visits that would then be investigated to determine a cause, which could be influenza. ID Epi monitors and reviews data from Emergency Department admissions through the Wyoming syndromic surveillance system.
- d. Emphasize reporting of outbreaks in long-term care facilities and other institutional settings and provide epidemiologic support for investigation activities, including laboratory support to identify causes.

### **2. Wyoming Interval 2**



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- a. Monitor CDC weekly influenza updates regarding clinical, epidemiological, and virologic characteristics of the novel strain.
  - b. Provide updates to public and private healthcare providers, including, but not limited to county health officers, public health nurses, infection control practitioners, ILINet sentinel providers, hospitals, clinics, and private physician offices, through the ID Epi website, Health Alert Network (HAN) notifications, and telephone and video conferences as needed. All information and materials will be approved by the State Health Officer and/or the State Epidemiologist prior to distribution.
  - c. WPHL will obtain reagents from CDC to detect and identify the novel strain, when available.
  - d. Request that ILINet sentinel sites collect specimens from patients presenting with ILI, especially those with a recent travel history to a region where the novel strain is circulating or persons with unusual/severe symptoms.
  - e. Other providers will be informed that any testing for novel influenza will be conducted only following consultation with ID Epi staff due to the limited capacity of the WPHL. If WDH and the provider agree that testing for the novel strain is indicated, ID Epi will coordinate the proper submission of specimens to the WPHL.
  - f. ID Epi will request that all providers collect specimens from patients meeting the following criteria:
    - i. Hospitalized patients with severe ILI, including pneumonia, who meet the epidemiologic criteria for exposure risk (see iii), or
    - ii. Non-hospitalized patients with ILI and with strong epidemiologic suspicion of novel influenza virus exposure (see iii).
    - iii. Epidemiologic criteria for risk exposure:
      1. Persons who recently visited or lived in an area affected by highly pathogenic novel influenza A outbreaks in animals (e.g. domestic poultry) or where a human case of novel influenza has been confirmed, and either
      2. had direct contact with affected animals, or
      3. had close contact with a person with confirmed or suspected novel influenza.
    - iv. Persons at occupational risk for infection with a novel strain of influenza (e.g., 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.
  - g. Laboratory algorithm: For cases with a strong epidemiologic suspicion of novel influenza virus exposure, WPHL will screen samples using rRT-PCR. Specimens that are type B will be subtyped using rRT-PCR for Victoria or Yamagata and will be reported with no further workup is necessary. If a specimen is negative for type A and type B, no further workup is necessary. Specimens that are positive for type A will be tested with rRT-PCR for H1 and H3; if negative for H1 and H3, they will be tested for H5 and H7. If negative for all four, specimen will be sent to the CDC overnight for further sub-typing. Specimens positive for H1, H3, H5 or H7 will immediately be reported to ID Epi via fax and phone. A positive rRT-PCR test result for a novel influenza strains should be considered presumptive, pending testing by a second reference laboratory. Any patient sample may be sent to the



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CDC for further strain identification. The laboratory will call the CDC Emergency Response Hotline (770-488-7100) before sending specimens for influenza A reference testing. This number is available 24 hours a day, 7 days a week. Hotline staff will notify a member of the Influenza Branch who will contact the laboratory to answer questions and provide guidance. Specimens should be sent by priority overnight shipping for receipt within 24 hours. Samples may be frozen at -70° C if the package cannot be shipped within a specified time. A specimen inventory sheet, assigned CDC case ID number, and a note "Influenza surveillance" will be included on all materials and specimens sent. All shipment must comply with current DOT/IATA shipping regulations.

- h. As usual, if at any phase of sub-typing, WPHL tests indicate that a patient sample contains a strain other than those currently circulating; the WPHL will immediately notify CDC via the Emergency Response Hotline (770-488-7100) for assistance.
- i. ID Epi will call the CDC Emergency Response Hotline (770-488-7100) to report a suspected case of infection with a novel influenza virus.
- j. ID Epi will conduct follow-up on all cases. Control measures (e.g. isolation and quarantine) will be conducted after approval from the State Epidemiologist and State Health Officer. Information on cases will be reported to CDC as requested.

### **3. Wyoming Interval 3**

- a. Expand the number of ILINet sentinel sites and possibly expand amount of testing each site is conducting. Possibly expand testing to also include private clinics, hospitals, private practices, institutions, and other healthcare facilities, as for interval 4.
- b. WPHL and ID Epi will coordinate to identify those facilities needing collection kits.
- c. Continue to request that all providers submit specimens for those persons meeting the epidemiologic criteria described in 2.f.
- d. ID Epi will strive to conduct individual follow-up and confirmation for all persons meeting the epidemiologic criteria described in 2.f, and all other persons who are laboratory confirmed positive for the novel strain.
- e. ID Epi will continue to monitor the syndromic surveillance system.
- f. Laboratory algorithm: Same as previous interval, with possible expansion to include all patients with healthcare provider clinical diagnosis of influenza based on direction from the State Epidemiologist
- g. ID Epi will assess functionality, timeliness, and completeness of reporting, data entry, and data dissemination, and will make improvements where warranted.
- h. Assess the need to screen travelers arriving in the state from affected countries or states.
- i. ID Epi will investigate outbreaks and increases in ILI, including those detected through the ILINet sentinel provider surveillance system and syndromic surveillance and implement control measures
- j. CDC will advise states on the percentage of isolates per week or month that they should send to CDC as part of efforts to monitor changes in the antigenicity and antiviral susceptibility of the pandemic virus. Throughout the pandemic, CDC will provide updated instructions on the collection of clinical and epidemiologic data that should accompany isolates. CDC could ask some state public health laboratories to perform rRT-PCR subtyping before sending specimens to CDC.
- k. ID Epi will report influenza cases to CDC by best available method and as directed by CDC.

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#### **4. Wyoming Interval 4**

- a. As resources allow, accept specimens from patients with a healthcare provider clinical diagnosis of influenza, particularly those with a positive rapid test. If needed, WPHL and ID Epi will create a priority testing plan under the direction of the State Epidemiologist, to be based upon the current disease situation and testing capabilities of PHL.
- b. WPHL has established a courier system that provides daily pickup and delivery to designated sites throughout the state. This courier system is the primary transportation route in the case of a pandemic. The courier provides pickups Monday through Friday. Locations of the courier sites and pick up times could be communicated to primary care facilities, providing overnight delivery of specimens to the laboratory. During a pandemic a commercial shipping source may be used as a secondary transportation route if necessary.
- c. Laboratory algorithm: Once the first case of a novel strain is detected in WY, specimens will be tested initially by rRT-PCR for that H subtype, and specimens that are positive for that subtype will be immediately sent to the CDC until we are instructed to send no further specimens. As high volumes of specimens are encountered, the WPHL will work with ID Epi to determine a schematic for prioritization of testing. Specimens that are negative for the novel subtype will be tested by rRT-PCR for A and B, and will follow the algorithm established as indicated above.
- d. Providers may be asked to report all influenza cases, both clinical and laboratory diagnosed, to ID Epi. Reports will contain patient specific information as per routine disease reporting.
- e. ID Epi will strive to conduct individual follow-up and confirmation for all persons who are laboratory-confirmed positive for the novel strain.
- f. ID Epi will continue monitoring the syndromic surveillance system.
- g. Consider a hospital beds-filled and beds-available surveillance system to locate and monitor available inpatient health care space by enrolling selected hospitals to monitor daily or weekly capacity.
- h. Coordinate receipt of selected autopsy specimens for submission for testing, as indicated.
- i. Provide materials and educate surveillance sources of the likelihood of a second and possible third wave of illness.
- j. ID Epi will monitor the number of pneumonia and influenza hospitalizations in each county using the hospital bed tracking system. This system allows hospital infection control to enter all data required to monitor novel flu at each hospital. ICP's will enter the data into the electronic system, and ID Epi will tabulate that information. ID Epi will then use that data to estimate rates of influenza hospitalizations for each county.
- k. WDH will report influenza cases to CDC by best available method and as directed by CDC.

#### **5. Wyoming Interval 5**

Once a novel strain becomes established in a given Wyoming community (as determined by ID Epi), WDH will no longer recommend that all healthcare providers from that community submit specimens on all patients with a clinical diagnosis of influenza.

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- a. WDH will return to a sentinel-based surveillance system in which ILINet sentinel sites continue to submit samples from a representative portion of their patients with ILI (e.g. first 5-10 patients with ILI per week) for trend monitoring. At this point, test results will not likely be clinically relevant and will only be used to monitor the epidemiology of the outbreak. This testing will help confirm or refute that continuing cases of ILI are indeed due to the novel influenza strain (and not other common causes of respiratory illness), and will also provide baseline data on cases of influenza between possible pandemic waves.
  - b. WPHL will only accept specimens from non-ILINet sentinel providers if determined to be clinically important for care.
  - c. Providers may be asked to report all influenza cases, both clinical and laboratory diagnosed, to ID Epi. Consideration may be given to asking providers to report daily aggregate numbers of influenza cases; in such a scenario, demographic information on influenza cases may be explored by looking at other databases such as syndromic surveillance, etc.
  - d. ID Epi will no longer be conducting individual case follow-up and confirmation on all cases.
  - e. ID Epi will continue to monitor the syndromic surveillance system.
  - f. Consider random telephone surveys of the population to estimate additional epidemiologic data such as attack rates.

## **6. Deceleration**

During this interval, it is evident that the rates of pandemic infection are declining. The decline provides an opportunity to begin planning for demobilization of community mitigation activities and recovery. General indicators of this interval might include low numbers (e.g. <10%) of specimens submitted to the state public health laboratory positive for the pandemic strain for at least two consecutive weeks, or the healthcare system capacity is below surge capacity.

- a. Continue sentinel-based surveillance system in which ILINet sentinel providers continue to submit samples from a representative portion of their patients with ILI (e.g. first 5-10 patients with ILI per week) for trend monitoring. At this point, test results will not likely be clinically relevant and will only be used to monitor the epidemiology of the outbreak. This sentinel-based testing will help confirm or refute that continuing cases of ILI are indeed due to the novel influenza strain (and not other common causes of respiratory illness), and will also provide baseline data on cases of influenza between possible pandemic waves.
- b. WPHL will only accept specimens from non-ILINet sentinel providers if determined to be clinically important for care.
- c. Providers may be asked to report all influenza cases, both clinical and laboratory diagnosed, to ID Epi. Consideration may be given to asking providers to report daily aggregate numbers of influenza cases; in such a scenario, demographic information on influenza cases may be explored by looking at other databases (syndromic surveillance systems, etc.).

## **7. Preparation**

In this interval, pandemic cases are no longer occurring, or occur only sporadically. Surveillance in this interval will be the same as for the Deceleration interval above.

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## **Influenza Death Surveillance During a Pandemic**

1. Currently, all influenza-associated deaths are required by statute (W.S. 35-4-107) to be reported to ID Epi within 24 hours and will continue to be reportable during a pandemic.
2. All deaths, regardless of the cause, are required by Wyoming statute to be reported to the WDH Vital Statistics Services within 3 days of occurrence. This VSS reporting system is electronically based. During a pandemic:
  - a. ID Epi will monitor and track the number of deaths daily.
  - b. In the case that electronic data are not available, ID Epi will contact coroners and death registrars weekly to ascertain the number of deaths per county. In many instances, the cause of death will be listed as pending in the initial reporting. However, during a pandemic tracking the number of deaths will provide valuable information even if the specific cause is not known immediately.
3. County Vital Statistics Registrars will have access to an electronic internet-based reporting system (Hospital Bed Tracking System) and will be asked to report on a daily basis the number of deaths in their county. The registrars will be asked to report the number of these deaths due to influenza or pneumonia if the cause is known. ID Epi will monitor and track the number of deaths daily.

## **INFLUENZA DISEASE CONTROL AND PREVENTION**

### **A. Isolation, Quarantine, and Community Mitigation Activities**

Targeted isolation and quarantine of specific individuals as ordered by public health officials may be effective in slowing or even preventing spread of the pandemic influenza virus to others during the early stages of a pandemic (see Appendix D1 for example of a public health isolation order and Appendix E for example of quarantine instructions). Once the pandemic influenza virus becomes well established and there is widespread transmission in a community, targeted isolation and quarantine of specific individuals will be impractical and may have limited impact in the prevention of transmission of pandemic influenza due to the short incubation period of the illness, the ability of persons with asymptomatic infection to transmit the virus, and the non-specific nature of clinical illness from influenza. However, during periods of widespread transmission, a broad recommendation encouraging the voluntary isolation of persons ill with influenza (see Appendix D2 for example of voluntary isolation instructions), and the voluntary quarantine of household contacts during a particularly severe pandemic, may be made and may have some impact in decreasing the transmission of influenza.

NOTE: When isolation and/or quarantine is ordered by public health officials for specific individuals or groups, it is the responsibility of local public health officials to ensure that the affected individuals have access to and are provided essential supplies and services.

Implementation of the community mitigation strategies discussed in this section may be based on the severity of the pandemic.

### **1. Wyoming Intervals 1 and 2**

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- a. PHPR will work with local government agencies to develop plans for mass isolation and quarantine which may be indicated in particular circumstances during a pandemic response.

## **2. Wyoming Intervals 3 and 4**

- a. ID Epi, the State Epidemiologist, and the State Health Officer may consider isolation for confirmed or suspected influenza cases (including those with negative tests, but with a strong epidemiologic suspicion and no alternate diagnosis), see Appendix D1.
  - i. Isolation may be at home, or if medically necessary, in a hospital for a period of time to be determined based on current epidemiology; or until the infection is laboratory-confirmed not to be caused by a novel influenza A virus.
  - ii. Those isolated at home may be given a letter detailing instructions for home isolation (Appendix D1).
  - iii. Treatment of influenza using neuraminidase inhibitors is most effective if given within 48 hours of symptom onset. If clinically indicated and supplies allow, antiviral treatment should be initiated as soon as possible even if laboratory results are not yet available.
  - iv. Alternative isolation plans for individuals in long-term care facilities, dormitories, etc. will be dealt with on a case-by-case basis.
  - v. In the event of travel-related isolation and quarantine (e.g., buses, planes), appropriate facilities as outlined in the WDH Non-Pharmaceutical Interventions Plan Plan will be utilized. Decisions to order isolation and quarantine will be made by the State Epidemiologist and State Health Officer. Local government agencies will be primarily responsible for providing all necessities associated with isolation and quarantine of travelers (e.g. food, clothing, and medical care).
- b. If epidemiologically indicated to protect public health, consideration may be given to the quarantine of close contacts of cases (and their contacts, if warranted) (see Appendix E). Close contacts shall be defined as those who have shared a defined setting (households, extended family, hospital, other residential institution, schools and child care facilities, military service, or other close prolonged contact) with a patient with proven or suspected novel influenza A infection. ID Epi will conduct interviews with cases and contacts and, under the guidance of the State Epidemiologist and State Health Officer, will recommend quarantine based on the current epidemiology of the virus.
  - i. Those quarantined at home may be given a letter detailing instructions for home quarantine (Appendix E). Alternative quarantine plans for individuals in long-term care facilities, dormitories, etc. will be dealt with on a case-by-case basis by local authorities.

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- c. Prophylaxis of close contacts shall be under the direction of the State Health Officer or State Epidemiologist. Post-exposure prophylaxis might be useful in attempts to control small, well-defined disease clusters.
  - d. As resources allow, a local public health nurse, or WDH employee, will monitor those in public health ordered home isolation/quarantine on a daily basis by phone.
  - e. At the direction of the State Health Officer or State Epidemiologist, discourage or cancel large gatherings in the affected town/county and encourage those with respiratory illnesses to stay home from work, school, etc., depending on the level of person-to-person transmission.
  - f. One possible control measure that could be recommended to help mitigate the effects of pandemic influenza on a community is the closing of schools, pre-schools, and daycares. While the closing of schools, pre-schools, and daycares may indeed eliminate a large gathering, such an action is not without potential complications and should not be entered into lightly. For these closures to be effective they must be implemented early in a pandemic (before widespread transmission) and be maintained throughout the entire time the pandemic virus is circulating in a community. This will likely be 1-2 months at a time for each pandemic wave, and possibly for 2 or 3 separate waves. Another complicating factor is that to be effective, these closures must NOT result in large gatherings of children, such as out-of-home childcare with multiple children or gathering at a popular spot such as a shopping mall. Another concern about closing schools, pre-schools, and daycares is the potential adverse effect this may have on the ability of a community to provide essential services. Such closings have the significant potential to result in many adult workers having to stay home to care for children, and could result in lost income.

If the epidemiology suggests the pandemic is moderate or severe or that children are at particular risk of severe disease, then based upon guidance from ID Epi, the State Epidemiologist, and the State Health Officer, consideration may be given by schools, pre-schools, and daycares to cancel services or classes in traditional classroom settings in an attempt to mitigate the disease impact in children. The WDH along with the Wyoming Department of Education will coordinate with neighboring state health and education entities regarding school closures.

It is likely the decision whether to close schools, pre-schools, and child caring facilities will be largely made by local school officials, public health officials, and parents. Such a decision will be dependent upon the facilities' contingency plans for closure, anticipated effect on the community, extent of illness in the community, number of healthy staff and students, and parent's willingness to send their children to these facilities.

Every school district or child caring facility should anticipate the possibility of closing traditional classroom settings during a pandemic and have contingency plans in place. These plans must be actively communicated to the parents and the community.

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- g. Colleges and universities should anticipate the canceling/postponing of events that result in large gatherings such as sports and cultural events and large classes. Strong consideration should be given to closing dormitory type student housing if the pandemic is epidemiologically considered moderate or severe in an attempt to mitigate the disease impact in college students.

### **3. Wyoming Interval 5**

At this stage of the pandemic targeted isolation and quarantine of specific individuals will be impractical and may have limited impact in the prevention of transmission of pandemic influenza. However, during periods of widespread transmission a broad recommendation encouraging the voluntary isolation of persons ill with influenza will be made (see Appendix D2 for example of voluntary isolation instructions). Voluntary isolation of all persons with influenza-like illness (ILI) should be encouraged. Instructions such as those in Appendix D2 could be given to every person with ILI by both public and private healthcare providers.

- a. Control efforts should focus on community-wide containment measures.
- b. At the direction of the State Health Officer or State Epidemiologist, discourage or cancel large gatherings in the affected town/county, or order that non-essential personnel not go out in public, depending on the level of person-to-person transmission.
- c. WDH will encourage those with respiratory illnesses to stay home from work, school, etc. Closing of schools, pre-schools, daycares, and some college/university settings could be considered as per the discussion above (2f and 2g).
- d. During a particularly severe pandemic, public health officials may recommend the voluntary quarantine of household contacts of a person ill with influenza. The period of voluntary quarantine will be determined during the actual pandemic based on epidemiologic information.

### **4. Deceleration**

The decline of rates of pandemic infection provides an opportunity to begin planning for demobilization of community mitigation activities and recovery. State health officials may choose to rescind community mitigation intervention measures in selected regions within their jurisdiction, as appropriate; however, mathematical models suggest that cessation of community mitigation measures are most effective when new cases are not occurring or occur very infrequently. Actions taken may include:

- a. Continue some or all mitigation actions as above (Peak/Established Transmission)
- b. Assess, plan for, and implement targeted cessation of community mitigation measures as appropriate
- c. Initiate targeted cessation of surge capacity strategies
- d. Maintain aggressive infection control measures in the community



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## 5. Preparation

In this interval, pandemic cases are no longer occurring, or occur only sporadically. Actions taken may include:

- a. Continue/initiate actions as above (Deceleration)
- b. Rescind community mitigation interventions
- c. Prepare for possible second wave
- d. Continue to promote community mitigation preparedness activities on standby for second wave
- e. Conduct after-action review for lessons learned
- f. Replenish stockpiles/caches as able

## B. Infection Control

Infection control guidelines may change depending on several factors during a pandemic. Table 3 lists general planning guidelines developed by CDC. For more information on infection control in healthcare facilities, reference Appendix H.

**Table 3: Influenza Transmission Prevention Strategies\***

	Healthcare Setting	Community
Decrease potential for contact	<ul style="list-style-type: none"><li>· Private rooms or cohorting with other influenza patients</li><li>· Negative pressure room when performing high-risk aerosol-generating procedures, if feasible</li><li>· Designate specific wards or hospitals for admission of patients</li><li>· Minimize transportation of patients</li><li>· Limit number of healthcare workers caring for influenza patients</li><li>· Limit number of visitors to influenza patients</li><li>· Environmental decontamination for influenza following existing guidelines</li></ul>	<ul style="list-style-type: none"><li>· Provide advisories or limit travel to areas where a novel influenza strain is circulating</li><li>· Cancel large group gatherings</li><li>· Close schools and/or businesses</li><li>· Encourage telecommuting</li><li>· Limit availability of public transportation</li><li>· Avoid unnecessary hospital visits</li><li>· Discourage hand shaking</li><li>· Quarantine of contacts of cases early in the pandemic</li><li>· Stay home if ill with influenza like symptoms</li></ul>



Decrease potential for infection if contact occurs	<ul style="list-style-type: none"> <li>· Vaccination of healthcare workers</li> <li>· Antiviral chemoprophylaxis for healthcare workers</li> <li>· Strict hand hygiene</li> <li>· Respiratory/cough etiquette</li> <li>· Standard and droplet precautions including use of gowns, gloves, and masks by healthcare workers and visitors to influenza patients, plus use of N-95 respirators by healthcare workers with direct patient contact if possible (see Appendix H)</li> </ul>	<ul style="list-style-type: none"> <li>· Hand hygiene</li> <li>· Respiratory/cough etiquette</li> <li>· Vaccination or antiviral treatment or chemoprophylaxis per priority groups, if available</li> </ul>
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*\*From: Draft Pandemic Influenza Preparedness and Response Plan, Department of Health and Human Services, Annex 8: Strategies to Limit Transmission, August 2004.*

## 1. Mask and respirator use in non-healthcare settings during a pandemic

The benefit of wearing masks by well persons in public settings has not been established. Mask and respirator use may somewhat decrease, but will not eliminate, the chance of becoming infected, and use is not a substitute for social distancing or other personal protection measures. The first and most important steps in reducing one's risk of pandemic influenza are to limit close contact with others as much as possible and to practice good hygiene. These measures should be used at all times, regardless of whether a face mask or respirator is worn.

Individuals considering surgical mask or respirator use must consider that improper use may actually increase the transmission of illness to themselves or others. In addition surgical mask and respirator use by an untrained person can be uncomfortable, stressful, and has the real potential to exacerbate underlying chronic respiratory or heart conditions. In addition, the supply of masks and respirators available to the public may not be enough to allow stockpiling by everyone. For persons who make the individual choice to include mask or respirator use in their protection strategies, masks and respirators are usually available for purchase at pharmacies or medical supply stores.

Persons in non-healthcare or non-emergency medical services settings, for example the general public where close, direct contact with persons known or strongly suspected to have the pandemic influenza strain is not expected, may wish to consider mask or respirator use in the following situations:

- When there is evidence of significant spread of pandemic influenza in a person's community, a face mask (e.g., surgical mask, procedure mask, isolation mask) could be used if entry into a crowded setting that lacks protective measures is unavoidable (e.g., mass transit or going to a crowded store to purchase essentials such as medications).
- When it is necessary to have close contact (less than 6 feet) with someone who is ill with pandemic influenza – for example, to give care to a family member – one should use an N95 respirator or equivalent certified by the National Institute of

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Occupational Health and Safety (NIOSH) and consider specifically using a respirator model that also is cleared by the U.S. Food and Drug Administration (FDA) for use by the general public in public health medical emergencies. Although fit testing programs generally are not available for the public, selecting an appropriate respirator, carefully following instructions for its use, and making sure that it fits tightly against the face are critical to ensuring the respirator provides protection. Because the material used to make respirators is denser than that used in facemasks, it may be more difficult to breathe through a respirator. Persons who have heart or lung disease or other illnesses that affect their breathing should consult a healthcare provider before using a respirator.

- c. Ill persons should use a face mask when they must be in close contact with others. Examples of such contact include when the ill person is being cared for at home, when an ill postpartum woman is caring for or nursing her infant, or if an ill person needs to leave home to access medical care or manage other necessities.

Given the potential for the above scenarios to occur in a pandemic, it would be reasonable for each household to stockpile some face masks and respirators (see Appendix I). The purchase of masks and respirators to be used according to the above scenarios is an individual responsibility. Government supplies of masks and respirators will NOT be available to meet these needs.

The U.S. Department of Health and Human Services has made recommendations regarding the use of facemasks in community settings during a Pandemic (Community Mitigation Guidelines to Prevent Pandemic Influenza – United States, 2017. [https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm?s\\_cid=rr6601a1\\_w](https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm?s_cid=rr6601a1_w) ). When worn, the outside of the face mask or respirator may become contaminated with secretions from an ill person; therefore care should be taken to keep the face mask or respirator away from others after use and to wash hands well after removing a face mask or respirator, or before putting on a previously used face mask or respirator. Never wash or disinfect disposable face masks or respirators and never share used face masks or respirators with others.

Several scientific studies are being done to investigate the level of protection against influenza that may be provided by respirators and face masks and the ability of persons to correctly and consistently use these devices. This guidance may be modified based on the results from these studies, and also may be modified during a Pandemic based on Pandemic characteristics.

In addition, Federal OSHA has published Guidance on Preparing Workplaces for an Influenza Pandemic (OSHA 3327-02N 2007) which discusses measures which can be taken in the workplace to reduce the exposure of workers to the pandemic influenza virus, including mask and respirator use.

General information on buying and wearing face masks and respirators can be found at the FDA website

<http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/GeneralHospitalDevicesandSupplies/PersonalProtectiveEquipment/ucm055977.htm>

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## **2. Protection for Workforce Sustainability**

Local Public Health staff and hospitals determine their pandemic influenza personal protective equipment (PPE) needs. Preparedness funds were allocated to all 23 county public health nursing offices and the Northern Arapaho and Eastern Shoshone Tribes for purchase of the necessary PPE to sustain public health responders during an influenza pandemic. Local Public Health staff have purchased N95 masks, surgical masks, and disposable gloves, gowns and booties that are stored in public health offices across Wyoming. Some counties may also have powered air purifying respirators (PAPRS), head coverings, face shields and goggles, hand sanitizer, soap/lotion, disinfectants, disposable thermometers, biohazard bags, Kleenex, alcohol wipes and other materials for these emergencies.

The WDH ID Epi leadership reviewed the needs of the WDH. The number of critical staff was determined and PPE was purchased and stockpiled for emergency use. Additional PPE was purchased to supplement local stockpiles and for use by critical workforce and Bio/Rad PPE kits were placed with each county and tribal nation.

## **VACCINE DELIVERY**

### **A. Annual Vaccination Campaign**

#### **1. Influenza and Pneumococcal Vaccine Distribution**

The Wyoming Immunization Unit within the Public Health Division (PHD) of WDH is responsible for routine distribution of all publicly-purchased vaccines in Wyoming to providers enrolled in the Public Vaccine Programs. Publicly-purchased influenza vaccines are available to children 0 through 18 years of age who are eligible for the federal Vaccines For Children (VFC) Program. Publicly-purchased pneumococcal vaccine is available to children 0 through 18 years of age who are eligible for either the VFC Program or the state-funded Wyoming Vaccinates Important People (WyVIP) Program. Adults may receive publicly-purchased pneumococcal vaccines through the federally-funded Vaccines for Uninsured Adults (VUA) Program. Wyoming does not provide publicly-purchased influenza vaccine for adults.

Enrolled providers place vaccine orders and manage public vaccine inventories in the Wyoming Immunization Registry (WyIR). Immunization staff export vaccine orders and inventory out of the WyIR and uploaded them into the CDC's Vaccine Tracking System (VTrckS) which is then forwarded to the CDC Vaccine Distribution Contractor, McKesson Specialty Distribution (McKesson). Vaccines are then directly shipped to providers by McKesson from the vaccine distribution center located in Aurora, Colorado. Guidance on the contractually-defined acceptable interactions between the State, the CDC and McKesson are described in CDC Vaccine Storage and Handling Toolkit.

#### **2. Vaccine Management During a Pandemic Response**

During a pandemic, it is likely the entire population will be susceptible. Multiple doses of vaccine may be required for optimal protection. This means that the state of Wyoming could potentially use over 1 million doses. Even if the maximum amount of 1 million doses were to become available, it would most likely arrive in batches over an extended period

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of time. The amount of vaccine that will have to be managed by the Immunization Unit will be affected by the following factors:

- Vaccine availability (the manufacturers' ability to produce and distribute vaccine),
- The proportion of available vaccine that will be purchased and distributed by the public versus the private sector, and
- The amount of vaccine available for public purchase through federal contract(s).

The proportion of influenza vaccine to be distributed and administered through the public versus the private sector is unknown. During the 2009 H1N1 pandemic, all pandemic vaccines were provided by the federal government to states, and no private stock inventories were available for purchase. Specific locations, public and/or private, as well as the determination to use public and/or private healthcare staff to administer influenza vaccine will be at the discretion of each County Health Officer. The planned method is addressed in the individual county response plans. It is possible that during an emergency, county public health nursing (PHN) offices will be given the responsibility for further distribution of all vaccine. Control of vaccine distribution by the Immunization Unit and PHN will help to ensure equitable distribution to priority groups regardless of income or access to care and will also facilitate distribution of vaccine to essential community servants. All vaccine available to the public sector will be distributed to local PHN offices and tribal health entities. Other public and private healthcare providers, or hospital facilities that have been identified and registered to administer pandemic vaccines, will be supplied by PHN staff in accordance with the county-level distribution plan and in accordance with Immunization Unit policies and procedures. Coordination of vaccine redistribution within each county will be addressed in the specific response plan of each county. Number of doses to be administered per shift will be determined at the local level and will depend on the number of doses available for administration at any one time, staff availability and the number of patients presenting. There is currently no methodology to determine the weekly allocation of vaccine for Wyoming, since this factor will likely be controlled by the availability of vaccine, the extent of disease morbidity and the pockets of disease that may be presenting by location in the state. Based on these unknown factors, Wyoming will fall back on the primary plan of allocating vaccine through a population based allocation distribution plan.

## **1. Personnel**

In order to provide appropriate support, education and management of vaccine orders and distribution, no less than five (5) Immunization Unit staff will be required. Minimum necessary staff during a pandemic consists of the Unit Manager, Immunization Access Manager, Public Vaccine Program Coordinator, Client Support Specialist and Client Management Specialist. The need for additional staff will depend upon the specific functional requirements for tracking vaccine distribution, supporting vaccine data processes and assisting other WDH staff in information management tasks during the event.

Local public health jurisdictions will provide primary management and coordination of vaccine administration, following vaccine priority guidelines, to the extent possible. Information is available in this document that outlines possible federal guidelines for vaccine priority categories and tiers. These vaccine priority guidelines will be assessed with each pandemic and may change.

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Where public health infrastructure is not adequate to provide all administration of vaccine during a pandemic event, local health authorities have been authorized to supplement the needed personnel with private healthcare workers, institutions or agencies at their discretion. As the plans for each public health jurisdiction will be unique, these processes are outlined in the individual county health response plans.

Personnel needs for vaccine administration at county sites are documented in the individual County Response Plans. The development and oversight of the county plans is provided by the County Public Health Response Coordinators. Documentation of specific staffing and personnel backup contingencies are in the local County plans. Development and utilization of job descriptions and Memoranda of Agreement (MOA) for additional staff is at the discretion of each County Health Department.

All PHN locations in Wyoming utilize the Wyoming Immunization Registry (WYIR). A Mass Immunization Module is routinely tested statewide during annual influenza campaigns to ensure that personnel are adept at using this data tool during a pandemic event. The WYIR will be the designated tool for data accumulation for vaccine distribution, inventory and administration during a pandemic. Tribal health entities also have access to the WYIR; however, because the tribal nations fall under federal rather than state statute, mandatory reporting to the WYIR cannot be enforced.

All PHN clinics operate under standards set by the CDC found in the VFC Program Operations Manual and Storage and Handling Toolkit for publicly-purchased vaccines. PHN clinics operate under standard operating procedures and through standing orders from a supervising physician.

## **2. Allocation**

The Immunization Unit will allocate vaccine to counties on a population-basis. A more detailed plan of allocation will depend upon the amount of vaccine Wyoming will receive from the CDC. The counties would then administer the vaccine according to CDC target group recommendations as supply allows. Each county will determine the vaccine distribution for their county allotment (county specific decision on how the vaccine for that county will be distributed to additional sites within that county). County plans may be required to comply with federal recommendations for administration of vaccines to specific priority groups that may be designated.

## **3. Ordering and Distribution**

CDC will notify the Immunization Unit of how much vaccine will be available for Wyoming through federal contracts. Vaccine may also be available through contracts negotiated directly between WDH and vaccine manufacturers, although this option is not considered likely. Once the total amount of vaccine available is known, the Immunization Unit will consult with the State Health Officer and other WDH officials to determine how much vaccine will be distributed to each county.

WDH has chosen the option of having pandemic influenza vaccine shipped directly from the CDC Vaccine Distribution Center or the Strategic National Stockpile (SNS), as appropriate, to designated county PHN offices throughout the state. The WDH plan anticipates that vaccine shipments will be made on a population percentage basis. All allocation plans are predicated on a population based allotment. Shipments of vaccine

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are targeted to county PHN offices on a population proportionate basis. This allocation plan is intended to be the same without regard to shipment schedules determined by CDC. Should CDC impose different plans for distribution of pandemic vaccines, the state processes will be modified as needed.

Once allocations are established, vaccine orders will be entered into the WylR by the Immunization Unit for each county PHN Office and then uploaded to the CDC's Vaccine Tracking System (VTrckS) which then transmits the orders to McKesson for distribution. Once the county PHN Office physically receives the vaccine order, they are to "receive" the order in the WylR to create an appropriate vaccine inventory. Vaccine shipments are anticipated to be provided by USPS, FedEx or other distributors designated by McKesson.

#### **4. Storage and Handling**

Storage and Handling of all vaccines at any facility that receives public vaccines should be in accordance with the CDC Vaccine Storage and Handling Toolkit even during a pandemic event. All PHN clinics participate in the Vaccines for Children (VFC) Program through the Immunization Unit so they are familiar with vaccine storage and handling requirements. Staff at PHN sites are trained on cold chain procedures and provide routine monitoring of vaccine storage unit temperatures using a digital data logger thermometer. Compliance Visits are conducted for each PHN Office no less than every 24 months to ensure compliance. Unannounced Storage and Handling Visits may also take place for some PHN Offices. Additional vaccine storage sites are determined by each county and documented in the individual county response plans.

Vaccine storage plans, back-up, and security are site specific to each county PHN office. Local plans are in place to receive, document and monitor vaccines. Each county has a backup contingency plan to address issues such as power loss or inadequate capacity at each site to ensure proper cold maintenance. PHN office personnel are trained in the receiving processes of vaccines, and adhere to standards for appropriate chain of custody. In counties where off-site mass immunization clinics will be offered, the personnel are trained in proper vaccine transportation procedures to ensure cold chain maintenance.

Where appropriate, individual county emergency planning activities have included the use of MOA, to provide for vaccination sites, security, crowd control and alternate vaccine storage. These procedures and MOA are included in the county specific emergency plans. These plans also include the staffing profiles and needs for vaccination sites and project the number of doses that can be administered per shift. Mass immunization exercises have been conducted in conjunction with annual influenza clinics to test the capacity and staffing needs of each county; however, these exercises are no longer required.

#### **5. Transportation of Vaccine to Sites Identified by Counties**

It is anticipated that vaccines will be distributed directly to county PHN Offices from McKesson; therefore, transport to county PHN offices would not be necessary. Transport of vaccine to additional local sites by PHN offices must be in accordance with the CDC Vaccine Storage and Handling Toolkit (S&H Toolkit). This includes the use of appropriate



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vaccine transport containers, materials and temperature monitoring equipment. The S&H Toolkit also describes proper packing of vaccines in preparation for transport.

## **6. Vaccination Clinics**

If possible, large-scale vaccination clinics should be organized in accordance with CDC's Guidelines for Large-Scale Influenza Vaccination Clinic Planning.

### **a. Staffing**

PHN offices may not have adequate staff to hold large-scale vaccination clinics. Volunteer agencies could be used to help with non-medical services such as data entry/data management, management of supplies, and others. Local agencies should contact private providers in their community to create a list of those willing to assist with vaccination administration in the event of a pandemic or other public health emergency. Additionally, the WDH PHPR has established a list of licensed nurses who have agreed to offer their services during a public health emergency. Each county is responsible for addressing local security to protect vaccine at storage facilities and during transportation to vaccination sites, as applicable. These local security arrangements should include riot/crowd control, as deemed necessary at each county site. All volunteer staff must be appropriately trained in vaccine storage and handling and reporting to the WylR as required based on function.

### **b. Alternate Clinic Sites**

PHN offices might not be large enough to accommodate a large immunization clinic. If this is the case, an alternate site should be identified. Any large, open-area building with handicap access and adequate parking would be adequate. Types of facilities recommended for large-scale vaccination clinics include schools, auditoriums, conference halls, and theatres. County MCM plans address this contingency. Local agencies may wish to establish Memorandums of Understanding with facilities in advance of a public health emergency. Vaccine storage and handling at alternates sites must be in compliance with the CDC Vaccine Storage & Handling Toolkit.

PHN offices might consider distribution points such as police or fire stations, hospitals, or mobile vans to target specific groups of essential personnel. PHN offices should consider having hospitals administer vaccine to their staff members. If clinic sites other than the health department are deemed necessary or preferable, local law enforcement should be sought as partners to help determine sites that can be secured.

### **c. Clinic Supplies**

Local public health officials may want to consider establishing a stockpile of non-perishable supplies that would be necessary to run a mass vaccination clinic. These supplies might include syringes, gloves, masks, alcohol wipes, etc. It is probable that vaccines provided by CDC will include syringes and or pre-filled syringe units.

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d. Vaccine Accountability

Per Immunization Administrative Rules, all Wyoming healthcare providers are required to report information for administered vaccines to the WylR regardless of whether the vaccine was publicly or privately purchased. In addition, providers who receive vaccine inventory during a pandemic must also manage this inventory in the WylR. All PHN offices have access to the WylR and have been trained to enter data into this system. Record keeping and documentation of vaccine inventories and administration data is critical as each individual vaccinated may need to be re-vaccinated 2-4 weeks after the initial vaccination. This data may be needed to track potential vaccine adverse events.

The vaccine may be unlicensed and need to be used under emergency Investigational New Drug (IND) or Emergency Use Authorization (EUA) provisions. Such provisions call for strict inventory control and record keeping.

Any adverse reaction should be entered into the Vaccine Adverse Event Reporting System (VAERS). Reporting of the adverse reaction can be completed by clinic staff or the public. A list of symptoms will be distributed to clinic patients advising them to notify their PHN office if adverse reactions occur. In turn the PHN offices will notify the State. The Immunization Unit's Clinical Consultant and Quality Improvement Specialist will serve as the Vaccine Safety Coordinator at the State level.

## **7. Data Collection and Accountability**

Vaccine and vaccine recipient data will be collected through the WylR. During a pandemic event, data will be collected through the WylR via the Mass Immunization Module. This module is currently able to collect Aggregate Reporting data required by the CDC CRA and has been successfully tested during the CY 2007 influenza campaign. WylR data can be safely transmitted to CDC via the CRA in an electronic transmission. This functionality was also successfully tested during the CY 2007 and CY 2008 seasonal influenza campaigns.

Access to the Mass Immunization Module is available to all PHN clinics or any other authorized provider and healthcare facility and may be utilized for data entry during an emergency event. The Immunization Unit provides distance learning tools, and when needed, individualized training to all WylR users on the basic registry system, as well as individual modules like the Mass Immunization data collection system. The module also contains functionality to manage vaccine inventory.

The WylR is available and in use at all PHN clinics. All clinics are equipped to enter and transmit data through the web-based registry application. The WylR is HL7 and PHIN compliant.

## **8. Target Recipient Groups**

a. Establishing Target Recipient Groups

- i. In view of likely vaccine shortages, HHS, in conjunction with various advisory committees has formulated recommendations for high priority target groups for vaccination, the Allocating & Targeting Pandemic



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Influenza Vaccine Guidance. These vaccine priority guidelines will be assessed with each pandemic, and may change. The order of these groups is based on a number of factors including the need to maintain those elements of community infrastructure that are essential to carrying out the pandemic response plan. Other factors include limiting mortality among high-risk groups, the reduction of morbidity in the general population, and the minimization of social disruption and economic losses. This list is subject to change depending on the epidemiological and clinical features exhibited by the actual pandemic strain and the availability of vaccine.

- ii. The latest recommendations from the federal government for vaccine target groups is based on a model accounting for three different levels of intensity of a pandemic event: severe, moderate and less severe. In each of these conditions, a prioritized hierarchy for vaccination target groups has been recommended. The target groups are divided into four categories: Homeland and National Security, Health Care and Community Support Services, Critical Infrastructure, and General Population. Within each category, these target groups are subdivided into 1 – 5 tiers.
- b. During a pandemic event, all individuals within Tier 1 of any category are considered equal and will be the first individuals targeted for vaccination. After all Tier 1 individuals have been vaccinated, administration will begin to Tier 2 individuals. This process will continue through all tier levels, to the extent that vaccine is available. Tables in Appendix F indicate the vaccine targeting categories and tiers for each of the three pandemic severity conditions.
- c. The WDH Working Group will distribute the federal Priority Groups List to all healthcare providers that might administer vaccine. This list is to be used as guidelines for healthcare providers. However, the decision of who should and should not be vaccinated will be left to the discretion of the healthcare providers administering vaccine.
- d. Wyoming National Guard personnel will receive vaccinations if they fall into the identified priority groups, for their county, as delineated in Appendix F. Wyoming National Guard personnel would also be eligible for vaccination if on a pandemic influenza mission and in a critical position with no backup. Military beneficiaries will be treated as other citizens and will receive vaccinations if they fit into the identified priority groups as delineated in Appendix F.
- e. It is likely that each pandemic event will require a customized priority distribution process based on morbidity and mortality data produced by that event as well as other factors such as quantities of vaccines available. State and county-level plans may need to be adjusted to accommodate the specifics of different pandemic events.

## **9. Estimates of and Plans to Vaccinate Priority Group Members**

- a. WDH will work with PHN offices and local emergency management agencies to estimate how many persons fall into each of the established priority groups to help with planning efforts locally. PHN offices, in collaboration with their partners, will need to develop plans for vaccinating persons who fall into the priority groups. Each local jurisdiction will determine if priority group membership verification is desired and the standards to which the verification will be documented.

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- b. Each local jurisdiction may develop Memoranda of Agreements with other institutions, individuals and/or agencies to delegate vaccination activities within their jurisdiction, as appropriate.

## **10. Education Regarding the Priority Groups List**

- a. Special attention must be paid to educating the general public about the Priority Groups List for receipt of vaccine, including the rationale for the list, the process by which the decisions were made, and what other control measures people can take until vaccine is available for everyone.

## **ANTIVIRAL AGENTS/MEDICAL COUNTERMEASURES**

Medical countermeasures include both biologic and pharmaceutical medical countermeasures (e.g., antimicrobials, and antibody preparations) and non-pharmaceutical interventions (e.g., ventilators, devices, personal protective equipment such as face masks and gloves) to prevent and mitigate the health effects of biological agents. Because vaccine will likely not be available when the novel virus first affects communities, antivirals may play an important role for the control and prevention of influenza, especially during the period before vaccine is available. HHS is working to increase the stockpile of antiviral drugs (especially oseltamivir) in the Strategic National Stockpile (SNS). Wyoming's MCM Plan will be utilized for distribution of public asset medical countermeasures during a pandemic. Information on the MCM and state purchase of antivirals (state stockpile) quantities can be located in the Pharmaceutical Stockpile Management Plan. This state stockpile has expired and will be available for distribution if the FDA Shelf Life Extension Program approves an expiration dating extension. Prior to the release of any antivirals or antibiotics from the state cache of medical countermeasures, the State Health Officer will be consulted. The WDH PHPR unit will coordinate any meetings necessary for discussion of medical countermeasure distribution and may consult the CDC's Division of SNS for assistance, if required.

The WDH Working Group is responsible for reviewing nationally recommended priority groups, developing Wyoming-specific guidelines, and distributing those guidelines to all public health agencies, physicians and pharmacists in the state. For publicly available antivirals, WDH will develop a distribution and allocation protocol for target groups. As with vaccine, it will be critical to clearly communicate with the public about the rationale for priority groups. Coordination with and education of the private sector will be an important aspect of planning.

### **A. Background Information on Antiviral Agents**

- a. Six antiviral agents are approved for treatment of influenza: amantadine, rimantadine, zanamivir, peramivir, and oseltamivir, and baloxavir, which was approved by the FDA on October 24, 2018. Four of the agents (amantadine, rimantadine, zanamivir, and oseltamivir) are also approved for prophylactic use in certain circumstances. However at this time it is recommended that amantadine and rimantadine NOT be used for treatment or prophylaxis of influenza due to increasing resistance of the virus to these medications.
- b. Neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) are effective against influenza A and B; all three are approved for treatment of influenza, and oseltamivir and zanamivir are also approved for prophylaxis of influenza virus. The endonuclease inhibitor baloxavir is also effective against influenza A and B and is

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approved for treatment, but not prophylaxis, of influenza. When treatment is initiated within 48 hours of illness onset, these four drugs are effective in decreasing shedding and reducing the duration of symptoms of influenza by approximately one to two days compared with placebo. Distribution of drugs for therapy during a pandemic will be a challenge given the limited amount available, the large number of points of care, and the need to initiate the course of treatment within 48 hours of onset of symptoms.

- i. The choice of which antiviral medications to use, and whether to use for treatment or prophylaxis, will vary depending on the susceptibility of the influenza virus strain, the epidemiology of the disease, and medication availability.
- ii. Additional information on antiviral treatments and their use can be found in Part 2, Supplement 7 of the HHS Pandemic Influenza Plan.

## **Strategies for Antiviral Drug Use**

The State Epidemiologist and State Health Officer will make decisions on antiviral use based on recommendations from the CDC and ID Epi. Assumptions and considerations are:

- a. Because antiviral drug supply is limited, planning for the use of antiviral drugs will be based on defined goals and identified priority groups targeted to achieve those goals.
- b. WDH will be flexible in deciding optimal use of antiviral drug supply based on the available supply, and the local impacts and epidemiology of the pandemic.
- c. Use of adamantanes for therapy can lead to the development and subsequent spread of resistant influenza viruses. Based on recent experience with seasonal influenza, it is likely that the adamantanes will have limited benefit for treatment or prophylaxis in a pandemic.
- d. The effectiveness of antiviral drug therapy when started more than 48 hours after onset of influenza symptoms is usually decreased; therefore initiation of treatment with antiviral medications more than 48 hours after onset should generally be reserved for special circumstances, such as severe illness.
- e. HHS has devised some general recommendations on target groups for the use of antiviral medications during a pandemic when supply is limited, and WDH has adapted these for WY (see Appendix G). This priority group list is to serve as a guide for healthcare providers and public health officials. During a pandemic the CDC and WDH will provide additional guidance dependent upon epidemiology of the virus. The recommendations in Appendix G were developed taking into consideration the likely limited supply of antiviral medications, the fact that some groups of people are at higher risk for severe complications and death, and the need to maintain a community's ability to provide essential services, such as healthcare. During an actual pandemic, these recommendations and resulting use of antiviral medications may change based on the pandemic characteristics and antiviral medication supply. In addition, use of public health stockpiles may vary from these target group recommendations in an effort to maintain critical public health and patient care infrastructure.
- f. Given the large number of people in a community ill with influenza, local healthcare triage plans may need to give consideration to instructing mildly ill persons to stay home, and directing those with more severe illness or those persons in an antiviral treatment priority group (see Appendix G) to the

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appropriate level of care. Such a strategy will focus antiviral medications on individuals likely to benefit the most, reduce the burden on an overwhelmed healthcare system, and limit the number of persons exposed to individuals with influenza.

- g. In addition to treatment of already ill persons, antiviral medication prophylaxis throughout the period of increased influenza activity due to the pandemic strain of certain groups of people may lessen the overall adverse impact on a community (see Appendix G). WDH has identified the following groups as persons for whom antiviral medication prophylaxis may be indicated if the supplies of antiviral medications in public health stockpiles are sufficient. During an actual pandemic, these recommendations and resulting use of antiviral medications may change based on the pandemic characteristics and antiviral medication supply. It is important to note that public health stockpiles of antiviral medications are limited and may not allow for prophylaxis of persons in all these groups, or even all persons in any one group.
  - i. Prophylaxis should be considered for critical healthcare workers (HCW) and EMS providers. Priority should be considered for workers with direct patient contact and staff required for effective provision of care.
  - ii. Prophylaxis should also be considered for public health (PH) workers who will be essential for administration and distribution of vaccine and antiviral medications, involved in influenza surveillance and implementation of control measures, and critical to maintain PH response to a pandemic situation (e.g., public health nursing, public health response coordinators, immunization program staff, epidemiologists, county health officers, public health laboratorians, and state health officer).
  - iii. Prophylaxis of highest risk outpatients who are at highest risk of severe disease and death could also be considered if supplies allow. This includes persons with hematopoietic stem cell transplants and solid organ transplants; those with severe immunosuppression 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.
  - iv. If supplies allow, prophylaxis of persons with unique roles in maintaining critical infrastructure and services to the community, and for whom there is inadequate back-up personnel to provide these services, should be considered. This may include, but not limited to, persons critical to public safety (e.g. law enforcement, fire, corrections, emergency management workers, etc.) and to societal function (e.g. coroner, mortuary, utility, waste, transportation workers, elected officials critical to a pandemic response, etc.). Persons in these groups will largely be determined by county officials based on local supplies and needs.
  - v. Wyoming National Guard personnel will receive antiviral medications if they fit into the identified priority groups, for their county, as delineated in Appendix G. Wyoming National Guard personnel would also be eligible for antiviral prophylaxis if on a pandemic influenza mission and in a critical position with no backup. Military beneficiaries will be treated as other citizens and will receive antiviral medications if they fit into the identified priority groups as delineated in Appendix G.

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- vi. The duration of prophylaxis is estimated to be six to eight weeks if used while influenza is circulating in a community or may be longer. Because prophylaxis would be provided to a group of people who were at risk of exposure to the pandemic virus and its consequences, many of those who receive prophylaxis may not become infected and may not have become ill even in its absence. Therefore, for a given quantity of antiviral drugs, prophylaxis (if indicated) should be targeted to very specific and limited groups of people.
  - h. Appendix G contains a sample worksheet that local planners may use to help them evaluate the antiviral medication needs for treatment and prophylaxis in their community.
  - i. In the event of a pandemic, local healthcare facilities will be the primary entity responsible for the care and treatment of ill persons, as in a non-pandemic situation. It is therefore recommended that healthcare facilities and pharmacies maintain a supply of antiviral medications that could be used for the care of patients, and possibly prophylaxis of staff if part of their prevention strategy, as the availability of such medications allows. Current evidence indicates the facility supply should include oseltamivir (Tamiflu); however the facility supply does not necessarily need to be restricted to oseltamivir as other antiviral medications such as zanamivir (Relenza) may be effective against pandemic virus strains. In addition, at this time the antiviral medication available for public health stockpiles includes significantly limited supplies of pediatric dosages, so healthcare facilities and pharmacies should consider this need. While it is possible that public health stockpiles of antiviral medications may be available, relying solely on public health stockpiles would likely not provide sufficient amounts of antiviral medications and would not be the most efficient means of providing treatment to patients.

## **Activities by Wyoming Pandemic Interval**

### **1. Wyoming Intervals 1 and 2**

- a. Review and modify as needed the national recommendations for priority groups
- b. Quantify high priority populations for prophylaxis and therapy and develop drug distribution contingency plans for the different possible distribution scenarios.
- c. Develop plans for ordering, storage, and distribution of a state stockpile.
- d. Develop plans for storage and distribution of federally purchased stockpile being held by the Strategic National Stockpile.
- e. Develop plans for education and notification of the medical community and of the public around appropriate prescribing information.
- f. Consider developing data management system to track supplies, distribution, and use.

### **2. Wyoming Interval 3**

- a. Consider convening the WDH Working Group and appropriate partners and stakeholders to review major elements of the antivirals plan. Modify plan as needed to account for updates, if any, on recommended target groups and projected drug supply.
- b. Notify the medical community of the status of the plan and antiviral availability.

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- c. Disseminate antiviral use guidelines to the medical community and conduct training for public health staff involved in antiviral distribution protocols and procedures.
  - d. Ensure that the human resources and logistics are in place to begin drug distribution and administration, taking into account the need for added staff due to illness.

### **3. Wyoming Intervals 4 and 5**

- a. Fully activate Pharmaceutical Stockpile Management Plan.
- b. Implement data management system for antiviral distribution, use, and supply.

### **State Purchase of Antivirals (State Stockpile):**

Reference Pharmaceutical Stockpile Management Plan  
Reference Medical Countermeasures Distribution Plan

### **SNS Stockpile**

Reference: Medical Countermeasures Plan

- j. State Reserve of Oseltamivir – The WDH has determined to reserve five percent (5%) of the oseltamivir we receive from our State Stockpile purchase. This reserve will be held, by the State, for reallocation under emergency contingencies, use where needed to supplement the existing quantities provided to each county and/or for prophylaxis of state responders.
- k. Statewide distribution will be per capita to each county based on the most current available census data or estimates. Planning for local dispensing of antivirals is ongoing and initial distribution will be to Public Health Nursing Managers, County Health Officers, Board of Health Directors, or tribal health departments. (contact lists maintained by PHPR)
- l. State Stockpile Antivirals

Reference: Pharmaceutical Stockpile Management Plan

- m. Upon imminence of a Pandemic in the US, the counties would be notified  
Reference MCM Plan.
  - i. If there is a new antiviral medication developed for use against a pandemic strain the state may need to follow IND or Emergency Use Authorization provisions. Any forms required by CDC can be duplicated to go out with antiviral medications and can also be duplicated at the local level if needed.

### **HEALTHCARE SURGE CAPACITY**

(see Appendix H and <http://www.phe.gov/preparedness/planning/mscc/pages/default.aspx> for more detailed guidance)



## A. Estimate of Need for Healthcare Services

Although there is great uncertainty associated with any estimate of a pandemic influenza impact, the following estimates of the potential impact of an influenza pandemic on Wyoming are derived from calculations using the CDC software, *FluAid 2.0*. All of the following calculations are based on Wyoming population estimates from 2010 U.S. Census Bureau data. Table 4 contains estimates of the potential impact of the next influenza pandemic in Wyoming based on a 35% attack rate. The estimates labeled “1918-type scenario” were generated using rates of influenza-related morbidity and mortality from the influenza pandemic of 1918. (For more information on the model used to develop these projections see Meltzer MI, Cox NJ, Fukuda K. The Economic Impact of Pandemic Influenza in the United State: Priorities for Intervention. *Emerging Infectious Diseases* 1999; 5: 659-71.)

**Table 4: Total estimates, per health outcome, from the most severe scenario of potential impact of next influenza pandemic in Wyoming: Gross Attack Rate\* of 35% (197,269 clinically ill)**

	Severe scenario (1918 - type)
Deaths	4,301
Hospitalizations§	18,813
Total hospital beds needed§	21,823
Outpatients€	87,077

\*Gross attack rate = % of WY populations assumed to become clinically ill with influenza during the next pandemic. § As a health outcome, the term “hospitalizations” refers to those who are hospitalized due to influenza-related illness but survive (i.e., their end health outcome is hospitalization). However, a percentage of those who will die from influenza-related illnesses are likely to die in hospital. Thus, total hospital beds required will be the sum of hospitalizations + deaths in hospital. We have assumed, for the sake of illustration that 70% of influenza-related deaths will occur in hospitals. € Outpatient visits is calculated by (total symptomatic-deaths-hospitalizations)\*% seeking care. It is assumed that approximately 50% will seek care.

## B. Evaluation of Existing Healthcare Infrastructure and EMS

The Wyoming Healthcare Preparedness Program requests that all Wyoming hospitals provide information on a variety of performance measures and data elements which measure surge capacity. Data collected includes NIMS compliance status; exercises and training activities; Hospital Available Beds for Emergencies and Disasters (HAVBED) System requirements; communication capability; volunteer capability; fatality management planning; evacuation planning; bed surge capability; pharmaceutical supplies, decontamination capability, personal protective equipment and supplies, i.e. ventilators, etc. Data from hospitals are collected at a minimum bi-annually. The data elements collected via the HAVBED System and WAVE (Wyoming Activation of Volunteers in

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Emergencies) are web-based and can be collected on an as needed basis. HAvBED tracks diversion status, bed availability (adult, pediatric, burn, OR, psychiatric, ICU, trauma), decontamination capability, ventilators and can be customized to track other components such as number of Influenza Like Illness patients, number of pneumonia patients and number of deaths.

The State Office of EMS is responsible for the collection of data from each ambulance patient care report (Wyoming Patient Care Report) as well as data collected from the Wyoming Trauma Registry. Both systems collect patient data which can be used for surveillance purposes.

The State of Wyoming participates in the ESAR-VHP Program (Emergency Systems for Advance Registration of Volunteer Health Professionals) via WAVE. The mission of ESAR-VHP is to register, verify, and notify qualified medical and non-medical volunteers to assist in the event of an emergency, public health event or healthcare incident or disaster. Volunteer Group Administrators run credential verifications to verify volunteers are qualified to perform the needed services for each incident or emergency. This system is in compliance with ESAR-VHP Program guidelines.

During a pandemic, disruptions in the availability of EMS equipment, supplies and services will occur statewide. Mutual Aid agreements between EMS services in state as well as inter-state have been developed to address these gaps. The Wyoming Board of Medicine directs EMS authorized acts and/or scope of practice. Wyoming EMS Rule defines the authorized acts which can occur during a pandemic or other public health emergency.

The State Office of EMS will provide technical support and assistance to ambulance services and hospitals in their efforts to restore equipment, supplies and pharmaceuticals after an event. The State Office of EMS does not maintain a cache of these items, but can serve as a resource and negotiator in the response and recovery process.

State and local EMS agencies will integrate pandemic influenza surveillance, mitigation and response into their EMS response system. An EMS system's response to pandemic influenza should be flexible, scalable, dynamic and timely with the ability to change rapidly based on new information about the virus and other public health emergencies. EMS must be present during state and community level planning and an active participant in drills and exercises. The EMS response will include medical direction, quality improvement, education, training, communications, coordinator and appropriate supplies and personal protective equipment. Local EMS agencies have been referred to the "Emergency Medical Service and Non-Emergent (Medical) Transport Organizations Pandemic Influenza Planning Checklist" provided by the CDC, to assist in their plan development.

### **C. Maintenance of Healthcare Services (see Appendix H for more detailed guidance)**

Healthcare facilities must be aware of their responsibilities regarding pandemic planning and response. Guidelines for healthcare facility management (including infection control recommendations) during an influenza pandemic are available (Appendix H and <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>). These



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guidelines have been distributed to the twenty-seven hospitals, clinics and two Veteran Administration Medical Centers.

Interoperable communication systems are continuously improving within the State of Wyoming; on a statewide basis, hospitals have the ability to communicate via radio (as well as phone) with their local ambulance service, fire; law, emergency management and public health; the ability to exchange data is limited to fax, internet and hand-delivered. The purchase of radios and radio base stations has been conducted on a standard based approach, with all equipment being APCO Project 25 compliant as well as compatibility with the WyoLink program (state-wide communication project). Communication protocols exist within the state, and planning for redundancy is a top priority. With Wyoming being a frontier state, communication challenges exist daily: cell phone coverage is sporadic state-wide; weather affects electrical availability (power outages are common statewide); geographically, mountain ranges prohibit cell phone and/or radio usage and satellite phone usage.

There will likely be a significantly increased demand for ventilator support and other critical care needs during a pandemic, likely beyond the usual capacity of healthcare facilities. Triage decisions for critical care access and ventilator support will be the responsibility of the local healthcare system, including healthcare providers and facilities. It is highly recommended that healthcare providers and facilities develop triage protocols to help ensure the most beneficial use of critical care resources. The Healthcare Preparedness Program is developing Crisis Standards of Care which provide guidance to healthcare facilities on how to conserve supplies and allocate scarce resources during emergencies. Healthcare personnel will be affected by illness at least as much, if not more than, the general population. Given that assumption, there will be high absenteeism rates among healthcare staff, at least until a vaccine becomes available. While retired healthcare providers and volunteers can be called on to assist in the care of the ill, it is likely that some responsibility for non-critically ill patients will shift to families. Guidelines on “How to Care for Family Members at Home” have been distributed to hospitals and other healthcare entities such as emergency medical services and clinics. Local healthcare triage plans should have the goal of instructing mildly ill persons to stay home, and directing those with more severe illness or those persons in an antiviral treatment priority group (see Appendix G) to the appropriate level of care. Such a strategy will focus antiviral medications on individuals likely to benefit the most, reduce the burden on an overwhelmed healthcare system, and limit the number of persons exposed to individuals with influenza.

## **D. Strategic National Stockpile (SNS) Ventilator Guidance**

CDC SNS Program has a relatively small number of ventilators that WDH can request. The following guidance has been developed by the WDH for distribution of these limited ventilators.

1. Requests from county EOCs, hospitals or public health must follow the SNS request process as outlined in the state and county SNS Plan.
2. The MCM Coordinator will gather data on the number of requests received and the number of ventilators available.
3. MCM Coordinator will work with the WDH Healthcare Preparedness Program Coordinator (HPPC) to:

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- a. Confirm with hospital the need for the ventilator to include:
      - i. are all available ventilators in use
      - ii. does the hospital have critical patients in need of the ventilator immediately
      - iii. does the hospital have respiratory therapy staff to adequately operate the requested ventilators
  4. The SNS Coordinator will discuss the request and above information with the WDH Incident Coordinator and Operations Chief.
  5. The State Health Officer will have ultimate approval authority for all ventilator requests.
  6. In general the request for ventilators will be filled in the order they are received with the following caveats:
    - a. There must be a demonstrated need.
    - b. If multiple facilities are requesting ventilators, each facility may not get the number they request. WDH will try to spread the ventilators out so each requesting facility can have at least one (until supplies are exhausted, by order of request).
    - c. If the entire allotment of SNS ventilators is requested by only a small number of facilities the HPPC may be directed to do a needs assessment to determine needs of other facilities.

## **COMMUNICATIONS**

Reference: Crisis and Emergency Risk Communication Plan

## **APPENDICES**

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## **Appendix A: Pandemic Influenza Working Group and Stakeholders**

### **Wyoming Department of Health Pandemic Influenza Working Group Members**

State Health Officer  
State Epidemiologist  
Public Health Laboratory Administrator  
Public Health Laboratory Microbiology Manager  
Infectious Disease Epidemiology Unit Manager  
Epidemic Intelligence Service Officer  
Representatives from Public Health Nursing Program  
Immunization Unit Manager  
Influenza Surveillance Epidemiologist  
HHS Healthcare Preparedness Program Coordinator  
Public Health Preparedness and Response Unit Manager  
State Public Health Veterinarian  
Public Health Preparedness and Response Epidemiologist  
Representative from Public Health Response Coordinator  
WDH Public Information Officer  
Medical Countermeasures Coordinator  
Representative from Department of Family Services  
Representative from Pharmacy Program  
Representatives from Department of Education  
Representatives from National Guard  
Representatives from Wyoming Office of Homeland Security

### **Pandemic Influenza Stakeholders**

#### Representatives from the following:

Governor's Office  
Wyoming Office of Homeland Security  
Wyoming Department of Health:  
    Director's Office  
    Public Health Preparedness and Response Unit  
    Office of Emergency Medical Services  
    Infectious Disease Epidemiology Unit  
    Immunization Unit  
    Behavioral Health Division  
    Aging Division  
    Office of Rural Health  
    Pharmacy Program  
    Public Health Laboratory  
    Public Health Nursing Program  
Wyoming Hospital Association  
Wyoming Medical Society  
Wyoming Board of Medicine  
Wyoming Board of Nursing  
Indian Health Services  
Wyoming Department of Education  
Wyoming Department of Corrections

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Wyoming Business Council  
Wyoming County Commissioner Association  
County Health Departments  
County Health Officers  
Northern Arapaho Tribe  
Eastern Shoshone Tribe  
Veterans Administration Hospitals  
National Guard – Adjutant General or designee  
Attorney General's Office

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## **Appendix B: Pandemic Influenza Planning Roles**

Pandemic influenza planning is essential, but in order to plan effectively, it is important to know what is being done at each level of the public health system. This fact sheet contains examples of planning roles at the federal, state, and local level.

### **Federal Planning Roles**

National and international surveillance  
“Pandemic Phase” declarations  
Development and use of diagnostic laboratory tests and reagents  
Development of reference strains and reagents for vaccines  
Vaccine evaluation and licensure  
Determination of populations at highest risk and strategies for vaccination and antiviral use  
Assessment of measures to decrease transmission (travel restrictions, isolation, and quarantine)  
Deployment of federally purchased vaccine  
Deployment of antiviral agents in the Strategic National Stockpile  
National adverse events surveillance system  
Evaluation of vaccine safety  
Deployment of Commissioned Corps Readiness Force and Epidemic Intelligence Service officers  
Medical and public health communications  
National information database/ exchange/clearinghouse on the internet  
Development of the following:  
Fact sheets on influenza disease, vaccine and antivirals  
Strategies and guidelines for interacting with the media and communicating with public health agencies, medical communities, and the general public  
Guidelines for triage and treatment of influenza patients

### **Wyoming Department of Health Planning Roles**

Development of Pandemic Influenza Plan  
Exercise of Pandemic Influenza Plan  
Coordination of state-wide influenza surveillance  
Vaccine and antiviral medication procurement and distribution plans  
Development of data management systems needed to implement components of the plan.  
Identification of essential service groups as first round vaccine recipients  
Statewide media messages  
Legislative/administrative measures  
Provide guidance to local jurisdictions to ensure development and exercise of local plans.  
Provide guidance and funding to Cities Readiness Initiative jurisdictions to ensure Pandemic Influenza Readiness Assessment action plans are addressed  
Coordination with other state agencies  
Coordination with adjoining jurisdictions.

### **Local Planning Roles**

Development of local emergency operations plan  
Surveillance assistance as requested  
Vaccine and antiviral medication storage, distribution, and dispensing plans  
Identification of critical workforce as first round vaccine recipients

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Local emergency response  
Continuation of operations

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## Appendix C: Pandemic Planning Guidance for Local Public Health

Because pandemic influenza outbreaks are expected to occur simultaneously throughout much of the United States, shifts in human and material resources that normally occur with other natural disasters will not be possible. This unique challenge should be considered during pandemic influenza planning. This guidance document highlights a number of issues that should be considered during the pandemic planning process at the local level.

### I. Command and Control

#### A. Wyoming Interval 1

- Identify persons/agencies responsible for writing and updating the plan.
- Determine how often the plan should be revised.
- Review existing emergency response or similar plans that have already been developed and determine how the pandemic plan can be incorporated into existing plans.
- Exercise pandemic influenza plans.
- Identify leaders and decision makers for pandemic response activities in your jurisdiction.
- Identify essential services of your agency which must be continued during a pandemic.
- Identify who is responsible for documentation of costs of the pandemic response.
- Develop and maintain lists of partners, resources, facilities, and mutual aid agreements within the jurisdiction that can be used to support response activities during a pandemic, including:
  - Local Emergency Operations Center
  - Vaccination sites (small and mass clinics) and antiviral distribution sites
  - Vaccine and antiviral storage sites

#### B. Wyoming Interval 2

- Establish a Pandemic Influenza Working Group and Advisory Committee
- Identify high risk environments for influenza transmission.
- Review and exercise the pandemic influenza response plan, as necessary.
- Coordinate with response partners for development of response protocols.
- Support the efforts of the WDH to train and communicate with private and public sector health professionals.

#### C. Wyoming Intervals 3-5 and Deceleration Interval

- Convene the Working Group, Advisory Committee, and other partners and stakeholders to review the plan and assess current capabilities.
- Hold daily briefings for key stakeholders.
- Monitor staffing and other agency resource needs.
- Document expenses related to the pandemic response.
- Consider activating EOC to facilitate coordination with WDH Incident Management Team

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D. Wyoming Preparation Interval

- Identify when staff will return to usual activities.
- Complete a hotwash and After-Action Report

## II. Surveillance

*Surveillance is primarily a state public health activity; local public health may be asked to assist in disease surveillance.*

A. Wyoming Interval 1

- Support routine influenza surveillance activities of the WDH.
- Assist in identifying ILINet sentinel physicians and school nurses for surveillance.

B. Wyoming Interval 2

- Work with the WDH to ensure that all healthcare providers within your jurisdiction are aware of the recommendation to culture patients presenting with ILI with recent travel history to an affected area.
- Obtain updates on the disease and share this information with key stakeholders

C. Wyoming Intervals 3-5 and Deceleration Interval

- Continue to work with the WDH to ensure that all healthcare providers within your jurisdiction are aware of the current lab testing recommendations.
- Assist with specimen collection and/or data collection as appropriate.

D. Wyoming Preparation Interval

- Assist WDH in data collection for retrospective characterization of the pandemic.

## III. Vaccine Management

*Obtaining vaccine, distribution to regional centers, and identification of priority vaccination groups is a state responsibility. Local agencies will be responsible for identifying persons in priority groups and administering vaccine.*

A. Wyoming Interval 1

- Develop contingency plans for mass and small vaccination clinics
- Identify facility, storage unit, supplies, and staffing requirements
- Develop and exercise plans for vaccine delivery and storage.
- Train staff and volunteers on vaccine management guidelines and set-up for mass vaccination clinics
- Develop a system in your jurisdiction to identify number of persons in priority groups for vaccination (reminder: coordinate with local emergency management).
- Assist WDH to improve current seasonal influenza and pneumococcal vaccination efforts
- Encourage providers to administer influenza and pneumococcal vaccine to ACIP recommended groups.

B. Wyoming Intervals 2-5 and Deceleration Interval

*Before vaccine is available:*



- 
- Identify individuals (actual people) in priority groups for vaccination as defined by the WDH.
  - Educate the public on vaccine priority groups, including the rationale for the list
  - Identify facilities and staff for administering vaccine

*When vaccine is available:*

- Coordinate transportation and security with local law enforcement and other partners.
- Collaborate with WDH Immunization program on vaccine delivery, accountability, etc.
- Follow state standing orders for vaccine administration
- Use WDH Immunization Registry to track clinic participation, lot numbers.
- Use VAERS to track adverse vaccine reactions.

#### C. Wyoming Preparation Interval

- Summarize pandemic influenza vaccination response
- Summarize lessons learned from vaccination efforts
- Complete a hotwash and After-Action Report.

### IV. **Antiviral Management**

*Obtaining antiviral medications, distribution to local centers, and identification of priority vaccination groups is a state responsibility. Local agencies will be responsible for storing, distributing, and dispensing antivirals.*

#### A. Wyoming Interval 1

- Develop contingency plans for storage and dispensing sites.
- Identify facility, storage unit, supplies, and staffing requirements.
- Train staff on antiviral forms and procedures for antiviral tracking and data management

#### B. Wyoming Intervals 2-5 and Deceleration Interval

- Before antivirals are available:
- Develop standing orders as needed (“Antiviral Distribution/Dispensing Standing Order” template is in the county plans)
- Develop a system to prophylax priority groups and distribute antivirals to healthcare providers for treatment

*When antivirals are available:*

- Ensure logistics are in place for security, distribution, and administration
- Notify the medical community of the status of antiviral availability
- Disseminate antiviral use guidelines to the medical community and conduct training for public health staff
- Track antiviral distribution, use, and supply using system that will be provided by WDH.
- Report adverse antiviral reactions through established systems.

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C. Wyoming Preparation Interval

- Summarize pandemic influenza antiviral response
- Summarize lessons learned from mass distribution efforts.
- Conduct a hotwash and After-Action Report

**V. Emergency Response**

A. Wyoming Interval 1

- Inventory relevant medical supplies, facilities, and services in your jurisdiction.
- Identify individuals and agencies who will need to be notified.

B. Wyoming Intervals 2-5 and Deceleration Interval

- Stock and inventory relevant medical supplies, survey facilities, and assess services in your area
- Meet with decision makers.
- Implement infection control measures for staff protection
- Review current policies and new recommendations.
- Coordinate response activities with neighboring jurisdictions.
- Activate local Emergency Operations Center (EOC) as appropriate.
- Refer to local and agency EOP plans.

C. Wyoming Preparation Interval

- Coordinate response activities with other localities.
- Reduce staffing/close EOC as appropriate.
- Evaluate pandemic response.
- Summarize pandemic response and debrief.
- Conduct a hotwash and After-Action Report

**VI. Communications**

A. Wyoming Interval 1

- Identify a PIO (and backups)
- Educate the public on influenza and personal disaster preparedness
- Identify personnel and agencies within the county to be notified during the stages of a pandemic.
- Determine communication network and responsibilities between local public health and local emergency management.
- Develop/coordinate communication with your jurisdiction's health care professionals
- Coordinate media messages with state agencies and other local agencies to ensure consistency.
- Identify and address deficiencies in your communications systems.

B. Wyoming Intervals 2-5 and Deceleration Interval

- PIO will identify and train subject matter experts

- 
- Distribute risk communication messages
  - Educate the public on pandemic influenza and personal preparedness
  - Coordinate information with the WDH to ensure consistency

D. Wyoming Preparation Interval

- Confirm with county officials who will serve as the local PIO
- Review and modify developed materials and messages as needed
- Notify other agencies/organizations of pending threat
- Coordinate media messages with local agencies and the WDH to ensure consistency
- Prepare to activate local public health hotlines that will provide information to the public and train personnel/volunteers to staff the hotline(s)
- Disseminate information to the public and media on an ongoing basis
- Monitor media coverage and address misinformation

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## Appendix D1: Public Health Ordered Isolation Letter to Suspected and Confirmed Novel Influenza Cases

*Patient name*

*Street Address*

*City, WY Zip code*

*Date of Order*

Dear *[Patient name]*:

You were recently diagnosed with an infection of a novel (pandemic) strain of influenza. Because this strain of influenza is very contagious to others, strong measures must be taken to stop further spread of the disease and protect the public's health. **Therefore, under the authority vested in me pursuant to Wyoming State Statute § 35-1-240, I hereby order, for the protection of the public health, that you, *[patient name]*, of *[patient address]*, *[city/town]*, remain under public health ordered isolation until this order is lifted by public health officials. This will typically be until 7 days after illness began, or until recovered, whichever is later. *(The actual length of isolation will be determined during an actual pandemic based on epidemiologic data and guidance from the CDC).***

If your symptoms have not improved after 7 days, you may need to follow these guidelines for a longer time. Your healthcare provider and/or public health officials will tell you if you need to follow this order for longer than 7 days.

If your symptoms worsen, please call your healthcare provider or local public health.

The local Public Health Nursing office will be calling your home on a daily basis to check to see if anyone in your family or household is getting sick. If someone you live with or spend time with gets sick with fever or develops other flu-like symptoms (e.g. cough, headache, muscle aches), call that person's healthcare provider, and also call your local public health office at (local number) or the Wyoming Department of Health at (877) 996-9000.

### **1. Stay at home.**

You may leave your home only if you remain on your property and have no face-to-face contact with anyone other than members of your household.

You may not leave your property during this isolation period for any reason, except to visit your healthcare provider or for a medical emergency. Do not go to work, school, or any other public areas. If you need something from outside your home, ask family, friends, and neighbors who are not sick to get it for you.

### **2. Use safe practices to protect the health of others.**

Wearing a surgical mask when you are around other people may help lessen the chance you will spread your illness to others. You may be provided a surgical mask(s) to take with you by your healthcare provider or local public health officials, depending on supplies. In addition, surgical

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masks can usually be purchased at drug stores or medical supply stores. If you must purchase your own masks please have a family member or friend who is not ill make the purchase for you.

Cover your mouth and nose with a tissue when you sneeze, cough, or blow your nose. Put the used tissue in the garbage and remember to wash your hands immediately afterwards.

While at home, limit your contact with those that live with you as much as possible. Consider designating one person as the primary caregiver. If possible, the primary caregiver should be someone who does not have an underlying medical condition that places them at high risk for severe illness. Sleep in a separate room, if possible, or at least in a separate bed. Avoid close contact such as kissing. Consider having caregivers wear a surgical mask or respirator (N95 mask) when in close contact with any ill person. Surgical masks and respirators (N95 masks) are usually available for purchase at pharmacies or home health supply stores, although supplies may be quite limited by the spread of influenza in your community.

**Only people who live in your home or who are essential for patient care or support should enter your home while this order is in place.** If non-ill persons must enter the home, they must use appropriate protective measures or avoid close contact with the patient.

Wash your hands often, for at least 15 seconds, with soap and warm water or alcohol-based hand rubs. Hand washing may be the best way to prevent others from getting sick. You should wash your hands after coughing, sneezing, blowing your nose, and going to the bathroom.

Throw out your used tissues and face masks with your regular garbage. Do not share eating utensils (spoons, forks, cups, or glasses), towels, or bedding (pillows, sheets, or blankets) with others. These items can be used again after routine cleaning with soap and hot water. Do not share toothbrushes, cigarettes and other tobacco products, or drinks.

If any of your respiratory fluids (secretions from your nose or mouth) get on surfaces in your home (such as door knobs or any other object that you sneeze or cough on), the surface should be washed with a household cleaner, such as bleach (1 part household bleach to 9 parts water) or other disinfectant. Anyone doing the cleaning should wear gloves.

### **3. Call your healthcare provider if your symptoms worsen.**

If your symptoms worsen, please call your healthcare provider or local public health.

If you need to go to the doctor's office, you should have a family member or friend drive you in a private car. Do not take public transportation (e.g. bus). Contact your doctor before you visit and tell the doctor you have been diagnosed with pandemic influenza. Also notify the local public health office that you will be traveling to your healthcare provider. If you have one, wear a surgical face mask on the way to and from your healthcare provider. You should go straight to the receptionist when you arrive so they can put you in a private room. Try to sit away from others as much as possible.

If you are very sick and need to call an ambulance to take you to the hospital, let the operator know that you have pandemic influenza when you call 911, and let the ambulance crew know when they arrive.

Failure to follow these instructions will place the health of others at risk. Therefore, failure to comply with all directives in this order may result in the issuance of an emergency order requiring that you be taken into custody pursuant to Wyoming State Statute §§ 35-1-240, and 35-4-103 et

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seq. to ensure that you do not expose other persons to this dangerous and potentially deadly disease. If you have questions call your local public health office at (list number) or the Wyoming Department of Health at (877) 996-9000.

Sincerely,

[Signature of State Health Officer, or designee, or County Health Officer]

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## Appendix D2: Voluntary Isolation Letter for Novel Influenza Cases

Dear Patient:

You have recently been diagnosed with an infection with a novel strain of influenza. Although you may be feeling better and are being sent home from the hospital or clinic, others who are in close contact with you could still get the infection from you.

Because influenza is contagious, strong measures must be taken to stop further spread of the disease. As a result, **you are directed to follow the following guidelines from now until 7 days after illness began, or until no longer ill (absence of fever, cough, runny nose, headache, muscle aches) whichever is later. (the actual length of isolation will be determined during an actual pandemic based on epidemiologic data and guidance from the CDC).**

### **1. Stay at home.**

You may leave your home only if you remain on your property and have no face-to-face contact with anyone other than members of your household.

You may not leave your property during this isolation period for any reason, except to visit your healthcare provider or for a medical emergency. Do not go to work, school, or any other public areas. If you need something from outside your home, ask family, friends, and neighbors who are not sick to get it for you.

Failure to follow these instructions will place the health of others at risk.

### **2. Use safe practices so your household members do not get sick.**

Wearing a surgical mask when you are around other people may help lessen the chance you will spread your illness to others. You may be provided a surgical mask(s) to take with you by your healthcare provider or local public health officials, depending on supplies. In addition, surgical masks can usually be purchased at drug stores or medical supply stores. If you must purchase your own masks please have a family member or friend who is not ill make the purchase for you.

Cover your mouth and nose with a tissue when you sneeze, cough, or blow your nose. Put the used tissue in the garbage and remember to wash your hands immediately afterwards.

While at home, limit your contact with those that live with you as much as possible. Consider designating one person as the primary caregiver. If possible, the primary caregiver should be someone who does not have an underlying medical condition that places them at high risk for severe illness. Sleep in a separate room, if possible, or at least in a separate bed. Avoid close contact such as kissing. Consider having caregivers wear a surgical mask or respirator (N95 mask) when in close contact with the ill person. Surgical masks and respirators (N95 masks) are usually available for purchase at pharmacies or home health supply stores, although supplies will be quite limited during a pandemic.

**Only people who live in your home or who are essential for patient care or support should enter your home while this order is in place.** If non-ill persons must enter the home, they must use appropriate protective measures or avoid close contact with the patient.



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Wash your hands for at least 15 seconds often with soap and warm water or alcohol-based hand rubs. Hand washing may be the best way to prevent others from getting sick. You should wash your hands after coughing, sneezing, blowing your nose, and going to the bathroom.

Throw out your used tissues and face masks with your regular garbage. Do not share eating utensils (spoons, forks, cups, or glasses), towels, or bedding (pillows, sheets, or blankets) with others. These items can be used again after routine cleaning with soap and hot water. Do not share toothbrushes, cigarettes and other tobacco products, or drinks.

If any of your respiratory fluids (secretions from your nose or mouth) get on surfaces in your home (such as door knobs or any other object that you sneeze or cough on), the surface should be washed with a household cleaner, such as bleach (1 part household bleach to 9 parts water) or other disinfectant. Anyone doing the cleaning should wear gloves.

### **3. Call your healthcare provider if your symptoms worsen.**

If your symptoms worsen, please call your healthcare provider.

If you need to go to the doctor's office, you should have a family member or friend drive you in a private car. Do not take public transportation (bus). Please contact your doctor before you visit and tell the doctor you have been diagnosed with pandemic influenza. If you have one, wear a surgical face mask on the way to see your healthcare provider. You should go straight to the receptionist when you arrive so they can put you in a private room. Try to sit away from others as much as possible.

If you are very sick and need to call an ambulance to take you to the hospital, let the operator know that you may have pandemic influenza when you call 911, and let the ambulance crew know when they arrive.

For more information, please call your healthcare provider or the Wyoming Department of Health at (877) 996-9000.

Sincerely,

Wyoming State Health Officer

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## Appendix E: Quarantine Instructions for Contacts of Novel Influenza Cases

You have been identified as a close contact of an individual who has been diagnosed with, or suspected to have, novel influenza (pandemic influenza). Because influenza is contagious, strong measures must be taken to stop further spread of the disease. As a result, you are directed to comply with the following guidelines, from now until at least 7 days after you last had contact with the ill person. The exact time period for which you will be under quarantine will be determined by public health officials. ***(The actual length of quarantine will be determined during an actual pandemic based on epidemiologic data and guidance from CDC).***

### **Monitor your temperature**

Take your temperature twice a day for the time period determined by public health officials. Record your temperature in the table below. A representative from the local Public Health Nursing office will be calling your home on a daily basis to check to see if you have developed a fever or other respiratory symptoms.

#### **Temperature Monitoring Table for Novel Influenza Contacts**

**Instructions:** Record your temperature twice each day for the time period determined by your healthcare provider in the boxes below.

***If you develop a fever of 100° F or greater OR any respiratory symptoms (coughing, shortness of breath, etc), call your healthcare provider and the following number immediately: (888) 996-9104.***

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Calendar Date										
Temperature #1										
Temperature #2										

For non-emergencies, or if you have questions, please call the Wyoming Department of Health at (877) 996-9000.

### **Call your healthcare provider if you develop symptoms**

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If you (or someone you live with or spend time with) gets sick with fever or respiratory symptoms (cough, shortness of breath, or difficulty breathing), please call your healthcare provider right away. Also, please call the Wyoming Department of Health at (888) 996-9104.

If you need to go to the doctor's office, you should have a family member or friend drive you in a private car. Do not take public transportation (e.g. bus). Please contact your doctor before you visit and tell the doctor that you have been in contact with an individual who was diagnosed with novel influenza. You should go straight to the receptionist when you arrive so they can put you in a private room. Try to sit away from others as much as possible.

If you are very sick and need to call an ambulance to take you to the hospital, let the operator know that you may have novel influenza when you call 911, and let the ambulance crew know when they arrive.

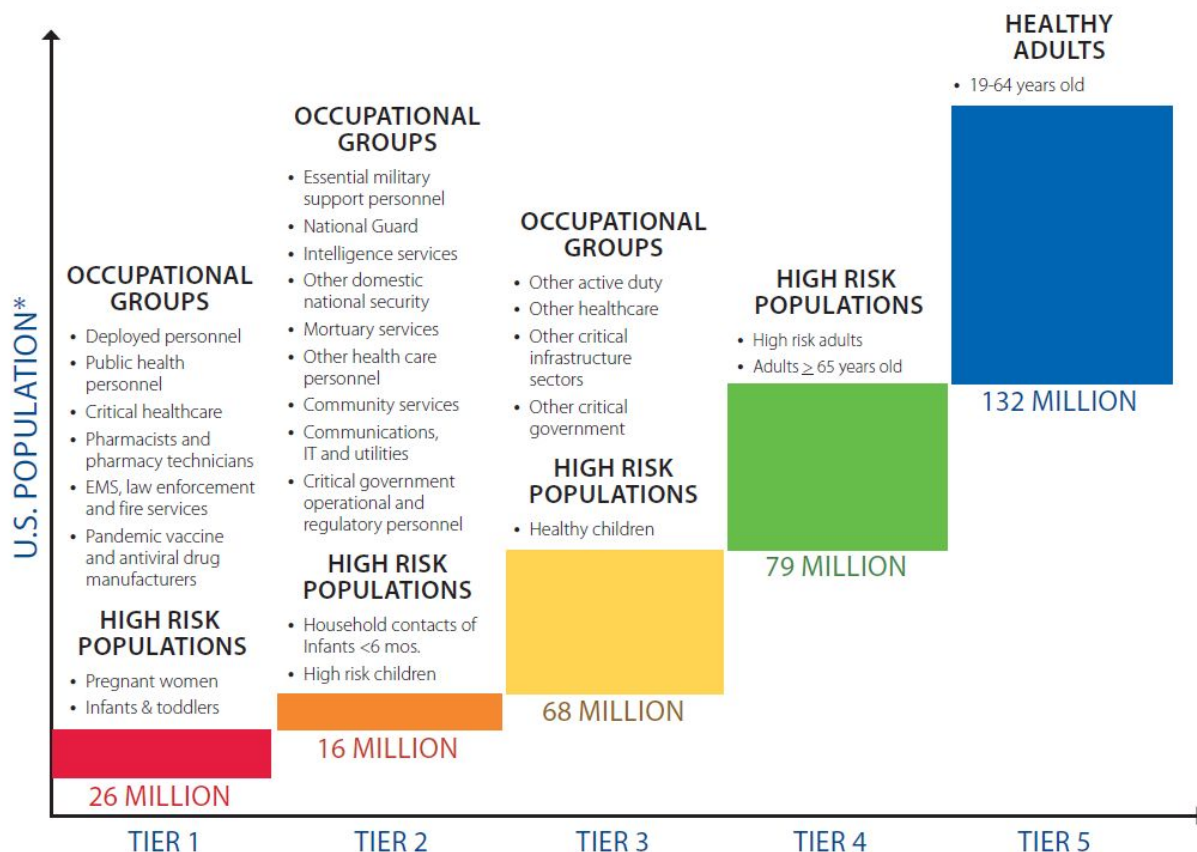
For more information, please call your healthcare provider or the Wyoming Department of Health at (877) 996-9000.

## Appendix F: Vaccination Tiers and Population Groups

### Vaccination tiers and population groups for a high/very high level of pandemic severity.

Accessible version at [https://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/guidance\\_508.html#figure-1](https://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/guidance_508.html#figure-1)

*This figure illustrates how vaccination is administered to population groups by tiers until the entire U.S. population has had the opportunity to be vaccinated during a pandemic with a high or very high level of severity, and how tiers integrate population groups, balancing vaccine allocation to occupationally defined groups and the general population. (See Appendix A for description of Occupational and High Risk Population Groups)*



\* Based on 2015 U.S. population of 321 million people. <https://factfinder.census.gov/bkmk/table/1.0/en/PEP/2015/PEPAGESEX>

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## Appendix G: Antiviral Drug Priority Group Recommendations\*

The use of antiviral medications in an influenza pandemic should be guided by the following list of priority group recommendations. These recommendations were developed taking into consideration the likely limited supply of antiviral medications, the fact that some groups of people are at higher risk of severe complications and death, and the need to maintain a community's ability to provide essential services, such as healthcare. Use of antiviral medications will involve some members of all of these groups simultaneously.

### Treatment

- **Treatment of influenza patients admitted to the hospital.**
- **Treatment of highest-risk outpatients (immunocompromised persons and pregnant women).** Specifically this includes persons with hematopoietic stem cell transplants and solid organ transplants; severe immunosuppression due to cancer therapy or hematological malignancy; immunosuppressive therapy for other illnesses (e.g., rheumatoid arthritis); HIV infection and a CD4 count <200; dialysis; and women who are in the second or third trimester of pregnancy.
- **Treatment of increased risk outpatients (young children 12-23 months old, persons >65 yrs old, and persons with underlying medical conditions).**
- **Treatment of patients and prophylaxis of contacts in outbreak response in long-term care facilities**
- **Treatment of other persons who present for care early during their illness and would benefit from antiviral medication treatment.**

### Prophylaxis

- **Prophylaxis of critical healthcare workers, public health workers, emergency service personnel, and workers with unique roles maintaining critical infrastructure and services for whom there is inadequate back-up personnel to provide these services, for the duration of the community outbreak.**
- **Post exposure prophylaxis of highest risk outpatients (e.g. immunocompromised persons, pregnant women).** See description of this group above.
- **Prophylaxis of public health responders families is a strategy to be considered to ensure workers report for work. However, it must be considered that antiviral prophylaxis will not likely be recommended for the general public and family members of first responders are not currently specifically linked in the tier structure.**

\*Adapted by the WDH from Part 1; Appendix D of the U.S. Department of Health and Human Services Pandemic Influenza Plan.

### Possible Model for Determining Antiviral Treatment and Prophylaxis Needs

Assumptions:

- Estimated 35% attack rate (according to CDC Flu-aid software this would represent a severe pandemic).

- Estimate that the number of persons with influenza whom will present for diagnosis and treatment in a timely enough manner for antiviral medications to be effective, or whom will be hospitalized and therefore candidates for treatment, will total approximately 50% to 75% of flu cases. [Local healthcare triage plans should have the goal of instructing mildly ill persons to stay home, and directing those with more severe illness or those persons in an antiviral treatment priority group to the appropriate level of care.]
- Local pandemic influenza planners will likely have a strategy of antiviral prophylaxis for persons in the U.S. Health and Human Services Antiviral Use Priority Groups (Appendix D) and the Wyoming Department of Health Pandemic Influenza Response Plan Antiviral Priority Groups (Appendix G). The number of persons in these groups will be county specific, and will be dependent on the number of persons in each county that belong to these groups and local emergency plans regarding issues such as healthcare surge capacity. Prophylaxis for these groups should be expected to require at least 4-6 courses of antiviral medications (40 – 60 days). As such, use of antiviral medications for long-term prophylaxis should be judicious, and put in place only when there exists the high likelihood of widespread transmission within a community.

#### **Possible Model:**

$0.35 \times \text{county population} = X$  (estimated number of ill persons in county)

$X / 2 = Y$  (estimated number of persons with influenza whom will present for diagnosis and treatment in a timely enough manner for antiviral medications to be effective, or whom will be hospitalized and therefore candidates for treatment. This example uses 50% estimate, but could perhaps be up to 75%)

$Z$  = number of persons for which long term prophylaxis may be indicated based on local planning and prioritization

$Z \times 6 = P$  (number of courses of antiviral medication needed for 60 days of prophylaxis)

The sum of  $Y$  and  $P$  will have to come out of the county's total allotment of antiviral medications from the SNS and State stockpiles. Local planners will have to look at these estimated needs and balance the two areas of need.

Example calculation (using Campbell County for illustration purposes):

$0.35 \times 37,405 = 13,092$  (estimated number of ill persons in county)

$13,092 / 2 = 6546$  (estimated persons whom will be candidates for treatment. This example uses 50% estimate, but could perhaps be up to 75%)

Campbell County allotment = 9,174 courses

$9,174 - 6546 = 2628$  courses available for long term prophylaxis

$2628 / 6 = 438$  persons whom can be prophylaxed for 60 days

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## Appendix H: Guidelines for Healthcare Facilities Management

*These guidelines were created to help health care facilities maximize staffed beds, maximize resources available, and decrease disease transmission within the facility during an influenza pandemic.*

**Staffing:** One of the greatest challenges in a pandemic response is expected to be the management of high patient load in the face of reduced staff. Many hospitals already have high census protocols and emergency preparedness plans that may be adapted to pandemic planning. Specific preventive interventions may reduce staff absenteeism during a pandemic. Health care personnel are among priority groups for antiviral chemoprophylaxis and vaccination. However, available supply of antivirals likely will be far less than the need and the efficacy of chemoprophylaxis may be compromised by antiviral resistance. If available, vaccine is also likely to be in short supply early in a pandemic. Assuming insufficient vaccine initially to protect all hospital staff, health departments and health care organizations should work together to define front-line health care workers who would have priority for vaccination or chemoprophylaxis. Absenteeism may result from illness, the need to care for ill family members, and possibly from fear of exposure and infection. As part of preparedness planning, health care organizations should develop strategies to cope with staffing shortages.

Strategies to increase available staff:

1. Ensure that the facility's time-off policies and procedures adequately consider staffing needs in periods of clinical crisis.
2. Consider or expand hospital-sponsored sick care services for the children of hospital staff to reduce staff absenteeism.
3. Within reasonable limits of clinical competency, consider the use of registered nurses and other health care providers serving in administrative positions to provide patient care.
4. Consider appropriate clinical care roles for trainees (such as medical or nursing students), retired health care providers, and community volunteers for some patient care roles and other functions such as patient or specimen transport and for maintaining good patient flow in crowded emergency department settings.
5. When vaccine becomes available, sponsor local immunization programs for all staff members, physicians and their families, and other at-risk members of the community.
6. Preferentially use immunized staff to care for those with suspected or confirmed influenza infection.
7. Generally, health care workers who have respiratory illness should be excluded from work to avoid infection of patients, many of whom are at high risk for severe or complicated disease. In a pandemic, and if faced with critical staff shortages, such restrictions could be relaxed on a case-by-case basis, such that healthcare workers who have mild respiratory illness could provide care for cohorted influenza patients.
1. In addition to chemoprophylaxis begun before exposure and vaccination, other strategies to decrease the risk that a healthcare worker will be infected include good infection control and post-exposure chemoprophylaxis. Antiviral treatment using a neuraminidase inhibitor shortly after onset of symptoms can decrease the duration of illness and time missed from work as well as reducing the amount of viral shedding and risk to other staff and patients. Early therapy also is the most efficient approach to antiviral use when supplies are limited.



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## **Triage:**

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).

- 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 care.
- 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.
- Given the large number of people in a community ill with influenza, local healthcare triage plans may need to give consideration to instructing mildly ill persons to stay home, and directing those with more severe illness or those persons in an antiviral treatment priority group (see Appendix G) to the appropriate level of care. Such a strategy will focus antiviral medications on individuals likely to benefit the most, reduce the burden on an overwhelmed healthcare system, and limit the number of persons exposed to individuals with influenza.

**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.
- 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.

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**Bed Availability:** Additional beds can be made available for those who require admission for influenza or its complications by decreasing other admissions, implementing more stringent triage, and decreasing the length-of-stay. Hospitals also may be able to add acute care beds in a public health emergency, although staffing those beds may be a limitation.

Strategies to increase the availability of hospital beds:

- Review policies for scheduling elective procedures and develop guidelines and contingency plans to limit elective admissions and surgery. Decreasing elective utilization of health care facilities during a pandemic will increase bed availability, allow redistribution of staff and equipment, and may decrease the elective patient's exposure to influenza infected persons. Consideration should be given to performing any necessary surgeries in a surgical ambulatory care center to reduce the likelihood of exposure to influenza infected patients in hospital.
- Consider appointment of a triage officer to manage patient flow in the emergency department, including appropriate patient referral to other clinics within the facility or to local physicians' offices or nontraditional care settings when emergency department care is not required.
- Review and revise criteria for admission. Consider directing patients referred for admission by their physician to the emergency department where the need for admission can be directly evaluated (by a triage officer) in the context of bed and staff shortages.
- Review guidelines and policies allowing expeditious transfer of patients between units, especially from critical care units, when indicated.
- Develop plans and policies to promptly transport discharged patients home or to other facilities. Consider creating a patient discharge holding area or discharge lounge to free up bed space.
- Ensure that the facility has effective rules for expediting patient discharge during periods of anticipated high demand. These rules might include allocation of a sufficient number of triage physicians and nurses to the appropriate services and procedures for discharge and transfer of patients to home, a skilled nursing facility, or other facilities.
- Coordinate with home health care agencies to provide follow-up for persons who are not admitted to the hospital or are discharged earlier than usual.

**Equipment/Supplies:** Plan for the limited availability and increased need for equipment and supplies such as respirators, gurneys and supply carts within the facility and for potential disruption in the normal delivery of supplies and repair services. Although several thousand ventilators are included in the Strategic National Stockpile (SNS), this quantity is small relative to what the national need may be. Because a pandemic may not affect all areas simultaneously, it may be possible to shift some resources between areas; this may be most feasible if a pandemic wave already has passed through a community and ventilators become available rather than an area that has not yet experienced disease sending its equipment elsewhere.

Consumable resource needs are those specific to an outbreak of infectious respiratory disease, including hand hygiene supplies, gowns, gloves, and surgical and N-95 masks, as well as other supplies associated with routine patient care. Healthcare facilities should be expected to provide supplies, including masks, to their patients and staff to ensure appropriate infection control within their facility as appropriate based on infection control guidelines and supply availability. Local public health officials may wish to provide assistance to healthcare facilities in the form of supplies or funding based on need to ensure proper infection control within those facilities. While Public Health Emergency Preparedness (PHEP) Cooperative Agreement funds cannot be used to provide supplies for clinical care, Hospital Preparedness Program funds or PHEP crisis funds may

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be available . It is quite likely during a pandemic availability of essential supplies will be limited. Healthcare providers and facilities are encouraged to procure essential supplies, including respiratory protection for patients and staff, before a pandemic occurs. Local Healthcare Coalitions have a limited medical cache. Consider contacting the local Healthcare Coalition to determine availability of equipment and supplies within the coalition.

In the event of a pandemic, local healthcare facilities will be the primary entity responsible for the care and treatment of ill persons. It is recommended that healthcare facilities maintain a supply of antiviral medications to be used for the treatment of ill persons, as the availability of such medications allows. Current evidence indicates the facility supply should include oseltamivir (Tamiflu); however the facility supply does not necessarily need to be restricted to oseltamivir as other antiviral medications such as zanamivir (Relenza) may be effective against pandemic virus strains. In addition, at this time the antiviral medication available for public health stockpiles does NOT include suspension formulations for pediatric dosing, so healthcare facilities and pharmacies should consider this need. While it is possible that public health stockpiles of antiviral medications may be available, relying solely on public health stockpiles would likely not provide sufficient amounts of antiviral medications and would not be the most efficient means of providing treatment to patients.

**Strategic National Stockpile (SNS) Ventilator Policy:** CDC SNS program has ventilators that WDH can request. The following policy has been developed by WDH for distribution of these limited ventilators. This policy is subject to change based on specific pandemic circumstances. This policy will likely be carried out through the IMT.

- Requests from local Emergency Operations Center (EOCs), hospitals or public health must follow the SNS request process as outlined in the state and county MCM Plan.
- The MCM Coordinator will gather data on the number of requests received and the number of ventilators available.
- MCM Coordinator will work with the WDH Healthcare Preparedness Program Coordinator (HPPC) to:
  - Confirm with hospital the need for the ventilator to include:
    - are all available ventilators in use
    - does the hospital have critical patients in need of the ventilator now
    - does the hospital have respiratory therapy staff to adequately operate the requested ventilators
- The MCM Coordinator will discuss the request and above information with the WDH Incident Coordinator and Operations Coordinator and present the strategy to the SHO for final approval.
- In general the request for ventilators will be filled in the order they are received with the following caveats:
  - There must be a demonstrated need
  - If multiple facilities are requesting ventilators, each facility may not get the number they request. WDH will try to spread the ventilators out so each requesting facility can have at least one (until supplies are exhausted, by order of request).
  - If the entire allotment of SNS ventilators are requested by only a small number of facilities the HPPC may be directed to do a needs assessment to determine needs of other facilities.

**Infection Control:** Influenza viruses are spread from person-to-person, primarily through inhalation of small particle aerosols and large droplet infection. Influenza can be highly

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contagious, particularly among persons without pre-existing antibodies against influenza, such as young children during normal influenza seasons and anyone during a pandemic. The typical incubation period of influenza is two days (range one to four days). Viral shedding, and the period during which a person may be infectious to others, generally peaks on the second day of symptoms, but may begin the day before symptoms start, and typically lasts five to seven days in adults. Young children and immunocompromised persons may shed virus and be infectious for three weeks or longer. The amount of virus shed and the length of time of viral shedding may be prolonged during initial infection with a new influenza subtype.

Infection control practices for pandemic influenza are generally the same as for other human influenza viruses and primarily involve the application of standard and droplet precautions (see <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm> for description of infection control precautions). Special guidelines for infection control may need to be in place during pandemic influenza, taking into account the likelihood that a high proportion of the population will be affected and that secondary infections are a major source of morbidity and mortality.

At this time WDH recommends adherence to the following CDC recommended infection control precautions for pandemic influenza  
(<http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>)

### **WDH Recommended Infection Control Precautions for Healthcare Facilities for Novel Influenza Virus**

#### **Implementation of Respiratory Hygiene/Cough Etiquette**

To prevent the transmission of all respiratory infections in healthcare settings, including novel influenza virus, respiratory hygiene/cough etiquette infection control measures should be implemented at the first point of contact with a potentially infected person. They should be incorporated into infection control practices as one component of Standard Precautions.

Healthcare facilities should establish mechanisms to screen patients for signs and symptoms of febrile respiratory illness at any point of entry to the facility. Provisions should be made to allow for prompt isolation and assessment of symptomatic patients.

#### **Implementation of Facility Contingency Plans**

Staff in healthcare settings should monitor information from state and local health departments, and CDC, for the latest information. Healthcare facilities should be reviewing and making plans to implement their facility contingency response and/or pandemic response plans. This should include making plans for managing increasing patient volume and potential staffing limitations.

#### **Interim Infection Control Recommendations**

If the patient is presenting in a community where novel influenza virus transmission is occurring (based upon information provided by state and local health departments), these infection control recommendations should apply to all patients with febrile respiratory illness (defined as fever [greater than 37.8° C] plus one or more of the following: rhinorrhea or nasal congestion; sore throat; cough).

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If the patient is presenting in a community without novel influenza virus transmission, these infection control recommendations should apply to those patients with febrile respiratory illness AND:

- close contact with a person who is a confirmed, probable, or suspected case of novel influenza virus infection, within the past 7 days OR
- travel to a community either within the United States or internationally where there are one or more confirmed novel influenza virus cases within 7 days

As the situation evolves, the ability to use epidemiologic links to identify potentially infectious patients may be lost and these recommendations may need to be applied to all patients with febrile respiratory illness. This situation will be monitored, and these guidelines will be updated as needed.

### **Infection Control of Ill Persons in a Healthcare Setting:**

#### **Patient placement and transport**

Any patients who have a confirmed, probable, or suspected case of novel influenza virus and present for care at a healthcare facility should be placed directly into individual rooms and the door should be kept closed, whenever feasible. Healthcare personnel who interact with the patients should follow the infection control guidance in this document. For the purposes of this guidance, healthcare personnel are defined as persons, including employees, students, contractors, attending clinicians, and volunteers, whose activities involve contact with patients in a healthcare or laboratory setting.

**For procedures that are likely to generate aerosols (e.g., bronchoscopy, elective intubation, suctioning, administering nebulized medications), an airborne infection isolation room (AIIR) with negative pressure air handling with 6 to 12 air changes per hour can be used.** Air can be exhausted directly outside or be recirculated after filtration by a high efficiency particulate air (HEPA) filter.

Procedures for transport of patients in isolation precautions should be followed. Facilities should also ensure that plans are in place to communicate information about suspected cases that are transferred to other departments in the facility (e.g., radiology, laboratory) and other facilities. **The ill person should wear a surgical mask to contain secretions when outside of the patient room** and should be encouraged to perform hand hygiene frequently and follow [respiratory hygiene/cough etiquette practices](#).

#### **Isolation precautions**

All healthcare personnel who enter the patient's room should take standard and contact precautions. Maintain adherence to hand hygiene by washing with soap and water or using alcohol-based hand sanitizer immediately after removing gloves and other equipment and after any contact with respiratory secretions. Nonsterile gloves and gowns along with eye protection should be donned when entering a patient's room.

**Respiratory protection: All healthcare personnel who enter the rooms of patients in isolation with confirmed, suspected, or probable novel influenza virus should wear a fit-tested disposable N95 respirator or better. Respiratory protection should be donned when entering a patient's room.**

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Note that this recommendation differs from current infection control guidance for seasonal influenza, which recommends that healthcare personnel wear surgical masks for patient care. The rationale for the use of respiratory protection is that a more conservative approach is needed until more is known about the specific transmission characteristics of this new virus.

### **Management of visitors**

Limit visitors for patients in isolation for novel influenza virus infection to persons who are necessary for the patient's emotional well-being and care. Visitors who have been in contact with the patient before and during hospitalization are a possible source of novel influenza virus. Therefore, schedule and control visits to allow for appropriate screening for acute respiratory illness before entering the hospital and appropriate instruction on use of personal protective equipment and other precautions (e.g., hand hygiene, limiting surfaces touched) while in the patient's room. Visitors should be instructed to limit their movement within the facility.

Visitors may be offered a gown, gloves, eye protection, and respiratory protection (i.e., N95 respirator) and should be instructed by healthcare personnel on their use before entering the patient's room.

### **Duration of precautions**

Isolation precautions should be continued for 7 days from symptom onset or until the resolution of symptoms, whichever is longer.

Persons with novel influenza virus infection should be considered potentially contagious from one day before to 7 days following illness onset. Persons who continue to be ill longer than 7 days after illness onset should be considered potentially contagious until symptoms have resolved. Children, especially younger children, might be contagious for longer periods. These time periods may change depending on the specific characteristics of the novel virus.

### **Surveillance of healthcare personnel**

In communities where novel influenza virus transmission is occurring, healthcare personnel should be monitored daily for signs and symptoms of febrile respiratory illness. Healthcare personnel who develop these symptoms should be instructed not to report to work, or if at work, should cease patient care activities and notify their supervisor and infection control personnel.

In communities without novel influenza virus transmission, healthcare personnel working in areas of a facility where there are patients being assessed or isolated for novel influenza virus infection should be monitored daily for signs and symptoms of febrile respiratory infection. This would include healthcare personnel exposed to patients in an outpatient setting or the emergency department. Healthcare personnel who develop these symptoms should be instructed not to report to work, or if at work, should cease patient care activities and notify their supervisor and infection control personnel.

### **Management of ill healthcare personnel**

Healthcare personnel should not report to work if they have a febrile respiratory illness.

In communities where novel influenza virus transmission is occurring, healthcare personnel who develop a febrile respiratory illness should be excluded from work for 7 days or until symptoms

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have resolved, whichever is longer. These time periods may change depending on the specific characteristics of the novel virus.

In communities without novel influenza virus transmission, healthcare personnel who develop a febrile respiratory illness and have been working in areas of the hospital where novel influenza patients are present should be excluded from work for 7 days or until symptoms have resolved, whichever is longer.

In communities where novel influenza transmission is not occurring, healthcare personnel who develop febrile respiratory illness and have not been in areas of the facility where novel influenza patients are present should follow facility guidelines on returning to work.

### **Stewardship of personal protective equipment and antivirals**

Facilities should implement plans to ensure appropriate allocation of personal protective equipment, including N95 respirators, and antiviral medications.

### **Environmental infection control**

Routine cleaning and disinfection strategies used during influenza seasons can be applied to the environmental management of novel influenza. Management of laundry, utensils and medical waste should also be performed in accordance with procedures followed for seasonal influenza.

### **Facility access control**

Facilities should have signage at entry points instructing patients and visitors about hospital policies, including the need to notify staff immediately if they have signs and symptoms of febrile respiratory illness. Facilities in communities where swine influenza transmission is occurring should limit points of entry to the facility.

\*Respirator use should be in the context of a complete respiratory protection program in accordance with Occupational Safety and Health Administration (OSHA) regulations. Staff should be medically cleared, fit-tested, and trained for respirator use, including: proper fit-testing and use of respirators, safe removal and disposal, and medical contraindications to respirator use.)

Adapted from:

<http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>



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## Appendix I: Individual and Family Preparedness\*

The United States Department of Health and Human Services (HHS) has developed guidelines to follow in preparation for a pandemic. You can prepare for an influenza pandemic now. You should know both the magnitude of what can happen during a pandemic outbreak and what actions you can take to help lessen the impact of an influenza pandemic on you and your family. This checklist will help you gather the information and resources you may need in case of a flu pandemic.

### 1. To plan for a pandemic:

- Store a two-week supply of water and food. During a pandemic, if you cannot get to a store, or if stores are out of supplies, it will be important for you to have extra supplies on hand. This can be useful in other types of emergencies, such as power outages and disasters.
- Periodically check your regular prescription drugs to ensure a continuous supply in your home.
- Have nonprescription drugs and other health supplies on hand, including pain relievers, stomach remedies, cough and cold medicines, fluids with electrolytes, vitamins, and disposable tissues. You may wish to have a supply of disposable surgical masks and respirators on hand. These can usually be purchased from pharmacies or home health supply stores.
- Talk with family members and loved ones about how they would be cared for if they got sick, or what will be needed to care for them in your home.
- Volunteer with local groups to prepare and assist with emergency response.
- Get involved in your community as it works to prepare for an influenza pandemic.

### 2. To limit the spread of germs and prevent infection:

- Teach your children to wash hands frequently with soap and water, and be sure to model that behavior.
- Teach your children to cover coughs and sneezes with tissues, and be sure to model that behavior.
- Teach your children to stay away from others as much as possible if they are sick. Stay home from work and school if sick.

### 3. Items to have on hand for an extended stay at home:

Examples of food and non-perishables	Examples of medical, health, and emergency supplies
Ready-to-eat canned meats, fish, fruits, vegetables, beans, and soups	Prescribed medical supplies such as glucose and blood-pressure monitoring equipment
Protein or fruit bars	Soap and water, or alcohol-based (60-95%) hand sanitizer
Dry cereal or granola	Medicines for fever, such as acetaminophen or ibuprofen
Peanut butter or nuts	Thermometer

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Dried fruit	Anti-diarrheal medication
Crackers	Vitamins
Canned juices	Fluids with electrolytes
Bottled water	Cleansing agent/soap
Canned or jarred baby food and formula	Flashlight
Pet food	Batteries
Other nonperishable foods	Portable radio
	Manual can opener
	Garbage bags
	Tissues, toilet paper, disposable diapers
	Consider disposable surgical masks and respirators

\*From: *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States, Appendix 9*;

[http://www.flu.gov/planning-preparedness/community/community\\_mitigation.pdf](http://www.flu.gov/planning-preparedness/community/community_mitigation.pdf)

#### 4. How to Protect Yourself and Others From Pandemic Influenza

- Persons who have a flu-like illness must stay home and limit contact with others as much as possible. A flu-like illness may consist of fever, chills, cough, sore throat, runny nose, headache, and muscle aches. All or only a few of the symptoms may be present. The affected person should stay home beginning at the first signs of illness and for 5 days after illness begins, or until recovered, whichever is later. This time period may change depending on the specific characteristics of the novel virus. If it is felt the person needs medical attention, they should call ahead to their healthcare provider or healthcare facility for instructions before leaving.
- Avoid being around others who are ill as much as possible. If your occupation requires you to be around ill people, your place of employment should have infection control measures in place to help lessen your chances of becoming ill.
- Avoid large gatherings of people. These may include but are not limited to business conferences, social organizations, sporting events, public meetings, and celebrations.
- Everyone must practice good hand and respiratory hygiene. This is important for both ill and well people. Good hygiene consists of washing hands frequently (soap and water or alcohol based hand sanitizers), especially after touching items that may be contaminated with respiratory secretions; covering the nose and mouth when coughing or sneezing; using tissues to contain respiratory secretions, and disposing of tissues properly.
- Mask and respirator use in non-healthcare settings during a pandemic - The benefit of wearing masks by well persons in public settings has not been established. Mask and

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respirator use may somewhat decrease, but will not eliminate, the chance of becoming infected, and use is not a substitute for social distancing or other personal protection measures. The first and most important steps in reducing one's risk of pandemic influenza are to limit close contact with others as much as possible and to practice good hygiene. These measures should be used at all times, regardless of whether a face mask or respirator is worn.

Individuals considering surgical mask or respirator use must consider that improper use may actually increase the transmission of illness to themselves or others. In addition surgical mask and respirator use by an untrained person can be uncomfortable, stressful, and has the real potential to exacerbate underlying chronic respiratory or heart conditions. In addition the supply of masks and respirators available to the public may not be enough to allow stockpiling by everyone. For persons who make the individual choice to include mask or respirator use in their protection strategies, masks and respirators are usually available for purchase at pharmacies or medical supply stores.

Persons in non-healthcare or non-emergency medical services settings, for example the general public where close, direct contact with persons known or strongly suspected to have the pandemic influenza strain is not expected, may wish to consider mask or respirator use in the following situations:

- When there is evidence of significant spread of pandemic influenza in a person's community, a face mask (e.g. surgical mask, procedure mask, isolation mask) could be used if entry into a crowded setting that lacks protective measures is unavoidable (e.g., mass transit or going to a crowded store to purchase essentials such as medications).
- When it is necessary to have close contact (less than 6 feet) with someone who is ill with pandemic influenza – for example, to give care to a family member – one should use an N95 respirator or equivalent certified by the National Institute of Occupational Health and Safety (NIOSH) and consider specifically using a respirator model that also is cleared by the U.S. Food and Drug Administration (FDA) for use by the general public in public health medical emergencies. Although fit testing programs generally are not available for the public, selecting an appropriate respirator, carefully following instructions for its use, and making sure that it fits tightly against the face are critical to ensuring the respirator provides protection. Because the material used to make respirators is denser than that used in facemasks, it may be more difficult to breathe through a respirator. Persons who have heart or lung disease or other illnesses that affect their breathing should consult a healthcare provider before using a respirator.
- Ill persons should use a face mask when they must be in close contact with others. Examples of such contact include when the ill person is being cared for at home or if they need to leave home to access medical care or manage other necessities.

Given the potential for the above scenarios to occur in a pandemic, it would be reasonable for each household to stockpile some face masks and respirators. The purchase of masks and respirators to be used according to the above scenarios is an individual responsibility. Government supplies of masks and respirators will NOT be available to meet these needs.

The U.S. Department of Health and Human Services (HHS) has made recommendations to aid families and individuals in making decisions about using masks or respirators (Interim Public Health Guidance for the Use of Face Masks and Respirators in Non-Occupational Community

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Settings during an Influenza Pandemic,

<http://www.flu.gov/planning-preparedness/community/maskguidancecommunity.html>). When worn, the outside of the face mask or respirator may become contaminated with secretions from an ill person; therefore care should be taken to keep the face mask or respirator away from others after use and to wash hands well after removing a face mask or respirator, or before putting on a previously used face mask or respirator. Never wash or disinfect disposable face masks or respirators and never share used face masks or respirators with others.

Several scientific studies are currently being done to investigate the level of protection against influenza that may be provided by respirators and face masks and the ability of persons to correctly and consistently use these devices. This interim guidance may be modified based on the results from these studies.

In addition, Federal OSHA has published Guidance on Preparing Workplaces for an Influenza Pandemic (OSHA 3327-02N 2007) which discusses measures which can be taken in the workplace to reduce the exposure of workers to the pandemic influenza virus, including mask and respirator use.

General information on buying and wearing face masks and respirators can be found at the FDA website

<http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/GeneralHospitalDevicesandSupplies/PersonalProtectiveEquipment/ucm055977.htm>

- **If a household member is ill with the flu there are steps you can take to decrease the chance other household members will get sick.** Everyone in the household must practice good respiratory hygiene (see above); physically separate the ill person from non-ill persons as much as possible; avoid sharing personal items (examples include bedding, towels, eating and drinking utensils, clothing, hygiene items, and anything else that may be contaminated with mouth or nasal secretions). It is OK to wash dishes and clothing of ill persons with well persons using hot water and soap. Make sure to wash hands well after handling such items. Limit the number of people providing care to the ill person, or having other close contact; if possible, the primary caregiver should be someone who does not have an underlying medical condition that places them at high risk for severe illness. If you have them available, consideration should be given to having the ill person wear a surgical mask when around others, and having caregivers wear a respirator (N95 mask) when in close contact with the ill person (see above recommendations). Surgical masks and respirators (N95 masks) are usually available for purchase at pharmacies or home health supply stores, although supplies will be quite limited during a pandemic. Wearing a mask must not take the place of good respiratory hygiene. All persons in the household must wash their hands frequently, especially after touching items that may have been contaminated with mouth or nasal secretions from others. You may wish to wear disposable gloves when handling materials contaminated with mouth or nasal secretions of others. You must still wash your hands thoroughly after removing the gloves. Special attention should be given to disinfecting items around the house that are frequently touched by others, such as doorknobs, light switches, toys, countertops, office supplies, etc.
- If the unfortunate circumstance should arise where the death of a family member occurs in your home, you should isolate the body in an area where it will not be touched or disturbed. If the body must be moved or otherwise touched you should wear gloves and avoid contacting oral and respiratory secretions (from mouth, eyes, nose). Wash hands

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thoroughly after touching the body or surfaces contaminated by secretions. Thoroughly disinfect surfaces and launder clothing that may have been contaminated by secretions. Call the appropriate authorities to report the death.

In addition to these general precautions, public health officials may announce additional control measures such as cancelling events, closing large gatherings of people, or requesting that well persons in positions that are not critical to the public's health, safety, or general well-being stay home. It is important for your well-being and the well-being of others that you listen for and heed public health messages.

## **5. Home Care for Influenza**

- A person suffering from flu should have rest and plenty of liquids, and should refrain from alcohol and tobacco. Medications to relieve flu symptoms are available over-the-counter and may offer some relief. In some cases, a health-care professional may prescribe antiviral drugs to treat the flu. Antibiotics (like penicillin) don't cure it.
- Monitor flu symptoms by keeping a care log. Write down the date, time, fever, symptoms, medicines given and dosage. Make a new entry at least every 4 hours when awake or when the symptoms change.
- Call your healthcare professional if the ill person develops any of the following [Local healthcare systems and providers may establish "hotlines" or other information lines for citizens to call with flu related questions. These numbers may differ from the usual numbers people call. Please watch for messages from local public health officials or the local healthcare system for guidance on where to call for information]:
  - A high fever
  - Children and Adults: Greater than 105°F (40.5°C)
  - Babies 3- to 24-months-old: 103°F (39.4°C) or higher.
  - Babies up to 3 months: Rectal temperature of 100.4°F (38°C) or higher.
  - Shaking chills
  - Coughing that produces thick mucus
  - Dehydration (feeling of dry mouth or excessive thirst, in young children this may be indicated by less urination)
  - Worsening of an existing serious medical condition (for example: heart or lung disease, diabetes, HIV, cancer)
- If you cannot reach your health-care professional, call 9-1-1 or local emergency number for any of the signs below:
  - Irritability and/or confusion
  - Difficulty breathing or chest pain with each breath
  - Bluish skin
  - Stiff neck
  - Inability to move an arm or leg
  - First-time seizure
- Prevent Dehydration. Dehydration occurs when the body loses too much water and it's not replaced quickly enough. It can be serious. Begin giving soothing drinks at the first signs of the flu and follow these tips:
  - In addition to plenty of liquids, give ice and light, easily digested foods, such as soup and broth.
  - If the ill person has diarrhea or vomiting, give fluids that contain electrolytes. These are available at your pharmacy or grocery store. Or you can make your own rehydration electrolyte drink for someone 12 years or older (see below for recipe).

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- If drinking liquids makes nausea or vomiting worse, give one sip at a time until the ill person can drink again.
  - **Electrolyte Drink (to be given to those 12 years or older only):** 1 quart water 1/2 tsp. baking soda 1/2 tsp. table salt 3 to 4 tbsps. sugar 1/4 tsp. salt substitute Mix well and flavor with lemon juice or sugar-free Kool-Aid
  - **Fluids for Children younger than 12:** Commercially available oral replacement solutions (ORS) can be purchased at most grocery stores and pharmacies in the United States without a prescription. A few widely available brands include Pedialyte®, Infalyte®, and ReVital®, although generic brands are equally effective. Gelatin, tea, rice water, fruit juice and other beverages are not recommended for use as Oral replacement therapy in children with diarrhea. Parents should not try to prepare ORS recipes at home for infants because the formulas must be exact.
  - ORS may be given at home to a child who is mildly dehydrated, refusing to eat a normal diet, or has vomiting and/or diarrhea. If needed, ORS can be given in frequent, small amounts by spoon, bottle, or cup over three to four hours. A pediatrician may provide
  - Parents should first measure out the total amount to be given with a standardized medicine syringe or measuring cup or spoon, rather than a regular cup or spoon.
  - A total volume of 5 teaspoons per pound, or 50 milliliters per kilogram, should be given. For a 20-pound child, this would equal 100 teaspoons; for a 9 kg child, this would equal 450 milliliters.
  - The fluid can be given by teaspoonfuls (approximately equal to 5 milliliters each) every one to two minutes or as tolerated.
  - After the total amount has been given, a normal diet can be resumed.
  - A child who refuse to drink or vomits immediately after drinking ORT should be monitored closely for worsening dehydration. Children who are not dehydrated may drink ORT after every episode of vomiting to prevent dehydration.
  - Reduce Fever. To help reduce a fever, do the following:
    - Give plenty of fluids.
    - Give fever-reducing medication, such as acetaminophen or ibuprofen, as directed on the container's label. Aspirin is also a fever-reducing medication but do not give aspirin to anyone younger than 20.
    - Keep a record of the ill person's temperature in your care log.
    - To relieve discomfort, give a sponge bath with lukewarm water.
  - When is professional medical help needed? See the previous section labeled "Call your healthcare professional if the ill person develops any of the following". Health officials and providers in your community may have set up an information line you can call with questions about local access to healthcare. If so, it is important that you follow the directions given. When you arrive for medical care, tell the reception staff that you think the flu is involved. You may be asked to wear a mask and/or sit in a separate area to protect others from getting sick.
    - In children, emergency warning signs that need urgent medical attention include:
      - Fast breathing or trouble breathing
      - Bluish skin color
      - Not drinking enough fluids
      - Not waking up or not interacting
      - Being so irritable that the child does not want to be held
      - Flu-like symptoms improve but then return with fever and worse cough
      - Fever with a rash
      - Not urinating

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- In adults, emergency warning signs that need urgent medical attention include:
    - Difficulty breathing or shortness of breath
    - Pain or pressure in the chest or abdomen
    - Sudden dizziness
    - Confusion
    - Severe or persistent vomiting

**Where can I get more information?**

For federal information from the Centers for Disease Control and Prevention:  
<http://www.cdc.gov/flu/homecare>



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## **Appendix I: School Preparedness\***

One possible control measure that could be recommended to help mitigate the effects of pandemic influenza on a community is the closing of schools, pre-schools, and daycares. While the closing of schools, pre-schools, and daycares may indeed eliminate a large gathering, such an action is not without potential complications and should not be entered into lightly. For these closures to be effective they must be implemented early in a pandemic (before widespread transmission) and be maintained throughout the entire time the pandemic virus is circulating in a community. This will likely be 1-2 months at a time for each pandemic wave, and possibly for 2 or 3 separate waves. Another complicating factor is that to be effective, these closures must NOT result in large gatherings of children, such as out-of-home childcare with multiple children or gathering at a popular spot such as a mall. Another concern about closing schools, pre-schools, and daycares is the potential adverse effect this may have on the ability of a community to provide essential services. Such closings have the significant potential to result in many adult workers having to stay home to care for children, and could result in lost income.

If the epidemiology suggests the pandemic is moderate or severe or that children are at particular risk of severe disease, then based upon guidance from public health officials consideration should be given by schools, pre-schools, and daycares to cancel services or classes in traditional classroom settings in an attempt to mitigate the disease impact in children.

It is possible, however, that WDH officials may recommend or even order the closure of schools, pre-schools, and daycares based on the epidemiology and transmission of the pandemic influenza strain. This may occur, for example, if the illness is believed to cause unusually severe disease in children. Public health officials, including the County Health Officer and State Health Officer, have authority to order the closure of schools and other venues to protect public health (WY statute 35-1-240).

It is likely the decision whether or not to close schools, pre-schools, and daycares will be largely made by local school and public health officials, and parents. Such a decision will be dependent upon the school's contingency plans for closure, anticipated effect on the community, extent of illness in the community, number of healthy staff and students, and parent's willingness to send their children to these facilities.

Every school district should anticipate the possibility of closing traditional classroom settings during a pandemic and have contingency plans in place. These plans must be actively communicated to the parents and the community.

Colleges and universities should anticipate the canceling/postponing of events that result in large gatherings such as sports and cultural events and large classes. Strong consideration should be given to closing dormitory type student housing if the pandemic is epidemiologically considered moderate or severe in an attempt to mitigate the disease impact in college students.

### **Where can I get more information?**

For federal information from the Centers for Disease Control and Prevention: <http://www.flu.gov/planning-preparedness/school/index.html>



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## Appendix J: Management of Pandemic Influenza Fatalities

The Wyoming Department of Health recognizes that the timely, safe, and respectful disposition of pandemic influenza fatalities is an important component of an effective public health response. Based upon the epidemiology and transmission of pandemic influenza, an outbreak may quickly climb to disastrous levels that result in mass fatalities. Mass fatalities will not only place extraordinary demands on state and local jurisdictions, but they will also place a burden on the religious community, cultural community and the families of the victims.

If local and state fatality management capacities are exceeded support resources from the federal government (coordinated through the Department of Health and Human Services, the Department of Homeland Security, and the Department of Defense) may be available upon request. These services could potentially include establishing temporary morgue facilities and the processing, preparation and disposition of human remains. The state and federal government's level of involvement will be strained during a pandemic. Therefore, it is important for healthcare facilities, coroners, morgues, and funeral homes to plan for mass fatality management during an influenza pandemic.

### Strategies to Manage Mass Fatalities:

- Review current disaster plans for managing remains and handling morgue overflow;
- Develop plans to manage contaminated remains for an extended period of time (e.g. days);
- Assess current capacity for refrigeration of deceased persons;
- Work with local health officials and morticians to identify temporary morgue sites;
- Determine the scope and volume of postmortem materials needed and consider a memorandum of understanding (MOU) for surge mortuary supplies (e.g. body bag, refrigerator trucks, etc.).

### Handling of Deceased Bodies by the General Public, Such as At-home-death:

If the unfortunate circumstance should arise where the death of a family member occurs in your home, you should isolate the body in an area where it will not be touched or disturbed. If the body must be moved or otherwise touched you should wear gloves and avoid contacting oral and respiratory secretions (from mouth, eyes, nose). Wash hands thoroughly after touching the body or surfaces contaminated by secretions. Thoroughly disinfect surfaces and launder clothing that may have been contaminated by secretions. Call the appropriate authorities to report the death.

### Handling of Deceased Bodies in Healthcare Facilities

Removal of the body from the isolation room/area

- Personal protective equipment (PPE) to be used by healthcare workers/employees:
  - Particulate respirator (N95 or higher) if healthcare workers/employees remove the body from the isolation room/area immediately after the patient's death;
  - Surgical or procedure mask is sufficient if air in the isolation room/area has been exchanged;
  - Follow Standard Precautions to protect from blood/body fluids/secretions.
    - The body should be fully sealed in an impermeable body bag prior to removal from the isolation room/area and prior to transfer to pathology or to the mortuary.

- No leaking of body fluids should occur and the outside bag should be kept clean.
- Transfer to pathology or to mortuary should occur as soon as possible after death.
- After removing PPE perform hand hygiene.
- If the family of the patient wishes to view the body after removal from the isolation room/area, they may be allowed to do so. If the patient died in the infectious period, the family should wear gloves and gowns and perform hand hygiene.

### **Autopsy and Morgue Safety Recommendations**

In general, autopsy safety procedures for pandemic influenza-infected human bodies should be consistent with those used for any autopsy procedure with potentially infected remains, with a few specific precautions. During an influenza pandemic it may be prudent to handle all deceased victims as if they had an infectious disease. For an influenza infected body the respiratory tract, lungs, and respiratory secretions may still contain the influenza virus, and additional respiratory protection is needed during procedures that may generate small-particle aerosols or splashes with fluids or secretions (e.g., use of power saws and washing intestines). Personal Protective Equipment (PPE) and a protective autopsy setting are essential to reducing the risk of disease transmission.

#### **Recommended Personal Protective Equipment (PPE) for autopsy/post mortem exams**

- The number of people present should be restricted to the minimum number necessary.
- Particulate respirators (N95 or higher).
- Face shield (preferably) or goggles.
- Other protective equipment to protect from blood/body fluids/secretions as for any autopsy on potentially infected remains (Standard Precautions).

#### **Recommended Environmental controls**

- Air-borne infection controls in autopsy room, such as 12 air changes per hour, negative pressure relative to adjacent areas, and direct exhaust of air to the outside. Exhaust systems around the autopsy table should direct air (and aerosols) away from the individuals performing the procedure (e.g. exhaust downward).
- Use containment devices whenever possible. Use biosafety cabinets for the handling and examination of smaller specimens. When available, use vacuum shrouds for oscillating saws or local exhaust ventilation to contain aerosols and reduce the volume released into the ambient air environment.
- Reduce aerosols in the autopsy room (e.g. during lung excision) by:
  - avoiding the use of power saws;
  - conducting procedures under water if there is a chance of aerosolization; and
  - avoiding splashes when removing lung tissue.

### **Mortuary Care**

- Mortuary staff should be informed that the deceased had pandemic influenza.
- If mortuary staff are responding to the death of a pandemic influenza-infected patient who died at home, PPE should be used while in the home as per standard precautions. If other members of the household are ill with influenza mortuary staff should wear respiratory protection such as surgical masks or N95 respirators.

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- In the mortuary, mortuary staff and the burial team should use standard precautions when caring for the body. This includes appropriate use of PPE and performance of hand hygiene to avoid unprotected contact with blood, body fluids, secretions, or excretions.
  - Embalming may be conducted as per routine.
  - Hygienic preparation of the deceased (e.g. cleaning of body, tidying of hair, trimming of nails, and shaving) may also be conducted.
  - The body in the body bag can be safely removed for storage in the mortuary, sent to the crematorium, or placed in a coffin for burial.
  - If an autopsy is being considered, the body may be held under refrigeration in the mortuary. Standard infection control precautions should be followed.
  - If the family of the patient wishes to touch the body, they may be allowed to do so. If the patient died in the infectious period, the family should wear gloves and gowns and follow with hand hygiene. If family members want to kiss or touch the body (hands, face), these body parts should be disinfected, using a common antiseptic (e.g. 70% alcohol).
  - If the family requests only to view the body or the face of the deceased, but not touch it, there is no need to wear any kind of PPE.

## References

1. OSHA. Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employees. OSHA 3328-05 2007.
2. World Health Organization. Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Healthcare Facilities. May 10, 2007.