City of Austin

Austin/Travis County Health & Human Services Department

Preparedness and Response Plan for Pandemic Influenza

This Plan by the Austin/Travis County Health and Human Services Department supercedes and rescinds all previous versions of this document.

Approved: _____ Date: _____

Director
Austin/Travis County
Health and Human Services Department

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1. AUTHORITY.

This plan has been developed by the Austin/Travis County Health and Human Services Department as the official local public health agency responsible for directing and coordinating the Austin/Travis County public health response to biological events including incidents of bio-terrorism, catastrophic infectious diseases such as pandemic influenza and other disease outbreaks, whether natural, accidental or intentional in origin.

2. PURPOSE.

2.1 This plan is intended to serve as a foundation for further planning, drills and emergency preparedness activities within the Austin/Travis County Health and Human Services Department (HHSD) in order to ensure a timely, effective response to pandemic influenza.

2.2 The goal of influenza pandemic preparedness and response is to minimize serious illness, hospitalizations, and death; to preserve critical infrastructure; and to minimize social disruption in Austin/ Travis County as a result of an influenza pandemic (in accordance with state and federal policies and procedures).

2.3 The objectives of ATCHHSD's Pandemic Influenza Response Plan, as adopted from DSHS policy, include:

2.3.1 To assist and facilitate appropriate planning and response at all levels of government by:

- Developing a local plan through a collaborative process that is acceptable to stakeholders, and that clearly identifies roles and responsibilities;
- Developing a plan that is sufficiently flexible to account for the unknown epidemiology of a pandemic and the needs of different stakeholders;
- Recommending planning considerations for appropriate communication, resource management, and preventive measures to minimize infrastructure and social disruption.

2.3.2 To provide a comprehensive and clearly operational plan that is reviewed on an annual basis to ensure incorporation of new developments and to ensure consistencies with best practices.

3. SCOPE.

This plan is limited to preparedness and response for pandemic influenza in Austin and Travis County. External sources of support are assumed to be unavailable as noted below.

4. SITUATION.

The range of known biological agents capable of causing pandemic disease outbreaks is relatively narrow, since few agents fulfill both of the critical prerequisite conditions: 1) highly efficient person to person transmission and 2) very low levels of immunity within the population. A new strain of influenza, resulting from antigenic shift, is the most likely cause of pandemic disease in Central Texas. The optimal local response will be fully integrated with international, national, and state response planning.

INTERNATIONAL

International organizations, such as the World Health Organization (WHO), track the progress of emergent influenza strains, provide containment measures in underserved nations, and produce periodic updates on the global status of influenza. WHO has defined periods and phases of pandemic influenza to assist with planning and response activities. For consistency, comparability and coordination of national, state and local response, the United States Center for Disease Control (CDC) will identify and declare the status of these phases.

"Actions listed for each pandemic phase are intended to continue after upscaling to higher phases unless they are superseded by actions in the higher phase. If upscaling designation skips a phase, actions in the skipped phase should also be implemented unless they are superseded by actions in the higher phase" (WHO, 2005).

The WHO and CDC may declare, upscale, or downscale phases in a non-sequential order since viral characteristics and sequence of progression may vary (WHO, 2005). In addition, there is the possibility of simultaneous occurrence of events with pandemic potential with different threat levels in different countries. Thus, there may be significant deviations from anticipated sequence of events.

PANDEMIC PHASE CHART	
WHO Pandemic Phase	Definition
Interpandemic Period **Phases 1 and 2**	Phase 1 – **No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals, the risk[a] of human infection or disease is considered to be low.**
	Phase 2 – **No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk[a] of human disease.**
Pandemic Alert Period **Phase 3, 4, and 5**	Phase 3 - **Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.**
	Phase 4 - **Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.[b]**
	Phase 5 - **Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).[b]**
Pandemic Period **Phase 6**	Phase 6 - **Pandemic phase: increase and sustained transmission in general population.[b]**
Subsided	**Between waves**
Postpandemic Period	**End of pandemic and return to Interpandemic Period.**

[a] The distinction between *phase 1* and *phase 2* is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction would be based on various factors and their relative importance according to current scientific knowledge. Factors may include: pathogenicity in animals and humans; occurrence in domesticated animals and livestock or only in wildlife; whether the virus is enzootic or epizootic, geographically localized or widespread; other information from the viral genome; and /or other scientific information.

[b] The distinction between *phase 3, phase 4* and *phase 5* is based on an assessment of the risk of a pandemic. Various factors and their relative importance according to current scientific knowledge may be considered. Factors may include: rate of transmission; geographical location and spread; severity of illness; presence of genes from human strains (if derived from an animal strain); other information from the viral genome; and or other scientific information.

NATIONAL

The Federal Response Plan (ESF 8 - Health and Medical) will support public health and medical activities as required by the State of Texas in accordance with pre-established activation procedures.

It is likely, given the occurrence of a pandemic, that federal assistance will be limited to the issuance of event specific response guidelines for state and local governments to implement.

The severity of the next pandemic cannot be predicted, but modeling studies suggest that the impact of a pandemic on the United States could be substantial. In the absence of any control measures (vaccination or drugs), it has been estimated that in the United States a "medium-level" pandemic could cause 89,000 to 207,000 deaths, 314,000 and 734,000 hospitalizations, 18 to 42 million outpatient visits, and another 20 to 47 million people being sick. Between 15% and 35% of the U.S. population could be affected by an influenza pandemic, and the economic impact could range between $71.3 and $166.5 billion.

STATE OF TEXAS

Texas Department of State Health Services will provide (for counties without a health department) and/or augment public health, mental health, and emergency medical services that exceed the capabilities of the local government.

In an event, State vaccination and antiviral priority guidelines will serve as a guide until CDC recommendations are developed.

The State lab provides detection and monitoring services.

ATCHHSD

Local governments have the primary responsibility to provide public health, mental health, and emergency medical services within their jurisdictions. ATCHHSD will plan for the provision of these services in conjunction with the following key partners:

City of Austin Office of Emergency Management
Austin Fire Department
Austin Police Department
EMS
Local Hospitals
Community Care Services Department
Travis County Medical Examiner
Local Independent School Districts
Travis County Sheriff's Office

In developing and implementing preparedness and response plans for a pandemic event, ATCHHSD will work closely with both public and private entities that provide essential services to the community. These stakeholders include:

Capitol Area Council of Governments (CAPCOG)
Capital Area Trauma Regional Advisory Council (CATRAC)
Faith-based Organizations
Local Funeral Directors
Local Nursing Homes
Local Pharmacies
Travis County Medical Society
And all City and County Departments with essential staff

Without preventative measures in place the projected figures for hospitalizations during an influenza pandemic, as outlined below, would quickly outstrip the region's capacity to provide effective medical treatment. In order to curb the rate of infection and preserve a reasonable standard of care, ATCHHSD will prioritize business continuity planning and public education in collaboration with its partners and identified stakeholders. In addition, ATCHHSD will consult with the local Chambers of Commerce regarding contingency planning guidelines for local area businesses.

5. ASSUMPTIONS.

These assumptions were derived from the Texas Plan and adapted for the City of Austin and Travis County.

5.1 There may be no warning period of a coming pandemic.

5.2 There may be no vaccine available until one month before the pandemic hits the U.S. and Texas.

5.3 Two doses of vaccine (administered 30 days apart) will be required to develop immunity to the novel virus.

5.4 Once the vaccine is available, it will take five months to produce an adequate supply of vaccine for the entire U.S. population (approximately 20 percent of the vaccine will be produced per month).

5.5 The federal government will purchase the first 20 % of vaccine produced that will be distributed to states. In Texas, 4,170,364 (est. Texas population 20,851,820 from U.S. Bureau of the Census State and National Resident Population Estimates, April 2000) persons could receive two doses of vaccine from the federal supply.

5.6 In a given community, the pandemic waves will last about one month and peak at two weeks.

5.7 Two waves of pandemic influenza will affect Texas. The second wave will strike six months after the first wave.

5.8 The first wave will have the following effects on the general population in Austin (est. 2002 Metropolitan population 1,306,627):

5.8.1 ILI (Influenza Like Illness) attack rate of 25% –326,657 people will get the disease (illness duration 7 to 10 days);

5.8.2 Hospitalization rate of 4% – 13,067 hospitalizations; and

5.8.3 Case fatality rate of 1.7% – 5,553 deaths.

5.9 The second wave will have the following affects on the general population in Austin (est. 2002 Metropolitan population 1,306,627):

5.9.1 ILI attack rate of 5% – 65,332 people will get the disease (illness duration 7 to 10 days);

5.9.2 Hospitalization rate of 4% – 2,614 hospitalizations; and

5.9.3 Case fatality rate of 1.7% - 1,111 deaths.

5.10 Given the complexity of plotting epidemiological curves, it is not possible to estimate the peak rate for hospitalizations. The local healthcare systems capacity to provide a reasonable standard of care to influenza patients, however, can be assessed. Barring outside assistance, local surge capacity to provide meaningful treatment in a pandemic situation would not accommodate more than 6,000 patients.

5.11 Projected infection and mortality rates will have a significant impact on the available workforce for essential services. With absences due to illness, caring for loved ones, and death, departments providing essential services may have to function with staffing truancy rates as high as 70 percent.

5.12 Medical and personal protective equipment (PPE) supply reserves will be heavily relied upon.

6 PLAN.

The plan framework frames 5 components within the context of the pandemic flu planning phases, as defined in the Texas Department of State Health Services Pandemic Influenza Preparedness Plan and Resource Document.

The 5 components include:

- **PLANNING AND COORDINATION** The City of Austin and Austin Travis County Health and Human Services Department (ATCHHSD) use the National Incident Management System (NIMS)-compliant Incident Command System (ICS), a all-hazards incident management system already in use by first responders, the state, and the federal government. Ideally, the same basic command structure will be in place so that roles and responsibilities do not change significantly during the evolution of the pandemic or inter-pandemic periods. Staff and resources will be added to, or removed from, the command structure as the situational needs dictate.

- **SITUATION MONITORING AND ASSESSMENT** The genetic structure of the influenza virus is constantly changing. Most of these changes (genetic drift) do not affect public health response. However, more significant changes may necessitate adaptation of response measures. Local Surveillance and Epidemiological Response teams are key to the detection and assessment of the viral strain.

- **PREVENTION AND CONTAINMENT** Inactivated influenza vaccine is considered the cornerstone of influenza prevention and control. Antiviral drugs for influenza are an important adjunct to influenza vaccine for the control and prevention of influenza. Antivirals are not a substitute for vaccination. Antiviral medications are to be used as a temporary measure for prophylaxis until vaccine is available. Medication is not the only means of preventing transmission. Altering the behavioral patterns, by encouraging hygienic practices and limiting interpersonal contact, can also by highly effective in curbing the spread of disease.

- **HEALTH SYSTEMS RESPONSE** Local governments as well as congregate care facilities are required to have an emergency management plan that addresses pandemic influenza.

Deleted:

- **COMMUNICATIONS** Disseminating timely and accurate information to public health officials, medical care providers, the media, and the general public is clearly one of the most important facets of pandemic influenza preparedness and response. The public's access to information regarding protective measures against transmission, as well as how to seek treatment, is key to curbing the spread of a pandemic. ATCHHSDs News Media Policy is outlined in the department's Crisis and Emergency Risk Communications (CERC) plan.

6.1 Interpandemic: Phases 1&2

6.1.1 Planning and Coordination

ATCHHSD leadership will organize a NIMS-compliant ICS Structure to be implemented upon substantiation of a credible imminent threat to the Austin community. This will likely occur during the later phases of the Pandemic Alert phase. Personnel will be identified and trained for each role.

The Public Health Response Team will develop, review, and update the Pandemic Influenza Standard Operating Guidelines (SOG) annually.

The City of Austin Office of Emergency Manage Health and Hospitals planning group and the City Manager's Office will meet regularly to review planning and policy issues related to the Preparedness and Response Plan for Pandemic Influenza. The group will determine the necessity for any drills or training to enhance the community's preparedness. Special meetings will be called in response to any pressing concerns identified through monitoring and surveillance.

ATCHHSD has the following personnel and other resources to assist in disaster response:

- Disease Control and Prevention: epidemiologists, physicians, veterinarians, infection control practitioners, registered nurses, experienced disease investigators, data entry/analysis, and other professional staff
- Environmental Health: sanitarians, toxicologists, and other environmental technicians
- Planning and Regulations: staff with expertise in state/federal laws; hospital licensing expertise
- Immunization: nurses, pharmacists, and experienced disease investigators
- Emergency Medical Services (EMS): staff with expertise in facilitating emergency medical system response and trauma systems
- Public Health Laboratories: microbiologists, laboratory technicians and other staff; laboratory testing facilities
- Health Alert Network
- Stress management and Crisis Counseling: Critical Incident Stress Management (CISM) trained personnel, social workers, psychologists, crisis counselors, and other professional staff

ATCHHSD and the City of Austin OEM will identify gaps in City infrastructure and resources, laws and statutes that may interfere with an effective response. Of special concern are the development of business continuity plans for essential departments and the acquisition of sufficient personal protective equipment (PPE) supplies for critical staff. Approaches to correct these gaps will be developed.

ATCHHSD will work with CAPCOG, CATRAC, and TCMS to develop a process for the continual/ maintained assessment of Austin/ Travis County's healthcare system's response capacity.

ATCHHSD will coordinate plans with special-needs populations, as per the department's Crisis Emergency Risk Communications (CERC) plan.

Plans will be exercised alone and in conjunction with other All Hazards Response Plans.

ATCHHSD will collaborate with local employers from both the private and public sector to address business continuity issues related to the provision of essential services during a pandemic scenario.

ATCHHSD will work closely with local employers and school systems to promote public education initiatives regarding the threat of pandemic influenza and appropriate personal protective measures.

6.1.2 Situation Monitoring and Assessment

ATCHHSD conducts syndromic surveillance for respiratory illness or ILI (a variety of syndromic surveillance systems are currently used or under implementation). Targeted improvements to routine influenza surveillance may include:

- Increasing the sentinel physician network.
- Recruiting/monitoring additional healthcare facilities and clinics within the DSHS PHR 7 with population-based electronic medical records to report coding for visits for acute febrile respiratory illnesses (ICD-9 codes 460-487).
- Enhance surveillance of severe respiratory illness and unexplained deaths at local sites, e.g. hospitals or clinics that evaluate immigrant health.
- Evaluating syndromic surveillance to monitor influenza surveillance, e.g. increased over-the-counter drug use, increased physician office visits, work/school absenteeism.

6.1.3 Prevention and Containment

ATCHHSD pre-pandemic activities are designed to develop infrastructure, strategies, and collaborative relationships during the Interpandemic Period and prepare for a pandemic.

They include the following strategies:

Non-pharmaceutical Interventions Determine procedures for, and legalities related to, suspension of rules and necessary limitations of freedoms to contain the pandemic in collaboration with the ATCHSSD Legal Counsel and DSHS Office of the General Counsel (OGC) that include, but are not limited to:

- Quarantine and property control measures
- Release of information to law enforcement
- School/business closures

- Cancellation of public events

Pharmaceutical Interventions In conjunction with internal and external stakeholders ATCHHSD will:

- Provide influenza vaccine and/or antivirals to high-priority target groups and the general population based on changing conditions and CDC recommendations re: efficiency, greatest impact, and prioritization.
- Develop a vaccine and antiviral plan or program scheme to include estimates of the amount of vaccine and/or antivirals needed for priority groups.
- Establish a plan to 1) monitor and track vaccine and antiviral supplies and distribution; 2) monitor patient compliance with antiviral medication regimen; and 3) track vaccine series to ensure two doses are given.
- Plan alternatives for ordering and distribution of vaccines and/or antivirals in the presence of shortages (scalable); federal purchase and distribution (scalable); and State purchase of existing supplies using emergency funds.
- Develop plans for distribution of antivirals purchased with public funds in collaboration with the private sector stakeholders (private drug distributors, and others).

Plans will demonstrate steps to ensure equal distribution and access to specific population groups by identifying barriers to vaccination (e.g. culture, location). ATCHHSD will develop strategies to overcome these barriers (e.g. use of churches, involvement of community gatekeepers, and leaders) as reflective of local community needs, in collaboration with the Office for the Elimination of Health Disparities (OEHD).

ATCHHSD will inventory available supplies (per a Flu-Specific checklist) of antiviral medications to determine the following:

- the potential supply of antivirals that are available from local drug wholesalers (actual inventories will vary on a day to day basis).
- the supply of any existing hospital based stockpiles.
- the amount of amantadine needed for patients taking the drug for other conditions other than for flu therapy, including Parkinson's Disease.

ATCHHSD will ensure procedures to monitor and track adverse reactions to vaccines and antivirals during an influenza pandemic.

ATCHHSD will ensure that COA legal counsel:

- reviews medical and public health control legislation and liability issues related to delivery of biologic agents (e.g., vaccine and antiviral drug). The DSHS publication, Communicable Disease Control Measures In Texas, A Guide for Health Authorities in a Public Health Emergency (April 2004) summarizes these issues. The publication is accessible online at: http://www.dshs.state.tx.us/comprep/ogc/cdmanual.pdf
- examines legal aspects, including workers compensation, related to use of prophylactic medications and refusal of medication for those in high-risk groups.

Other legal resources and OGC interpretations that may be helpful can be found at http://www.dshs.state.tx.us/comprep/ogc/default.shtm.

ATCHHSD will ensure that the draft ATCHHSD Community Emergency Medication Clinic (CEMC) SOG is available and complete.

Based on community needs and resources, ATCHHSD will determine who will provide prophylaxis to certain targeted risk groups, such as hospital staff, EMS, or critical service providers.

ATCHHSD will collaborate with state efforts to:

- Encourage personal use of non-pharmaceutical interventions including hand washing, respiratory hygiene, and cough etiquette to prevent pandemic influenza.
- Enhance annual influenza vaccination coverage levels in traditional "high-risk" groups, particularly in sub-groups in whom coverage levels are significantly low: 6 to 23 month old children (36.6% 2004-2005 season), pregnant women (12% 2002-2003), minorities (34% white; 28% African American; 27% Hispanic 2000 season), over 50 years of age with chronic underlying medical conditions (44% 2003-2004). The goal is to meet 90% coverage for over 64 and 60% coverage for 50-64 and high risk less than 50 years of age.
- Consider vaccinating children in schools and child care centers to reduce the risk of exposure of high-risk groups.
- Distribute written materials to health care providers that include a summary of the most current year's influenza vaccine recommendations issued by the CDC and DSHS; a tip sheet with suggestions on strategies that have been successful in reaching at-risk populations; and listing of other resources to help promote and deliver adult vaccines. Include information on the normal and expected physiological and emotional impact as well as treatment recommendations that accompany alarming public health events.
- Enhance Pneumococcal vaccination coverage levels to reduce the incidence or severity of secondary bacterial pneumonia. Currently 64% (2004-2005 season) of people 65 years old and older have been vaccinated.

6.1.4 Health Systems Response

The ATCHHSD Epidemiological Response Teams (ERT), will update and/or inventory medical supplies, in coordination with local facilities and services. ATCHHSD ERT will monitor protective action recommendations as developed by DSHS, and alert local hospitals and schools as appropriate.

ATCHHSD will have an inventory of the following services and/or items:

- Medical personnel, including but not limited to currently licensed physicians, physician assistants, registered nurses, licensed practical nurses, medical assistants, and other people who may be trained in the event of an emergency (e.g., people with previous patient care experience who currently work outside of

patient care) Identification of back-up personnel will be provided with special emphasis on non-traditional volunteers (e.g. family members, retired health care personnel)
- Beds (hospital and longterm care)
- ICU capacity
- Ventilators
- Pharmacies and pharmacists
- Laboratories
- PPE (e.g., masks, gloves)
- Specimen collection and transport materials
- Contingency medical facilities (within jurisdiction)
- Mortuary and funeral services
- Social services, behavioral health services, and faith services
- Sources of medical supplies (e.g., syringes, gloves)

In collaboration with other local entities, ATCHHSD will:
- Analyze surge capacity in public and private sectors to determine potential needs.
- Ensure private health care systems have pandemic influenza plans and protocols.
- Estimate the impact of pandemic influenza on health care services, high-risk groups and special needs populations; for providing and reinforcing preventive action recommendations to communities; and for determining pre-event health-related needs. Information and estimates will be provided to the PIPG.
- Identify locations of relative quiet/calm to be used for overflow patient care including those presenting with anxiety, psychosomatic or stress related/induced symptoms, and strategies for the management of overflow locations, i.e., advance-planning protocols to triage overflow locations.
- Estimate the impact of an influenza pandemic related to hospitalizations, outpatient visits and deaths using FluAid. FluAid is a CDC software program designed to assist state and local level planners in preparation for an influenza pandemic. FluAid provides a range of estimates for the potential local impact related to deaths, hospitalizations, and outpatient visits due to pandemic influenza. FluAid can be accessed at: http://www2a.cdc.gov/od/fluaid/.
- Develop and maintain lists of essential community services personnel (including work and home contact information) whose absence would pose a serious threat to public safety or would significantly interfere with the ongoing response. The list should also include back-up and replacements personnel. Retired personnel may also be utilized.

ATCHHSD Legal Counsel will:

- Review pertinent legal authorities, including quarantine laws and their applicability in a public health emergency and laws and procedures for closing of businesses, schools, and public events during a declared state of emergency.

- Review legal aspects and issues related to medical volunteer licensure, liability, and compensation for in-state, out-of-state, and returning retired and non-medical volunteers.

ATCHHSD will work with the City of Austin Office of Emergency Management to build depth of personnel, as insurance against command fall-out due to infection.

6.1.5 Communications

Health Alert Network
The principal function of the HAN team is to coordinate implementation of the Health Alert Network. The function involves planning and liaison with TALHO, the sole source contractor for the implementation of the HAN system. ATCHHSD will maintain local contact databases and auto-forward health alerts to local contact lists.

Communications with Health Care Professionals
ATCHHSD Public Information Officer (PIO) will develop affected target audiences and communication channels for messages regarding pandemic influenza.
ATCHHSD PIO will continue to develop and update appropriate messages addressing identified issues and concerns.
Web-based communications systems will be utilized to communicate with regional offices and health care professionals.

Public Information Dissemination
ATCHHSD PIO will:

- Develop/revise/update informational materials in multiple languages related to personal use of non-pharmaceutical interventions including hand washing, respiratory hygiene, and cough etiquette to prevent pandemic influenza.
- Develop/revise/update information materials for target audiences in multiple languages through a Pandemic Information Shelf Kit and/or CD ROM.
- Develop key messages/fact sheets relating to currently circulating virus(es).
- Identify and train spokespeople for DSHS response to pandemic influenza.
- Identify and develop relationships with partners and stakeholders who are able to reach special populations. Provide partners and stakeholders with pandemic influenza information.
- Establish and update Web site for pandemic influenza information as part of the DSHS Preparedness and Response Website.
- Maintain channels for activating CDC Public Response Line (hotline) and provide information to other emergency information lines such as the national Emergency Alert System, Amber Alert System, National Oceanic and Atmospheric Administration, Emergency Weather Channel, and community 2-1-1 systems.
- Assure that public information dissemination is a part of any exercise or training for pandemic influenza response.
- Maintain call down lists for media, partners and stakeholders.

6.2 Pandemic Alert Period: Phases 3-5

6.2.1 Planning and Coordination

PHASE 3

- A TCHHSD will review potential ICS needs as regard implementation, and the sufficiency of preplanning command determinations.
- ATCHHSD will confirm availability of resources to support a pandemic response and will communicate with HSR 7.
- ATCHHSD will notify key government officials of preparedness related funding needs.

PHASE 4

- OEM and the Health and Hospitals planning group, and disease surveillance intelligence units will meet to determine the event specific criteria for implementing ICS. Determinations to be made include the development of a Joint Information Center (JIC) and the point of implementation for a financial team to track event related expenditures. These decision makers will keep in regular contact by means of e-mail, conference calls, or meetings depending on the nature of the threat.
- Identification of the first human infection in North America would immediately trigger EOC activation. This could occur in phases 4 through 6.
- If activated, the Unified Command team will determine communications needs and alert and/or mobilize necessary resources and organizations as applicable.
- Once activated, the Unified Command team will meet with school superintendents and major employers to determine/discuss the scenario specific triggers for school and business closures.

PHASE 5

- ICS will convene to determine next steps.
- Unified Command will submit requests for assistance through the Department of Emergency Management's State Operations Center.
- Enhanced surveillance and communication, through the HAN, will be initiated.
- Expenses will continue to be documented through the event ICS structure.

6.2.2 Situation Monitoring and Assessment

PHASE 3 AND 4

- ATCHHSD will continue influenza surveillance as during Interpandemic Period.
- There should be emergency Epi-X notification if avian influenza (H5N1) or similar virulent subtype is identified in North America. A HAN Advisory will be sent notifying stakeholders.
- DSHS will request that all patients presenting with ILI submit a specimen for viral culture. Of critical concern are those with recent travel history to regions where the pandemic strain of influenza is circulating or those with unusual, severe symptoms. Specimens should be sent to the DSHS PHL or other laboratory with appropriate laboratory capacity (Bio-Safety Level [BSL] 3 or higher).

PHASE 5

- ATCHHSD will continue influenza surveillance as during Interpandemic Period.
- Once pandemic influenza has been identified as circulating in North America, the goal of pandemic alert phase surveillance is to identify the novel influenza virus as it begins circulating in Texas.

6.2.3 Prevention and Containment

PHASE 3 AND 4

ATCHHSD will:

- Implement Non-pharmaceutical Interventions as appropriate, following guidance from DSHS, and CDC.
- Meet with public and private partners and stakeholders to review the major elements of vaccine and/or antiviral ordering and distribution plans.
- Review the current antiviral supply estimates to determine the appropriate use of the limited antiviral supply.
- Review, reprioritize, and/or prioritize within high-risk vaccine and antiviral priority groups as needed.
- Coordinate with DSHS regarding the availability and distribution of vaccine/ antiviral medications and guidelines to local medical community.

PHASE 5

ATCHHSD will:

- Continues to implement Non-pharmaceutical Interventions as appropriate, following guidance from DSHS, and CDC.

Incident command will:

- Ensure all elements of the vaccine and antiviral plan are in place as described in Inter-Pandemic Period.
- Prepare to activate distribution system according to local plans.
- Review logistics and human resources.
- Evaluate needs and process for activating any local antiviral prophylaxis stockpiles (e.g. rimantadine, amantadine or oseltamivir).
- Prepare for SNS delivery, prepare for delivery
- Conduct Just In Time training on pandemic policies and protocols for partners.
- Ensure appropriate policies, protocols, and MOUs are in place.

6.2.4 Health Systems Response

PHASE 3 AND 4

ATCHHSD will:

- Collaborate with local emergency management coordinators to maintain a high level of awareness and preparedness among emergency responders and health care providers to include behavioral health.
- Coordinate notification of appropriate agencies, infection control practitioners, local laboratories, and emergency rooms.
- Provide public and private health care providers with updated case definitions, protocols, and algorithms to assist with case finding, management, infection control, and surveillance reporting.
- Provide public and private health care providers and blood banks with any updates related to screening criteria. Pending further guidance by the CDC, standard influenza related screening criteria should be utilized, as outlined in Annex D.5 of the ATCHHSD Data Collection Plan.

PHASE 5

ATCHHSD will:

- Continue to collaborate with local emergency management coordinators to maintain a high level of awareness and preparedness among emergency responders and health care providers to include behavioral health.
- Coordinate notification of appropriate agencies, infection control practitioners, local laboratories, and emergency rooms within their own jurisdictions.

Hospitals and other health care centers will implement health care setting prevention and control procedures.

6.2.5 Communications

PHASE 3 AND 4

HAN

- Alert Notification: HAN staff will monitor the delivery of health alerts and implement backup and redundant communications systems as needed. The staff will be ready to update the HAN emergency contact database if required. The HAN staff will coordinate with DSHS for delivery of health alerts by e-mail, automated phone and fax technologies.
- Distance Learning Delivery: It is expected that CDC will call for national satellite broadcasts dealing with the emergency. Assets to be used include HAN video conferencing; HAN video streaming; multicast streaming; and audio conferencing equipment. In the future, if satellite technologies are implemented for the HAN, the HAN DLC will coordinate the delivery of satellite broadcasts. If JIT distance learning is required for the event, the HAN DLC will coordinate the delivery and/or rebroadcast of the JIT Training.
- Communications with Health Care Professionals; if novel virus is identified in a single human case, communication efforts will continue as described in Interpandemic. Modifications will be made accordingly.
- Public Information Dissemination; As per the CERC Guidelines, ATCHHSD PIO will develop messages about novel viruses; messages with HSR by email distribution and HAN; update fact sheets, flyers and frequently asked question sheets; provide information in Spanish and other languages as needed; update ATCHHSD web site as needed; serve on the ICS team.

JIC

Upon activation of the EOC, a Joint Information Center will be established. This may occur at any point between phases 4 and 6, and will be determined by the CMO, OEM, and Health and Hospitals group. The JIC will include PIOs from COA, ATCHHSD, CAPCOG, hospitals, DSHS, and Travis County Medical Society (TCMS). All information pertaining to the pandemic and Austin's response will be disseminated to the public and to healthcare providers through the JIC, in accordance with Annex **G** of the ATCHHSD CERC plan.

Media Relations

ATCHHSD will work with media contacts to educate the general public on personal protection against infection, and the development of a family preparedness plan specific to pandemic influenza.

PHASE 5

HAN

- Alert Notification: HAN staff will continue to monitor the delivery of health alerts and maintain backup and redundant communications systems as needed. The staff will continue to update the HAN emergency contact database if required.
- Distance Learning Delivery: It is expected that CDC will continue national satellite broadcasts dealing with the emergency.

Communications with Health Care Professionals
As per the CERC Guidelines, ATCHHSD PIO will:

- Coordinate with JIC, once activated.
- Disseminate news release as warranted.
- Update messages about pandemic alert.
- Update fact sheets, flyers and frequently asked questions sheets.
- Provide information in Spanish and other languages as needed.
- Coordinate messages and information with bordering jurisdictions.
- Work with partners to ensure consistent messages are delivered.
- Update Web site at least daily.
- Continue to serve as part of the ICS team for public information.
- Continue restricted release of information on pandemic influenza to designated spokesperson(s).

6.3 Pandemic: Phase 6

6.3.1 Planning and Coordination

- Incident Command will activate the Pandemic Period of the Plan. All components will be made available for response activities. DOC Commander will ensure surveillance is enhanced. Government officials will already have been notified via existing protocols. All policy related decisions will be made through Unified Command at the EOC. Outside request for assistance, if available, will be coordinated through the SOC.
- The ICS logistics section will monitor staffing needs, request additional staff and re-assign personnel as necessary.
- On-going communication with the HSR7 will continue.
- Expenses will continue to be documented through the ICS financial section.

6.3.2 Situation Monitoring and Assessment

- Active surveillance and required reporting to DSHS continues.
- Enhanced activities include:
  1. Attendance within schools.
  2. Hospital reporting to include:
     a. Number of patients on ventilators
     b. Number of available ventilators
     c. Number of beds occupied
     d. Number of beds available
     e. Estimates of staffing levels (MDs, nurses, ancillary)
     f. Number of deaths due to any respiratory illness (ICD-9 480-486 and 487) including medical examiner offices. Vital statistics should be involved
     g. Emergency room visit trends, syndromic surveillance
  3. Community clinics reporting enhanced ILI activity
  4. Surveillance for retail over-the-counter medication purchases
- Use of self-screening tools (e.g., Severe Acute Respiratory Syndrome [SARS]) in emergency rooms and healthcare facilities. People with known exposure to a person diagnosed with ‘bird influenza’ or ‘avian influenza’ or have been around people who might have had avian influenza AND has respiratory symptoms (cough, sore throat and fever) should obtain a mask, follow the instructions for applying the mask, and report to the triage nurse.

- Laboratory specimen submission forms will assure collection of the following minimum demographic information:
- 1. Name
- 2. Sex
- 3. Date of Birth
- 4. Symptoms
- 5. Symptom onset date
- 6. Specimen collection
- 7. Specimen source
- 8. Vaccination history
- 9. Severity of illness

Other items will be added to list as need is identified.

6.3.3 Prevention and Containment

- Continue Non-pharmaceutical Interventions as appropriate.
- Vaccine and antiviral ordering will depend on vaccine and antiviral availability and allocation as determined by the CDC and DSHS. It is assumed at the early stage, the state will coordinate ordering.
- Vaccine and antivirals will be distributed either through a centralized distribution system or VMI system (depending on CDC directives) to ATCHHSD. Security will be provided at deployment site as well as regional and/or local receiving site.
- ATCHHSD will notify all internal and external partners of the ordering and delivery/distribution plans.
- ATCHHSD will utilize/ implement medical stockpile receipt, distribution, and community vaccination procedures as provided for in the Strategic National Stockpile SNS Plan, depending on availability of medications.
- ATCHHSD will make any federally distributed vaccines or anti-viral medications available to hospitals as per estimates provided by the hospital and in accordance with SNS Plan procedures.
- ATCHHSD will report adverse vaccine event following influenza vaccination to VAERS.

6.3.4 Health Systems Response

ATCHHSD will coordinate notification of appropriate agencies, infection control practitioners, local laboratories, and emergency rooms.

In the event that hospital surge capacity is exceeded by the number of presenting influenza patients, ATCHHSD will establish an alternative care facility for the treatment of none acute cases, in accordance with the City of Austin's Special

Needs Shelter Plan. Pandemic Influenza specific admittance criteria and standards of care for this facility are located in the Influenza Related Shelter Planning Considerations Annex of this plan.

6.3.5 Communications

- HAN staff will continue to monitor the delivery of health alerts and maintain backup and redundant communications systems as needed. The staff will continue to update the HAN emergency contact database if required.
- The HAN DLC with the assistance of the HAN DLT will continue to assure that appropriate communications assets are employed to receive satellite programming, record it and deliver it to responders across the state.
- ATCHHSD PIO will continue to revise and provide messages to the public and providers in accordance with DSHS and CDC guidance.

6.4 Subsided

6.4.1 Planning and Coordination

- The Public Health Response Team will review procedure from first wave and make adjustments to Pandemic Influenza plan as necessary.
- Vaccination efforts will be continued with narrowed areas of focus.
- The ICS logistics section will determine the need for obtaining and maintaining essential personnel, facilities, equipment and supplies.
- Expenses will continue to be documented through the ICS financial section.

6.4.2 Situation Monitoring and Assessment

The Surveillance and Epidemiological Response teams will:

- Evaluate situation monitoring response in first wave.
- Make adjustments as necessary for subsequent waves.
- Maintain heightened surveillance activities.

6.4.3 Prevention and Containment

ATCHHSD will:

- Encourage personal use of non-pharmaceutical interventions including hand washing, respiratory hygiene, and cough etiquette to prevent pandemic influenza.
- Evaluate prevention and containment response to first wave.
- Make adjustments in response for subsequent waves as necessary.
- Follow same guidelines as appropriate from the Pandemic period.
- Continue vaccinations and distribution and use of antivirals if indicated by CDC.
- Continue to monitor and document any adverse reactions using the VAERS system.

6.4.4 Health Systems Response

In collaboration with partners, ATCHHSD will evaluate response to previous wave, make adjustments as necessary, and respond to subsequent waves as in Phase 6 with identified adjustments.

6.4.5 Communications

- HAN staff will continue to monitor the delivery of health alerts and maintain backup and redundant communications systems as needed. The

staff will continue to update the HAN emergency contact database if required.

- The HAN DLC with the assistance of the HAN DLT will continue to assure that appropriate communications assets are employed to receive satellite programming, record it and deliver it to responders across the state.
- ATCHHSD PIO will continue to revise and provide messages to the public and providers in accordance with DSHS & CDC guidance.

6.5 Post Pandemic

6.5.1 Planning and Coordination

- The Public Health Response Team will convene to debrief from response activities.
- Incident command will communicate the status of the response to DSHS and external stakeholders.
- Technical assistance regarding assessment and analysis will be provided as needed (to and from HSR 7 offices).
- The Pandemic Influenza Plan will be reviewed and updated to account for any gaps in the public health infrastructure noticed during the pandemic.
- Expenses will continue to be documented and costs analyzed through the ICS financial structure.
- After Action Reports (AAR) will be generated and disseminated appropriately.
- The ICS is deactivated.

6.5.2 Situation Monitoring and Assessment

The post-pandemic goals are to provide a detailed retrospective characterization of the pandemic and to evaluate the efficacy of protective action recommendation and emergency management strategies.

6.5.3 Prevention and Containment

- Continue to encourage personal use of non-pharmaceutical interventions including hand washing, respiratory hygiene, and cough etiquette as a regular practice to prevent infectious diseases.
- Discontinue antiviral distribution. Return unused vaccine and antivirals to appropriate vendor source or DSHS pharmacy in Austin, as appropriate.
- Assure completion of all medication distribution, tracking, and compliance record keeping.
- Complete AARs and modify pandemic influenza plans as necessary to correct problem areas.
- Evaluate interventions related to coverage, processes, efficiency, effectiveness, and health outcomes.

6.5.4 Health Systems Response

ATCHHSD will notify involved agencies of change of status to the Postpandemic Period.

6.5.5 Communications

HAN

- HAN Technology Implementation: After action analysis of communications systems and database systems will be conducted in order to improve the network design and delivery of services.
- HAN Distance Learning Coordination: After-action analysis of the effectiveness of distance learning programming and delivery will be conducted in order to improve delivery of services.
- Alert Notification: HAN staff will coordinate the update of the emergency contact database and conduct after-action interviews with local response staff to gather information to improve the alert function.
- Communications with Health Care Professionals: Communication efforts will continue to inform the regional offices and local health departments about end of pandemic.
- As per the CERC Guidelines, ATCHHSD PIO will:

  a. Evaluate (through after-action report) risk communications and public information dissemination. Assess effectiveness of messages.

  b. Assess media coverage and amount of information given out.

  c. Update the public through regular news releases and news updates as needed about the current situation.

  d. Update messages about the current pandemic influenza aftermath in coordination with CDC information.

  e. Update fact sheets, flyers and frequently asked questions sheets in coordination with CDC information. Provide translations in Spanish and other languages as needed.

  f. Update Web site as needed.

  g. Evaluate when to reinstate the Open Door media policy.

Annexes

Attachment 1: Telephone Contact List (needs partner/ stakeholder input)

Organization	Telephone number
Department of State Health Services	(512) 458-7111
CDC Emergency Response	(770) 488-7100
ATCHHSD Medical Authority	
ATCHHSD Nursing Supervisor	
ATCHHSD PHRT Program Manager	

Attachment 2: Abbreviations and Definitions (*from DSHS ~ needs local revision/ input*)

AAR	After Action Report
ACIP	Advisory Committee on Immunization Practices
BSL	Bio-Safety Level (laboratory)
BT	Bioterrorism
CCEA	Center for Consumer and External Affairs
CCP	Crisis Counseling Program
CDC	Centers for Disease Control and Prevention
CERC	Crisis and Emergency Risk Communications
CISM	Critical Incident Stress Management
CPS	Community Preparedness Section
DDC	Disaster District Command
DLC	Distance Learning Coordinator
DLT	Distance Learning Technician
DMDG	Drug and Medical Devices Group
DMHS	Disaster Mental Health Services
DPS	Department of Public Safety
DSHS	Department of State Health Services (Texas)
EMS	Emergency Management System
EOC	Emergency Operations Center
ERT	Epidemiology Response Team
ESC	Emergency Support Center (DSHS)
FASC	Finance/Administration Section Chief
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
GDEM	Governor's Division of Emergency Management
HAN	Health Alert Network
HCW	Health Care Worker
HSPD	Homeland Security Presidential Directive
HSR	Health Service Region
IAP	Incident Action Plan
IB	Immunization Branch
IC	Incident Command
ICP	Infection Control Practitioners
ICS	Incident Command System
IDCU	Infectious Disease Control Unit
ILI	Influenza-like Illness
JIT	Just in time training
LC	Legal Counsel
LHD	Local Health Department
LNO	Liaison Officer
LRN	Laboratory Response Network
LSC	Logistics Section Chief
MA	Medical Advisor
MOA	Memorandum of Agreement

MOU	Memorandum (memoranda) of Understanding
NBS	NEDSS Based System
NEDSS	National Electronic Data Surveillance System
NIMS	National Incident Management System
OBH	Office of Border Health
OGC	Office of General Counsel
OEHD	Office for the Elimination of Health Disparities
OSC	Operations Section Chief
PB	Pharmacy Branch
PHL	Public Health Laboratory
PI	Pandemic Influenza
PICS	Pharmacy Inventory Control System
PIL	Pandemic Influenza Lead
PIPC	Pandemic Influenza Planning Coordinator
PIO	Public Information Officer
PIPG	Pandemic Influenza Planning Group
PIRD	Pandemic Influenza Preparedness Plan and Resource Document
PPE	Personal Protective Equipment
PSC	Planning Section Chief
RD	Regional Director
SARS	Severe Acute Respiratory Syndrome
SDO	Standing Delegation Orders
SNS	Strategic National Stockpile
SO	Safety Officer
SOC	State Operation Center
SOG	Standard Operating Guidelines
TAHC	Texas Animal Health Commission
TALHO	Texas Association of Local Health Officials
THA	Texas Hospital Association
TIMS	Texas Inventory Management System
TMA	Texas Medical Association
TSBME	Texas State Board of Medical Examiners
TNA	Texas Nurses Association
TxOHS	Texas Office of Homeland Security
TPA	Texas Pharmacy Association
TPW	Texas Parks and Wildlife
TRC	Texas Racing Commission
TVFC	Texas Vaccines for Children
TVMDL	Texas Veterinary Medical Diagnostic Laboratory
TWICES	Texas-Wide Integrated Client Encounter System
USDA-APHIS	United States Dept. of Agriculture Animal & Plant Health Inspection Service
VAERS	Vaccine Adverse Events Reporting System
VIS	Vaccine Information Statement
VMI	Vendor-Managed Inventory

WHO	World Health Organization

Definitions

An **antiviral** medication destroys or inhibits the growth and reproduction of viruses.

A **confirmed case** of influenza disease is a person with influenza-like illness and with laboratory-confirmed influenza virus infection. A diagnosis of influenza is usually made on a clinical basis, particularly if influenza has been reported in the community.

Community containment measures refer to the separation of infected or exposed people from non-infected people by use of isolation, quarantine, or other restrictions on movement and activities.

A **contact** is a person who has been exposed to an influenza case during the infectious period. A **close contact** is a person who has cared for or lived with someone with influenza or had direct contact with respiratory secretions or body fluids of a patient with influenza. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within 3 feet, and touching someone directly. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a period of time.

Health care worker refers to any employee who has close contact within 3 feet of patients, patient-care areas (i.e., patient rooms, procedure areas), or patient-care items (i.e., linens and other waste).

The **incubation period** is the time from exposure to an infectious disease to symptom onset. The incubation period for influenza is usually two days but can vary from one to five days.

Infection control measures decrease the risk for transmission of infectious agents through proper hand hygiene, scrupulous work practices, and use of Personal Protective Equipment (PPE) including masks, gloves, gowns, and eye protection. The types of infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet, and airborne precautions (see related information online at http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm). Recommendations for influenza are standard, contact, and droplet precautions, defined below:

- **Standard precautions** are work practices required for the basic level of infection control. They center on proper hand hygiene and include use of Personal Protective Equipment (PPE) to serve as protective barriers and appropriate handling of clinical waste.
- **Contact precautions** are work practices designed to reduce the risk of transmitting infectious agents by direct or indirect contact with an infectious person. Direct contact transmission involves a direct body surface–to–body surface contact and physical transfer of infectious agents between an infected person and a susceptible host. Indirect–contact transmission involves contact of a susceptible host with a contaminated intermediate object, such as contaminated instruments or dressings, or contaminated hands that are not washed or gloves that are not changed between patients. Contact precautions also may include the use of PPE (gloves, gown, surgical mask, goggles or face shield) to reduce the spread of infectious agents.

- **Droplet precautions** are designed to reduce the risk of droplet transmission of infectious agents. Droplet transmission occurs when droplets containing infectious agents generated by an infectious person are propelled a short distance through the air (i.e., by coughing, sneezing, or talking) and deposited on the conjunctivae or mucous membranes of the mouth or nose of a susceptible person. Droplet precautions include the use of PPE (gloves, gown, surgical or other mask, and goggles or face shield) to reduce the spread of infectious agents.

Influenza-like illness (ILI) is defined as 1) a fever ≥ 100°F and 2) cough and/or sore throat in the absence of a known cause.

An **influenza pandemic** is a worldwide outbreak of a novel influenza virus causing sudden, pervasive illness in all age groups, and can severely affect even otherwise healthy individuals. Influenza pandemics occur infrequently and at irregular intervals and have the potential for substantial impact resulting in increased morbidity and mortality, significant social disruption, and severe economic costs.

Isolation and quarantine are standard practices in public health, and both aim to control exposure to infected or potentially infected people. Both may be used voluntarily or compelled by public health authorities and can be applied on an individual or population level.

- **Isolation** refers to the separation of people with a specific contagious illness from contact with susceptible people and the restriction of their movement to contain the spread of that illness. Isolation usually occurs in a hospital but can be in a home or dedicated isolation facility.
- **Quarantine** refers to the separation and restriction of movement of well people who may have been exposed to an infectious agent and may be infected but are not yet ill. Quarantine usually occurs in the home but can be in a dedicated facility or hospital. The term "quarantine" also can be applied to restrictions of movement into or out of buildings, other structures, and public conveyances. States generally have authority to invoke and enforce quarantine within their jurisdictions, although quarantine laws vary among states. The Centers for Disease Control and Prevention (CDC) also is empowered to detain, medically examine, or conditionally release people suspected of carrying certain communicable diseases at points of arrival in and departure from the United States or across state lines.

  - **Work quarantine** – In the event that quarantine is used as an occupational exposure management tool, some health care workers (HCWs) may need to continue working to ensure sufficient staffing levels. Appropriate measures should be developed for HCWs to comply with quarantine orders and to continue working at the health care facility. Limitations on alternative employment will be needed.

Nonpharmaceutical Interventions are those interventions to reduce transmission of disease at an individual or population level that are not pharmaceutically based.

Nosocomial refers to a health care setting, such as a hospital or clinic. Typically, nosocomial transmission refers to spread of an infectious disease from a patient in a

health care setting or from a health care worker to another patient, worker, or visitor in the same setting.

An **outbreak** is a sudden increase in the number of cases of a specific disease or clinical symptom.

Personal protective equipment (PPE) is barrier protection to be used by an individual to prevent disease transmission. PPE may include gowns, gloves, masks, goggles, or face shields. The type of mask (i.e., surgical, N95, or powered, air-purified respirator) is disease-specific and defined in the type of precautions.

Prophylaxis is the prevention of or protective treatment for a disease.

- **Chemoprophylaxis** is the use of vaccines, antiviral medications or other chemical agents to prevent the spread of influenza disease)

Respiratory hygiene and cough etiquette refers to the institution of public health measures to avert the transmission of influenza and/or other infectious diseases.

Surge Capacity is the accommodation to transient sudden rises in demand for services following an incident. It is the ability of the health system to expand beyond normal operations to meet a sudden increased demand for service.

Vendor Managed Inventory (VMI) refers to a means of optimizing supply chain performance in which the pharmaceutical manufacturer is responsible for maintaining the distributor's inventory levels. The manufacturer has access to the distributor's inventory data and is responsible for generating purchase orders. Under this Private sector system, providers (physicians, clinics, etc.) order directly from distributors.

Volunteer is any individual accepted to perform services by an agency and/or volunteer organization (Such as Ready Texans), that has authority to accept volunteer services, when the individual performs services without promise, expectations, or receipt of compensation for services performed.

Employee on voluntary assignment – A State Agency employee who, with written supervisory approval, volunteers to provide and is subsequently tasked to perform a task outside the scope of their employment during a state and/or federal emergency. The employee may be considered as being on temporary assignment (Source-HHSC Human Resource manual, Chapter 3) to perform disaster assistance duties

Attachment 3: Incident Command System

ATCHHSD Incident Command Structure:

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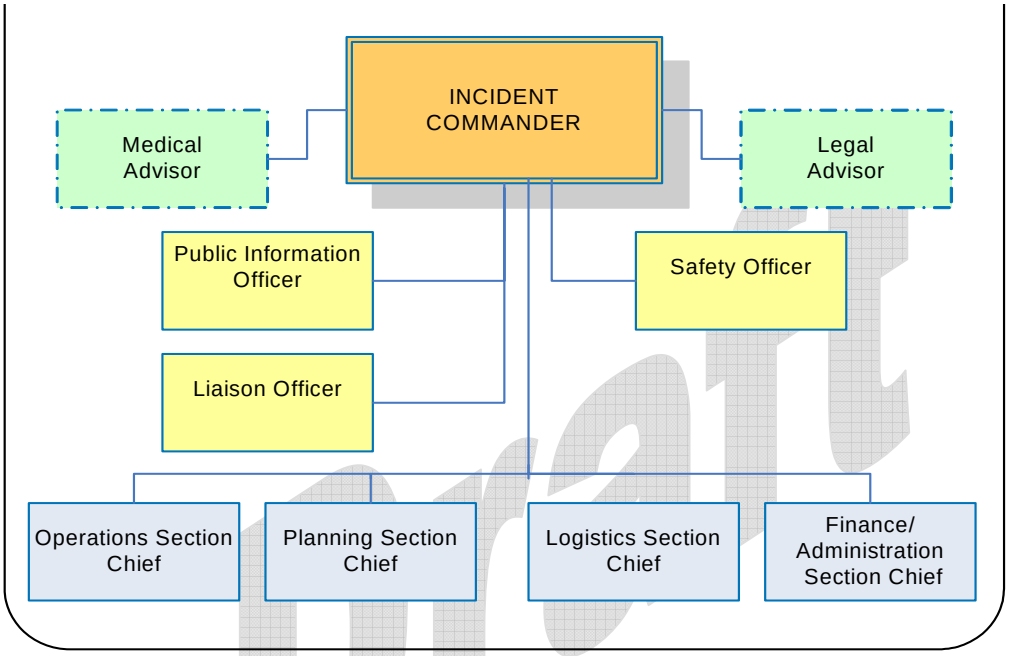

Pandemic Influenza Response Specific Assignments

Title	Name	Work Phone	Home Phone	Other[a]
Incident Commander				
Chief Operating Officer				
Public Information Officer				
Press Officer				
Assistant Press Officer				
Communications Unit Manager				
Liaison Officer				
Director Center for Consumer & External Affairs				
Government Affairs Unit Manager				
Consumer Affairs Unit Manager				
Safety Officer				
Medical Advisor				
Epidemiology				
Surveillance				
Medical Authority				
Legal Advisor				
Operations Section Chief				
Disease Prevention & Intervention Section				
Immunization Branch Mgr				
Planning Section Chief				
Community Preparedness Section Nurse Advisor				
Disease Prevention & Intervention Nurse Consultant				
Logistics Section Chief				
Health Alert Network				
Finance / Admin Section Chief				

a. P = pager; C = cell phone

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Attachment 4: Epidemiology and Surveillance Roles and Responsibilities

Role/Responsibility	Interpandemic Phase: Phase 1 and 2	Pandemic Alert Phase: Phase 3, 4, and 5	Pandemic Period: Phase 6	Subsided	Post Pandemic Phase
Monitoring and Detection:					
Serve as Department of State Health Services (DSHS) sentinel site for the early detection of flu by distributing flu culture to the community health care providers in the Austin/Travis County area.	X	X	X	X	X
Receive voluntary reporting of ILI and confirmed flu cases from community reporters such as hospitals, medical providers (group practices, partnerships, and individuals), nursing homes, institutions, work place, schools, daycares, etc.	X	X	X	X	X
Monitor and distribute international, national, state, local influenza incidence, updates, and recommendations using the Health Alert Network (HAN) and Epi-X.	X	X	X	X	X
Use Syndromic Surveillance systems to monitor and investigate flu-related signals (e.g., ILI, respiratory, cough and cold) that may trigger from physician office visits, emergency department visits and over the counter medication sales in the Austin/Travis County and surrounding communities.	X	X	X	X	X
Track all influenza deaths through the ATCHHSD Office of Vital Records weekly report to CDC. Continuous assessment (geospatial and temporal) of influenza morbidity and mortality data.	X	X	X	X	X
Communications:					
Update internal ATCHHSD staff, on established basis and when necessary, all significant disease information that is detected or reported in the community.	X	X	X	X	X
Send Weekly Flu Reports to DSHS Regional office.	X	X	X	X	X
Send weekly active surveillance communication to –designated Infection Control Practitioners (ICPs) in the Austin/Travis County area.	X	X	X	X	X
Coordinate with department to send influenza alerts/updates to the medical community through out influenza season.	X	X	X	X	X
Serve as a resource for area medical providers, hospitals, and community calling for Influenza information or guidance.	X	X	X	X	X
Provide referring medical providers an updated websites and/or an established department phone line with a pre-recorded message and		X	X	X	

Role/Responsibility	Interpandemic Phase: Phase 1 and 2	Pandemic Alert Phase: Phase 3, 4, and 5	Pandemic Period: Phase 6	Subsided	Post Pandemic Phase	
information.						
Investigation:						
Investigate influenza deaths and hospitalized influenza illness in otherwise healthy individual per CDC and state guidance.	X	X	X	X	X	
Conduct data entry of case investigation and timely reporting to DSHS regional office.	X	X	X	X	X	
Maintain an internal database on ILI reports (case not investigated).	X	X	X	X	X	
Response:						
Identify exposed contacts of influenza cases investigated and provide recommended preventative measures such as appropriate hygiene, vaccination, and/or referral to medical provider for influenza antiviral treatment to reduce exposure and risk of the developing disease.	X	X	X	X	X	
As available and in accordance with CDC and state recommendations vaccinate and/or treat identified contacts at the time of detection. Utilizing established department vaccination and/or treatment clinics as available for non-symptomatic contacts.		X	X	X		
Analyze and provide influenza data and information to Health Authority, Department Director and Department PIO for purpose of making recommendations to the community, schools, workplaces to cancel or severely limit large gathering of individuals as measure to stop transmission of disease.		X	X	X		
Serve as a resource for area medical providers, hospitals, and community calling for Influenza information or guidance. As necessary, establish a hotline to provide Influenza information to the community. The hotline will not only include recorded messages but also the ability to reach a health professional or leave a message so that a health professional can return a call to the individual. .		X	X	X		
Use of media and establish lines of communication to refer contacts to influenza case to follow up at established department vaccination and/or treatment clinics as available for non-symptomatic contacts.			X	X		
Identify homebound contacts, special needs contacts, and/or unusual circumstance contacts in need of preventative measures, referring to Public Health Response Team.			X	X		X

Attachment 5: Prescripted Messages, Pandemic Influenza

In the event of activation of one or more pharmaceutical dispensing sites under the operational control of the Austin/Travis County Health and Human Services Department, please refer to ANNEX K, Prescripted Messages, SNS.

Assumptions

1. PIC or Joint Information Center (JIC) is operational. (City, regional and state emergency operations centers may or may not be activated depending on the scope, impact and extent of the public threat or emergency.
2. Mass media and other resources are being used to disseminate information regarding the current situation as well as background on the type and pandemic nature of influenza involved in the Central Texas outbreak.

Procedures for informing public about community dispensing operations

1. Public information focuses on specific event-related information. The city's Office of Emergency Management (OEM), through the City of Austin Public Information Office (PIO) provides a public information program combining both education and emergency information.

2. In the event that the EOC is activated, the City PIO becomes the focal point of all public information and education activities. The City PIO will establish a Joint Information Center (JIC) in close proximity with the EOC. HHSD bioterrorism and public health preparedness communications staff with join other city departments in the JIC.

3. Communications Channels/Tools

    - News releases
    - Web sites (Department/partners/media)
    - FAQs
    - Special needs communication
    - PSA
    - HAN
    - News conferences
    - Telephone hotlines
    - Reverse 911 notification system

Message #1, Provider Information Statement – Novel Virus Alert

As you are aware, one or more human cases of a novel virus, for which there is no immunity in the general population, has been detected in _____. This could potentially, but not inevitably, be a precursor to a pandemic.

Austin Travis County Health and Human Services Department is working closely with the State to monitor reports of disease progression and surveillance to detect the arrival of disease caused by the novel virus in Texas. Currently there have been no reported cases in the Austin area.

The CDC has issued recommendations for enhanced influenza surveillance for state health departments. The purpose of these recommendations is to enhance the capacity to rapidly identify an importation of this virus. Current recommendations are available at the CDC website (insert link here).

We will continue to provide you with updates on influenza activity and will distribute recommendations on any additional surveillance activities that may become necessary.

If you have any questions please call Disease Control and Surveillance at (provide current number).

Message #2, Provider Information Statement – Pandemic Imminent

The _____novel virus____ is causing unusually high rates of morbidity and mortality in widespread geographic areas. Travel advisories remain in effect for the following areas:

If your patient is ill with influenza-like illness and has recently traveled to these areas, or is a close contact to someone who has traveled to these areas the following recommendations should be considered:

1) home isolation
2) antivirals for household contacts
3) self-monitoring of symptoms
4) report to Public Health (?)
5) refrain from public and interpersonal contact, including handshaking

Daily updates can be obtained at the state web or cdc websites (insert links here).

Austin/ Travis County continues to work closely with the State and CDC regarding influenza vaccine. We do not have a manufacturer's release date at this time but continue to review plans for distribution.

Providers are encouraged to use anti-virals for household contacts of confirmed or strongly suspected cases of influenza.

Enforcement of respiratory hygiene is essential. Continue to implement respiratory programs in your area of practice:

- At entry, triage, or registration, ask all patients with symptoms of respiratory illness to wear a surgical mask, and provide instructions on their proper use and disposal.
- Offer masks to all other persons who enter the emergency room to use voluntarily for their own protection.
- For patients who cannot wear a surgical mask, provide tissues to cover the nose and mouth when coughing or sneezing and a small bag for mask and tissue disposal.

- Encourage and provide access to hand washing or a waterless hand hygiene product and instruct patients to decontaminate their hands after handling respiratory secretions and before their contact with a healthcare worker.

- Separate patients with respiratory illness from other patients by either placing them into a cubicle, examination room, or some physical separation by at least 3 feet.

Message #3, Provider Information Statement – Pandemic Alert Declaration

A formal declaration was made today by the CDC regarding the influenza pandemic. Further spread with involvement of multiple continents has been reported.

The United States reported _____hospitalizations or deaths to the CDC with _____being from/in Texas.

The Austin/Travis County area has had _____related to complications from influenza.

Manufacturers of flu vaccine report a release date of _____. The City of Austin and Travis County continue to make plans for mass vaccination/prophylaxis/ public education. Current supply of antivirals remains low.

Up-to-date summaries of influenza activity are available at (COA or CDC web address)

Message #4, Provider Information Statement – Pandemic Alert Case Information

The novel virus_____ has demonstrated sustained person-to-person transmission and multiple cases in the same geographic area.

Confirmed case definition:

Probable case definition:

Possible case definition:

The number of confirmed cases are _____. Number of deaths are_____.

The CDC and State Department of Health Services has released a travel advisory

for_____ .

Daily updates can be obtained at the state web site (insert here) , or www.cdc.gov.___.

Austin Travis County has reported _____number of confirmed/ probable case (s) of influenza A _____. No deaths have been reported.

Antivirals are recommended for household contacts of confirmed cases and strongly suspected cases of influenza. Recommendations for asymptomatic household contacts can be downloaded from the county website at (insert current link).

Message #5, Sample Provider Information Statement – Pandemic Second Wave

Typically in a pandemic, the number of new cases of influenza peaks and then declines, giving the impression that the pandemic is over. Health care providers need to remain vigilant for the return of the epidemic activity. Health care providers must make use of the interim period to prepare for a resurgence of disease.

Austin Travis County Health and Human Services continues to urge providers to keep a respiratory hygiene program in place. Inventory and order supplies that may be necessary for disease resurgence. Continue to vaccinate (if applicable).

Log onto the ATCHHSD web site (insert link here) for current information about self protection.

Message #6, Influenza Alert for Public Release

FOR PUBLIC RELEASE

Influenza Alert

For Immediate Release Contact:_____

Date:_____ Title: _____

The Austin Travis County Public Health Authority, declared a public health emergency this morning/evening, alerting Travis County residents to take precautions to minimize the spread of the influenza virus. There is new strain of influenza virus that is unusually virulent, which means that most people have little or no natural immunity to protect them from illness. This means that, not only have more people come down with the "flu," the illness likely to be more severe. *(Insert data about current number of local hospitalizations.)*

At this time, there is no vaccine available to prevent this new strain of the flu. Vaccine development may be delayed and vaccine may initially be in short supply. This makes prevention measures even more important.

Symptoms of the flu include abrupt onset of chills and fever, muscle aches, sore throat, and cough. Those who develop flu symptoms should notify their health care provider. *(Consider whether ATCHHSD should advise everyone to do this, or just recommend that the elderly and those with medical conditions that increase their risk contact their provider.)*

Influenza virus is contagious from person-to-person. Infection spreads when droplets from a cough or sneeze of an infected person reach the mucous membranes of another person's mouth, nose, or eyes, or if they touch a surface or object (such as a doorknob or stair railing contaminated with infectious droplets and then touch their own mouth, nose, or eyes.

The risk of becoming ill can be reduced by frequent hand washing and keeping your hands away from your eyes, nose, and mouth. Also, try to avoid contact with people who have respiratory illnesses.

Those who become ill should stay home. This is crucial to preventing the spread of this disease to others, including co-workers and other people who would be encountered in public places.

If someone in the household has the flu, other family members can decrease their risk of becoming ill by wearing a mask over their nose and mouth whenever they come within three feet of the sick person. They should wear gloves whenever they come in contact with him or her or items they have handled and wash their hands after removing the gloves.

For more information, visit the Austin Travis County Health and Human Services website at:
(Insert link here.)
(Cancellation of public gatherings may also be advised at this stage.)

Attachment 6: Overview of Influenza Pandemic (*for media distribution*)

Pandemics result from the emergence of an influenza A virus that is novel for the human population.

The hallmark of pandemic influenza is excess mortality --- the number of deaths observed during an epidemic of influenza-like illness in excess of the number expected.

During this century, pandemics occurred in 1918, 1957, and 1968.

1918-19	"Spanish flu" A caused the highest known influenza-related mortality: at least 100,000 deaths in the United States, and 20 million worldwide.
1957-58.1	Asian flu" A: 70,000 deaths in the United States.
1968-69.1	Hong Kong flu" A: 34,000 deaths in the United States.

Although mortality rates associated with the pandemics of 1957 and 1968 were confined primarily to the elderly and chronically ill, both pandemics were associated with high rates of illness and social disruption, with combined economic losses of approximately $32 billion (in 1995 dollars).

The potential impact of an influenza virus in humans depends on its virulence (ability to cause severe illness or death) and on whether there is protective immunity in the population. Protective immunity will inhibit the virus' ability to be passed from person-to-person and will decrease the severity of illness.

Influenza viruses undergo two kinds of change. One is a series of mutations over time that causes a gradual evolution of the virus, known as antigenic drift. The other is an abrupt change in the surface antigen proteins, known as antigenic shift, thus suddenly creating a new subtype of the virus.

When antigenic shift occurs, the population does not have antibody protection against the virus.

Birds are the primary reservoir for influenza viruses. All 15 recognized influenza A subtypes have been found in birds.

In most years in the United States, influenza is responsible for 10,000-40,000 excess deaths, 50,000-300,000 hospitalizations, and approximately $1-3 billion in direct costs for medical care.

Influenza Background Information

The influenza (flu) epidemics that happen nearly every year are important events. Influenza is a respiratory illness that makes hundreds of thousands of people sick each year. The illness can cause severe health problems for the elderly and for younger people with diseases like diabetes, heart or lung disease, and illness that can weaken the immune system. Typical primary influenza illness lasts about a week and is characterized by abrupt onset of fever, muscle aches, sore throat,

and nonproductive cough. In some persons, severe malaise and cough can persist for several days or weeks.

Influenza infection not only causes primary illness but also can lead to severe secondary medical complications, including influenza viral pneumonia; secondary bacterial pneumonia; worsening of underlying medical conditions, such as congestive heart failure, asthma, or diabetes; or other complications such as ear infections (i.e., otitis media) in children.

Elderly persons (i.e., those 65 years and over) and persons with certain underlying medical conditions, such as chronic heart or lung disease, are at increased risk for developing complications from influenza infection. These complications increase the risk for hospitalization or death.

One of the most important features about influenza viruses is that their structure changes slightly but frequently over time (a process known as “drift”), and that this process results in the appearance of different strains that circulate each year. The composition of the flu vaccine is changed each year to help protect people from the strains of influenza virus that are expected to be the most common ones circulating during the coming flu season.

The ability of the vaccine to protect against influenza during a particular season depends on several factors, but particularly 1) the match between influenza strains in the vaccine and strains circulating in the community, and 2) the ability of each person's immune system to mount a protective response as a result of the vaccination. Although the vaccine may not prevent everyone who takes it from getting sick, it does reduce the risk of severe illness, hospitalization, and death. That's why it is so important for anyone who wants to reduce his or her risk of getting severely ill from influenza to receive the vaccine each year.

In contrast to the more gradual process of drift, in some years the influenza virus changes dramatically and unexpectedly through a process known as “shift.” Shift results in the appearance of a new influenza virus to which few (if any) people are immune. If this new virus spreads easily from person-to-person, it could quickly travel around the world and cause increased levels of serious illness and death, affecting millions of people. This is called an influenza pandemic.

Fortunately, pandemics don't occur very often. There has not been an influenza pandemic since 1968. In 1997, however, a flu virus, that had previously infected only birds, caused an outbreak of illness in humans. This virus, known as the “avian flu,” resulted in 18 illnesses and six deaths in Hong Kong but did not easily spread from person-to-person. Still, it provided a frightening reminder that the next pandemic could occur at any time. Governments around the world took notice. The U.S. government worked with state and local governments and private-sector partners to develop strategies and programs that would prepare our country for a pandemic.

How Does an Influenza Pandemic Start?

There are three main types of influenza viruses: A, B, and C. Influenza C causes only mild disease and has not been associated with widespread outbreaks. Influenza types A and B, however, cause epidemics nearly every year. Influenza A viruses are divided into subtypes, based on differences in two surface proteins: hemagglutinin (H) and neuraminidase (N). Influenza B viruses are not divided into subtypes. During an influenza flu season, usually one or more influenza A subtype and B viruses circulate at the same time.

A pandemic is possible when an influenza A virus makes a dramatic change (i.e., "shift") and acquires a new H or H+N. This shift results in a new or "novel" virus to which the general population has no immunity. The appearance of a novel virus is the first step toward a pandemic. However, the novel influenza A virus also must spread easily from person-to-person (and cause serious disease) for a pandemic to occur. Influenza B viruses do not undergo shift and do not cause influenza pandemics.

The reservoir for type A influenza viruses is wild birds, but influenza A viruses also infect animals such as pigs and horses, as well as people. The last two pandemic viruses were combinations of bird and human influenza viruses. Many people believe that these new viruses emerged when an intermediate host, such as a pig, was infected by both human and bird influenza A viruses at the same time, so that a new virus was created. Events in Hong Kong in 1997, however, showed that this is not the only way that humans can become infected with a novel virus. Sometimes, an avian influenza virus can "jump the species barrier" and move directly from chickens to humans and cause disease.

Since, by definition, a novel virus is a virus that has never previously infected humans, or hasn't infected humans for a long time, it's likely that almost no one will have immunity, or antibody to protect them against the novel virus. Therefore, anyone exposed to the virus--young or old, healthy or weak--could become infected and get sick. If the novel virus is related to a virus that circulated long ago, older people might have some level of immunity. It is possible that the novel virus may be especially dangerous to some age groups that are not usually at risk of severe illness or death from annual influenza (such as healthy young adults). Such widespread vulnerability makes a pandemic possible and allows it to have potentially devastating impact.

How Does a Pandemic Spread?

Although all pandemics begin with the appearance of a novel virus, most novel viruses do not spread and cause pandemics. It's more common for a novel virus to be detected and cause illness in a few people, but not go on to infect large numbers of people.
For a novel virus to cause a pandemic, a sequence of events must occur over time. A planning tool, developed by pandemic planners, of how those events might unfold can be found at the following web site: www.who.int/emc-documents/influenza/whoccscsredc991c.html. However, the phases will not occur simultaneously around the world.

The Phases of a Pandemic

Pandemic Phase	Definition
Novel Virus Alert	• Novel virus detected in one or more humans • Little or no immunity in the general population • Potential, but not inevitable precursor to pandemic
Pandemic Alert	• Novel virus demonstrates sustained person-to-person transmission and causes multiple cases in the same geographic area
Pandemic Imminent	• Novel virus causing unusually high rates of morbidity and/or mortality in multiple, widespread geographic areas
Pandemic	• Further spread with involvement of multiple continents; formal declaration made

Second Wave	• Reoccurrence of epidemic activity within several months following the initial wave of infection
Pandemic over	• Cessation of successive pandemic "waves," accompanied by return (in the U.S.) of more typical wintertime "epidemic" cycle

The Impact of a Pandemic: How Serious Might It Be?

There's no simple answer to the question of how serious a pandemic might be. It all depends on how virulent (severe) the virus is, how rapidly it can spread from population to population, and the effectiveness of pandemic prevention and response efforts. The 1918 Spanish flu is an example of a worst-case scenario because the strain was highly contagious and quite deadly. This pandemic killed more Americans than all the wars of the 20th century. Since our world today is vastly more populated, and people travel the globe with ease, the spread of a next pandemic could be more rapid than that of previous pandemics.
The impact of a pandemic isn't measured only by how many people will die. If millions of people get sick at the same time, major social consequences will occur. If many doctors and nurses become ill, it will be difficult to care for the sick. If the majority of a local police force is infected, the safety of the community might be at risk. If air traffic controllers are all sick at once, air travel could grind to a halt, interrupting not only business and personal travel, but also the transport of life-saving vaccines or antiviral drugs. Therefore, a vital part of pandemic planning is the development of strategies and tactics to address all these potential problems.

Historical Overview

History suggests that influenza pandemics have probably happened during at least the last four centuries. During the 20th century, three pandemics and several "pandemic scares" occurred. These are described in more detail below

1918: Spanish Flu

The Spanish influenza pandemic is the catastrophe against which all modern pandemics are measured. It is estimated that approximately 20 to 40 percent of the worldwide population became ill and that over 20 million people died. Between September 1918 and April 1919, approximately 500,000 deaths from the flu occurred in the U.S. alone. Many people died from this very quickly. Some people who felt well in the morning became sick by noon and were dead by nightfall. Those who did not succumb to the disease within the first few days often died of complications from the flu (such as pneumonia) caused by bacteria.
One of the most unusual aspects of the Spanish flu was its ability to kill young adults. The reasons for this remain uncertain. With the Spanish flu, mortality rates were high among healthy adults as well as the usual high-risk groups. The attack rate and mortality was highest among adults 20 to 50 years old. The severity of that virus has not been seen again.

1957: Asian Flu

In February 1957, the Asian influenza pandemic was first identified in the Far East. Immunity to this strain was rare in people less than 65 years of age, and a pandemic was predicted. In preparation, vaccine production began in late May 1957, and health officials increased surveillance for flu outbreaks.

Unlike the virus that caused the 1918 pandemic, the 1957 pandemic virus was quickly identified, due to advances in scientific technology. Vaccine was available in limited supply by August 1957. The virus came to the U.S. quietly, with a series of small outbreaks over the summer of 1957. When U.S. children went back to school in the fall, they spread the disease in classrooms and brought it home to their families. Infection rates were highest among school children, young adults, and pregnant women in October 1957. Most influenza- and pneumonia-related deaths occurred between September 1957 and March 1958. The elderly had the highest rates of death.

By December 1957, the worst seemed to be over. However, during January and February 1958, there was another wave of illness among the elderly. This is an example of the potential "second wave" of infections that can develop during a pandemic. The disease infects one group of people first, then infections appear to decrease, and thereafter infections increase in a different part of the population. Although the Asian flu pandemic was not as devastating as the Spanish flu, about 69,800 people in the U.S. died.

1968: Hong Kong Flu

In early 1968, the Hong Kong influenza pandemic was first detected in Hong Kong. The first cases in the U.S. were detected as early as September of that year, but illness did not become widespread in the U.S. until December. Deaths from this virus peaked in December 1968 and January 1969. Those over the age of 65 were most likely to die. The same virus returned in 1970 and 1972. The number of deaths between September 1968 and March 1969 for this pandemic was 33,800, making it the mildest pandemic in the 20th century.
There could be several reasons why fewer people in the U.S. died due to this virus. First, the Hong Kong flu virus was similar in some ways to the Asian flu virus that circulated between 1957 and 1968. Earlier infections by the Asian flu virus might have provided some immunity against the Hong Kong flu virus that may have helped to reduce the severity of illness during the Hong Kong pandemic. Second, instead of peaking in September or October, like pandemic influenza had in the previous two pandemics, this pandemic did not gain momentum until near the school holidays in December. Since children were at home and did not infect one another at school, the rate of influenza illness among schoolchildren and their families declined. Third, improved medical care and antibiotics that are more effective for secondary bacterial infections were available for those who became ill.

1976: Swine Flu Scare

When a novel virus was first identified at Fort Dix, it was labeled the "killer flu." Experts were extremely concerned because the virus was thought to be related to the Spanish flu virus of 1918. The concern that a major pandemic could sweep across the world led to a mass vaccination campaign in the United States. In fact, the virus--later named "swine flu"--never moved outside the Fort Dix area. Research on the virus later showed that if it had spread, it would probably have been much less deadly than the Spanish flu.

1977: Russian Flu Scare

In May 1977, influenza A/H1N1 virus emerged in northern China, spread rapidly, and caused epidemic disease in children and young adults (< 23 years) worldwide. The 1977 virus was similar to other A/H1N1 viruses that had circulated prior to 1957. (In 1957, the A/H1N1 virus was replaced by the new A/H2N2 viruses). Because of the timing of the appearance of these viruses, persons born before 1957 were likely to have been exposed to A/H1N1 viruses

and to have developed immunity against A/H1N1 viruses. Therefore, when the A/H1N1 reappeared in 1977, many people over the age of 23 had some protection against the virus, and it was primarily younger people who became ill from A/H1N1 infections. By January 1978, the virus had spread around the world, including the United States. Because illness occurred primarily in children, this event was not considered a true pandemic. Vaccine containing this virus was not produced in time for the 1977-78 season, but the virus was included in the 1978-79 vaccine.

1997: Avian Flu Scare

The most recent pandemic "scares" occurred in 1997 and 1999. In 1997, at least a few hundred people became infected with the avian A/H5N1 flu virus in Hong Kong and 18 people were hospitalized. Six of the hospitalized persons died. This virus was different because it moved directly from chickens to people, rather than having been altered by infecting pigs as an intermediate host. In addition, many of the most severe illnesses occurred in young adults similar to illnesses caused by the 1918 Spanish flu virus. To prevent the spread of this virus, all chickens in Hong Kong (approximately 1.5 million) were slaughtered. The avian flu did not easily spread from one person to another, and after the poultry slaughter, no new human infections were found.

In 1999, another novel avian flu virus – A/H9N2 – was found that caused illnesses in two children in Hong Kong. Although neither of these viruses have gone on to start pandemics, their continued presence in birds, their ability to infect humans, and the ability of influenza viruses to change and become more transmissible among people is an ongoing concern.

Ongoing Influenza Defense Tactics

Fighting the flu in the U.S. is a yearly battle that requires the combined resources of the Department of Health and Human Services, the World Health Organization (WHO), vaccine and drug companies, state and local health authorities, and the medical community. Early detection of changes in influenza viruses and rapid development of effective vaccines are the keys to defending against influenza each year and responding to the possibility of a pandemic. The cycle of surveillance and vaccine formulation is a never-ending process.

Ongoing Surveillance

The first line of defense against influenza is a worldwide surveillance system coordinated by WHO. This system makes it possible for changes in circulating influenza viruses and the emergence of novel influenza A viruses to be detected as soon as possible.
The task of identifying circulating strains of influenza--whether known or novel--is done by a worldwide network of 110 National Influenza Centers and many other WHO laboratories in 83 countries. WHO Collaborating Reference Centers for Influenza in London, Atlanta, Melbourne, and Tokyo coordinate the system and intensively analyze samples of virus isolated and collected by approximately 180 laboratories.

Each year, some influenza virus isolates from laboratories in the U.S. and overseas are sent to the Centers for Disease Control and Prevention (CDC) in Atlanta. Tests are done to determine the antigenic and molecular make-up of the viruses. CDC examines the viruses to

determine which are the most important emerging influenza viruses and their ability to cause outbreaks, and then provides this information at yearly meetings held by the Food and Drug Administration (FDA) and by WHO so it can be used to formulate vaccine for the next influenza season.

During January through March, WHO, FDA, and CDC undertake the process of deciding which strains will be selected for vaccine production in the U.S.

In addition, the CDC actively monitors U.S. disease activity and deaths related to influenza between October and May of each year. This information is provided each week in influenza surveillance summaries.

Vaccine Development

The best method of preventing and reducing the severity of the flu is the timely development, distribution, and administration of influenza vaccine. The influenza vaccine used each year is an inactivated trivalent vaccine. This means that the flu vaccine contains three inactivated (or "killed") flu viruses that protect against three different strains of influenza virus (one influenza B and two influenza A strains). Because the current licensed vaccines are inactivated vaccines, flu vaccine cannot cause the flu – a common misconception. The effectiveness of the trivalent vaccine depends upon the "match" between strains of influenza that are circulating and the viruses in the vaccine. Although there is no guarantee that the strains picked for the vaccine will be the strains that go around during the following flu season, the match between vaccine strains and circulating strains is good about 90 percent of the time.

The vaccine strain selection process requires surveillance information collected year-round. In late January of each year, the FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) reviews worldwide surveillance data. The Committee usually makes an initial recommendation about at least one of the three strains to be included in the vaccine. By mid-February, the WHO completes its review and makes recommendations for the Northern Hemisphere vaccine. The WHO repeats this process in September for Southern Hemisphere vaccine recommendations. In March, VRBPAC meets to finalize the recommendations for the U.S. influenza vaccine.

While the vaccine strain selection process is going on, the four influenza vaccine manufacturers licensed in the U.S. begin preparations for vaccine production. Because flu vaccine viruses are grown inside eggs, manufacturers must buy enough eggs to manufacture 80 million or more doses of vaccine. The FDA prepares the specific viral material for the manufacturers to use, in order to begin vaccine production. During the manufacturing process, the live viral ingredient is killed so that the vaccine will not cause people to become sick with the flu. As the manufacturers produce vaccine, FDA reviews safety data. The last steps of vaccine preparation include production and bottling of vaccine, distribution to vaccine providers, and administration to patients. All this must be done in time for vaccination campaigns to begin by late September.

Working closely with State and local health authorities, partners in the private sector, CDC, FDA, and vaccine manufacturers have built a successful program for vaccine delivery each year. CDC and its Advisory Committee on Immunization Practices (ACIP) issue recommendations each year for the prevention and control of influenza. ACIP strongly recommends influenza vaccine for any person, 6 months of age or older, who is at increased

risk for complications of influenza. Groups at increased risk include persons 65 years of age and older; residents of nursing homes and other chronic-care facilities; adults and children with chronic lung, heart, metabolic, kidney, or immune system disorders; and women who will be in the 2nd or 3rd trimester of pregnancy during the influenza season. Influenza vaccine also should be given to people who have close contact with high-risk persons, such as health care providers, family members of such persons, and others such as medical volunteers. The reason for vaccinating the close contacts is to prevent transmission of flu viruses to people who are at high risk for developing serious complications from flu. Influenza vaccine should also be administered to any person who wishes to reduce the likelihood of becoming ill with influenza.

Antiviral Drugs

In addition to vaccines, antiviral drugs are available for both the prevention and treatment of influenza. Currently, there are two classes of drugs--amantadines and neuraminidase inhibitors. The amantadines (amantadine and rimantadine) are approved for the treatment and prophylaxis of influenza A only. The neuraminidase inhibitors (zanamivir and oseltamivir) have activity against both influenza A and B, but are currently approved by FDA only for treatment.

To prevent the flu, antiviral drugs must be taken consistently before infection occurs. When used to reduce the impact of the flu for someone who is already infected, antiviral drugs must be taken within two days after flu symptoms start. It is important to know that antiviral drugs can have some potentially serious side effects.

In non-pandemic situations, antiviral drugs have been useful in helping to control outbreaks in settings such as nursing homes, where many people could become sick with flu and develop serious complications. In addition, antivirals can be useful in preventing influenza in certain individuals who have a weakened immune systems and, therefore, would not respond to the vaccine, or in those who have a known allergic reaction to the vaccine. There are important differences among the influenza antiviral drugs, including age-approved indications, side effects, and costs. A knowledgeable health care professional should be consulted when they are used.

During a pandemic, antiviral drugs are likely to play an important, but limited role. Guidelines are being developed to address how antiviral drugs should be used during a pandemic.

Preparing for the Next Pandemic

In the event of a pandemic, good surveillance, timely vaccine development and production, and the ability to administer vaccine to large numbers of people in a short amount of time will be very important.

The vaccination program during a pandemic will probably be different from current annual flu shot programs in several respects:

- More people will want and need to be vaccinated, so we will need a larger supply of vaccine.

- The warning period before a pandemic is likely to be short. Because the current vaccine manufacturing process takes a minimum of 6 months, it is likely that there will not be enough vaccine at the beginning of a pandemic to vaccinate everyone who wants it.
- It may be necessary for an individual to receive two doses of vaccine to be fully protected against the virus.

In addition, communication and emergency response systems are in place to assist in managing a pandemic. Since 1993, federal, state and local health officials have been working on several different preparedness efforts to reduce pandemic influenza-related deaths, sickness, and social disruption including enhancing surveillance and early detection of a novel virus, and improving the public health infrastructure so that pandemic-related programs can be effectively administered.

Further Information

Influenza (the Flu) Questions and Answers. National Center for Infectious Diseases (CDC) (October 2003). http://www.cdc.gov/ncidod/diseases/flu/facts.htm

Pandemic Influenza: A Planning Guide for State and Local Officials (Draft 2.1). CDC National Vaccine Program Office (January 2003). http://www.cdc.gov/od/nvpo/pubs/pandemicflu.htm

Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR April 12, 2002 / 51(RR03);1-31. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5103a1.htm

Additional Influenza links

1. The National Immunization Program (NIP), CDC
(http://www.cdc.gov/nip)
The NIP is a part of the Centers for Disease Control and Prevention, located in Atlanta, Georgia. As a disease-prevention program, NIP provides leadership for the planning, coordination, and conduct of immunization activities nationwide.

2. Influenza Branch, National Center for Infectious Diseases, CDC
The Influenza Branch provides leadership for the prevention and control of influenza in the U.S. and worldwide. Major activities include coordinating surveillance and conducting research. The Influenza Prevention and Control home page (http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm) contains information on influenza vaccine, antiviral agents, and surveillance.

The Influenza Branch operates one of the four World Health Organization (WHO) Collaborative Centers for Reference and Research on Influenza and is the main reference laboratory for characterizing influenza viruses in the U.S. and North America. It also:

- Characterizes influenza viruses circulating in the U.S. and worldwide, using molecular and serological techniques to detect new strains and the emergence of viruses with pandemic potential.
- Coordinates U.S. influenza surveillance and publishes a weekly influenza surveillance update (http://www.cdc.gov/ncidod/diseases/flu/weekly.htm) from October through May.

3. Center for Biologics Evaluation and Research (CBER), FDA
(http://www.fda.gov/cber/index.htm)
The mission of CBER is to protect and enhance the public health through regulation of biological products including blood, vaccines, therapeutics, and related drugs and devices according to statutory authority. The regulation of these products is founded on science and law to ensure their purity, potency, safety, efficacy, and availability. CBER plays a critical role in the manufacture and licensing of influenza vaccine.

4. National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases (NIAID)
(http://www.niaid.nih.gov/)
The National Institute of Allergy and Infectious Diseases (NIAID), part of the NIH, conducts and supports research aimed at finding better ways to treat and prevent influenza infections. This site includes NIAID fact sheets, brochures and news releases on influenza, as well as links to influenza information maintained by other federal agencies.

5. Animal and Plant Health Inspection Service, Veterinary Services, U.S. Department of Agriculture
(http://www.aphis.usda.gov/)
The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS) protects the health, quality, and marketability of our nation's livestock and poultry resources. Within VS, the Emergency Programs staff coordinates efforts to prepare for and respond to outbreaks of exotic animal diseases, including highly pathogenic avian influenza. Surveillance for influenza A viruses in avian species in the U.S. are reported each year by the USDA, APHIS, VS, National Veterinary Services Laboratories in the Proceedings of the U.S. Animal Health Association Annual Meeting (http://www.usaha.org/reports/poult97.html).

6. The USDA Agricultural Research Service (ARS)
(http://www.ars.usda.gov/)
The ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and provides information access and dissemination. The ARS' Southeast Poultry Research Laboratory publishes information on avian influenza research and contacts for further information.

7. The Department of Defense Global Emerging Infections Surveillance and Response System
(http://www.geis.ha.osd.mil/main2.html).
(DoD-GEIS) was created in response to Presidential Decision Directive NSTC-7. In the directive, former President Clinton recognized the threat posed by emerging infectious diseases to the health of our global community and to our national security. Responsibilities and actions to improve our nation's ability to identify and respond to the threat are assigned to many organizations and agencies, including the DoD.

8. The World Health Organization
(http://www.who.org)

The World Health Organization's Influenza Programme (http://www.who.org) (http://who.int/emc/diseases/flu/) was created in 1946 as an international centre to collect and distribute information, coordinate laboratory work on influenza, and train laboratory workers. After 50 years, WHO's global surveillance of influenza now

maintains 110 National Influenza Centres in 83 countries and four WHO Collaborating Centres for Virus Reference and Research in Atlanta, USA; London, UK; Melbourne, Australia; and Tokyo, Japan.

Attachment 9: Influenza Related Shelter Planning Considerations

Given the expected shortages of medical staff and supplies the following guidelines are recommended:

- Any auxiliary treatment shelter established for relief of pandemic related surge, should be reserved for non- acute patients and should concentrate on the provision of comfort care.
- Admittance criteria should be based on whether or not the individual could receive comfort care at home. PIOs should inform the public accordingly, and media disclosures should focus on guidelines/ recommendations for home care.
- The standard of care patient to staff will have to be scaled back based on the available workforce. (see chart below) At no point however, should the ratios exceed 100pts: 1RN.

Scalable standard of care for 6,000 patients in an auxiliary treatment facility

Ratio of patients to staff	**RN's needed**			**NA's needed***			**MD's needed**		
	1 shift	***2 shifts***	***3 shifts***	***1shift***	***2 shifts***	***3 shifts***	***1 shift***	***2 shifts***	***3 shifts***
25pts:1RN:2NA:.5MD	240	480	720	480	960	1440	120	240	360
50pts:1RN:3NA:.5MD (1MD)	120	240	360	360	720	1080	60 (120)	120 (240)	180 (360)
100pts:1RN:5NA:.5MD	60	120	180	300	600	900	30	60	90
100 pts: 1 RN:4NA:1MD	60	120	180	240	480	720	60	120	180

* The NA category estimates are intended to capture nursing assistants, medical assistants, and LVN's

The following chart is to be incorporated into admissions related appendices, upon their development.