



HHS Pandemic Influenza Plan

November 2, 2005



The *HHS Pandemic Influenza Plan* is a blueprint for pandemic influenza preparation and response. In particular, the *HHS Plan* provides guidance to national, state, and local policy makers and health departments. The goal is for all involved to achieve a state of readiness and quick response.

The *HHS Plan* is based on the knowledge that once a pandemic is triggered by the emergence of a novel influenza A virus subtype, it is a global event and all countries are at risk. The U.S. will work in concert with the World Health Organization and other international partners on containment and response activities abroad that also will assist the planning and monitoring for disease outbreaks in the U.S.

The *HHS Plan* includes an overview of the threat of pandemic influenza, a description of the relationship of this document to other Federal plans and an outline of key roles and responsibilities during a pandemic. In addition, the *HHS Plan* specifies needs and opportunities to build robust preparedness for and response to pandemic influenza. The preparations made for a pandemic today will have lasting benefits for the future.

Major components of the critical preparedness and ready response actions include:

- Intensifying surveillance and collaborating on containment measures – both international and domestic;
- Stockpiling of antivirals and vaccines and working with industry to expand capacity for production of these medical countermeasures;
- Creating a seamless network of Federal, state and local preparedness, including increasing health care surge capacity; and
- Developing the public education and communications efforts that will be so critical to keeping the public informed.

Strategies outlined in the *HHS plan* are based on an understanding of pandemics and influenza disease, and are guided by several overarching principles.

- Preparedness will require coordination among Federal, state and local government and partners in the private sector.
- An informed and responsive public is essential to minimizing the health effects of a pandemic and the resulting consequences to society.
- Domestic vaccine and production capacity sufficient to provide vaccine for the entire U. S. population is critical.
- Quantities of antiviral drugs sufficient to treat 25 percent of the U.S. population should be stockpiled.
- Sustained human-to-human transmission anywhere in the world will be the triggering event to initiate a pandemic response by the U.S.
- When possible and appropriate, basic public health measures will be employed to reduce person-to-person viral transmission and prevent or delay influenza outbreaks.
- At the start of a pandemic, vaccine, which will initially be in short supply, will be procured and distributed to state and local health departments for immunization of predetermined priority groups.
- At the onset of a pandemic, antiviral drugs from public stockpiles will be distributed to predetermined priority groups.

For a copy of the *HHS Pandemic Influenza Plan* visit: www.pandemicflu.gov.

The *Public Health Guidance for State and Local Partners (Part 2 of the HHS Plan)* provides 11 supplements on specific aspects of pandemic influenza planning and response..

Surveillance (Supplement 1) provides guidance on monitoring for influenza viruses and the health impact of influenza.

Laboratory Diagnostics (Supplement 2) provides guidance on the use of diagnostic tests to detect, characterize, and monitor novel subtypes of influenza, including avian influenza A (H5N1) and other viruses with pandemic potential. Occupational health issues for laboratory workers are also covered.

Healthcare Planning (Supplement 3) provides guidance for plans to include pandemic influenza surveillance, decision-making structures for responding to a pandemic, hospital communications, education and training, patient triage, clinical evaluation and admission, facility access, occupational health, distribution of vaccines and antiviral drugs, surge capacity, and mortuary issues. Planning for the provision of health care in non-hospital settings is also addressed.

Infection Control (Supplement 4) provides guidance on principles of infection control for limiting the spread of pandemic influenza including on the selection and use of personal protective equipment, hand hygiene and safe work practices, cleaning and disinfection of environmental surfaces, handling of laboratory specimens and post-mortem care. The guidance also covers infection control practices related to the management of infectious patients, the protection of persons at high-risk for severe influenza or its complications, and issues of occupational health.

Clinical Guidelines (Supplement 5) provides a guide related to clinical procedures for the initial screening, assessment, and management of patients as well as an assessment of locally available resources, such as rapid diagnostics, antiviral drugs and hospital beds.

Vaccine Distribution and Use (Supplement 6) provides guidance on the elements of a pandemic vaccination program, including planning for vaccine distribution, vaccination of priority groups, monitoring of adverse events, tracking of vaccine supply and administration, vaccine coverage and effectiveness studies, communications, legal preparedness, and training.

Antiviral Drug Distribution and Use (Supplement 7) provides guidance on the distribution and use of antiviral drugs for treatment and prophylaxis during an influenza pandemic. This section also covers the use of antiviral drugs in managing and containing infection with novel strains of influenza, including avian influenza A (H5N1) and human strains with pandemic potential.

Community Disease Control and Prevention (Supplement 8) provides guidance on the use of disease containment strategies to prevent or decrease transmission.

Managing Travel-Related Risks of Disease (Supplement 9) provides guidance on travel-related containment strategies that can be used during different phases of an influenza pandemic, ranging from distribution of health alert notices, to isolation and quarantine of new arrivals, to restriction or cancellation of nonessential travel.

Public Health Communications (Supplement 10) outlines key influenza pandemic risk communications concepts and addresses how CDC will provide timely and accurate information.

Workforce Support: Psychosocial Considerations and Information Needs (Supplement 11) focuses on psychosocial support services that will help workers manage emotional stress during an influenza pandemic and resolving related personal, professional, and family issues.

The *Public Health Guidance for State and Local Partners* is at: www.pandemicflu.gov.

United States Department of Health and Human Services



1.1. Planning Assumptions

- 1.1.1. Susceptibility to the pandemic influenza virus will be universal.
- 1.1.2. Efficient and sustained person-to-person transmission signals an imminent pandemic.
- 1.1.3. The clinical disease attack rate will likely be 30% or higher in the overall population during the pandemic. Illness rates will be highest among school-aged children (about 40%) and decline with age. Among working adults, an average of 20% will become ill during a community outbreak.
 - 1.1.3.1. Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection and develop immunity to subsequent infection.
- 1.1.4. Of those who become ill with influenza, 50% will seek outpatient medical care.
 - 1.1.4.1. With the availability of effective antiviral drugs for treatment, this proportion may be higher in the next pandemic.
- 1.1.5. The number of hospitalizations and deaths will depend on the virulence of the pandemic virus. Estimates differ about 10-fold between more and less severe scenarios. Two scenarios are presented based on extrapolation of past pandemic experience (Table 1). Planning should include the more severe scenario.
 - 1.1.5.1. Risk groups for severe and fatal infection cannot be predicted with certainty but are likely to include infants, the elderly, pregnant women, and persons with chronic medical conditions.
- 1.1.6. Rates of absenteeism will depend on the severity of the pandemic.
 - 1.1.6.1. In a severe pandemic, absenteeism attributable to illness, the need to care for ill family members, and fear of infection may reach 40% during the peak weeks of a community outbreak, with lower rates of absenteeism during the weeks before and after the peak.
 - 1.1.6.2. Certain public health measures (closing schools, quarantining household contacts of infected individuals, "snow days") are likely to increase rates of absenteeism.
- 1.1.7. The typical incubation period (interval between infection and onset of symptoms) for influenza is approximately 2 days.

- 1.1.8. Persons who become ill may shed virus and can transmit infection for up to one day before the onset of illness. Viral shedding and the risk of transmission will be greatest during the first 2 days of illness. Children usually shed the greatest amount of virus and therefore are likely to post the greatest risk for transmission.
- 1.1.9. On average, infected persons will transmit infection to approximately two other people.
- 1.1.10. In an affected community, a pandemic outbreak will last about 6 to 8 weeks.
- 1.1.11. Multiple waves (periods during which community outbreaks occur across the country) of illness could occur with each wave lasting 2-3 months. Historically, the largest waves have occurred in the fall and winter, but the seasonality of a pandemic cannot be predicted with certainty.

Table 1. Number of Episodes of Illness, Healthcare Utilization, and Death Associated with Moderate and Severe Pandemic Influenza Scenarios*

Characteristic	Moderate (1958/68-like)	Severe (1918-like)
Illness	90 million (30%)	90 million (30%)
Outpatient medical care	45 million (50%)	45 million (50%)
Hospitalization	865,000	9,900,000
ICU care	128,750	1,485,000
Mechanical ventilation	64,875	745,500
Deaths	209,000	1,903,000

*Estimates based on extrapolation from past pandemics in the United States. Note that these estimates do not include the potential impact of interventions not available during the 20th century pandemics.