West Virginia Region Two
Bundle Team

PANDEMIC INFLUENZA RESPONSE PLAN

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Pandemic Influenza Plan

I. Introduction

Influenza has been with us for centuries. It causes severe illness and death every winter in North America. A novel strain of the influenza virus, to which the population has no immunity, emerges three or four times a century.

Three influenza pandemics occurred in the 20th century – the Spanish (1918), Asian (1957) and Hong Kong (1968) pandemics.

Several features set pandemic influenza apart from other public health emergencies or community disasters:

- Influenza pandemics are expected but unpredictable and arrive with very little warning.
- Outbreaks can be expected to occur simultaneously throughout the U. S., preventing shifts in human and material resources that usually occur in the response to other disasters. Localities should be prepared to rely on their own resources to respond. The effect of influenza on individual communities will be relatively prolonged (weeks to months) in comparison to other types of disasters.
- Because of the high degree of infectiousness of pandemic influenza, the number of persons affected will be high.
- Health care workers and other first responders may be at higher risk of exposure and illness than the general population, further straining the health care system.
- Effective prevention and therapeutic measures, including vaccine and antiviral agents, will be delayed and in short supply.
- Widespread illness in the community could increase the likelihood of sudden and potentially significant shortages of personnel in other sectors who provide critical public safety services.

II. Purpose

The purpose of the Region Two Pandemic Influenza Response Plan is to supplement the existing frameworks established within each county for the detection, response, and control of an influenza pandemic. The plan has five main components: surveillance, epidemiological investigation, strategies to limit transmission, coordination of pharmaceutical distribution and public education/communication. This plan is designed to be a component of the Regional All Hazards, Epidemiological and Medical Counter Measures plans.

III. Assumptions

As the pandemic is likely to occur in waves, self-sufficiency will need to be sustained over a prolonged period of time

This plan is based on these key assumptions:

- At the time of the pandemic, decisions and actions of international and federal levels of government will likely influence the implementation of this plan.
- Efficient and sustained person-to-person transmission signals an imminent Pandemic
- Susceptibility to the pandemic influenza subtype will be universal
- 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
- The number of hospitalizations and deaths will depend on the virulence of the pandemic virus
- 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
- 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.
- The typical incubation period (interval between infection and onset of symptoms) for influenza is approximately 2 days. 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
- On average, infected persons will transmit infection to approximately two other people
- In an affected community, a pandemic outbreak will last about 6 to 8 weeks
- 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
- Unlike most other emergency scenarios, a pandemic will not be a localized phenomenon and resources of all regions will be simultaneously strained. Therefore, local health departments within Region Two must be able to demonstrate a large amount of self-sufficiency by sharing resources. The Region Two Bundle Team will coordinate and share available personnel and material resources in a coordinated effort to respond to a pandemic influenza event.
- Effective prevention and therapeutic measures, including vaccine and antiviral agents, will be delayed and in short supply.

A. Regional Roles

- Execution of pandemic influenza response drill
- Sharing of resources (supplies, personnel and etc.).

- Unified communication to public and providers
- Coordination across state and regional boundaries of needed resources

B. Local Roles

Local health departments will be responsible for the coordination of the pandemic response within their jurisdiction. Specific areas of responsibility include but are not limited to the following:

- Communication of information to area providers and stakeholders on Phases of Pandemic Influenza (see Risk Communication Plan)
- Receiving/dispensing State Medical Counter Measures vaccine and antiviral medications (refer to Medical Counter Measures Response Plan).
- Implementation of pandemic influenza drills
- Coordination of pharmaceutical distribution within regional jurisdictions
- Community education and referrals to appropriate agencies

IV. Pandemic Phases

Pandemic influenza response activities are outlined by pandemic phases, a classification system developed by the World Health Organization (WHO) in 2005. Those phases are in the table below:

Phase	Definition
Interpandemic Period	
1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.
2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.
Pandemic Alert Period	
3	Human infection(s) with a new subtype but no human-to-human spread or at most rare instances of spread to a close contact
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

5	Larger cluster(s) but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk)
Pandemic Period	
6	Pandemic phase: increased and sustained transmission in the general population
Postpandemic Period – Return to the Interpandemic Period (Phase 1)	

Notes: The distinction between **Phases 1** and **2** is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction is based on various factors and their relative importance according to current scientific knowledge. Factors may include pathogencity 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, and other scientific parameters.

The distinction among **Phases 3**, **4,** and **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), and other scientific parameters.

Figure A. Pandemic Severity Index

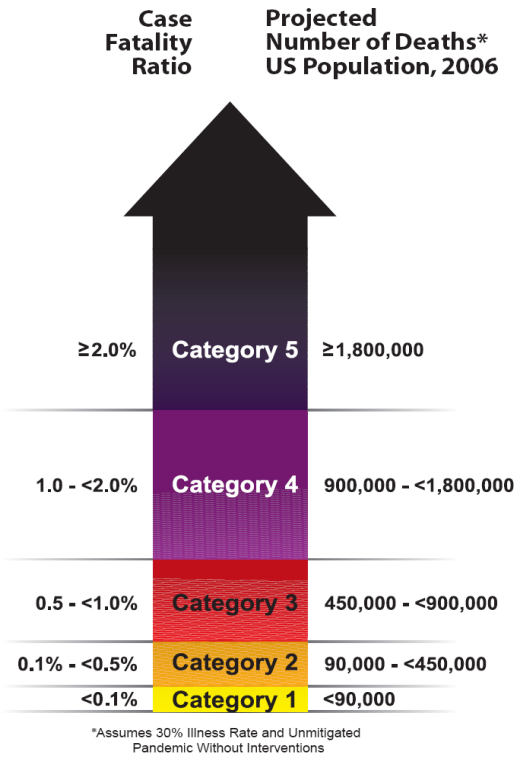

Table1: Pandemic Severity Index

Pandemic Severity Index	WHO Phase 6, U.S. Government stage 3*	WHO Phase 6, U.S. Government Stage 4† and First human case in the United States	WHO Phase 6, U.S. Government Stage 5§ and First laboratory confirmed cluster in state or region¶
1	Alert	Standby	Activate
2 and 3	Alert	Standby	Activate
4 and 5	Standby**	Standby/Activate††	Activate

Alert: Notification of critical systems and personnel of their impending activation.
Standby: Initiate decision-making processes for imminent activation, including mobilization of resources and personnel.
Activate: Implementation of the community mitigation strategy.
*Widespread human outbreaks in multiple locations overseas.
†First human case in North America.
§Spread throughout the United States.
¶Recommendations for regional planning acknowledge the tight linkages that may exist between cities and metropolitan areas that are not encompassed within state boundaries.
**Standby applies. However, Alert actions for Category 4 and 5 should occur during WHO Phase 5, which corresponds to U.S. Government Stage 2.
††Standby/Activate Standby applies unless the laboratory-confirmed case cluster and community transmission occurs within a given jurisdiction, in which case that jurisdiction should proceed directly to Activate community interventions defined in Table 2.

A. Pre-Pandemic Phase

At this stage there is no evidence that a pandemic is imminent; however, it is an opportunity to establish basic preparedness strategies and to "sensitize" the community to the issue. Although the declaration of a pandemic will not occur until cases are confirmed, a detailed account of the Pre-Pandemic Phase is included as a critical component of the overall management of the emergency.

1. Pre-Pandemic Phase: Surveillance

Each local health department within Region Two, in conjunction with local stakeholders, will establish surveillance procedures for the early identification of a novel virus in the community. At a minimum, surveillance systems will include:

a. Maintaining sentinel physician program which is reported to the Centers for Disease Control

b. Attendance monitoring in schools during the school year

c. Monitor respiratory outbreaks in long-term care settings and schools

d. Monitor Bio Sense data for level of influenza and dissemination of data from the West Virginia Division of Disease Epidemiology as well as the Regional Epidemiologist.

Each local health department within Region Two is responsible for maintaining the following standards of practice to ensure early detection and response to local conditions:

a. Reinforcing the requirement for prompt reporting of reportable diseases with practitioners

b. Establishing communications and data analysis system with sentinel physicians regarding surveillance results

c. Defining baseline attendance rates during the school year that would aid in heightened surveillance

d. Maintaining a directory of current fax numbers for physicians, acute and long-term care settings, nursing and retirement homes, and community nursing services for prompt notification of positive influenza results

e. Maintaining training materials for nasopharyngeal swab collection, e.g., video, diagrams, instructions, indications, etc.

f. Maintaining current medical directive for nasopharyngeal swab collection, testing procedures and equipment, such as rapid tests for viruses

2. Pre-Pandemic Phase: Communication

The Region Two Bundle Team will follow the West Virginia State guidelines for Risk Communication during the pre-pandemic phase.

The local health departments within Region Two will use and maintain a communication strategy for the dissemination of timely and accurate information as part of the Pandemic Influenza Plan.

3. Pre-Pandemic Phase: Antiviral/Vaccine Administration

All local health departments within Region Two are responsible to ensure the distribution of available vaccines.

4. Pre-Pandemic Phase: Emergency Measures

All local health departments within Region Two will collaborate and develop a contingency plan with local stakeholders, including a first response agency that identifies roles and responsibilities in managing a pandemic.

B. Pandemic Phase

The pandemic phase begins when a novel influenza virus begins to cause widespread illness somewhere in the world. The pandemic phase may be prolonged, depending on the number of waves and the interval between the waves.

1. Pandemic Phase: Surveillance

Once the onset of an influenza pandemic or threat is confirmed, additional surveillance activities will be implemented. All local health departments will conduct the following activities. These could include, but are not limited to, the following:

a. Close monitoring of increases in influenza like illnesses in coordination with the Regional Epidemiologist
b. Increased monitoring of influenza activity levels in neighboring jurisdictions
c. Enhanced surveillance for human cases returning from areas with human to human transmission
d. Increased monitoring of hospitals for influenza activity
e. Broadening of surveillance to include day cares, long term health facilities, and occupational sites
f. Expanding surveillance to include individuals who have been hospitalized with unexplained pneumonia or other severe respiratory illness
g. Refining syndromic surveillance to include the clinical signs and symptoms of the pandemic influenza-infected patients to maximize detection and identification of new cases

Additional surveillance measures will continue until the influenza pandemic is under control or has ceased.

2. Pandemic Phase: Epidemiological Investigation

All epidemiological investigations pertaining to an influenza pandemic will be conducted according to the guidelines found within the local/regional **Epidemiological Response Plan**.

3. Pandemic Phase: Communication

Upon the declaration of an influenza pandemic, the need for accurate, relevant and timely information to the general public, media and health care providers becomes significant. All local health departments within Region Two will continue to follow their **Local/Regional Risk Communication Plans.**

4. Non-Pharmaceutical Interventions

The use of non-pharmaceutical interventions for mitigating a community-wide epidemic has three major goals:

1. Delay the exponential growth in incident cases and shift the epidemic curve to the right in order to "buy time" for production and distribution of a well-matched pandemic strain vaccine
2. Decrease epidemic peak
3. Reduce the total number of incident cases, thus reducing community morbidity and mortality (based on Pandemic Severity Index in Figure A)

Ultimately, reducing the number of persons infected is a primary goal of pandemic planning. NPIs may help reduce influenza transmission by reducing contact between sick and uninfected persons. Reducing the number of persons infected will, in turn, lessen the need for healthcare services and minimize the impact of a pandemic on the economy and society.

Pre Pandemic planning for use of NPI should be directed to lessen the transition time between *alert, standby* and *activate* in order to reduce the speed of transmission. Use of NPI will reduce the speed of transmission which may affect the amount of time that health departments are allotted in each mode as well as the time it takes to implement the intervention once the decision has been made to activate.

These triggers for implementation of NPI will be most useful early in a pandemic and are summarized in the table below. This table provided by the CDC provides recommendations arrayed by pandemic severity index (provided in Table 1) and US government stage step-wise escalation of action from *alert,* to *standby,* and then to *activate*.

5. Pandemic Phase: Antiviral/Vaccine

It is unlikely that vaccine will be available until 6 –8 months after the pandemic has been declared. However, limited quantities of antiviral agents, if proven effective against the particular strain of virus, may be available immediately.

The Regional/Local SNS (Strategic National Stockpile) Plans for each Local Health Department within Region Two will be followed for distribution of

antiviral, influenza and pneumococcal vaccines. The distribution of medications will follow **DHHS guidelines (refer to Appendix B)**.

6. Pandemic Phase: Strategies to Limit Transmission

The two main strategies for the prevention of disease transmission during a pandemic are:

1. Decreasing contact between infected and uninfected persons; and
2. Decreasing the probability that contact will result in infection if contact occurs.

To slow and prevent the spread of disease during a pandemic the local health departments within Region Two will provide information to the public regarding infection control measures such as proper hand hygiene and cough etiquette, etc. Persons at high risk for complications of influenza may be encouraged to avoid public gatherings (e.g., movies, religious services, public meetings) and other public areas (e.g., food stores, pharmacies) when pandemic influenza is in the community. Although the benefit of wearing masks by well persons in public settings has not been established mask use may be recommended for persons who are at high risk for complications of influenza and those who are unable to avoid close contact with others or must travel for essential reasons such as seeking medical care.

Containment measures such as isolation or quarantine may also be necessary to limit contact between infected and uninfected persons. These measures can be viewed in Table 2 – Summary of the Community Mitigation Strategy by Pandemic Severity.

Table 2: Summary of the Community Mitigation Strategy by Pandemic Severity

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

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

In extreme circumstances quarantine may be used to contain the spread of disease. Quarantine is a legally enforceable action that restricts the movement or activities of persons who are not ill but who are believed to have been exposed to infection for the purpose of preventing the transmission of disease. County and municipal boards of health are granted the power to establish quarantine in **Section 16-3-2 of the WV Legislative code (see Appendix A**). Implementation of this measure is unlikely to prevent the spread of disease except in uncommon or unique circumstances (such as in a community able to be completely self-sufficient) and in the early stages of a pandemic. Therefore, it would not be implemented unless a community is in a setting where it is likely to be applied effectively with a well planned approach.

C. Recovery Phase

Each local health department within Region Two will refer to their local Pandemic Influenza Response Plan and will utilize community partners as available. Regionally, it is important to evaluate the Pandemic Influenza Plan in preparation for subsequent waves of illness, to return services and infra-structures to normal levels as quickly as possible and to address long term health needs of the community

D. Termination of the Pandemic Influenza Plan

Each local health department within Region Two will be responsible for following the recommendations set by the Bureau for Public Health Commissioner or alternate for termination of the Pandemic Influenza Plan when:

1. The influenza pandemic is declared over by the Centers for Disease Control
2. Local impact has diminished to a level where normal services may be resumed

E. Evaluation and Testing Of the Pandemic Influenza Plan

This Plan and related strategies will be tested annually through table-top or other simulation exercises. Revisions to the Plan shall be carried out annually or as needed.

Appendix A:

§16-3-2. Powers of county and municipal boards of health to establish quarantine; penalty for violation.

The county board of health of any county may declare quarantine therein, or in any particular district or place therein, whenever in their judgment it is necessary to prevent the spread of any communicable or infectious disease prevalent therein, or to prevent the introduction of any communicable or infectious disease prevailing in any other state, county or place, and of any and all persons and things likely to spread such infection. As soon as such quarantine is established such board shall, in writing, inform the director of health thereof, the duty of whom it shall be to ascertain, as soon as practicable, the necessity therefore, if any exists, and if the state director of health finds that no such necessity exists, the same shall, by the said director, be declared raised. The said county board of health shall have power and authority to enforce such quarantine until the same is raised as aforesaid, or by themselves, and may confine any such infected person, or any person liable to spread such infection, to the house or premises in which he resides, or if he has no residence in the county, at a place to be provided by them for the purpose; and if it shall become necessary to do so, they shall summon sufficient guard for the enforcement of their orders in the premises. Every person who shall fail or refuse to comply with any order made by such board under this section, and every person summoned as such guard who shall, without a lawful excuse, fail or refuse to obey the orders and directions of such board in enforcing said quarantine, shall be guilty of a misdemeanour, and, upon conviction thereof, shall be fined not less than twenty-five nor more than two hundred dollars. In cases of emergency or actual necessity, and when the county commission or corporate authorities are from any cause unable to meet or to provide for the emergency or the necessity of the case, all actual expenditures necessary for local and county quarantine, as provided for in this section, shall be certified by the county board of health to the county commission, and the whole, or as much thereof as the said commission may deem right and proper, shall be paid out of the county treasury. The board of health of any city, town or village shall have, within the municipality, the same powers and perform the same duties herein conferred upon and required of the county board of

health in their county. So far as applicable the provisions of this section shall apply to any quarantine established and maintained by the state director of health pursuant to section one of this article.

Appendix B:

HHS Pandemic Influenza Plan
Appendix D: NVAC/ACIP Recommendations for Prioritization of Pandemic Influenza Vaccine and NVAC Recommendations on Pandemic Antiviral Drug Use

Advisory Committee recommendations are presented in this report to provide guidance for planning purposes and to form the basis for further discussion of how to equitably allocate medical countermeasures that will be in short supply early in an influenza pandemic.

Two federal advisory committees, the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC), provided recommendations to the Department of Health and Human Services on the use of vaccines and antiviral drugs in an influenza pandemic.

Although the advisory committees considered potential priority groups broadly, the main expertise of the members was in health and public health. The primary goal of a pandemic response considered was to decrease health impacts including severe morbidity and death; secondary pandemic response goals included minimizing societal and economic impacts. However, as other sectors are increasingly engaged in pandemic planning, additional considerations may arise. The advisory committee reports explicitly acknowledge the importance of this, for example highlighting the priority for protecting critical components of the military. Finally, HHS has recently initiated outreach to engage the public and obtain a broader perspective into decisions on priority groups for pandemic vaccine and antiviral drugs. Though findings of the outreach are preliminary, a theme that has emerged is the importance of limiting the effects of a pandemic on society by preserving essential societal functions.

Based on this guidance, state, local, and tribal implementation plans should be developed to 1) include more specific definitions of the priority groups (e.g., which functions are indeed critical to maintaining continuity) and their size; 2) define how persons in these groups will be identified; and 3) establish strategies for effectively and equitably delivering vaccines and antiviral drugs to these populations. The committees acknowledged that further work is needed, in particular, to identify the functions that must be preserved to maintain effective services and critical infrastructures and to identify the groups that should be protected to achieve this goal. The committees also acknowledge that the specific composition of some priority groups may differ between states or localities based on their needs and that priority groups should be reconsidered when a pandemic occurs and information is obtained on its epidemiology and impacts.

On July 19, 2005, ACIP and NVAC voted unanimously in favor of the vaccine priority recommendations summarized in Table D-1. These votes followed deliberations of a joint Working Group of the two committees, which included as consultants representatives of public and private

sector stakeholder organizations and academic experts. There was limited staff level participation from DoD, DHS, and VA. Several ethicists also served as consultants to the Working Group.

A. Critical assumptions

The recommendations summarized in Table D-1 were based on the following critical assumptions:

- Morbidity and mortality. The greatest risk of hospitalization and death—as during the 1957 and 1968 pandemics and annual influenza—will be in infants, the elderly, and those with underlying health conditions. In the 1918 pandemic, most deaths occurred in young adults, highlighting the need to reconsider the recommendations at the time of the pandemic based on the epidemiology of disease.

- Healthcare system. The healthcare system will be severely taxed if not overwhelmed due to the large number of illnesses and complications from influenza requiring hospitalization and critical care. CDC models estimate increases in hospitalization and intensive care unit demand of more than 25% even in a moderate pandemic.

- Workforce. During a pandemic wave in a community, between 25% and 30% of persons will become ill during a 6 to 8 week outbreak. Among working-aged adults, illness attack rates will be lower than in the community as a whole. A CDC model suggests that at the peak of pandemic disease, about 10% of the workforce will be absent due to illness or caring for an ill family member. Impacts will likely vary between communities and work sites and may be greater if significant absenteeism occurs because persons stay home due to fear of becoming infected.

- Critical infrastructure. Only limited information was available from which to assess potential impacts on critical infrastructure sectors such as transportation and utility services. Because of changes in business practices and the complexity of networks, information from prior pandemics was not considered applicable.

- Vaccine production capacity. The U.S.-based vaccine production capacity was assumed at 3 to 5 million 15 µg doses per week with 3 to 6 months needed before the first doses are produced. Two doses per person were assumed to be required for protection. Subsequent results of an NIH clinical trial of influenza A (H5N1) vaccine suggest that higher doses of antigen will be needed to elicit a good immune response; thus, the assumptions made by the committee could potentially substantially exceed the amount of vaccine that would be produced.

Table D-1: Vaccine Priority Group Recommendations*

Tier	Subtier	Population	Rationale
1	A	• Vaccine and antiviral manufacturers and others essential to manufacturing and critical support (~40,000) • Medical workers and public health workers who are involved in direct patient contact, other support services essential for direct patient care, and vaccinators (8-9 million)	• Need to assure maximum production of vaccine and antiviral drugs • Healthcare workers are required for quality medical care (studies show outcome is associated with staff-to-patient ratios). There is little surge capacity among healthcare sector personnel to meet increased demand
	B	• Persons > 65 years with 1 or more influenza high-risk conditions, not including essential hypertension (approximately 18.2 million) • Persons 6 months to 64 years with 2 or more influenza high-risk conditions, not including essential hypertension (approximately 6.9 million) • Persons 6 months or older with history of hospitalization for pneumonia or influenza or other influenza high-risk condition in the past year (740,000)	• These groups are at high risk of hospitalization and death. Excludes elderly in nursing homes and those who are immunocompromised and would not likely be protected by vaccination
	C	• Pregnant women (approximately 3.0 million) • Household contacts of severely immunocompromised persons who would not be vaccinated due to likely poor response to vaccine (1.95 million with transplants, AIDS, and incident	• In past pandemics and for annual influenza, pregnant women have been at high risk; vaccination will also protect the infant who cannot receive vaccine. • Vaccination of household

		cancer x 1.4 household contacts per person = 2.7 million persons) • Household contacts of children <6 month olds (5.0 million)	contacts of immunocompromised and young infants will decrease risk of exposure and infection among those who cannot be directly protected by vaccination
	D	• Public health emergency response workers critical to pandemic response (assumed one-third of estimated public health workforce=150,000) • Key government leaders	• Critical to implement pandemic response such as providing vaccinations and managing/monitoring response activities • Preserving decision-making capacity also critical for managing and implementing a response
2	A	• Healthy 65 years and older (17.7 million) • 6 months to 64 years with 1 high-risk condition (35.8 million) • 6-23 months old, healthy (5.6 million)	• Groups that are also at increased risk but not as high risk as population in Tier 1B
	B	• Other public health emergency responders (300,000 = remaining two-thirds of public health work force) • Public safety workers including police, fire, 911 dispatchers, and correctional facility staff (2.99 million) • Utility workers essential for maintenance of power, water, and sewage system functioning (364,000) • Transportation workers transporting fuel, water, food, and medical supplies as well as public ground public transportation (3.8 million) • Telecommunications/IT for essential network operations and maintenance (1.08 million)	• Includes critical infrastructure groups that have impact on maintaining health (e.g., public safety or transportation of medical supplies and food); implementing a pandemic response; and on maintaining societal functions
3		• Other key government health decision-makers (estimated number not yet determined) • Funeral directors/embalmers (62,000)	• Other important societal groups for a pandemic response but of lower priority
4		• Healthy persons 2-64 years not included in above categories (179.3	• All persons not included in other groups based on objective to vaccinate all

		million)	those who want protection

*The committee focused its deliberations on the U.S. civilian population. ACIP and NVAC recognize that Department of Defense needs should be highly prioritized. DoD Health Affairs indicates that 1.5 million service members would require immunization to continue current combat operations and preserve critical components of the military medical system. Should the military be called upon to support civil authorities domestically, immunization of a greater proportion of the total force will become necessary. These factors should be considered in the designation of a proportion of the initial vaccine supply for the military.

Other groups also were not explicitly considered in these deliberations on prioritization. These include American citizens living overseas, non-citizens in the U.S., and other groups providing national security services such as the border patrol and customs service.