



**At-Risk Populations Project
Federal and National-Level Document
Review**

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Executive Summary

In August, 2007, the Association of State and Territorial Health Officials (ASTHO) entered into a cooperative agreement with the Centers for Disease Control and Prevention (CDC) to develop evidence-based, model guidance on the protection of at-risk populations during an influenza pandemic. As part of the project, ASTHO performed an extensive review of relevant publications and plans, convened subject matter expert-based drafting work groups, and held stakeholder engagement meetings to provide key input during the drafting process. The draft guidance was reviewed by public health practitioners, finalized and disseminated to state and local public health jurisdictions in late June, 2008.

In accordance with this cooperative agreement, the *At-Risk Populations Project Federal and National-Level Document Review* marked the commencement of a series of data-gathering tools used to develop essential guidance for at-risk populations. Documents issued by federal and national agencies were reviewed for their level of discussion on preparing and planning for at-risk populations. Certain documents from the Department of Health and Human Services, the Homeland Security Council, CDC, Congress, and the White House were considered primary federal guidance – documents that provide the essential planning guidance for influenza pandemic preparedness and response. Additional documents from these agencies and others, while not considered primary documents, were reviewed because of their applicability to the project.

It is evident that extensive commitment to the needs of at-risk populations is required in order to develop comprehensive preparedness and response plans. There has been an increasing progression of acknowledgment of the need to provide specific strategies for at-risk populations; however, very little has been written to provide responders with the tools they need to effectively assist at-risk populations during an emergency.

It was observed during the process of this literature review is that there is no common terminology used to address these various sets of populations that need extra attention in planning and preparedness efforts. Federal agencies currently use different terms and apply different meanings to these terms, creating a confusing array of recommendations throughout the literature.

The following sections of this report document the extent to which federal and national-level guidance addresses at-risk populations, provides a summary of review, and lays the groundwork for implementation of the full At-Risk Populations Project.

Background and Introduction

The United States Government has made a concerted effort to plan and prepare for the next influenza pandemic, an event that subject matter experts agree is inevitable. The World Health Organization (WHO) has documented increasing bird and human infections with a highly pathogenic strain of H5N1 influenza since 1996, first in China and most recently in Indonesia.¹ The spread of these infections to other countries, and the expanding number of human deaths from this infection – up from four in 2003 to a total of 206 as of November, 2007 – has invigorated health officials worldwide to focus their planning efforts on preparing their citizens for an influenza pandemic.

In November 2005, the White House Homeland Security Council (HSC) issued the *National Strategy for Pandemic Influenza* to address federal intentions to “prepare, detect, and respond to a pandemic.”² Concurrently, the United States Department of Health and Human Services (HHS) issued a revised *HHS Pandemic Influenza Plan* to provide “a blueprint from which to prepare for the challenges that lie ahead of us.”³ In May of 2006, the HSC issued the *National Strategy for Pandemic Influenza Implementation Plan* that describes “300 critical actions...to address the threat of pandemic influenza.”⁴ These reports were followed by the *Pandemic and All-Hazards Preparedness Act* (July 2006), the *HHS Pandemic Influenza Plan Implementation Plan* (November 2006), and subsequent progress reports, updates, and plans issued by the HSC, HHS, and states and local health departments. With each new plan and guidance document, lessons learned and new issues were added and refined.

CDC has worked to provide detailed planning guidance for state and local health agencies by issuing documents, such as the *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States – Early, Targeted, Layered Use of Nonpharmaceutical Interventions* (February 2007). During this time, CDC continued to revise their *CDC Influenza Pandemic Operation Plan (OPLAN)*, with the most recent version being published October 11, 2007, to enhance their internal response capabilities.

Throughout the course of the evolving focus on pandemic influenza, it has become apparent that extra planning is needed for managing at-risk populations. President George W. Bush issued an Executive Order in July, 2004 to “strengthen emergency preparedness with respect to individuals with disabilities.”⁵ In February 2007, CDC developed a draft version of the *Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency*, which was targeted for dissemination in the *HHS Pandemic Influenza Plan Implementation Plan*. This document was formulated to provide support to public health professionals in their planning and preparedness efforts for populations that need extra assistance in public health emergencies.⁶

The documents cited above, and others cited subsequently in this paper, have been developed to help the United States’ responders manage a potentially catastrophic public health emergency. The pages that follow provide an overview of these key documents in an effort to synthesize and summarize the overarching guidelines for pandemic preparedness specifically for at-risk populations, and to provide a synopsis of challenges and critical gaps in current federal and national plans, policies, and guidelines.

Literature Review

The *At-Risk Populations Project Federal and National-Level Document Review* serves as an assessment of federal and national level guidance documents and plans that currently exist for pandemic influenza. These documents have been vetted, summarized, and synthesized to identify the availability of federal guidance for at-risk populations, and to identify critical gaps in planning and guidance for these populations. In keeping with the objective for the CDC/ASTHO cooperative agreement, the following considerations and factors were used as key areas of focus during the reviewing process:

Considerations (Methods to protect at-risk populations)	Factors (Descriptors that put people at risk)
<ul style="list-style-type: none">• <i>Infection control</i>• <i>Social distancing</i>• <i>School closure</i>• <i>Cessation of mass gatherings</i>• <i>Disruptions of essential community services</i>• <i>Isolation</i>• <i>Quarantine</i>• <i>Community mitigation strategies</i>• <i>Distribution of antivirals and vaccine</i>	<ul style="list-style-type: none">• <i>Economically disadvantaged</i>• <i>Socially, culturally, geographically isolated</i>• <i>Particularly susceptible to injury or death because of physical, cognitive, or sensory disability or disease susceptibility</i>• <i>Aged</i>• <i>Limited in language competence</i>• <i>Limited access to services because of discrimination</i>

While the list of documents reviewed in this paper is not exhaustive, it encompasses the key documents that have been published by the major federal and national agencies and organizations involved in pandemic preparedness, including HHS, CDC, HSC, and others. These documents form the essential framework to guide states' preparedness planning, including pandemic preparedness.

The terms "at-risk," "vulnerable" and "special needs" have all been used to describe similar groups of individuals in different agency documents. In keeping with the recent federal guidance to use these terms interchangeably, "at-risk" will be the primary term used in this paper for referring to populations who may need extra assistance in an influenza pandemic. In the following section, "vulnerable" and "special needs" will be used when these terms were used in a specific document, but will hold the same meaning as "at-risk".

Data from the review process are divided into the following two sections: "Current Planning Components and Guidance" and "Challenges and Critical Gaps in Planning and Guidance" in an effort to highlight the most pertinent information.

Current Planning Components and Guidance for At-Risk Populations

Primary Federal Documents

The following documents are considered to be the primary federal documents for the purposes of this paper. These documents provide principal guidance and federal responsibilities for overall management of an influenza pandemic response. Their incorporation of preparedness planning for at-risk populations is summarized below.

- *National Strategy for Pandemic Influenza (November 2005)*
- *HHS Pandemic Influenza Plan (November 2005)*
- *National Strategy for Pandemic Influenza: Implementation Plan (May 2006)*
- *Pandemic and All-Hazards Preparedness Act (18 July 2006)*
- *Pandemic Influenza Implementation Plan (November 2006)*
- *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States – Early, Targeted, Layered Use of Nonpharmaceutical Interventions (February 2007)*
- *Pandemic Planning Update IV (18 July 2007)*
- *National Strategy for Pandemic Influenza Implementation Plan One Year Summary (July 2007)*
- *Homeland Security Presidential Directive 21 (18 October 2007)*
- *Pandemic and All-Hazards Preparedness Act, Progress Report (November 2007)*

The *National Strategy for Pandemic Influenza* states that the Nation’s primary goals for guiding preparedness and response are: (1) stopping, slowing, or otherwise limiting the spread of a pandemic to the United States; (2) limiting the domestic spread of pandemic, and mitigating disease, suffering and death; and (3) sustaining infrastructure and mitigating impact to the economy and the functioning of society.² The only mention of any “at-risk” populations is in reference to groups of people who are likely to be at most risk of exposure, e.g. first responders. This same terminology is used in Part 1 of the *HHS Pandemic Influenza Plan*.

In “Part 2 – Public Health Guidance for State and Local Partners” of the *HHS Pandemic Influenza Plan*, there are 11 supplements that provide specific guidance and recommendations for various aspects of pandemic planning (e.g. surveillance, infection control, communications, etc).³ Within these supplements, vulnerable populations and people with special needs are mentioned throughout the document as populations who are overseen by the Centers for Medicare and Medicaid Services, and the Administration for Children and Families. It is noted that health care workers who provide services to vulnerable populations should be included as planning partners. The plan also states that there may be an increased risk of adverse side effects from antiviral medications and that a “demographic picture of the community (p S11-12)” should be identified to better assist vulnerable populations. The plan recommends providing materials for people with special needs such as “non-English speaking populations, difficult-to-reach communities, and persons living in institutional settings (p S10-4).”

In the *National Strategy for Pandemic Influenza Implementation Plan* the term at-risk is reserved for referring to countries as “an unaffected country with insufficient medical, public health, or veterinary capacity to prevent, detect, or contain influenza with pandemic potential (p 205).”⁴ The *Implementation Plan* refers to vulnerable populations as children, the elderly, and the chronically ill, when discussing using vaccines to enhance immunity. The document mentions these populations in the section “Faith-Based Organizations and Community-Based Organizations.” It is suggested that these organizations “help fill the needs of vulnerable populations” and that they have “awareness of the most vulnerable populations (p 177).” In Appendix A, “Guidance for Schools (K-12),” vulnerable populations are mentioned in section 1.8 in reference to schools being used in support of the local health department by being a location at which vulnerable populations can receive meals as a community service.

The *Pandemic and All-Hazards Preparedness Act (PAHPA)*, enacted in December 2006, as part of the preparedness goals of the National Health Security Strategy, provides a sub-section specifically about at-risk individuals (Sec. 103.3.b.4).⁷ The bill states that the public health and medical needs of at-risk individuals need to be considered when addressing preparedness goals, and the definition of at-risk individuals within the bill means “children, pregnant women, senior citizens, and other individuals who have special needs in the event of a public health emergency, as determined by the Secretary [of HHS].” PAHPA also requires that at-risk individuals be considered when performing the annual review of the Strategic National Stockpile. One requirement for receiving funds is for eligible grantees to develop all-hazards and pandemic influenza plans that take into account at-risk individuals. Revisions to wording in the Public Health Service Act are made in PAHPA to replace the term “children” with “at-risk individuals” in the paragraph heading “Children and Terrorism.” Section 304, “Core Education and Training” suggests taking into account the public health and medical needs of at-risk populations.

One year after the publication of the *HHS Pandemic Influenza Plan*, the *Pandemic Influenza Implementation Plan* was published to detail the agency’s strategy in fulfilling the requirements laid out in the *HHS Pandemic Influenza Plan*. Key statements in the *Implementation Plan* include: HHS will coordinate with other federal agencies to develop a strategy for shifting priorities for at-risk populations; special needs populations are considered in quarantine planning; and Federal Medical Stations have provision for caring for special needs individuals.⁸ The *Implementation Plan* also includes two measures of performance for HHS pandemic planning activities that include developing guidance on assisting vulnerable populations and disseminating such guidance; and disseminating the draft version of CDC’s *Public Health Workbook to Define, Locate and Reach Special, Vulnerable and At-Risk Populations in an Emergency*.

In an effort to plan for minimizing the spread of an influenza pandemic, CDC released in February 2007, the *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States – Early, Targeted, Layered Use of Nonpharmaceutical Interventions*. This document provides a preliminary strategy for using nonpharmaceutical practices in combination with the use of antiviral medications to reduce the impact of an influenza pandemic.⁹ The document acknowledges that community mitigation strategies may be more difficult for vulnerable populations to implement or to recover from, particularly financially, and that these populations should be pre-identified to better assist them. The *Interim Pre-pandemic Planning Guidance* discusses vulnerable populations in depth in the section on voluntary home isolation and quarantine. The concern is that many of these people will not have someone to help take care of them if they became sick and are expected to stay at home. The disruption of school meals is discussed as an issue; approximately two million children would have difficulty obtaining meals if the school meal system were disrupted in an influenza pandemic. It is recommended that ongoing public engagement occur for planning purposes, particularly with vulnerable populations. The document provides six appendices tailored to specific groups to help them to prepare for an influenza pandemic. These appendices include recommendations for paying particular attention to the needs of vulnerable populations. Of note in this document is the prominence and concerted effort given to public engagement and incorporation of the public’s comments into the final draft.

Since the publication of the *HHS Pandemic Influenza Plan*, HHS has issued four updates, the latest of which – *Pandemic Planning Update IV* – was published in July 2007. The document

focuses predominantly on monies HHS has spent on pandemic preparedness.¹⁰ Much of the funding has gone to increasing surveillance capabilities; developing new vaccine technologies and new antiviral medications; and stockpiling antiviral medications. The *Pandemic Planning Update IV* also states, “HHS provided another \$250 million to intensify ongoing pandemic preparedness exercises. These include incorporating community mitigation measures, containment plans, the medical surge capacity to treat influenza victims, and seasonal influenza vaccinations to test mass inoculation capabilities (p 11).” They do not mention preparedness for any at-risk individuals.

National Strategy for Pandemic Influenza Implementation Plan One Year Summary provides an update of actions taken since the publication of the *National Strategy for Pandemic Influenza Implementation Plan*. The *National Strategy for Pandemic Influenza Implementation Plan One Year Summary* focuses heavily on vaccine and antiviral medication production, and increasing surveillance capabilities to help reduce the spread and impact of an influenza pandemic. Actions completed since the release of the *Strategy* include making the federal government’s pandemic influenza information website, www.pandemicflu.gov, available in English, Spanish, Chinese, and Vietnamese; and moving some essential government services for low-income citizens to an electronic-based system.¹¹ This move will allow families to receive the maximum allowable benefits under the program to help compensate for the loss of free and reduced price meals that they normally receive at schools, which may be closed due to a pandemic. The *Summary* also states, “Minimizing the negative impact will require communities to undertake appropriate planning and exercises to pre-identify vulnerable populations and persons at-risk and to develop population-specific strategies (p 30).”

Homeland Security Presidential Directives cover a range of issues related to homeland security, the most recent of which is *Homeland Security Presidential Directive 21(HSPD-21)* which establishes a National Strategy for Public Health and Medical Preparedness.¹² This directive considers four critical components of public health and medical preparedness: biosurveillance, countermeasure distribution, mass casualty care, and community resilience. Within these critical components, HSPD-21 refers to any at-risk populations once, under the component mass casualty care – the directive requires establishment of a Federal Advisory Committee for Disaster Mental Health to provide “recommendations for protecting, preserving, and restoring individual and community mental health in catastrophic health event settings, including pre-event, intra-event, and post-event education, messaging, and interventions.”

Issued in November 2007, the *PAHPA Progress Report* is the most recent of the principal federally issued pandemic preparedness documents. It provides a summary of actions taken in the year since the bill was introduced.¹³ HHS participated in the Department of Homeland Security’s Special Needs Workgroup that functioned, in part, to develop a definition of at-risk populations to be incorporated into the National Response Framework (NRF). This definition is documented in the NRF, “‘Special needs’ refers to those who may have additional needs before, during, or after an incident in one or more of the following functional areas: maintaining independence, communication, transportation, supervision, and medical care.”¹⁴ The NRF includes individuals who might need extra response assistance as those who: have disabilities; live in institutionalized settings; are elderly; have limited English proficiency or who are non-English speaking; are children; are transportation disadvantaged. Other activities that HHS has participated in include joining with the American Red Cross to develop an assessment tool that helps put at-risk individuals in the most appropriate shelter; developing a toolkit to assist

planners in accounting for at-risk populations' needs; identifying behavioral health resources and assets within HHS; creation of "quick card" training materials for response workers that help to identify the appropriate authorities for disabled individuals; and participation in an interagency work group to discuss the needs of at-risk people in transportation plans and activities.¹³ The *PAHPA Progress Report* also documents future activities to be completed, including recommendations, research projects, technological advances and communication activities that address the needs of at-risk individuals.

Other Essential Federal and National-Level Documents

Many other federal and national-level plans and guidance documents have been written in an effort to help responders plan and prepare for a pandemic. Some address, to a degree, management of at-risk populations. The section that follows provides an overall summary of how these documents address at-risk populations.

HHS, CDC, the Federal Emergency Management Agency (FEMA), the Government Accountability Office (GAO), the Occupational and Safety and Health Administration, and the National Council on Disability (NOD) are just a few of the federal and national-level agencies who have written planning and preparedness guidance that include some degree of discussion on at-risk populations. The vast majority of these documents have been written between 2005 and 2007, suggesting an increasing emphasis on planning for at-risk populations.

In regard to determining appropriate guidelines for prioritizing limited vaccine and antiviral medications, CDC's *Ethical Guidelines in Pandemic Influenza- Recommendations of the Ethics Subcommittee of the Advisory Committee to the Director* suggests that the risk associated with distributing resources to maintain a functioning society (as opposed to trying to minimize serious influenza-related complications) is greater to at-risk populations.¹⁵ The document also states that it is "not ethically supported (p 7)" to distribute resources on a first come, first served basis. This method of distributing materials discriminates against those individuals who are unable to transport themselves to the distribution site.

In March of 2007, Eileen Elias, Deputy Director, Office on Disability, HHS, prepared a symposium, "Ethical Considerations of Emergency Preparedness of People with Disabilities" in which she cites examples from experiences with Hurricane Katrina and states, "At the present time, there are limited mechanisms for enforcing comprehensive emergency preparedness planning at the federal, state or private organizational levels (slide 10)."¹⁶ Ms. Elias also supports a federal, functional-based definition that addresses, "Persons of all ages with a temporary or long standing disability and/or medical condition (slide 13)." In the presentation, Ms. Elias discusses the advent of the Shelter Assessment Tool and the Emergency Planner Toolkit, both of which were developed by the Office on Disability and the Office of the Assistant Secretary for Preparedness and Response.

In 2005, the National Council on Disability submitted a report to the President of the United States entitled, *Saving Lives: Including People with Disabilities in Emergency Planning*.¹⁷ This report was formulated to provide the federal government with actions it can take to build a strong foundation on which specific populations of people with disabilities will be included in emergency preparedness and response. The report specifically states that while there is a plethora of anecdotes regarding the disabled and disasters, there is very little research documented on disabled individuals' experiences with disasters, including what their limitations are and how

they affect disaster activities. This report continues on by discussing the barriers people with disabilities face in receiving disaster relief, and promotes community-based organizations that have “powerful support tools for emergency preparedness and response planning (p 23).”

David Heyman, Director, Center for Strategic and International Studies Homeland Security Program, addresses the extra preparedness efforts vulnerable populations require in *Model Operational Guidelines for Disease Exposure Control*, written in 2005. The purpose of this document is to provide assistance in developing measures to prevent the spread of disease when medical countermeasures are unavailable. He states, “...authorities must pay close attention to the special needs of vulnerable populations...(p 28).”¹⁸ In the chapter, “Meeting Essential Needs,” Mr. Heyman provides a section on special populations that includes: families, homeless populations, elderly, disabled, immobile individuals, blind, deaf, prisoners, foreign groups, and religious groups. Following this section on special populations, Mr. Heyman includes a separate section on mental health needs.

CDC’s draft version of the *Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency* is available online (www.bt.cdc.gov/workbook) to help jurisdictions prepare for at-risk populations in emergencies.⁶ The workbook provides an introduction to the layout of the document, followed by three sections: “Defining Special Populations,” “Locating Special Populations,” and “Reaching Special Populations.” Each of these sections is divided into: “Overview,” “Understanding the Process,” “Tools and Templates,” and “Checklist.” The workbook provides an in-depth, step-by-step process for preparing at-risk populations for public health emergencies, including resources that communities can use to help them with the process. This workbook, once finalized, will provide communities with a solid basis of guidance on which they can begin to build their all-hazards at-risk populations preparedness plans.

In July 2007, CDC’s Coordinating Office for Terrorism Preparedness and Emergency Response (COTPER) developed a workbook manual that corresponds with the *Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency*, discussed above. The document, *Locating and Reaching At-Risk Populations in an Emergency*, puts at-risk groups into categories: economic disadvantage, limited language proficiency; disability (physical, mental, cognitive, or sensory), isolation (cultural, geographic, or social), and age.¹⁹ The manual promotes the concept of focusing on these broad groupings of characteristics that put people at risk because it allows examination of the “nature of the vulnerability that might put someone at higher risk in an emergency (p 2).” This characterization also allows for the fact that many individuals will fall into multiple groupings. The workbook manual provides checklist for more specific groupings within the major categories.

CDC also drafted *Defining Special Populations for Public Health’s Public Information and Health-Risk Communication Activities in Emergency Events*, with the purpose of defining “special populations as it relates to public health’s public information and health-risk communication activities for persons coordinating this activity during public health emergencies at the local, state, regional, and federal levels (p 1).”²⁰ The document comments that individuals must prepare to help themselves and each other, and that “...we must let people who **can** help themselves, help themselves (p 3)” It describes special populations (for public health public information purposes) as “any group who cannot be reached effectively during the initial phase of a public safety emergency with general public health messages delivered through mass communication channels (p 3), and states that it is imperative that public information officers in

all responding agencies coordinate in order to provide consistent and accurate information, which will ultimately reduce the risk of wasting resources.

Challenges and Critical Gaps in Planning and Guidance for At-Risk Populations

Primary Federal Documents

The primary critical gap in planning for at-risk populations is that there is no federal definition of who falls into this category in the context of pandemic influenza. The terms “at-risk,” “vulnerable” and “special needs” are all used in different documents, making it difficult to find consistent guidance needed to effectively plan for these populations. The type of groups that fall under the definition varies widely among documents. The essential challenge that falls to public health officials is to develop a universal, encompassing definition that will help responders identify, plan for, and prepare as many at-risk individuals as possible for an influenza pandemic.

Since President Bush’s Executive Order in 2004, federal plans, policies, and guidance documents have notably increased in focus on preparing for at-risk populations in public health emergencies; however, some principal documents, such as the *National Strategy for Pandemic Influenza*, do not have any mention of at-risk populations. The *National Strategy for Pandemic Influenza Implementation Plan*, while acknowledging that these populations need extra attention, provides little more than suggestions that businesses and organizations identify employees and customers with special needs and “incorporate the requirements of such persons into your preparedness plan (p 183).”⁴ The plan suggests that faith-based and community-based organizations manage the needs of at-risk populations due to their “awareness of the most vulnerable populations (p 177)”, and the plan provides a checklist for these organizations to use in their preparedness planning. This theme shows throughout the federal documents – planning and preparing for at-risk populations is recommended to be completed at the community level. The *National Strategy for Pandemic Influenza Implementation Plan* acknowledges that due to the widespread nature of an influenza pandemic, states and local communities should not expect any external aid. The *National Strategy for Pandemic Influenza Implementation Plan One Year Summary* reiterates this message by stating that resources will not be able to be shifted from one location to another.⁹ The *HHS Pandemic Influenza Plan Implementation Plan* also notes that, “While guidelines, recommendations, and some resources will emanate from Federal Agencies, requisite action must be implemented at the State, local, and tribal levels for effective preparedness and response (p 242).”⁸

Concerns with this notion include maintaining acceptable standards of care. The *HHS Pandemic Influenza Plan Implementation Plan* states, “...certain outpatient care settings serve especially vulnerable persons who, if unable to receive care, will additionally burden hospitals...Therefore, planning must address maintaining continuity of services for medically fragile persons and emerging acute-care needs amongst the general population (p 243).”⁸ Standard of care is defined as being what is reasonably expected; in a pandemic, regular care will be forcibly altered by the reduction in resources and manpower. When this happens, standards of care will be altered such that preference will be given to those who will medically gain the most benefit.⁴ Some individuals in at-risk populations will already be having difficulty in receiving care for non-pandemic related health conditions, making this process of deciding “preference” of particular concern to at-risk populations. This decision-making process will be of importance in regards to pandemic vaccine and to distribution of antiviral medications. The *National Strategy for*

Pandemic Influenza states that specific targeting will need to occur in the case of limited supplies. While it is not documented in this plan what type of specific targeting will take place, specific guidance documents pertaining to prioritization for vaccines and antivirals are under development.

The *PAHPA Progress Report*, while incorporating action items for the management of at-risk populations, also documents a multi-department team that developed 24 criteria for states to address in their pandemic influenza plans; none of the criteria include planning for at-risk populations.¹³

Other Essential Federal and National-Level Documents

While a number of federal and national-level documents have been written to help begin the process of managing at-risk populations during an influenza pandemic, there has been minimal documentation in regards to specific strategies for assisting these populations. CDC has taken great strides in developing comprehensive guidelines for communities to build detailed plans for managing at-risk populations in an influenza pandemic; however, this work has yet to be put into definitive use or be detailed in grant requirements.

The National Council on Disability remarks that not only do people with disabilities have limited opportunity to provide contributions to the planning process, but these populations question the frequency with which lessons learned after a disaster are integrated into better preparing at-risk populations for the next event. Shelters and disaster recovery centers are often not equipped for certain at-risk populations, because of lack of training in those who establish the sites. During Hurricane Katrina, shelters were not adequately set up for people with accessibility needs. In the evacuation process, people were separated from their support systems, and had difficulty obtaining regular medical care due to disruptions of service from the hurricane.

Risk communication messages are an integral way to inform the public of the incident itself and to advise them on practices to protect themselves and the community. Assuring that these messages are reaching as many people as possible is essential to providing an effective overall response. The deaf, hard-of-hearing, and people who speak languages other than English will all need assistance in receiving communication messages related to the emergency. The National Council on Disability cites an incident after the Northridge, California earthquake in 1994 in which a woman who was attempting to assist a deaf man in communicating with a shelter worker was turned away along with the deaf man because he reported that he had tested positive for tuberculosis more than five years ago. The woman was assumed to be with the deaf man because they both used sign language.¹⁷ Barriers are frequently encountered in, "...physical plants, communications, and programs in shelters and recovery centers and in other facilities or devices used in connection with disaster operations such as first aid stations, mass feeding areas, portable payphone stations, portable toilets, and temporary housing (p 5)."

With the emphasis on using community-based and faith-based organizations to assist at-risk populations during emergencies, "Emergency managers need to strengthen their relationships with these organizations by recruiting, encouraging, and providing funding and incentives to CBOs so that they can participate and assist in disaster preparedness and relief (p 6)." These organizations may be a viable option for assisting public responders, but need to be included in the emergency management planning process in order to fully integrate federal, state, and local preparedness planning efforts.

The overall message of these documents is that not enough is being accomplished in helping at-risk populations through disasters. There are numerous citations on the need for developing guidance, but limited documentation on specific strategies for providing effective response activities for at-risk populations, particularly in the context of pandemic influenza. Further development of these strategies will be necessary in order to increase the United States' overall response capabilities for at-risk populations during an influenza pandemic.

Conclusions

Since President George W. Bush issued an Executive Order in July, 2004 to “strengthen emergency preparedness with respect to individuals with disabilities,”⁵ significant progress has been made in developing more comprehensive preparedness plans and guidance that address the needs of the diverse United States’ population. Federal guidance documents have become increasingly more streamlined to help states and local communities become better prepared for an influenza pandemic. Planning for at-risk populations, however, requires continued extensive commitment to achieve a level of guidance that will ensure that as many at-risk populations as possible have effective disaster support.

Much of the current federal guidance shows a planning emphasis on biosurveillance, countermeasure production and distribution, surge capacity, and community resilience. Key priorities highlighted in the documents are developing vaccines and stockpiling antiviral medications for treatment. Guidance for at-risk populations is limited to a few sentences in most of the principal federal documents on influenza pandemic planning, with the burden of planning for these populations placed onto states and auxiliary organizations (e.g., faith-based and community-based organizations).

The principal federal guidance documents do, however, discuss multi-level, interagency coordination as key to effective preparedness. This strategy is necessary to implement effective, coordinated response activities across all aspects of emergency response, and is essential in planning for at-risk populations. Federal guidance is necessary to support universal response capabilities across the country; state guidance is necessary to ensure continuity of response within each state; and local guidance is necessary to ensure that locality-specific response actions are recorded in plans and procedures to assist the unique populations of individual localities.

CDC has taken a great leap forward in developing at-risk populations-specific documents such as the *Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency (Draft)*. By laying the groundwork on which to build solid preparedness plans for at-risk populations, CDC has overcome the immense initial hurdle that has hindered the process thus far.

The next step in building federal, state, and local preparedness plans for at-risk populations is to provide a universal definition of populations that fall under the umbrella term “at-risk.” Until this definition is established, it is impossible to effectively plan for preparing individuals for disasters and for providing extra assistance during and after emergencies. Multi-level, interagency coordination will be essential in determining this universal definition. Additionally, because of the unique nature of pandemic influenza and the unprecedented level of response that will be needed to sustain communities in the midst of a severe pandemic, specific guidance on protecting these individuals during a pandemic is also required. Such guidance will bridge the gap between the current, general statements on protecting at-risk populations and move toward comprehensive, evidence-based planning in this area.

Appendices

Appendix A: Glossary of Terms

Terms that were found in more than one document are cross-referenced to each document. More than one definition is provided for terms that had different (or slightly different) definitions in the documents and are referenced accordingly.

Affected country: An at-risk country experiencing endemic (widespread and recurring) or epidemic (isolated) cases in humans or domestic animals of influenza with human pandemic potential.⁴

Age: At-risk population that consists of people over 65 who have chronic health problems, limited mobility, blindness, deafness, social isolation, fear, and/or reduced income, and infants and children under 18, particularly if they are separated from their parents or guardians in an emergency.¹⁹

Antiviral medications: Medications presumed to be effective against potential pandemic influenza virus strains. These antiviral medications include the neuraminidase inhibitors oseltamivir (Tamiflu[®]) and zanamivir (Relenza[®]).^{4,9}

At-risk country: An unaffected country with insufficient medical, public health, or veterinary capacity to prevent, detect, or contain influenza with pandemic potential.⁴

Biosurveillance: The process of active data-gathering with appropriate analysis and interpretation of biosphere data that might relate to disease activity and threats to human or animal health in order to achieve early warning of health threats, early detection of health events, and overall situational awareness of disease activity.¹²

Catastrophic health event: Any natural or manmade incident, including terrorism, that results in a number of ill or injured persons sufficient to overwhelm the capabilities of immediate local and regional emergency response and health care systems.¹²

Community-based organization: A private nonprofit organization, Indian tribe or tribally sanctioned organization, or other type of group that works within a community for the improvement of some aspect of that community. Community-based organizations include nonprofit organizations (501c(3)), faith-based organizations, tribes, and their subsidiaries.⁴

Community mitigation strategy: A strategy for the implementation at the community level of interventions designed to slow or limit the transmission of a pandemic virus.⁴

Community Outreach Information Network (COIN): A grassroots network of people and trusted leaders who can help with emergency planning and serve to give information to at-risk populations in emergencies.¹⁹

Cough etiquette: Covering ones mouth and nose while coughing or sneezing; using tissues and disposing in no-touch receptacles; and washing your hands to avoid spreading an infection to others.⁴

Countermeasures: Refers to pre-pandemic and pandemic influenza vaccine and antiviral medications.^{4,9}

Critical infrastructure: Systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating

impact on security, national economic security, national public health or safety, or any combination of those matters. Specifically, it refers to the critical infrastructure sectors and key resources identified in Homeland Security Presidential Directive 7 (HSPD-7). As defined by HSPD-7, critical infrastructure includes the following sectors and key resources: agriculture and food; public health and health care; drinking water and water treatment systems; energy (including the production, refining, storage, and distribution of oil and gas, and electric power except for nuclear facilities); banking and finance; national monuments and icons; defense industrial base; information technology; telecommunications; chemical; transportation systems (including mass transit, aviation, maritime, ground/surface, and rail and pipeline systems); emergency services; postal and shipping; dams; government facilities; commercial facilities; and nuclear reactors, material, and waste. Critical infrastructure in this Plan is used to refer to the 17 critical infrastructure and key resources included in the National Infrastructure Protection Plan.^{4,9}

Delegation of authority: Identification, by position, the authorities for making policy determinations and decisions at headquarters, field levels, and other organizational locations, as appropriate. Generally, pre-determined delegations of authority will take effect when normal channels of direction are disrupted and terminate when these channels have resumed.⁴

Disability:

1. Applies to those that are noticeable (wheelchair users, blind, deaf) but also to people with heart disease, emotional or psychiatric conditions, arthritis, significant allergies, asthma, multiple chemical sensitivities, respiratory conditions, some visual, hearing, and cognitive disabilities.¹⁷
2. The presence of a physical cognitive, sensory, emotional, or other condition that impacts/influences that person's level of functioning such that assistance/accommodation may be needed to maintain safety and independence. The person's level of independence or functioning may vary given the situation.¹⁶

Disaggregation of disease transmission networks: The disruption of activities and social interactions that facilitate transmission of influenza (e.g., closure of schools, canceling public meetings or large social gatherings, keeping schoolchildren home, and restriction of travel).⁴

Epidemiologic surveillance: The process of actively gathering and analyzing data related to human health and disease in a population in order to obtain early warning of human health events, rapid characterization of human disease events, and overall situational awareness of disease activity in the human population.¹²

Economic disadvantage: At risk population whose socioeconomic status may significantly affect their ability to follow a public health directive if they do not have the resources of mean to do what is being asked (stockpile food, stay home from work and lose a day's pay, or evacuate and leave their home). Many at risk populations live at or below the federal poverty level and are found within this broad category.¹⁹

Faith-based organization: Any organization that has a faith-inspired interest.^{4,9}

Geographic quarantine (cordon sanitaire): The isolation, by force if necessary, of localities with documented disease transmission from localities still free of infection.⁴

Hand hygiene: Hand washing with either plain soap or antimicrobial soap and water and use of alcohol-based products (gels, rinses, foams) containing an emollient that do not require the use of water.^{4, 9}

Incident of National Significance: Designation is based on criteria established in Homeland Security Presidential Directive 5 and includes events with actual or potential high-impact that requires a coordinated and effective response by Federal, State, local, tribal, nongovernmental, and/or private sector entities in order to save lives, minimize damage, and provide the basis for long-term community recovery and mitigation activities.⁹

Infection control: Hygiene and protective measures to reduce the risk of transmission of an infectious agent from an infected person to uninfected persons (e.g., hand hygiene, cough etiquette, use of personal protective equipment, such as face masks and respirators, and disinfection).⁹

Influenza pandemic: A worldwide epidemic caused by the emergence of a new or novel influenza strain to which humans have little or no immunity and which develops the ability to infect and be transmitted efficiently and sustainably between humans.⁹

Isolation:

1. Separation of infected individuals from those who are not infected.⁴
2. People in remote rural areas and in dense urban areas who are outside the “mainstream” of contemporary American life, by choice, or by simple fact of life.²¹

Examples of isolated people include: rural populations of ranchers, farmers, and people who live in sparsely populated mountain and hill communities; temporary residents (on a military base, a college campus, or in migrant workers’ camps); undocumented immigrants; single parents and caregivers; and certain religious groups such as Amish and Mennonite communities.¹⁹

Isolation of ill people: Separation or restriction of movement of persons ill with an infectious disease in order to prevent transmission to others.⁹

Layered protective measures: Rather than focusing on a single measure for mitigation, a layered approach uses an array of measures deployed in tandem, to reduce overall risk. A layered, system-wide, integrated approach to risk reduction includes redundant measures and is designed to avoid a single point of failure. Examples include, implementing pre-departure, en route, and arrival screening measures for international travel.⁴

Limited English proficiency: Persons who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English can be limited English proficient.¹⁹

Medical: The science and practice of maintenance of health and prevention, diagnosis, treatment, and alleviation of disease or injury and the provision of those services to individuals.¹²

Medical condition: A chronic or acute condition (e.g., laceration, broken bone, asthma, diabetes, etc.) requiring professional medical supervision or attention. The person’s level of independence or functioning may vary given the situation.¹⁶

Nonpharmaceutical intervention (NPI): Mitigation measure implemented to reduce the spread of an infectious disease (e.g., pandemic influenza) but one that does not include pharmaceutical

products, such as vaccines and medicines. Examples include social distancing and infection control measures.⁹

Pandemic: A worldwide epidemic when a new or novel strain of influenza virus emerges in which humans have little or no immunity, and develops the ability to infect and be passed between humans.⁴

Pandemic vaccine: Vaccine for specific influenza virus strain that has evolved the capacity for sustained and efficient human-to-human transmission. This vaccine can only be developed once the pandemic strain emerges.^{4, 9}

Post-exposure prophylaxis: The use of antiviral medications in individuals exposed to others with influenza to prevent disease transmission.^{4, 9}

Pre-pandemic vaccine: Vaccine against strains of influenza virus in animals that have caused isolated infections in humans of pandemic potential. This vaccine is prepared prior to the emergence of a pandemic strain and may be a good or poor match (and hence of greater or lesser protection) for the pandemic strain that ultimately emerges.^{4, 9}

Prophylaxis: Prevention of disease or of a process that can lead to disease. With respect to pandemic influenza this specifically refers to the administration of antiviral medications to healthy individuals for the prevention of influenza.^{4, 9}

Protective sequestration: Measures taken by local authorities to protect a defined and still healthy population from infection, including: prohibitions on members of the institution or community from leaving the site and from outside visitors from entering.²²

Provisional influenza escape community: Community or institution where there were relatively few reported cases of influenza (compared to surrounding areas or analogous communities, towns, cities) and zero to one deaths resulting from influenza or pneumonia-related illness while non-pharmaceutical interventions were enforced during the second wave of the 1918-1920 influenza pandemic.²²

Public health: The science and practice of protecting and improving the overall health of the community through disease prevention and early diagnosis, control of communicable diseases, health education, injury prevention, sanitation, and protection from environmental hazards.¹²

Public health and medical preparedness: The existence of plans, procedures, policies, training, and equipment necessary to maximize the ability to prevent, respond to, and recover from major events, including efforts that result in the capability to render an appropriate public health and medical response that will mitigate the effect of illness and injury, limit morbidity and mortality to the maximum extent possible, and sustain societal, economic, and political infrastructure.¹²

Quarantine:

1. Separation of individuals who have been exposed to an infection but are not yet ill from others who have not been exposed to the transmissible infection.⁴
2. A restraint upon the activities or communication (e.g., physical separation or restriction of movement within the community/work setting) of an individual(s) who has been exposed to an infection but is not yet ill to prevent the spread of disease; quarantine may be applied voluntarily (preferred) or on compulsory basis dependent on legal authority.⁹

Risk communication: An interactive process of exchange of information and opinion among individuals, groups, and institutions; often involves multiple messages about the nature of risk or expressing concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management.²³

Risk message: A written, verbal, or visual statement containing information about risk; may or may not include advice about risk reduction behavior; a formal risk message is a structured written, audio, or visual package developed with the express purpose of presenting information about risk.²³

Schools (K-12): Refers to schools, both public and private, spanning the grades kindergarten through 12th grade (elementary through high school).^{4, 9}

Snow days:

1. Refers to days which the authorities recommend that individuals and families limit social contacts by remaining within their households to reduce community disease transmission of infection.⁴
2. Days on which offices, schools, transportation systems are closed or cancelled, as if there were a major snowstorm, in an effort to minimize or eliminate a wide array of public assemblies.²²

Social distancing:

1. Infection control strategies that reduce the duration and/or intimacy of social contacts and thereby limit the transmission of influenza. There are two basic categories of intervention: transmission interventions, such as the use of facemasks, may reduce the likelihood of casual social contacts resulting in disease transmission; contact interventions, such as closing schools or canceling large gatherings, eliminate or reduce the likelihood of contact with infected individuals.⁴
2. Measures to increase the space between people and decrease the frequency of contact among people.⁹
3. Non-pharmaceutical intervention implemented to discourage or prohibit close social contact between individuals in schools, sports facilities, churches, and other places of public gathering. These measures may be advertised to the public as voluntary or the may involve actual closing of places of public gathering or prohibitions of public events and gatherings.²²

Social scapegoating: If one social group has a high percentage of quarantined individuals compared to others, there is a risk that the rest of society will designate the quarantined social group as scapegoats, with a wide range of negative effects for both the scapegoated group and society at large.²²

Special needs populations: Groups that require additional resources due for example to problems with physical mobility or language skills, may be unable to comply with disease exposure control unless their special needs can be met (i.e., families, religious groups, ethnic groups, prisoners, foreign groups, and homeless).¹⁸

Standard of care: The level of care that is reasonably expected under the extant circumstances.⁴

Surge capacity: Refers to the ability to expand provision of services beyond normal capacity to meet transient increases in demand. Surge capacity within a medical context denotes the ability of health care or laboratory facilities to provide care or services above their usual capacity, or to expand manufacturing capacity of essential medical materiel (e.g., vaccine) to meet increased demand.^{4, 9}

Treatment course (antiviral medications): The course of antiviral medication prescribed as treatment (not prophylaxis) for a person infected with an agent susceptible to the antiviral medication. For oseltamivir, a treatment course for seasonal influenza is 10 capsules, administered twice daily for 5 days (a prophylaxis course is much greater, typically 42 capsules taken once daily for 42 days).⁴

Treatment course (vaccine): The course of vaccine (typically two injections) required to induce protective immunity against the target of the vaccine.⁴

Appendix B: References

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