

Introduction



The U.S. Secretary of Education has called on schools to make emergency preparedness planning for pandemic influenza a priority—“to build on local emergency crisis plans by integrating specific pandemic influenza measures.”

According to the U.S Secretary of Education, “Pandemic influenza could have a profound effect on our nation’s school systems. Children would be expected to have high rates of infection and are more likely than adults to spread infection.” “...an important issue for educators during a pandemic will be the decision of whether to close schools. School closure might be necessary to protect the health of students and school personnel, to limit the spread of the virus, or in response to student and/or staff absences. Depending upon the underlying circumstances, the duration of school closure could range from a few weeks up to three months.”¹

Why are specific pandemic influenza measures needed for a school’s emergency crisis plan?

Characteristics of an influenza pandemic differentiate it from other hazards and threats that school emergency crisis plans address.

- A pandemic will have widespread, possibly global, impact versus geographically-bound local impact. As a result, any outside assistance that is available will be limited and possibly sporadic.
- Unlike other hazards, such as an earthquake or a hurricane, a pandemic does not cause physical damage.
- A pandemic’s primary effect will be on people. A worst-case scenario pandemic will cause illness in a very large number of school personnel and students, resulting in up to 30% absenteeism rates at peak periods for at least two weeks during each wave. The healthcare system throughout the nation will be overwhelmed. Due to absenteeism,
 - Basic services, such as law enforcement, fire, emergency response, communications, transportation, and utilities could be disrupted.
 - Supply chains for essential items such as food, water, and other emergency provisions may be compromised.

¹ Key Policy Letters Signed by the Education Secretary or Deputy Secretary, March 2006, October 2006, and February 2007.

- A pandemic can last for 12-24 months, occurring in waves (peak periods of illness) with three to nine months between waves, rather than last for days or weeks like many other emergency events.
- Unlike most emergencies there may be a short period of time to prepare for a pandemic emergency. Experts estimate that a pandemic influenza virus could spread around the world in 30 to 60 days. If the pandemic starts in another country and is detected immediately by the World Health Organization's global surveillance network, we may receive notice of the impending pandemic.

This combination of characteristics along with community mitigation strategies, such as school closures, that will be used present a unique challenge to schools and their communities.

During school closures, the U.S. Department of Education recommends continued education. The Department has provided guidance, such as its November 21, 2007 *Pan Flu Guidance* and the U.S. Department of Education/Office of Safe and Drug-Free Schools' Teleconference on December 18, 2007. "Continued instruction is important to maintain learning, and also to engage students in constructive activities while they are not in school. Engaging students to any degree will provide them with a sense of normalcy during a crisis situation, as well as providing a constructive outlet for interaction. Maintaining routine or normal activities has been found to be a positive coping measure that assists with recovery following a crisis."² Continuing instruction during a school closure, to be successful, requires planning. This toolkit will also assist schools in their pandemic planning.

What is the Pandemic Influenza School Planning Toolkit?

The Santa Clara County Public Health Department Advanced Practice Center created the *Pandemic Influenza School Planning Toolkit* for the National Association of County and City Health Officials to assist local public health agencies in partnering with the schools within their jurisdictions for pandemic emergency preparedness planning. The toolkit is designed to:

- Increase awareness of the threat of a pandemic influenza and its impact on the school community.
- Guide schools in developing specific pandemic influenza measures to integrate into their emergency crisis plans. Specifically,
 - To increase preventive health behaviors that limit the spread of viruses, such as a pandemic influenza.

² The U.S. Department of Education's November 21, 2007 *Pan Flu Guidance*.

- To continue student learning and core operations during the pandemic.
- To recover, returning to the “new normal,” when the pandemic has passed.

The *Pandemic Influenza School Planning Toolkit* is consistent with Federal guidance for school emergency crisis planning. It is organized to reflect the sequence of crisis management:

- Prevention (addresses what schools and districts can do to prevent and limit the spread of disease).
- Preparedness (focuses on planning for a worst-case scenario pandemic influenza).
- Response (specifies the steps to take during an influenza pandemic).
- Recovery (deals with how to restore the learning and teaching environment after the pandemic).

A plan template is provided to guide development of pandemic specific measures to augment a school’s emergency crisis plan. The plan template is supported by several tools (e.g., communications tools and continuity of instruction tools) to assist schools in completing specific template sections. The template, when completed by a school, becomes the school’s pandemic plan.

It is important to note that the enhanced ability to respond to pandemic influenza that is gained from pandemic planning efforts will also enhance the ability of schools to respond to many other hazards and threats. Emergency planning is ultimately about building and enhancing community resiliency.

How will a pandemic influenza impact schools?

It is necessary to understand pandemic influenza to prepare for a pandemic.

Why is a pandemic a major concern now?

A pandemic is a major concern at this time because conditions worldwide are again favoring the appearance of a pandemic strain of influenza. An influenza pandemic is a global outbreak of disease that occurs when a new influenza A virus appears or “emerges” in the human population, causes serious illness, and then spreads easily from person to person worldwide. Conditions favoring a pandemic include:

- The natural cycle of pandemic influenza is every 30-40 years, and it has been nearly 40 years since the last influenza pandemic.

- The avian influenza virus (H5N1) is currently being monitored by the World Health Organization (WHO) because a major genetic “shift” allowing it to become transmissible person-to-person will create a “novel” virus and the potential for a pandemic.
- We are now in Phase Three of the Pandemic Alert Period (of WHO’s six pandemic phases). Human infections are occurring with a new subtype (H5N1), but no human-to-human spread has occurred, or at most, rare instances of spread to a close contact have occurred.

The progression of a pandemic is monitored by WHO and by the Federal government. The following table presents a summary of the WHO global pandemic phases and the U.S. Federal response stages. The Federal response stages characterize the stages of an outbreak in terms of the immediate and specific threat a pandemic virus poses to the U.S. population. These phases/stages provide guidance for pandemic influenza planning and response activities.

Pandemic Influenza Classification System to Guide Planning and Response			
WHO Pandemic Phases		U.S. Federal Response Stages	
Inter-Pandemic Period New virus in animals, no human cases			
1	Low risk of human cases	0	New domestic animal outbreak in at-risk country
2	Higher risk of human cases		
Pandemic Alert New virus causes human cases			
3	No or very limited human-to-human transmission	0	New domestic animal outbreak in at-risk country
4	Evidence of increased human-to-human transmission	1	Suspected human outbreak overseas
5	Evidence of significant human-to-human transmission	2	Confirmed human outbreak overseas
Pandemic			
6	Efficient and sustained human-to-human transmission	3	Widespread human outbreaks in multiple locations overseas
		4	First human case in North America
		5	Spread throughout United States
		6	Recovery and preparation for subsequent waves

Each pandemic phase (Inter-Pandemic Period, Pandemic Alert, and Pandemic) has overarching public health goals. U.S. goals for pandemic response are to:

- limit the spread of a pandemic;
- mitigate disease, suffering, and death; and
- sustain infrastructure and lessen the impact on the economy and the functioning of society.

What are the primary interventions to minimize the impact of an influenza pandemic?

The primary strategies for combating influenza are 1) vaccination, 2) treatment of infected individuals and prophylaxis of exposed individuals with influenza antiviral medications, and 3) implementation of infection control and social distancing measures.

It is not likely that pharmaceutical interventions will be the primary strategies to combat influenza initially because:

- It is unlikely that a well-matched pandemic strain vaccine will be available at the beginning of the pandemic.
- Influenza antiviral medications are likely to be in short supply and may not be effective against a future pandemic strain.
- Antibiotics are not effective against viruses.

Non-pharmaceutical interventions are more likely to be the primary strategies to combat influenza. The non-pharmaceutical interventions are:

- Voluntary isolation and treatment (as appropriate) of the sick.
- Voluntary home quarantine of members of households with confirmed or probable influenza cases.
- School/child social distancing to reduce contact among children and youth in the community (including termination of after-school activities, closure of schools and childcare, and reduction of out-of-school/childcare social contacts).
- Workplace/community social distancing to reduce contact among adults in the community and workplace (including cancellation of large public gatherings and alteration of workplace environments and schedules).

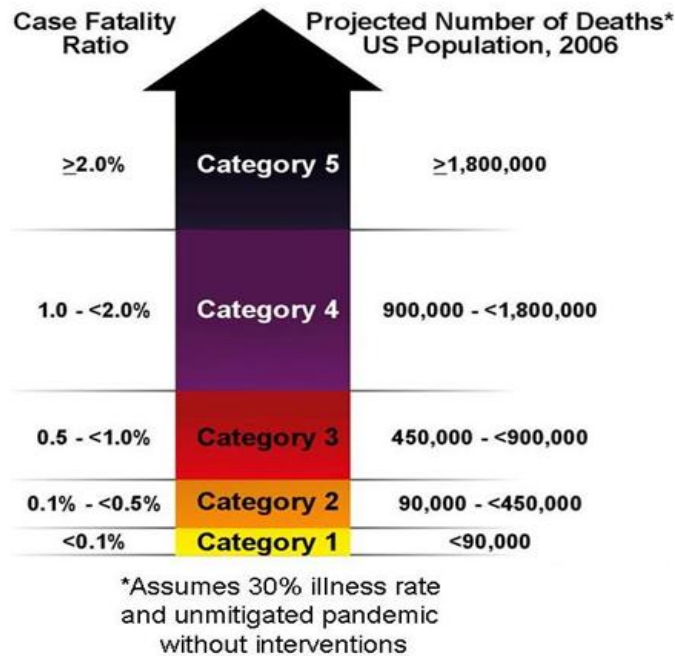
How will use of non-pharmaceutical interventions be determined?

When the pandemic arrives, its severity will drive the implementation of non-pharmaceutical interventions.

Pandemic Severity Index

To determine severity, the Centers for Disease Control and Prevention (CDC) has developed a Pandemic Severity Index. The index uses the case fatality ratio (the proportion of deaths among clinically ill persons) to categorize the severity of the pandemic. The Pandemic Severity Index is illustrated below.

Pandemic Severity Index



Future pandemics will be assigned to one of the five categories of increasing severity. Once WHO has declared that the world has entered Pandemic Phase 5 (substantial pandemic risk), CDC will provide frequent assessments of the pandemic severity. Communities facing the imminent arrival of pandemic disease will be able to use the pandemic severity assessment to guide implementation of non-pharmaceutical interventions.

CDC Recommended Trigger Points for School Closure

CDC guidance³ suggests that the primary activation trigger for initiating non-pharmaceutical interventions (including school closure) will be the arrival and transmission of pandemic virus. This will be established by a laboratory-confirmed cluster of infection with a novel influenza virus and evidence of community transmission.

Critical considerations for implementation of non-pharmaceutical interventions based on this trigger are:

- Community connectedness and
- Determination of the timing (initiation and length) of the interventions.

Community connectedness encompasses physical proximity and the ease, speed, and volume of travel between the jurisdiction with the cluster of infection and other jurisdictions (e.g., the jurisdiction where your school is located).

³ *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early Targeted Use of Non-pharmaceutical Interventions* (CDC, 2007).

Since the timing of the initiation of non-pharmaceutical interventions influences their effectiveness, the optimal time for initiating interventions needs to be early enough to prevent an initial steep increase in pandemic influenza cases and the interventions need to continue long enough to cover the peak of the anticipated epidemic curve. As long as susceptible individuals are present in large numbers, disease spread may continue.

The steps between recognition of a pandemic threat and the decision to activate a response are critical to successful implementation of non-pharmaceutical interventions. To emphasize the importance of this concept, CDC guidance on triggers introduces key steps in escalation of response action—*Alert*, *Standby*, and *Activate*.

- *Alert* includes notification of critical systems and personnel of their impending activation.
- *Standby* includes initiation of decision-making processes for imminent activation, including mobilization of resources and personnel.
- *Activate* refers to implementation of pandemic mitigation measures.

The amount of time decision-makers are able to allot to each step, may be driven by the pandemic severity index, the speed of transmission, and the amount of time it takes to fully implement the intervention once a decision is made to *Activate*.

Statutory Authority for School Closure

The statutory authority in your community for school closures during an influenza pandemic will be the person that determines the selection and timing of non-pharmaceutical interventions in your community.

This authority will monitor the WHO global pandemic phases and the U.S. Federal response stages. Intervention decisions will be based on multiple factors, including, but not necessarily limited to, the pandemic severity index, speed of transmission, the community's connectedness to the jurisdiction with the pandemic infection cluster, the level of community preparedness or the amount of time it will likely take to fully implement the intervention once a decision is made to *Activate*, and the timing that is believed to best for optimal impact.

Three-Tiered Strategy for Implementing School/Child Social Distancing Measures

To provide further guidance, CDC has defined a three-tiered strategy for implementing school/child social distancing measures:

CDC Guidance for Implementing School/Child Social Distancing Measures	
Federal Response Pandemic Stage	Social Distancing Measures
1	No school closure/reduction in out-of-school social contacts
2 and 3	Short-term (up to 4 weeks) school closure/reduction in out-of-school social contacts
4 and 5	Prolonged (up to 12 weeks) school closure/reduction in out-of-school social contacts

Learning from Previous Pandemics

Over the last 400 years there have been 12 influenza pandemics, three of them during the last century. The 1918 influenza pandemic was the most severe, causing more than 500,000 deaths in the United States and more than 40 million deaths around the world.

According to *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early Targeted Use of Non-pharmaceutical Interventions*, recent preliminary analyses of cities affected by the 1918 pandemic show a highly significant association between the early use of multiple non-pharmaceutical interventions and reductions in peak and overall death rates. In addition, combining the analyses of historical data with mathematical modeling suggests that the early, coordinated application of multiple interventions may be more effective in reducing transmission than the use of a single intervention.

What we have learned from history provides hope that the effect of a severe pandemic can be mitigated if implementation of interventions is timely and coordinated.

Planning in advance is required if these strategies are to be implemented in a timely and coordinated fashion during a severe or worst-case scenario pandemic. That is why this toolkit has been developed and why it is so important for schools to build on their emergency crisis plans by integrating specific pandemic influenza measures.

How is the Pandemic Influenza School Planning Toolkit organized?

The Pandemic Influenza School Planning Toolkit is organized as follows:

- Preparing to Plan
 - *Pandemic Influenza School Planning Toolkit* Overview
 - Jurisdiction-Level Planning: Public Health as Champion
 - Tools:
 - Sample Introductory Letter from Health Officer and County Office of Education Superintendent
 - Sample Letter from Health Officer and County Police Chiefs Association Chair
 - Sample Description of Santa Clara County Health Officer Legal Authority regarding Pandemic Influenza

- District-Level Planning: Setting the Stage for an Effective Planning Process
- Pandemic Influenza Plan Template
 - Template Tools:
 - Communication Tools (Prevention, Preparedness, Response Recovery)
 - Prevention Tools
 - Preventive Health Information Tools
 - Preparedness Tools
 - Continuity of Management Tools: NIMS, ICS and Continuity of Operations Planning
 - Continuity of Instruction Tools
 - School Employees' Role as Disaster Service Workers Tools

This *Pandemic Influenza School Planning Toolkit* provides substantial guidance and information to facilitate integration of specific pandemic influenza measures into a school's existing emergency crisis plan.