Technical Report for State and Local Public Health Officials and School Administrators on CDC Guidance for School (K-12) Responses to Influenza during the 2009-2010 School Year

CDC is releasing new guidance to help decrease the spread of flu among students and school staff during the 2009-2010 school year. The guidance expands upon earlier school guidance documents by providing a menu of tools that school and health officials can choose from based on conditions in their area. It recommends actions to take this school year, suggests strategies to consider if CDC finds that the flu starts causing more severe disease than during the spring 2009 outbreak, and provides a checklist for making decisions at the local level. Based on the severity of 2009 H1N1 flu-related illness in the community, schools may also need to consider strategies to keep influenza-like illness from spreading in schools without the use of fever-reducing medications. For the purpose of this document, “schools” will refer to both public and private institutions providing grades K-12 education to children and adolescents in group settings. The guidance applies to such schools in their entirety, even if they provide services for younger or older students. Guidance for child care settings and institutions of higher education will be addressed in separate documents.

This Technical Report includes detailed information on the reasons for the strategies presented in the CDC Guidance for School (K-12) Responses to Influenza During the 2009-2010 School Year and suggestions on how to use them. The guidance is designed to decrease exposure to regular seasonal flu and 2009 H1N1 flu while limiting the disruption of day-to-day activities and the vital learning that goes on in schools. CDC will continue to monitor the situation and update the current guidance as more information is obtained on 2009 H1N1.

About 55 million students and 7 million staff attend the more than 130,000 public and private schools in the United States each day. By implementing these recommendations, schools and health officials can help protect one-fifth of the country’s population from flu. In addition to their central mission of educating children and adolescents, schools meet other basic needs: feeding students and providing needed child care, health and mental health services, and safe and stable routines. It is crucial not to interrupt the learning process without due cause. Although illness may be such a cause, schools and their communities have a responsibility to balance the risks of illness among students and staff with the benefits of keeping students in school.

The decision to dismiss students should be made locally and should balance the goal of reducing the number of people who become seriously ill or die from influenza with the goal of minimizing social disruption and safety risks to children sometimes associated with school dismissal. Based on the experience and knowledge gained in jurisdictions that had large outbreaks in spring 2009, the potential benefits of preemptively dismissing students from their schools may outweigh the benefits resulting from the consequences, health workers missing shifts when they must stay home with their children, students missing meals, and interruption of students' education. Still, although the situation in fall 2009 is unpredictable, more communities may be affected, reflecting wider transmission. The overall impact of 2009 H1N1 should be greater than in the spring, and dismissals may be warranted, depending on the disease burden and other conditions.

CDC is continually monitoring the spread of flu, the severity of the illness it is causing (including hospitalizations and deaths), and whether the virus is changing; CDC will provide periodic updates of these assessments. If this information indicates that flu is causing more severe disease than during the spring 2009 outbreak, more after-school or off-hours plans to cover key positions (for example, school nurses) when staff are home ill, and regularly remind parents and staff of the exclusion recommendations.

Recommended school responses to influenza for the 2009 – 2010 school year

Basic foundations of infection control in school settings should always be promoted and facilitated, not only during an influenza pandemic. During flu season, schools should be particularly vigilant about keeping sick students and staff at home. Schools should follow key principles: keep sick students at home, separate ill students and staff, separate sick students and staff from healthy students and staff, keep sick students home, and keep sick infants and toddlers home.


Recommended responses under conditions with similar severity as in spring 2009

Stay home when sick

CDC recommends that individuals with influenza-like illness remain at home until at least 24 hours after they are free of fever (100° F [37.8° C] or greater), or signs of a fever, without the use of fever-reducing medications.

This recommendation is based on epidemiologic data about the overall risk of severe illness and death attempts to balance the risks of severe illness from influenza and the potential benefits of decreasing transmission through the exclusion of ill persons with the goal of minimizing social disruption. Depending on local conditions, extending the exclusion period should be made at the community level, in conjunction with local and state health officials. More stringent guidelines and longer periods of exclusion – for example, until complete resolution of symptoms – may be considered for people belonging to settings where high numbers of high-risk people may be exposed.

Epidemiologic data collected during spring 2009 found that most people with 2009 H1N1 flu who were not hospitalized had a fever last 2 to 4 days; this would require an exclusion period of 3 to 5 days in most cases. Those with more severe illness are likely to have fever for longer periods of time. Although fever is a component of the case definition of influenza-like illness, the epidemiologic data collected during spring 2009 found that a minority of patients infected with 2009 H1N1 flu with respiratory symptoms did not have a fever.

Sick individuals should stay at home until the end of the exclusion period, to the extent possible, except when necessary to seek required medical care. Sick individuals should avoid contact with others. Keeping people who get infected at elevated temperature is associated with increased shedding of influenza virus. CDC recommends this exclusion period whether or not antiviral medications are used. People on antiviral treatment may shed influenza viruses that are resistant to antiviral medications.

Many people with influenza illness will continue shedding influenza virus 24 hours after their fevers go away, but at lower levels than during acute infection. Shedding of influenza virus, as detected in respiratory tests, can be detected for several days in people who have had influenza-like illness. Therefore, when people who have had influenza-like illness return to school they should continue to practice good respiratory etiquette and hand hygiene when they return to school and avoid close contact with people they know to be at increased risk of influenza-related complications.

Because some people may shed influenza virus before they feel ill, and because some people with influenza will not have a fever, it is important that all people cover their cough and wash hands often. To lessen the chance of spreading influenza viruses that are resistant to antiviral medications, adherence to good respiratory etiquette and hand hygiene is as important for people taking antiviral medications as it is for others.

Fever-reducing medications, that is, medications containing acetaminophen or ibuprofen, are appropriate for use in individuals with influenza-like illness. Aspirin (salicylic acid) should not be given to children or teenagers who have influenza; this can cause a rare but serious illness called Reye’s syndrome. The determination of readiness to return to school should be made when at least 24 hours have elapsed since the ill person’s temperature first returned to normal without the use of these medications.

Visit: http://www.cdc.gov/h1n1flu/guidance_homecare.htm for more information on caring for sick persons in the home.

Separate ill students and staff

Schools and staff should always be required to stay home. CDC recommends that students and staff who appear to have an influenza-like illness at arrival or become ill during the day be promptly separated from other students and staff and sent home. Schools should regularly update contact information for parents so that they can be contacted more easily if they need to pick up their ill child. Recognizing that space is often in short supply, early planning on the location for a sick room is essential. This room should...
CDC recommends that staff who provide care for persons with known, probable or suspected influenza or influenza-like illness use appropriate personal protective equipment.

Visit: https://www.cdc.gov/h1n1flu/masks.htm for more information on caring for a sick person.

Hand hygiene

Influenza can spread via contaminated hands or inanimate objects that become contaminated with influenza viruses. CDC recommends that staff and students be encouraged to wash their hands often with soap and water, especially after coughing or sneezing. Hand-hygiene hand wash instructions are also effective if alcohol-based hand cleansers are available. If alcohol-based hand cleansers are not available, alcohol-based products are not allowed in the school, other hand sanitizers that do not contain alcohol may be useful. Hygiene hand wash instructions is less evidence on their effectiveness compared to that on hand washing and alcohol-based sanitizers.

Schools should provide the time needed for all students and staff to wash their hands whenever necessary, especially after coughing or sneezing into hands, before eating, and after using the restroom. Soap, paper towels and sanitizers are critical for proper hand hygiene and should be readily available in schools. If it is necessary to provide supervision to students as they wash hands in rest rooms, schools should consider timing and staffing as they plan for the fall.

Visit: www.cdc.gov/cleanhands for more information on hand hygiene.

Respiratory etiquette

Influenza viruses are thought to spread mainly from person to person in respiratory droplets of coughs and sneezes. This can happen when droplets are inhaled by people nearby. CDC recommends covering the nose and mouth with a tissue when coughing or sneezing and throwing the tissue in the trash after use. Wash hands promptly after coughing or sneezing. If a tissue is not immediately available, cover a cough or sneeze with the sleeve (not one's hand) and wash hands as soon as possible.

Schools and staff should consider using masks for persons with influenza-like illness who are in close contact with others in the school. CDC recommends that school employees wear surgical masks. When should students and other staff wear a mask? The key is to prevent spread of the virus when a person is in respiratory droplet or airborne transmission: Instead, this strategy aims to protect students and staff at high risk of severe illness and death. Information on reactive school dismissals may be considered based on the population of an individual school.

Selective school dismissals

Selective school dismissals may be considered based on the population of an individual school.

Adverse events and side effects

Adverse events and side effects of antiviral medications include nausea, vomiting, diarrhea, mild liver function tests and rarely, encephalopathy. There has been no confirmed resistance to oseltamivir in the U.S., but concerns about resistance to zanamivir have been reported in Japan, and the World Health Organization (WHO) suggests the need for clinical surveillance of antiviral resistance to zanamivir in countries unexposed to influenza C.

Antidepressants can cause nausea, vomiting, diarrhea, and constipation. They can cause mild to moderate liver function test abnormalities, but rarely lead to severe liver disease. Antidepressants can cause seizures. Aseptic meningitis has been reported in patients taking fluconazole. Risks and benefits need to be carefully weighed with patients and the relative risk of antiviral resistance and resistance to antiviral medications needs to be considered.

School nurse team

School nurse teams are critical to the success of these strategies. Their role includes coordinating care and communication with parents, monitoring illness among students, and educating families, students, and staff about influenza and its prevention. School nurses also play an important role in the assessment of illness and the tracking of cases.
People who elect to stay home from school should also attempt to decrease their exposure in other ways for example, by avoiding large public gatherings. Well students should be expected to continue their education while at home as much as possible. Schools should prepare for discussions with parents about school safety and should consult with school boards and legal counsel about policy accommodations that might be necessary to allow students and staff at high risk for influenza complications to stay home. Local and state laws and policies also might need to be reviewed for applicability. Policies to be reviewed may be official or unofficial, such as school policies for students with perfect attendance. Schools should plan now for ways to keep first students who stay home through methods such as instructional telephone calls, homework packets, internet-based lessons, and other distance-based learning approaches.

**Students with ill household members stay home**

If influenza severity increases, school-aged children who live with people with influenza-like illness should remain home for 5 to 7 days from the first household member got sick. This is the time period they are most likely to get sick themselves. The risk of transmission is highest during the first 2 days of illness (about 90%), with the next highest transmission risk by Day 1 of this person’s illness (about 40%). Keeping all the children in the household at home during this time period may also keep the flu virus from being spread to others outside the home. If a household member develops an acute respiratory illness during this time, the recommendation is for exclusion of persons with influenza-like illness should be implemented. The five-day period does not need to start again for other well children in the household.

**Increase social distances within the school environment**

If influenza severity increases, schools should explore innovative methods for increasing social distances within the school environment. The goal should be to keep distance between people at most times or to cluster students in small, consistent groups. This is not a simple or easy strategy for most schools. Implementing any of the following options would require considerable flexibility and willingness to change among students, staff, and families. Some transmission options to increase the amount of space between students or to keep consistent groups of students include:

- rotate teachers between classrooms while keeping the same group of students in one classroom (in middle and high school);
- cancel classes that bring students together from multiple classrooms (in elementary school);
- postpone class trips that bring students together from multiple classrooms or schools in large, densely-packed groups;
- hold classes outdoors;
- discourage use of school buses and public transit;
- divide classes into smaller groups;
- move desks farther apart; and
- move classes to larger spaces, when available, to allow more space between students.

**Extended exclusion period**

If influenza severity increases, individuals with influenza-like illness should remain at home for at least 7 days, even if symptoms resolve sooner. Individuals who are still sick 7 days after they became ill should continue to stay home until all influenza-like symptoms have resolved. This recommendation is based on viral shedding information. Influenza virus shedding general occurs for 5 to 7 days for seasonal influenza infection. This period may be longer for persons with 2009 H1N1 flu and among young people who are immunocompromised. Longer period of exclusion also may be considered based on setting- and population-specific characteristics. Schools also might prefer a longer period so that students and staff feel able to fully function at school after recovery from their illness. Sick individuals should stay at home until at least the end of the exclusion period, to the extent possible, except when necessary to seek required medical care. Sick individuals should avoid contact with others. CDC recommends this exclusion period whether or not antiviral medications are used. People on antiviral treatment may shed influenza viruses that are resistant to antiviral medications. When people who have had influenza-like illness return to school they should continue to practice good respiratory etiquette and hand hygiene. Schools should consider holding school-related mass gatherings outside. This is especially important for antiviral medications as it is for other preventive measures. CDC recommends that communities review and prepare to implement their school dismissal plans according to the guidelines outlined below. School and health officials should balance the risks of influenza in their community with the disruption dismissals will cause in both education and the wider community. School officials should work closely and directly their local and state public health officials to make sound decisions, based on local conditions, and to implement strategies in a coordinated manner.

When communities choose to use school dismissal, education and public health officials should clearly state to parents and their communities the reason for dismissing students and the type of school dismissal they are implementing. There are three types of school dismissals: selective (described above), reactive, and preemptive. Reactive dismissals might be appropriate when schools are experiencing excessive absenteeism among students or staff, a large number of students are visiting the school health office or being excused from school during the school day with documented fever, the school is not able to keep potentially infectious people out, or for other reasons that decrease the ability to maintain school functioning. Reactive dismissals might reduce the burden on the local health care system.

A reactive decision to dismiss students should be made locally and should balance the goal of reducing the number of people who become severely ill or die from influenza with the goal of minimizing social disruption. School officials are encouraged to work collaboratively with others in their communities to keep others in the region aware of actions that are being taken. Officials might decide to dismiss or not dismiss students from their own schools based on the experiences of their neighbors. The risk to students and staff from an ongoing school-based outbreak if potentially infectious individuals cannot be excluded from school may also lead to jurisdictions to decide to close schools. In this case, school-related mass gatherings also should be cancelled or postponed. Preemptive dismissals can be used to decrease the spread of influenza virus or to reduce demand on the health care system. If global or national risk assessments indicate an increased level of severity compared with the spring 2009 H1N1 influenza outbreak, CDC might recommend preemptive school dismissals. If schools are dismissed, school-related mass gatherings should be cancelled or postponed. This would include sporting events, school dances, performances, rallies, commemoration ceremonies, and other events that bring large groups of people into close proximity with one another. School dismissal is likely to be more effective in decreasing the spread of influenza virus in the community when used early in relation to the appearance of the virus in the community and when used in conjunction with other strategies (for example, cancellation of community sporting events and other mass gatherings). Cancellation or postponement of community events is a decision of event organizers, local public health officials and other government agencies and should be part of a coordinated community prevention strategy of spreading influenza viruses that are resistant to antiviral medications, adherence to good respiratory etiquette and hand hygiene is as important for other strategies as it is for other preventive measures. CDC recommends that communities review and prepare to implement their school dismissal plans according to the guidelines outlined below. School and health officials should balance the risks of influenza in their community with the disruption dismissals will cause in both education and the wider community.

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Reducing adverse effects from school dismissal
As part of a community planning process, school dismissal plans should address possible secondary effects on the community. The planning process should include communicating these plans with the community members affected by school dismissal. These might include effects on critical infrastructure, parents’ job security and income loss, school funding due to funding calculations based on attendance, child nutrition due to the loss of access to the school meals program, loss of access to health services, educational progress, and family safety due to possibly increased unsupervised time. Communities should prepare to address these secondary effects so as to increase the acceptability of and participation in school dismissal. Parents should plan for child care while schools are dismissed, as these decisions may be made very quickly.

Collaboration is essential: many different stakeholders have important roles to play in the decision-making process, implementing strategies, and ensuring their effectiveness. To be most effective, these activities must be coordinated at the federal, state, and local levels.

- CDC will continue to monitor the spread and severity of influenza illness, monitor for changes in circulating influenza viruses that may confer increased severity of disease, identify promising methods for reducing morbidity and mortality, assist state and local health and education agencies to implement those methods and evaluate their effectiveness, and provide timely updates on new scientific findings as well as additional guidance as the situation warrants.
- The U.S. Department of Education (ED) will collaborate with federal, state, and local agencies as well as non-governmental entities to disseminate new guidance, provide support to state and local education agencies, and work with states to provide flexibility in regulations around funding.
- ED, state public health and education agencies, and CDC will monitor school dismissals and other related issues.
- State and local public health and education agencies should work together to decide which strategies to implement and when, collect and share data, and disseminate emerging guidance.
- Schools should examine and revise, as necessary, their current crisis or pandemic plans and procedures, including updating contact information, and communicate with vendors who supply critical products or services to plan for continuation of those services throughout the flu season. Critical services may include food service, hygiene supplies, and personal protective equipment for staff. This planning is especially important when suppliers may be small businesses in the local area that could also be affected by a flu outbreak.

Strategies applied early and simultaneously based on trends in the severity of the disease, characteristics of the virus, expected impact, feasibility, and acceptability. These issues should be determined through collaborative decision-making involving education and public health agencies, parents, and the community.

CDC and its partners will continuously look for changes in the severity of influenza-like illness and will share what is learned with state and local agencies. However, states and local communities can expect to see a lot of differences in disease burden across the country. Every state and community should have a variety of objectives to determine their best course of action to help decrease the spread of influenza.

Decision-makers should explicitly identify and communicate their objectives which might be one or more of the following: (a) protecting overall public health by reducing community transmission; (b) reducing transmission in students and school staff; and (c) protecting people with high-risk conditions.

Some strategies can have negative consequences in addition to their potential benefits. In the particular case of school dismissals, decision-makers also must consider and balance additional factors: (1) how to ensure students continue to learn; (2) how to provide an emotionally and physically safe place for students; and (3) how to reduce demands on local health care services. The following questions can help begin discussions and lead to decisions at the state and local levels.

Decision-Makers and Stakeholders

Are all the right decision-makers and stakeholders involved in the decision-making process?
- Identify the decision-makers. In different jurisdictions, local and state health, education, and homeland security agencies may have relevant decision-making responsibilities. Direct involvement of governors, mayors, public health officials, or school superintendents may be needed.
- Identify the stakeholders. Stakeholders will vary from community to community but may include parent representatives, students, local business and faith community representatives, teachers, health care providers, hospitals, community organizations, school nurses, school food service directors, and vendors that supply schools.

What is the process for working together?
- Do you have a process for regular input and collaboration on decisions?
- Are there strong, open communication channels between health and education officials? Does this include frequent information sharing?
- Do you regularly review your crisis and pandemic plans? Do you revise as needed?

Information Collection and Sharing

Can local or state health officials determine and share information about the following?
- Is the hospitalization rate for influenza-like illness? Are the numbers of hospitalizations or deaths increasing? What percent of these hospitalized patients require admission to intensive care units? How many influenza deaths have occurred in the community? Are some groups being disproportionately affected?
- How busy are local health care providers and emergency departments? How many visits are they getting for influenza-like illness? Are they able to meet the increased demand for care from persons with influenza-like illness? Are local health care providers or emergency departments becoming overburdened?
- Does the hospital and intensive care unit (ICU) beds fill up with influenza patients? Is there available space in the ICUs? Are there enough ventilators?
- Are the hospitals have enough staff to provide care? Is there increasing absenteeism in health care workers due to influenza-like illness in themselves or their family members?
- Is there enough antiviral medication to treat sick patients at high risk for complications?

Can local education agencies or schools determine and share information about the following?
● What are school absenteeism rates? How many visits are being made to school health offices daily? How many students with influenza-like illness are being sent home during the school day?

Feasibility
Do you have the resources to implement the strategies being considered?
● What resources are available? Do you have access to the funds, personnel, equipment, and space needed?
● How long will the strategies take to implement? How long can the strategies be sustained?
● Are changes to legal authority or policy needed? How feasible are these changes?
● How can you most clearly communicate with the community about steps parents, students, individuals and families need to take and the reasons for recommendations?

Acceptability
Have you determined how to address the following challenges to implementing the strategies?
● How are public concerns affecting the community? What can you do to empower personal responsibility for protective actions?
● Will the community support the strategies under consideration? What can you do to increase support?
● What secondary effects (for example, child nutrition, job security, financial support, health service access, and educational progress) might result from the strategies under consideration? Can you get the message out to businesses and employers that they need to have flexible leave policies that align with public health recommendations?
● Can these secondary effects be mitigated? Which community entities and organizations can help reduce the secondary effects?
● What can be done to increase community buy-in?