



## SCHOOLS RESPOND TO INFECTIOUS DISEASE

Every year, schools confront a range of infectious diseases such as chicken pox, lice, ringworm and seasonal influenza. In response, faculty and staff work together to control the outbreak, quell fears and dispel rumors. For example, school administrators may educate faculty about the disease, send notices home to parents to warn about the dangers of an outbreak and work collaboratively with the school nurse and other trained staff to accurately identify and treat sick children. However, a new strain of influenza—such as a mutation of the avian influenza virus (N5H1)—that spreads easily from person to person and triggers a pandemic, or global outbreak, would pose incredible challenges not only to health care providers, but also to schools and school districts. Now is the time for the education community to begin planning for an emergency health care response that will protect the health and well-being of students and staff.

### The Possibility of Pandemic Influenza

Influenza, or “the flu,” is caused by the influenza virus, which infects the respiratory tract and may cause severe illnesses and life-threatening complications in those affected. Three forms of the virus exist, each with its own variety of subtypes, or strains. Influenza is transmitted via the respiratory droplets of an infected person when he or she coughs or sneezes. The disease may also be spread by a person touching something with the influenza virus on it and then touching his or her mouth

or nose. Most healthy adults are able to infect others beginning the day *before* symptoms develop and up to five days after symptoms manifest. *In other words, infected persons may pass on the illness to others before they themselves manifest symptoms or while they are manifesting symptoms.* Typical symptoms include fever, headache, exhaustion, dry cough, sore throat, runny or stuffy nose and muscle aches. Children may also experience nausea, vomiting and diarrhea.

In the United States, the number of influenza cases peak from late December to early March; this is typically referred to as “flu season.” Because the virus is always present somewhere in the population, scientists are able to predict which strains will cause the most illnesses during a given flu season. With this information, scientists create a flu vaccine, which is typically given to the population each fall to allow enough time for the development of immunity to the predicted strains. However, even if a person has been inoculated, he or she may still acquire a mild case of the disease.

An influenza pandemic could occur if a new strain of the influenza virus emerged and was quickly transmitted through the human population before immunity was developed or a vaccine was created to counteract it. Such a new strain would put everyone equally at risk of being infected. A pandemic such as the “Spanish Flu” of 1918, which was caused by an unusually severe and deadly strain of H1N1 and which killed 50–100 million people worldwide,

would likely cause major social and economic disruption. For example, models predicting the rate of infection—based on a severe strain of the new virus and little or no preparation or intervention—project a bell-curve shape over a six- to eight-week period, with the two weeks at the peak of the curve potentially contributing to up to 40 percent of the workforce absenteeism rate across the country. Likewise, such a pandemic would almost certainly overwhelm global health care systems. The World Health Organization (WHO), the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC), and other domestic and international agencies are carefully monitoring influenza outbreaks and other disease patterns. Experts in these organizations believe it is only a matter of time before the next influenza pandemic occurs.

While scientists cannot predict the strain of flu that might lead to a pandemic, they are currently particularly interested in an Influenza A virus subtype called H5N1, commonly known as avian influenza or the “bird flu.” This virus occurs mainly in wild birds, is highly contagious among the birds and is also deadly to them. The H5N1 virus has killed birds in Asia, Europe, Africa and the Near East. According to the WHO, as of July 14, 2006, 230 people who have come into direct or close contact with diseased or dead birds have contracted the illness; a little over half of these individuals (132) have died. To date, human-to-human transmission of the virus has been rare; however, as with all viruses, under certain conditions H5N1 could mutate and become more easily transmissible among humans, resulting in a potential pandemic.

## INFLUENZA GLOSSARY

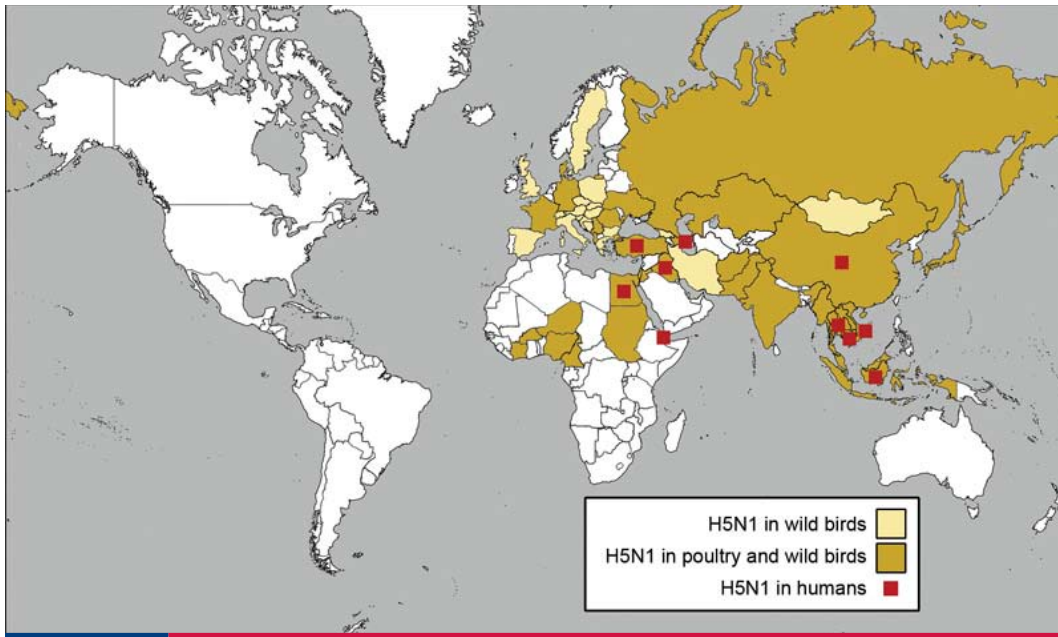
*Seasonal (or common) influenza:* a respiratory illness that can be transmitted from person to person. Although many people have some natural immunity to influenza, vaccines are made available each fall. Seasonal influenza poses a serious public health threat; approximately 36,000 Americans die from influenza or influenza-related causes each year, with approximately 120,000 cases resulting in hospitalization.

*Pandemic influenza:* a worldwide outbreak of a virulent strain of influenza. Because there is little natural immunity to a mutated strain, the disease is easily transmitted.

*Avian influenza (or H5N1 or “bird flu”):* a strain of the Influenza A virus that occurs naturally among wild birds. The H5N1 variant is deadly to domestic fowl and can be transmitted from birds to humans. To date, there is no evidence of sustained human-to-human transmission. There is no human immunity to H5N1 and no vaccine is available.

Source: “Flu Terms Defined,” taken from <http://www.pandemicflu.gov/general> (accessed July 13, 2006).

## Nations With Confirmed Cases of H5N1



Source: PandemicFlu.gov (<http://www.pandemicflu.gov>)

### Is Your School Ready?

Schools tend to be affected by outbreaks more than other settings because their occupants—primarily children—easily transmit illnesses to one another as a result of their close proximity and their inefficiency at containing the droplets issued by their coughs and sneezes. Compared to seasonal influenza outbreaks that are usually short-lived and more easily managed (e.g., instruction can proceed with substitute teachers and assignments can be sent home to ill students), an influenza pandemic could seriously disrupt the daily operations of a school. High susceptibility of students and staff to exposure to the mutated virus as a result of proximity and a longer duration of the outbreak due to lack of immunity and vaccines could result in lengthy and widespread absenteeism. In a worse-case scenario, the pandemic could force schools to close, potentially prompting administrators to extend the academic year and expend

additional resources for staff sick leave and substitute teachers.

These are issues that schools should begin considering now, before the advent of an influenza pandemic. In fact, many schools and school districts have already established or are beginning to establish plans for addressing a pandemic. These emergency response and crisis management plans should build on existing or emerging multi-hazard planning efforts. The four phases of emergency response and crisis management—prevention-mitigation, preparedness, response and recovery—provide a solid structure to follow when planning for a pandemic. Many components of these emergency response and crisis management plans, such as the communications infrastructure or the Incident Command System (ICS), would only need to be enhanced to include pandemic response.



*With pandemic flu, we're asking you to build on your emergency plans and procedures and put in place specific protocols [that are to be followed] in the event of a flu outbreak.*

—Margaret Spellings, secretary, U.S. Department of Education, in her remarks to public health specialists, education officials and other community leaders at the Pandemic Planning Summit on March 21, 2006, Raleigh, N. C.

## **Collaborate With Community Partners**

To prepare for and effectively respond to an influenza pandemic, school districts and local public health agencies should collaborate to: identify roles and responsibilities; establish appropriate strategies for closing schools and buildings (e.g., libraries, stores and other businesses) and limiting transportation (e.g., public, school-owned, and privately contracted); and refining their ICS to incorporate decision-making guidelines into their overall emergency response plans. Because information is constantly changing and emerging, these plans will need to

be continually reviewed and updated. In addition, school response teams should identify needs, resources and strategies they can share with other schools and ensure their plans' alignment with regional and state planning initiatives.

The following suggestions, categorized by the four phases of emergency response and crisis management, will assist schools and school districts in establishing or refining their emergency response and crisis management plans to include influenza pandemic considerations.

### ***Step 1: Prevention-Mitigation***

Schools and school districts should consider the following to help mitigate the consequences of a potential pandemic:

- Establish processes and procedures (a “surveillance system”) so individual schools can continually report the absentee rates for staff and students in collaboration with local health departments;
- Review management policies and procedures and enhance them if necessary, including continuity of operations plans, business continuity plans or personnel policies;
- Conduct training for nurses, teachers, administrative staff and food service staff about infectious diseases, their symptoms and treatments, and how to prevent and control outbreaks;
- Devise a communications system to inform parents of outbreaks, risks and precautions, as well as actions taken by the school district and resources for additional information;

- Disseminate messages about preventive hygiene—including effective hand washing and the importance of covering the mouth during coughs and sneezes—by using posters and videos to outline recommended procedures for staff and students;
- Identify key contacts in local public health departments; and
- Review and distribute recommendations from the WHO, the CDC and local public health departments for identifying and managing infectious disease outbreaks.

### *Step Two: Preparedness*

Schools and school districts should consider the following to prepare for a potential pandemic:

- Formalize collaboration and coordination of resources with local health departments or affiliated organizations such as hospitals;
- Review city, county or regional response plans to avoid fragmentation or unnecessary duplication of services;
- Consider alternate school calendars, Web-based instruction or other methods to ensure continuity of instruction;



- Establish incident command structures and ensure they comply with National Incident Management System guidelines [<http://www.ercm.org/index.cfm?event=express> (accessed July 13, 2006)];
- Share general health and hygiene information (e.g., hand washing, covering coughs and sneezes and disposing of used facial tissues) when discussing the management of seasonal influenza;
- Stock appropriate and adequate sanitation supplies such as soap, alcohol gel, tissues and surgical masks;
- Exhibit colorful posters and signs, show videos and share Web links that support preparedness education in schools (see the Resources section for more information);
- Update contact lists for parents and guardians and establish protocols for keeping ill children at school or sending them home;
- Formulate plans to continue school operations and instructional programs with up to a 30 percent reduction in the workforce, ensuring adequate instructional coverage (e.g., substitute teachers) and coverage of important administrative functions such as payroll;
- Collaborate with personnel unions to include in collective bargaining agreements or labor-relations agreements nonpunitive sick or liberal leave options, alternate work schedules, monetary or other compensation and extra or alternative assignments;

- Review the strategies for maintaining communication with staff, parents and students; and
- Test plans and conduct tabletop exercises to determine the feasibility and operability of plans.

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*School staff might be tempted to regard [a serious outbreak] as ‘just [another] flu [season].’ But a functional exercise ... will help them understand the potential threats posed by a pandemic.*

—Pegi McEvoy, safety administrator, Seattle School District

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### *Step Three: Response*

Once the first case of pandemic influenza has been diagnosed in a community, schools and school districts should transition into the response phase. Actions to take should include:

- Activating response plans;
- Contacting district personnel and incident commanders;
- Following the procedures outlined in their joint response plans, such as isolating sick students and staff and sending them home (if necessary), ensuring sanitation supplies are readily available, and communicating with parents and the external community about the outbreak;
- Delivering timely and honest communication that demonstrates that schools and school districts are taking reasonable action to preserve the safety and health of faculty, staff, students and the students’ families; and
- Monitoring the situation and implementing policies accordingly.

Things to consider during the response phase include:

- *The potential spread of misinformation.* The diverse and rapid communication options of our digital age could have both positive and negative effects on managing an outbreak. The use of Web-based technologies and teleconferencing and e-mail capabilities could not only slow the spread of the disease (by limiting face-to-face contact), but also maintain continuity of learning for students and daily transactions for businesses. However, without careful planning, the nonstop communication that characterizes our times may fuel rumors, conjecture and misinformation about a pandemic. According to Dana Carr, project officer for the Office of Safe and Drug-Free Schools at the U.S. Department of Education, pandemic planning and response must focus on maintaining open, efficient and effective lines of communication, and on ensuring that school constituencies and the public know in advance where to locate official information.
- *School closures.* The decision to close schools may be determined by local public health departments; however, communities should consider the complex social implications of doing so. For example, a



school closure means that parents may need to stay home with their children or ensure that someone else is able to do so. If schools are closed for a long period of time, a large task will be to keep children from gathering in other public places, such as shopping malls or parks, so as to minimize the risk of spreading the infection. School districts must also consider children with special needs, such as those who receive their primary nutrition at school.

#### **Step Four: Recovery**

The objective of recovery is to restore the learning environment as soon as possible. Actions to take in the recovery phase will depend on the severity and duration of the outbreak. Schools and school districts may need to consider:

- *Disinfection.* Although viruses can live up to 48 hours outside the human body on nonporous surfaces like plastic, metal or wood (depending on the virus), schools may still be able to reopen after an influenza pandemic without much need for disinfecting their buildings. However, disinfection depends primarily on the severity and duration of the pandemic, which, along with other factors, should inform decisions made by school response teams and local health departments.
- *Period of adjustment.* To assist students in readjusting to classroom-based learning—a process that may take a significant amount of time—school administrators, faculty and staff should be willing and able to provide additional instruction and reinforce behavioral expectations.

- *Mental health issues.* In collaboration with local mental health partners, school guidance counselors may assist students with loss or grief issues; schools will also need to address staff mental health needs.

### **The Federal Government's Response to Pandemic Influenza**

In November 2005, the White House released the report, *National Strategy for Pandemic Influenza*, available at <http://www.whitehouse.gov/homeland/nspi.pdf> (accessed July 13, 2006), to guide the nation's preparedness efforts and, if necessary, direct its response to an influenza pandemic. The strategy focuses on: stopping, slowing or limiting the emergence of a pandemic in the U.S.; containing the spread of the disease; and sustaining the nation's infrastructure and economy during an outbreak.

The White House's May 2006 follow-up to its national strategy, *National Strategy for Pandemic Influenza: Implementation Plan*, available at [http://www.whitehouse.gov/homeland/nspi\\_implementation.pdf](http://www.whitehouse.gov/homeland/nspi_implementation.pdf) (accessed July 13, 2006), outlines over 300 actions, many of which have already been initiated, that the federal government is taking to prepare for an influenza pandemic. These steps include viral research, the development of vaccines and surveillance for the disease in people and animals.



The implementation of the national strategy is a joint effort by the U.S. departments of Homeland Security (DHS) and Health and Human Services (HHS). The DHS is responsible for the coordination of federal operations and resources, the establishment of reporting requirements and the continuity of communications among federal, state, local and tribal governments, the private sector, and nongovernmental organizations. HHS is charged with leading health and medical response efforts and is the principal federal spokesperson for public health issues.

The White House will release more information in fall 2006 on the steps schools and school districts can take to quickly and efficiently respond to an influenza pandemic.

The U.S. Department of Education also has a comprehensive preparedness and response plan that focuses on four main areas: 1) maintaining the health and safety of the school-based population; 2) maintaining continuity of business functions, including learning and school administrative processes; 3) supporting federal, state and local partners; and 4) communicating with all stakeholders throughout a pandemic. The specific details of the plan center around the unique challenges presented by the potential spread of infectious disease. The Department relied heavily on information from the CDC, the DHS and other sources in crafting its plan and tailoring it to its constituencies. This complement to the Department's Continuity of Operations Plan (COOP) is not available to the public.

As part of the Department's plan, Emergency Response and Crisis Management (ERCM)

grant applicants will be required to address infectious disease planning in their fiscal year (FY) 2006 applications. A primary resource for grantees is the government's pandemic flu Web site, <http://www.pandemicflu.gov>, which offers a school district planning checklist (see the Resources section), and sample emergency response and crisis management plans from school districts across the nation. Although pandemic influenza plans are more complex than regular infectious disease outbreak plans, much of the work for pandemic influenza planning builds on the contacts and processes developed through regular infectious disease planning.

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The potential for an influenza pandemic should encourage schools and school districts to review and refine their multi-hazard crisis planning and emergency management plans to include the

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*Planning for a pandemic is part of the continuum of emergency response and crisis management planning. The fundamental planning concepts apply to a range of emergencies; however, all emergencies and crises differ in the details of preparation, preparedness, response and recovery. Pandemic influenza planning efforts should build on existing multi-hazard planning infrastructures and processes.*

—Dana Carr, program specialist, Office of Safe and Drug-Free Schools, U.S. Department of Education

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management of infectious disease outbreaks. In addition, they now have a tremendous opportunity to strengthen their partnerships with their local law enforcement and public health agencies and improve communications plans

and infrastructures. These actions, coupled with leadership from the White House and the U.S. Department of Education, should enable schools and school districts to be well prepared to manage any outbreaks that lie ahead.

## **FALSE ALARM TEACHES VALUABLE LESSONS**

In 2003, Severe Acute Respiratory Syndrome (SARS) gripped the nation's headlines as travelers to China, Singapore and Vietnam were at risk of acquiring it. Closer to home, Toronto and Vancouver reported local transmission of the disease in Canada. Acting quickly, Seattle Public Schools (SPS) prepared informational letters to parents, translating the messages into several languages to coincide with what was spoken by parents and students in the school district. SPS administrators knew that many students would be traveling abroad on spring break to SARS-affected areas in China and Southeast Asia. The letters instructed parents to watch for signs of fever, keep sick children home and seek medical attention if necessary—especially if they were returning from a SARS-affected area.

District officials knew of seven children traveling to such areas, and assumed that their families would alert the students' respective schools if the children displayed any of the symptoms described in the letters. The students returned to school after spring break via buses and interacted with other children. One student, eager to return to school after the break, neglected to tell her parents that she was not feeling well. Once at school, she developed a

high fever and other symptoms, which presented multiple challenges to administrators.

First, the student needed to be isolated, examined and sent home. However, the disposable paper masks kept at her school, sufficient for protection against regular infectious disease outbreaks, were ineffective against the deadly airborne SARS. Second, the school nurse could not get close enough to examine the student until an N95 mask—a fluid-resistant, disposable and surgery-suitable mask with a 95 percent filtration ability—was driven to the school from another location. Third, the student could not be sent home by taxi because if she had SARS, the driver and all subsequent passengers would be exposed. After more delay, the student's mother came to the school and took the child to a doctor, who, after testing, determined that the student had a regular case of influenza.

Ultimately, district staff learned that the standard methods of dealing with outbreaks of childhood disease—letters to parents, maintaining a stock of disposable paper masks and transporting sick students home by taxi—would not be sufficient in the event of a potentially deadly outbreak.

## RESOURCES

### U.S. Department of Education

The U.S. Department of Education Web site, <http://www.ed.gov>, offers the following free resources for schools and school districts to assist them in preparing and planning for a possible influenza pandemic:

#### ■ “Flu Information and Resources”

##### Web Page

The “Flu Information and Resources” Web page contains answers to frequently asked questions about influenza and offers links to CDC fact sheets, checklists, tool kits and other resources that promote preparedness in the classroom, at work and at home. It is available at <http://www.ed.gov/admins/lead/safety/flu-resources.html> (accessed July 13, 2006).

#### ■ 2005 Emergency Response and Crisis Management (ERCM) Grantee Meeting Materials

The U.S. Department of Education’s Office of Safe and Drug-Free Schools (OSDFS) conducted a meeting for FY 05 ERCM grantees Jan. 9–11, 2006, in Atlanta. The meeting agenda included two types of presentations: 1) plenary sessions; and 2) concurrent breakout sessions. The following two plenary presentations, listed on the ERCM Technical Assistance (TA) Center’s Web site under “Preparing for Pandemic Flu,” specifically addressed infectious diseases and pandemic influenza:

- *Pandemic Influenza: Preparing and Responding to a School Crisis* [listed as *The CDC’s Guidelines*] by Diane Allensworth, associate director, Education Sector, CDC
- *Planning for Pandemic Influenza* [listed as *Seattle’s Perspective*] by Pegi McEvoy, safety administrator, Seattle Public Schools

Both presentations are available at <http://www.ercm.org/index.cfm?event=trainings#AtlantaMeeting> (accessed July 13, 2006).

#### ■ Emergency Management Training for Schools

OSDFS conducted two training sessions for non-ERCM-funded school districts. The first session was held April 26–28, 2006, in Denver; the second was held May 15–17, 2006, in Pittsburgh. The following two plenary presentations, listed on the ERCM TA Center’s Web site under “Trainings” specifically address infectious disease and pandemic influenza:

- *Pandemic Influenza Planning: What Schools Need to Know* by David Morens, National Institutes of Health Division of Microbiology and Infectious Diseases, outlines the history of pandemics, common attributes and steps schools can take to prepare for pandemic influenza. The presentation is available at <http://www.ercm.org/views/documents/PandemicInfluenzaPlanningWhatSchoolsNeed2Know.ppt> (accessed July 13, 2006).

## RESOURCES (con't.)

- *Infectious Disease Planning: Incorporating Pandemic Planning into School Crisis Plans* by Dana Carr, program specialist, OSDFS, provides information about infectious diseases, examines the influenza pandemic in light of the application of the four phases of emergency management and outlines the steps schools can take to prepare for an outbreak. The presentation is available at [http://www.ercm.org/views/documents/InfectiousDiseasePlanning\\_PA.ppt](http://www.ercm.org/views/documents/InfectiousDiseasePlanning_PA.ppt) (accessed July 13, 2006).

### U.S. Department of Health and Human Services

The U.S. Department of Health and Human Services (HHS), which includes the Centers for Disease Control and Prevention (CDC), is the federal government's primary source of information on public health issues. The HHS Web site for pandemic influenza, available at <http://www.pandemicflu.gov> (accessed July 13, 2006), offers: maps; news articles; fact sheets; a question-and-answer section; links to global activities and state and local planning efforts; influenza research topics and timelines; a glossary; and the *National Strategic Plan* and its implementation plan. The CDC's influenza Web pages, available at <http://www.cdc.gov/flu/> (accessed July 13, 2006), also offer information about influenza for the general public as well as training materials for health professionals.

Other HHS resources include:

- **School District (K-12) Pandemic Influenza Planning Checklist:**

This comprehensive checklist, available at <http://www.pandemicflu.gov/plan/school-checklist.html> (accessed July 13, 2006), offers critical planning and collaboration steps that are centered on the four phases of crisis planning and build on the existing contingency plans recommended to schools and school districts by the U.S. Department of Education. A Spanish-language version of the checklist is forthcoming.

- **Emergency and Risk Communication Training**

The CDC's Office of Communication offers Emergency and Risk Communication (ERC) Training for public health workers and communicators. The goals of the training are to: disseminate training curricula and tools to help public health communication professionals effectively prepare for and respond to public health emergencies; introduce public health officials to the crisis and emergency risk training curricula and tools developed by the CDC's Office of Communication; and train communicators in how to train public health professionals to systematically plan, develop, implement and evaluate crisis and emergency risk communication activities.

## RESOURCES (con't.)

A synopsis of the ERC Training and a list of certified trainers are available at [http://www.cdc.gov/communication/emergency/erc\\_training.htm](http://www.cdc.gov/communication/emergency/erc_training.htm) (accessed July 13, 2006).

### ■ “Healthy Habits Keep You Well”

#### Web Page

The CDC has created materials for public use and made them available for free on its “Be a Germ Stopper” Web page, available at <http://www.cdc.gov/germstopper/> (accessed July 13, 2006). Resources on the page include posters, facts sheets, survey results and tool kits on topics such as hand washing, food safety, epidemiology and influenza. Other resources include information on CDC campaigns like “Get Smart: Know When Antibiotics Work” and “Clean Hands.”

### The White House

In November 2005, the White House released its *National Strategy for Pandemic Influenza* to guide the nation’s preparedness efforts and, if necessary, direct its response to an influenza pandemic. It is available at <http://www.whitehouse.gov/homeland/nspi.pdf> (accessed June 28, 2006). The May 2006 follow-up to the national strategy, *National Strategy for Pandemic Influenza: Implementation Plan*, outlines over 300 actions, many of which have already been initiated, that the federal government is taking to prepare for an influenza pandemic. It is available at [http://www.whitehouse.gov/homeland/nspi\\_implementation.pdf](http://www.whitehouse.gov/homeland/nspi_implementation.pdf) (accessed June 28, 2006).

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