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Pandemic Influenza: Is This Threat Real?

By Beth Anne Bahn, CSN, MSN, CRNP, Pennsylvania and Rosemary Moyer, CSN, MSN, CRNP, Pennsylvania

School nurses are accustomed to dealing with seasonal influenza. They understand the importance of flu shots, cough and sneeze etiquette and handwashing. More recently, however, a new variation of influenza has been causing concern. The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) have been calling for families, communities and schools to prepare for the inevitable outbreak of pandemic influenza. Health officials worldwide are warning that “it is not a question of whether there is going to be a killer pandemic, but when” (Philpott, 2007). This article will answer the question “Is This Threat Real?” by looking at the history of pandemics and other factors. A second article in this newsletter, “Pennsylvania Pandemic Planning Toolkit for Schools,” will introduce resources and items for consideration when schools plan for a pandemic.

What Is a Pandemic?

Pandemic influenza is defined by the CDC (2007) as “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 between humans for a sustained period of time in the community.” Three pandemics have occurred over the past century: (1) Spanish Influenza in 1918, causing 675,000 deaths in the United States and 50 million deaths worldwide; (2) Asian Influenza in 1957, causing 70,000 deaths in the United States and 1 to 2 million worldwide; and (3) Hong Kong Influenza in 1968, causing 34,000 deaths in the United States and 700,000 deaths worldwide (U.S. Department of Health and Human Services [HHS], 2006).

According to the WHO (2005), a pandemic can begin when three conditions have been met: (1) a new virus subtype emerges; (2) the virus causes serious human illness and death; and (3) the virus transmits easily from person to person. The most likely way for a new virus to appear is for a current virus which presents only in animals to mutate and become transmissible to humans. This is the case with avian influenza. Avian influenza is a virus that infects wild birds (ducks, gulls and shorebirds) and domestic poultry (chickens, turkeys, ducks and geese). It is classified as either “low path”, which causes minor symptoms in birds and poses little threat to humans or “high path”, which is often fatal in chickens and turkeys. There have been three major outbreaks of high path avian influenza in the United States, in 1924, 1983 and 2004, which

caused no significant illness to humans (U.S. Department of Agriculture, 2006).

The WHO (2007) reports 277 confirmed human cases of avian influenza (H5N1) resulting in 167 deaths from 2003 through March 1st of 2007. This represents a 60% fatality rate. The cases have been reported in 12 different countries, with the majority occurring in Vietnam and Indonesia. No human cases have been reported in Europe or North and South America. The majority of persons have been infected through direct contact with infected poultry or infected surfaces. There have been a few instances where secondary transmission person-to-person may have occurred.

What Is the Difference Between Seasonal Flu and Pandemic Flu?

In September of 2006, the U.S. Department of Education published “Pandemic Flu: A Planning Guide for Educators,” part of which outlines the differences between seasonal and pandemic flu. Though the symptoms (fever, cough and muscle pains) are similar between seasonal and pandemic flu, pandemic symptoms would be more severe and cause more complications, such as pneumonia. Even healthy adults would be at increased risk for serious illness and complications with pandemic flu. Being vaccinated for seasonal flu provides complete or partial immunity to the virus. However, there will be no vaccine readily available for pandemic flu. The medical community speculates that the earliest a vaccine would be available for distribution would be six to eight months after the identification of the virus. The HHS further differentiates between seasonal and pandemic flu. Seasonal flu occurs in a predictable pattern each year, over five to six months, while pandemic flu occurs rarely, but in waves lasting weeks to months.

Is This Threat Real and Relevant to Schools?

Pennsylvania’s Influenza Pandemic Response Plan (2005) identifies several assumptions including the inevitability that a pandemic will occur at some point in time, probably with little warning. Once a virus mutates to cause human-to-human transmission, global spread will be inevitable. During previous pandemics, it took six to nine months for the virus to encircle the world. The National Strategy for Pandemic Influenza Implementation Plan (The White House, 2006) concludes that barring any border or travel restrictions, pandemic influenza will arrive in the United States within one to two months of the virus appearing

elsewhere in the world. It is assumed that once the virus reaches the United States, it will cause simultaneous outbreaks across the country, severely limiting the availability of state and federal resources (Pennsylvania's Influenza Pandemic Response Plan, 2005).

HHS Secretary Michael Leavitt states, "The reality is that local preparation is the foundation of the response to a deadly flu outbreak" (Philpott, 2007). Schools need to begin planning now to include a pandemic component to their All-Hazards Emergency Response Plan. U.S. Secretary of Education Margaret Spellings states, "Educators must be integrally involved in state and local efforts to plan and prepare for a potential pandemic (U.S. Department of Education, 2006)." Schools will be essential partners in protecting the health and safety of their community when a pandemic occurs. At the present time, the two most critical factors for schools to consider in preparing for a potential pandemic are: (1) education of their students and staff on handwashing, as well as cough and sneeze etiquette; and (2) reaching out to their community by collaborating with local Emergency Management Agencies to incorporate school planning into the overall community plan in order to ensure a coordinated approach response in the event of a pandemic.

In the unlikely instance that a pandemic never occurs, this education and collaboration remains vital as a means to mitigate or lessen the effects of any communicable disease outbreak, including seasonal flu. Every year in the United States, 5–20% of the population becomes ill with seasonal flu, some schools close and approximately 36,000 people die. Of these statistics, the majority of flu cases occur in children, while the highest number of hospitalizations and deaths occur in persons over the age of 64 (CDC, 2006).

Is this threat real? Yes. Are schools vital partners in collaboration with their local communities to mitigate the effects of a pandemic or any communicable disease? Absolutely! Need to know how to get started with your school's planning? Check out the article, "Pennsylvania Pandemic Preparedness Toolkit for Schools," on pages 15–16 for specific steps in developing an effective plan.

To discuss pandemic flu preparations in your state, please contact your State School Nurse Consultant. To locate contact information for your State School Nurse Consultant, please visit the National Association of State School Nurse Consultants' website at www.nassnc.org and click on "About Us" to gain access to a listing of our members.

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