

Pediatricians Must Prepare for Influenza Pandemic

BY ROXANNE NELSON
Contributing Writer

LYNNWOOD, WASH. — An influenza pandemic may seem abstract right now, but it will happen, Dr. Kathryn Koelemay, M.P.H., said at a conference sponsored by the North Pacific Pediatric Society.

"The time that we spend preparing for it will be time well spent," she said.

Pediatricians can start now to ready their office and staff for such an event.

There have been three influenza pandemics during the past century, with the most notable being the Spanish flu, which circled the globe in 1918-1919. Smaller pandemics occurred in 1957-1958 and 1968-1969.

The most pressing concern currently is the outbreak of avian flu, caused by the highly pathogenic H5N1 strain, which first appeared in birds in 1997. Influenza viruses are common in birds, explained Dr. Koelemay, a medical epidemiologist at the Department of Public Health of Seattle and King County, Wash. "They affect birds all of the time, but they are generally of low pathogenicity."

Since 1997, the highly pathogenic strain of influenza type A H5N1 has infected birds in more than 50 countries, and to date, 12 nations have reported human cases.

The mortality is very high in human avian flu infections, Dr. Koelemay explained, but it is not easily spread among human populations.

All cases thus far have involved close contact with infected birds or family members, and no sustained human-to-human transmission has been reported. In fact, it remains very difficult for a person to be infected with avian flu, which continues to be largely a disease of birds.

Many experts warn that we are unprepared for a global influenza pandemic, which may be overdue, and the avian H5N1 is the most likely candidate. Even though human transmission remains limited, the potential for viral mutation persists. Evidence from 1918 suggests that the Spanish flu evolved from avian origin, so it is not inconceivable that it could happen again.

"One of the major differences between now and 1918 is the

greater degree of human migration. We know that the flu will move around the world much more quickly," said Dr. Koelemay.

Government agencies are making plans for this, but we also need to rely as much as possible on our own resources, she added.

Community strategies will involve measures that include iso-

to work. Dr. Koelemay explained that the most frequently cited reason for the unwillingness of employees to report to work during a disaster was fear and concern for their own safety and that of their family.

"You need to ask yourself what you can do now to make sure that you can report to work during a health emergency," said Dr.

Koelemay.

Pediatricians and their employees need to develop a personal family emergency and disaster plan.

Additionally, expectations of health care

workers also must be clarified in advance of a pandemic. Job expectations during a pandemic need to be specified, along with alternative work assignments for employees with medical conditions that place them at an increased risk, and policies for absenteeism, leave, and compensation.

The severe acute respiratory syndrome (SARS) outbreak taught us valuable lessons, which may help protect health care workers in the event of an influenza pandemic. SARS was transmitted to health care work-

ers because of a lack of infection-control precautions and training, an inconsistent use of personal protective equipment, and the use of aerosol-generating procedures without requiring fit-tested N-95 equivalent respirators.

"You have to train everyone in your facility—even down to the person who sits at the front desk," Dr. Koelemay said.

Effective education and training of all workers, providing appropriate protective equipment with sufficient training on how to use it properly, and establishing clear policies and protocols will help to alleviate fear among employees.

Pediatrics practices will encounter some specific challenges in the event of a pandemic, Dr. Koelemay pointed out.

"In pediatrics, beds tend to be more centralized than the patients are," she said.

Designated pediatric beds may not be available in all area hospitals, and there may be only minimal planning in the outpatient community.

Caring for children during a pandemic will require trained personnel, equipment, and supplies suitable for a pediatric population, she said. ■

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lation and treatment of known cases, and voluntary home quarantine of family members of patients with influenza. Other pandemic mitigation interventions call for the closure of child care programs and schools, and the use of social distancing measures to reduce contact between adults in the community and workplace.

Pediatricians need to prepare themselves and their office staff for a possible pandemic. A major problem during any type of emergency is the difficulty in getting health care workers to report

Resistant Influenza B Is Transmissible

BY MARY ANN MOON
Contributing Writer

Influenza B viruses with partial resistance to neuraminidase inhibitors have emerged during routine antiviral therapy and appear to be transmitted from person to person within communities as well as within families.

That finding emerged from a Japanese study.

So far, the rate of emergence of resistant influenza B viruses appears to be "low but appreciable" at 1.4%, and the mutant viruses appear to be as virulent as wild-type viruses, Dr. Shuji Hatakeyama and associates wrote.

In an editorial comment accompanying this report, Dr. Anne Moscona and Dr. Jennifer McKimm-Breschkin said that until now, the medical community has been somewhat complacent about resistant influenza B because little resistance has been documented, and the few resistant strains that have emerged in animal and in vitro studies appeared to have compromised infectivity and transmissibility. "This has led to the belief that significant transmission is unlikely to occur among humans," they wrote.

Now the findings of Dr. Hatakeyama and associates make it "striking-

ly clear" that resistant strains are already circulating among humans and that they induce infection with the same duration of symptoms, level of viral shedding, and clinical outcome as nonresistant strains.

This means "it is no longer possible to be confident that resistant strains will have little effect on epidemic or pandemic influenza," the editorialists said.

Dr. Hatakeyama of the University of Tokyo and associates tracked patterns of resistance and transmission during an influenza B outbreak in the winter of 2004-2005 that caused a widespread epidemic in Japan, the country with the highest use in the world of neuraminidase inhibitors such as zanamivir and oseltamivir.

Pharyngeal or nasal swabs were obtained before and after antiviral therapy from one sample of 74 infected children and from another sample of 356 children (median age 5 years) and 66 adults (median age 34 years) with influenza B.

Seven subjects (1.7%) had strains with partial resistance to zanamivir, oseltamivir, or both, even though

they had never been treated with antivirals. There was evidence that identical strains had been transmitted among family members as well as among members of the same community (JAMA 2007;297:1435-42).

There were no differences in symptoms, clinical course, or viral shedding between subjects with resistant strains of the virus and those with wild-type virus, which indicated that these mutant viruses "do not lose virulence even though they have evolved to a status that is less sensitive to the drug," they noted.

In their editorial comment, Dr. Moscona of Weill Medical College of

Cornell University, New York, and Dr. McKimm-Breschkin of Molecular and Health Technologies, Parkville, Australia, said, "Contrary to what had been hoped until now, some resistant variants are vigorous pathogens.

"The presence of low-level resistance sets the stage for selective pressure for development of high-level resistance," they noted (JAMA 2007;297:1492-3). ■

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Pet Turtles Carry Lethal Salmonella Risk, FDA Warns After Infant Dies

Pet turtles, especially those with shells less than 4 inches in length, are often natural hosts to *Salmonella* bacteria, and handling them or coming into contact with their habitats can lead to salmonellosis, the Food and Drug Administration has warned.

The recent death of a 4-week-old infant in Florida following an infection traced to the serotype *Salmonella pomona* from a pet turtle kept in the infant's home highlighted this risk and prompted the FDA to issue the warning. The FDA has banned the sale of under-4-inch turtles in the United States since 1975. According to an April 23 FDA consumer update, the size factor was based on the agency's judgment that larger turtles did not pose the same health threat because young children would not likely try to fit them into their mouths.

Salmonella bacteria are shed in the feces of infected turtles, then may spread to outer skin and shell surfaces. An infected turtle typically does not look or act sick. Testing may not prove a turtle is *Salmonella* free, since its feces may not always contain bacterial discharge.

The risk of mortality from salmonellosis is highest in infants, young children, the elderly, and any person whose immune system is weakened by pregnancy, disease, or cancer treatment.

To minimize potential contamination, the FDA recommends vigorous handwashing after touching pet turtles or any objects they have come into contact with, such as water dishes. For more information on the risks of turtle ownership, visit www.fda.gov/cvm/documents/turtlesflier.pdf or www.cdc.gov/healthy pets/spotlight_an_turtles.htm

—Denise Napoli