

Getting Workers Immunized

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workers not only protects patients by limiting their exposure to the virus, but also helps ensure that hospitals can function at their full capacity.

"We want to be certain that health care personnel are protected against both seasonal flu and the 2009 H1N1 virus," said Linda Greene, R.N., lead author of the position paper and the director of infection control at Rochester (N.Y.) General Health System. "Otherwise, facilities could face a double problem of increased illness and absenteeism among staff, coupled with overcrowded emergency departments."

Physicians and nurses are not the only ones who should be vaccinated, the paper said. "All employees with direct patient contact should be immunized annually, including physicians, nurses, therapists, dietitians, religious workers, environmental services, and kitchen staff."

At a press briefing in Washington sponsored by the National Foundation for Infectious Diseases, leaders from the American College of Physicians, American Academy of Pediatrics, and American Medical Association emphasized the importance of seasonal vaccination of

health care workers, urging clinicians to set a good example by emphasizing the protective value of seasonal flu vaccine and by getting vaccinated themselves.

"Speaking to my colleagues, I want to say one important message: I'm sorry, but it's not about you," said Dr. Gregory Poland, chair of the American College of Physicians' Adult Immunization Advisory Board. "It is about the patients that you are privileged to care for." Studies have shown that vaccination of health care workers against influenza sharply reduces patient mortality, he added.

Not only can health care workers protect themselves by getting their seasonal vaccinations, but early seasonal flu vaccination will also "free up doctors ... to be part of the public health team" when the pandemic H1N1 vaccine becomes available, said Dr. Nancy Nielsen, immediate past president of the AMA.

Evidence of the need to vaccinate health care staff against influenza comes from a prospective study conducted at Edouard Herriot University Hospital, a 1,100-bed tertiary care center in Lyon, France. Using data on adults treated at the

hospital during three consecutive seasonal flu epidemics between 2004 and 2007, the researchers recorded 64 incident cases of hospital-acquired influenzalike illness among 21,519 patients during 19,773 patient-weeks (3.2 cases per 1,000 patient-weeks). If all 21,519 patients had stayed home, only 33 would have been expected to have incident influenzalike illness, given the community rate of 1.7 per 1,000 patient-weeks derived from sur-

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veillance and census data for the Lyon area.

After adjustment for patient age, the relative risk for hospital patients was 1.95 when compared with individuals in the community, a statistically significant difference, Dr. Philippe Vanhems reported in San Francisco at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy, sponsored by

the American Society for Microbiology.

Patients who encountered no health care workers and no other patients with an influenzalike illness had no significant increase in the risk of acquiring such an illness while hospitalized. But the risk was increased 7-fold among patients who encountered at least one health care worker with an influenzalike illness, 24-fold among those exposed to at least one other patient on the ward with such an illness, and 47-fold among those who encountered at least one health care worker and at least one patient with such an illness. All of those differences were statistically significant, said Dr. Vanhems of the University of Lyon.

In addition to underscoring the need for vaccination of health care workers as well as good hygiene procedures, he noted that the study also suggests it may be wise to reduce hospitalization rates during a flu pandemic.

The study was sponsored by the French National Committee for Clinical Research, the French Ministry of Health, and Sanofi Pasteur. Dr. Vanhems and his colleagues did not disclose any conflicts of interest. ■

Robert Finn and Heidi Splete contributed to this report.

Diagnostic Challenges Are Anticipated in Pandemic Flu

BY BRUCE JANCIN

VAIL, COLO. — Recent anecdotal reports suggest that the diagnosis of 2009 influenza A(H1N1) should not be ruled out by a negative upper respiratory tract specimen in a patient with pneumonia.

There have been two patients at Albany (N.Y.) Medical Center and one in Denver who were hospitalized with severe lower respiratory tract infections whose nasopharyngeal swabs were negative for influenza A by rapid tests—but who had endotracheal aspirates positive for the 2009 H1N1 virus by culture and polymerase chain reaction (PCR).

"That's something to watch for. It would be consistent with findings in animal models showing the virus replicates very well in the lower respiratory tract," said Dr. Adriana Weinberg, who reported on the cases at a conference on pediatric infectious diseases sponsored by the Children's Hospital, Denver.

"As the pandemic evolves, perhaps we may see more cases with florid infection in the lower respiratory tract and not so much virus in the upper respiratory tract," said Dr. Weinberg, professor of medicine, pediatrics, and pathology and medical director of the clinical virology laboratory at the University of Colorado Hospital, Aurora.

At present, the preferred specimens for making the diagnosis of 2009 H1N1 are the same as for seasonal influenza: nasopharyngeal aspirates or swabs in adults and nasal washings in children. Yet negative results on upper respiratory tract specimens do not necessarily rule out 2009 H1N1 in patients with lower respiratory tract infections.

"In these patients, you may want to proceed with obtaining an induced sputum, an

endotracheal aspirate, or a bronchoalveolar lavage specimen to rule out the pandemic strain," Dr. Weinberg said.

Most diagnostic tests for seasonal influenza A or A plus B also will pick up the pandemic H1N1 strain. A caveat is that the rapid tests, which in general are not terribly sensitive for the diagnosis of seasonal influenza viruses, appear to be even less sensitive for 2009 H1N1.

"A positive rapid test indicates you may be dealing with the pandemic strain, but a negative test does not rule out pandemic influenza. However, culture and PCR are extremely sensitive for this strain," she continued.

The Centers for Disease Control and Prevention acted quickly in preparing tools for the diagnosis of 2009 H1N1. Regular PCR and culture cannot differentiate between seasonal influenza A and the 2009 H1N1 strain. But just 2 weeks after the first U.S. case of 2009 H1N1 disease was diagnosed in April, the CDC began sending out to sentinel laboratories PCR kits that are highly specific for the virus. Less than 2 months later, the kits were on-site at 233 U.S. laboratories, including all state health department laboratories.

Physicians can expect to see a lot of patients with a prominent gastrointestinal presentation of 2009 H1N1. Animal studies suggest that the pandemic strain replicates much better in the GI tract than do seasonal influenza viruses. That has been borne out in the first 400 U.S. cases of 2009 H1N1: More than 90% presented with fever and cough, and two-thirds had a sore throat—all typical of seasonal influenza—but in addition, 25% presented with diarrhea and 25% had vomiting. ■

Bacterial Coinfection a Factor In Fatal Pandemic H1N1 Cases

BY HEIDI SPLETE

Bacterial coinfections likely played a role in almost one-third of fatal cases of 2009 pandemic influenza A(H1N1) in the United States, based on data from 77 patients published online in the Centers for Disease Control and Prevention's Morbidity and Mortality Weekly Report.

"These findings confirm that bacterial lung infections are occurring among patients with fatal cases of 2009 H1N1 and underscore both the importance of pneumococcal vaccination for persons at increased risk for pneumococcal pneumonia and the need for early recognition of bacterial pneumonia in persons with influenza," the investigators wrote (MMWR 2009;58:1-4).

The investigators found evidence of concurrent bacterial infection in lung specimens from 22 of 77 patients (29%) with fatal cases of 2009 H1N1 infection. The specimens were submitted to the CDC by medical examiners and local health departments between May 1 and Aug. 20, 2009.

A total of 10 fatal cases were coinfections with *Streptococcus pneumoniae*, 6 were *Streptococcus pyogenes*, 7 were *Staphylococcus aureus*, 2 were *Streptococcus mitis*, and 1 was *Haemophilus influenzae*. Four of the fatal cases involved multiple pathogens. The age of the patients ranged from 2 months to 56 years,

with an average age of 31 years. The 22 patients were divided evenly by sex. The average duration of illness was 6 days, based on data from 17 of the 22 coinfection cases for whom this information was available.

Medical history was available for 21 of the coinfection patients, and 16 of these had underlying medical conditions "that were known to increase the risk for influenza-related complications," the investigators wrote. And 15 patients had conditions that were indications for vaccination with the 23-valent pneumococcal polysaccharide vaccine (PPSV23), the investigators added. Data were not available on the vaccination status of any of the 22 bacterial coinfection cases.

Although two early reviews of severe 2009 H1N1 cases this year showed no evidence of coinfection with bacterial pneumonia, the current results support findings from autopsy studies in previous pandemics, in which bacterial coinfections were found in the majority of the deaths attributed to influenza A infections, the investigators wrote.

The results were limited by incomplete patient information, a lack of specimens from unaffected lung tissue, and a limited evaluation of potential bacterial pathogens, they noted. ■

For the complete MMWR report, visit www.cdc.gov/mmwr.