Clinical Watch

FROM CSAC, THE CLINICAL AND SCIENTIFIC AFFAIRS COUNCIL OF THE AAPA

INFLUENZA 2008-2009

Update your vaccination protocol

›WHO SHOULD READ THIS?

Any physician assistant involved in patient care should be familiar with the latest information about influenza. Two important features of this disease are its epidemic nature and the mortality rate from pulmonary complications.[1] The old, the young, and patients with chronic conditions such as asthma, diabetes, or heart disease are at higher risk for serious complications.[1]

›WHAT ARE THE SYMPTOMS OF INFLUENZA?

Influenza type A and B viruses cause acute respiratory tract infections that may be self-limiting or may become complicated enough to require hospitalization. These viral infections are associated with high fever and cough; they generally occur during the winter, with outbreaks of varying intensity. The sudden onset of fever, malaise, headache, and myalgia can resemble the onset of other viral respiratory tract infections.[1]

Influenza virus spreads through airborne droplets produced by coughing or by direct contact with contaminated surfaces or infected patients. The onset of illness is within 1 to 4 days of exposure, with an average incubation period of 2 days. Adults begin shedding the influenza virus 1 day before the onset of symptoms and continue to shed virus for a week or more after symptom onset. The amount of virus being shed declines after 3 to 5 days, however, and patients will thereafter be less infectious. Children may shed virus for 10 days or longer. Immunocompromised persons may also shed virus for longer periods.[1]

›WHY IS INFLUENZA IMPORTANT?

Each year in the United States, 5% to 20% of the population acquires influenza, more than 200,000 people are hospitalized from complications, and about 36,000 people die from these complication.[2,3] Each year, the CDC publishes influenza surveillance activity from September to May. In general, significant numbers are reported in November, incidence peaks in February, and cases continue to be reported as late in the season as May.[2,3]

The influenza vaccine remains the best way to reduce morbidity and mortality.[1] Three influenza strains are chosen each spring, based on global surveillance, and used to make up the next season's influenza vaccine. In the 2007-2008 influenza season, the most severe since 2003-2004, 77% of influenza A (H3N2) viruses and 98% of influenza B viruses sent to the CDC were not optimally matched to the 2007-2008 influenza vaccine strains;[4,5] but during well-matched years, clinical trials have shown vaccine efficacy between 70% and 90% for inactivated influenza vaccines in the prevention of serologically confirmed influenza among healthy adults.[5]

TAKE-HOME POINTS

- Influenza is a serious infection with an epidemic nature and significant associated mortality.
- Annual vaccination is recommended to reduce morbidity and mortality associated with influenza.
- All patient office visits should be utilized as an opportunity for health promotion and vaccination.
- PAs should adopt the new paradigm of a longer vaccination period (from autumn through the entire influenza season).
- All eligible PAs should receive annual influenza vaccine.

›WHO SHOULD RECEIVE INFLUENZA VACCINATION?

The Advisory Committee on Immunization Practices (ACIP) of the CDC recommends annual influenza vaccine for all persons who want to reduce the risk of becoming ill with influenza or of transmitting it to others.[1] In February 2008, ACIP expanded their recommendations to include more children (see Table 1, page 18). Less than half of the eligible US population receives an influenza vaccination.[6] Unfortunately, vaccination rates for health care workers have also fallen far short of goals set by the CDC.[1]

PAs should use any office visit as an opportunity to vaccinate patients against influenza during the influenza vaccination season. Recently, there has a been a movement to expand this season, and many experts now recommend that the vaccine be given as soon it becomes available and that clinicians continue to vaccinate patients beyond the traditional vaccination season (October-January).[7] The CDC generally recommends that vaccination efforts continue as long as influenza is circulating in the community. This shift in the recommendations recognizes the value of vaccination throughout the season and the need to vaccinate at-risk persons at every opportunity.

›WHAT ARE THE CURRENT LICENSED VACCINES FOR INFLUENZA?

The FDA has approved six vaccines for use during the 2008-2009 influenza vaccination season; persons who receive these vaccines have a reduced likelihood

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TABLE 1. Who should receive influenza vaccination?

All children aged 6 mo-18 y
All persons >50 y
Adults <50 y at risk for medical complications from influenza
All persons who live with or care for persons at high risk for influenza-related complications
Contacts of children <6 mo
Women who will be pregnant during the influenza season
Health care personnel
Data from Fiore AE et al.[1]

TABLE 2. Who should not be vaccinated?

People who have a severe allergy to chicken eggs
People who have had a severe reaction to an influenza vaccination in the past
People who developed Guillain-Barré syndrome within 6 wk of receiving influenza vaccine
Children <6 mo (influenza vaccine is not approved for use in this age-group
People who have a moderate or severe illness with a fever
Data from Fiore AE et al.[1]

of becoming ill with influenza or of transmitting influenza to others.

There are two types of influenza vaccines. The *trivalent inactivated influenza vaccine* (TIV) is injected into the muscle of the upper arm or thigh. TIV can be administered to people 6 months of age or older, including healthy people, those with chronic medical conditions, and pregnant women. The *live attenuated influenza vaccine* is administered as a nasal spray, but this vaccine can be given only to healthy people aged 2 to 49 years who are not pregnant and who have no contact with persons who may be immunocompromised. There are some contraindications for annual influenza vaccination, and these are listed in Table 2.

WHAT ELSE IS IMPORTANT TO KNOW?

Resistance to antivirals The two classes of antiviral drugs that are used to fight influenza are the neuraminidase inhibitors—oseltamivir (Tamiflu) and zanamivir (Relenza)—and the M2 inhibitors—amantadine (Symmetrel) and rimantadine (Flumadine). In the United States, influenza A H1N1 viral strain resistance to oseltamivir increased from 0.7% last year to 8% of tested viruses this year.[1,4,5] Influenza A H3N2 strains remain highly sensitive to oseltamivir.[5] Zanamivir can be used effectively against all forms of influenza, as no resistance has been demonstrated to this inhaled drug.[5]

The use of these antiviral medications remains an important means of limiting the devastating effects of the influenza virus.[1] Table 3 lists the groups who should receive antiviral chemoprophylaxis.

M2 inhibitors attack the M2 channel of influenza A viruses, and because of a viral mutation, nearly all H3N2 strains are now resistant to both M2 inhibitors.[1] Only 8% of H1N1 strains are resistant. M2 inhibitors are ineffective against influenza B virus strains because their membranes lack M2 channels. Because of these patterns, the CDC has not recommended amantadine and rimantadine for influenza chemoprophylaxis for several years.[1] Vaccination remains the frontline weapon in the battle against seasonal Influenza.

Avian influenza According to data reported to the World Health Organization, 245 people in Asia and Africa have died from avian (H5N1) influenza thus far, a fatality rate of 63% (387 total cases).[8] This disease, while deadly, would have to achieve significant human-to-human spread before it could become a global killer.

Recent efforts to develop a vaccine against avian influenza have been successful,[9,10] and the FDA announced approval for such a vaccine last year. Many experts believe that vaccination has the greatest potential for preventing global devastation.[1,9,10] JAAPA

TABLE 3. When should chemoprophylaxis be considered during times of increased influenza activity?

After exposure to influenza <2 wk after being vaccinated
When a patient is at high risk for influenza and vaccination is contraindicated
When an unvaccinated person has continuing close contact with other high-risk or unvaccinated persons
When risk for influenza is high—or the patient is a family member, close contact of a high-risk person, or health worker—and current vaccines are not well-matched to circulating strains (this can be difficult to determine)
When the patient is immunocompromised or has a weak immune response to the vaccine
When an unvaccinated person works in an extended care facility where there is an influenza outbreak
Data from Fiore AE et al.[1]

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