



CDC Releases New Guidelines on Influenza Immunization **CME**

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May 5, 2004 — The Centers for Disease Control and Prevention (CDC) have released new guidelines on influenza immunization. This report, published on the CDC Web site, updates the 2003 recommendations by the Advisory Committee on Immunization Practices (ACIP) on the use of influenza vaccine and antiviral agents. (The report can be found at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr53e430a1.htm>.)

"Influenza vaccination is the primary method for preventing influenza and its severe complications," write Scott A. Harper, MD, and colleagues from the ACIP. "Although influenza vaccination remains the cornerstone for the control and treatment of influenza, information on antiviral medications is also presented because these agents are an adjunct to vaccine."

Principal changes or updates from the 2003 recommendations are that healthy children aged 6 to 23 months, and close contacts of children aged 0 to 23 months, should be vaccinated against influenza; severely immunosuppressed persons should not administer live, attenuated influenza vaccine (LAIV); and other persons at high risk for influenza complications may administer LAIV.

The guidelines recommend annual vaccination for three primary target groups. The first group is persons at increased risk for influenza-related complications, including those older than 65 years, children aged 6 to 23 months, pregnant women, and persons of any age with certain chronic medical conditions. The second group is persons aged 50 to 64 years, because this group has an increased prevalence of certain chronic medical conditions. Finally, the third group is persons who live with or care for persons at high risk, such as healthcare workers and household contacts in frequent contact with persons at high risk and who can transmit influenza to those persons at high risk.

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Benefits of vaccination documented in several studies include decreased influenza-related respiratory illness and physician visits in all age groups, lower incidence of hospitalization and death in high-risk groups, fewer cases of otitis media in children, and decreased work absenteeism.

The 2004-2005 trivalent inactivated vaccine virus strains are A/Fujian/411/2002 (H3N2)-like, A/New Caledonia/20/99 (H1N1)-like, and B/Shanghai/361/2002-like antigens. For the A/Fujian/411/2002 (H3N2)-like antigen, manufacturers may use the antigenically equivalent A/Wyoming/3/2003 [H3N2] virus. For the B/Shanghai/361/2002-like antigen, manufacturers may use the antigenically equivalent B/Jilin/20/2003 virus or B/Jiangsu/10/2003 virus.

During the summer of 2004, preceding the 2004-2005 influenza season, the CDC and other agencies will evaluate the vaccine supply throughout the manufacturing period to make recommendations regarding the need for tiered timing of vaccination for different risk groups.

"Although influenza vaccination levels increased substantially during the 1990s, further improvements in vaccine coverage levels are needed, chiefly among persons aged <65 years who are at increased risk for influenza-related complications among all racial and ethnic groups, among blacks and Hispanics aged >65 years, among children aged 6 to 23 months, and among health-care workers," the authors write. "ACIP recommends using strategies to improve vaccination levels, including using reminder/recall systems and standing orders programs."

Learning Objectives

Upon completion of this activity, participants will be able to:

- List the CDC's principal updated recommendations for the prevention and control of influenza.
- Describe some indications and contraindications for influenza vaccination and chemoprophylaxis.

Clinical Context

From 1990-1999, there were 36,000 deaths per year from influenza epidemics in the U.S. The ACIP recommends targeting annual vaccination for persons older than 65 years, children aged 6 to 23 months, pregnant women, persons of any age with chronic medical conditions, and persons aged 50 to 64 years who live with or are in close contact with persons at high risk, including healthcare professionals. Vaccination has been associated with reductions in respiratory illness from influenza, use of antibiotics for secondary bacterial infections, physician visits, absenteeism from work, otitis media in children, hospitalizations, and death.

Vaccination remains the cornerstone for the control and treatment of influenza, while antiviral medications are considered an adjunct. Inactivated influenza vaccine is preferred over LAIV. Both are antigenically equivalent to the annually recommended strains of influenza A and B and both are grown in eggs. Inactivated vaccine contains killed viruses and is approved for use in persons older than 6 months, while LAIV is approved for persons aged 5 to 49 years. Contraindications to the use of LAIV include egg allergy, persons with asthma and pulmonary diseases, underlying chronic medical conditions including diabetes and cardiovascular disease, pregnant women, children or adolescents receiving aspirin or salicylates (association of Reye's syndrome), and those with a history of Guillan-Barré Syndrome.

The current report updates the 2003 ACIP recommendations.

Study Highlights

The 4 principal changes from 2003 are:

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- Healthy children aged 6 to 23 months and close contacts of children aged 0 to 23 months should be vaccinated against influenza. The current inactivated influenza vaccine is not approved by the U.S. Food and Drug Administration (FDA) for use in children younger than 6 months, the group at greatest risk for influenza-associated complications. Thus, their close contacts should be vaccinated.
- Inactivated vaccine is preferred over LAIV for household members, healthcare workers, and others in close contact with severely immunosuppressed patients. If LAIV is used, vaccine recipients need to refrain from contact with immunosuppressed patients for 7 days.
- Severely immunocompromised persons should not administer LAIV. However, other persons at high risk for influenza complications may administer LAIV.
- The 2004-2005 trivalent vaccine virus strains are A/Fujian/411/2002(H3N2)-like, A/NewCaledonia/20/99(H1N1)-like, and B/Shanghai/361/2002-like antigens. The CDC and other agencies will assess the vaccine supply and make recommendations about tiered timing for vaccination of different risk groups in summer 2004.

Other findings and recommendations include the following:

- In 2004, 27 of 29 influenza vaccination products under CDC contract do not contain thimerosal as a preservative.
- Children eligible for influenza vaccination under the Vaccination for Children program now include those aged 2 to 18 years who are household contacts of children aged 0 to 23 months.
- The benefits of vaccination outweigh the risks in pregnant women and young children. Women who will be pregnant during the influenza season should be vaccinated. Vaccination with inactivated vaccine can occur in any trimester. No adverse fetal effects have been demonstrated in one study of more than 2,000 pregnant women. 1 to 2 hospitalizations can be prevented for every 1,000 pregnant women vaccinated.
- Breast-feeding does not affect the immune response and is not a contraindication for vaccination. There are no adverse effects in the mother or infant.
- The risk of influenza death in persons with HIV can be as high as 9.4 to 14.6 per 10,000 persons with HIV compared with 6.4 to 7.0 per 10,000 persons older than 65 years. Vaccination will benefit HIV-infected persons including HIV-infected pregnant women.
- Persons who provide essential community services, students (particularly those who reside in dormitories), and persons in institutionalized settings should be encouraged to receive the influenza vaccine.
- Persons allergic to eggs may be offered prophylactic antiviral agents instead of influenza vaccine.
- The available antiviral agents are the adamantanes, amantadine and rimantadine, active against influenza A only; and the neuraminidase inhibitors, zanamivir and oseltamivir, active against both influenza A and B. Dose, duration, and pharmacokinetics of these agents differ.
- Chemoprophylaxis is indicated for persons at high risk after an influenza outbreak has begun, unvaccinated healthy persons in contact with those at high risk, those with advanced HIV disease, and immunosuppressed patients with inadequate antibody response to influenza vaccine.
- During outbreaks in institutions, chemoprophylaxis should be administered to all residents and continue for a minimum of 2 weeks or at least 1 week after the end of the outbreak.
- Chemoprophylaxis has not been adequately evaluated for children younger than 1 year or in pregnant women and should only be used if the potential benefit clearly outweighs the risks.

Pearls for Practice

- Recommendations for influenza vaccination now include all healthy children aged 6 to 23 months and close contacts of children aged 0 to 23 months.
- Inactivated vaccine is preferred over LAIV.

Post Test

1. An otherwise healthy 5-month-old with a recent asthma attack presents for well-child care. Recommendations for influenza prevention include all the following *except*:

- a. Immediate vaccination with inactivated influenza vaccine
- b. Vaccination of close contacts
- c. Avoidance of institutional settings
- d. Maintenance of the usual immunization schedule

2. All of the following are contraindications to influenza vaccination with LAIV *except*:

- a. Egg allergy
- b. Breast-feeding mother
- c. Children receiving aspirin therapy
- d. Adults with asthma

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