

Complete Summary

GUIDELINE TITLE

Influenza vaccination as secondary prevention for cardiovascular disease. A science advisory from the American Heart Association/American College of Cardiology: endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Association of Critical Care Nurses, the American Association of Heart Failure Nurses, the American Diabetes Association, the Association of Black Cardiologists, Inc., the Heart Failure Society of America, and the Preventive Cardiovascular Nurses Association. The American Academy of Nurse Practitioners supports the recommendations of this scientific advisory. This science advisory is consistent with the recommendations of the Centers for Disease Control and Prevention and the Advisory Committee on Immunization Practices.

BIBLIOGRAPHIC SOURCE(S)

Davis MM, Taubert K, Benin AL, Brown DW, Mensah GA, Baddour LM, Dunbar S, Krumholz HM, American Heart Association, American College of Cardiology. Influenza vaccination as secondary prevention for cardiovascular disease: a science advisory from the American Heart Association/American College of Cardiology. *Circulation* 2006 Oct 3;114(14):1549-53. [33 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

- Influenza

- Cardiovascular disease (CVD)

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Cardiology
Family Practice
Infectious Diseases
Nursing
Pediatrics
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To equip practitioners with the information they need to adopt these recommendations into practice and ensure that cardiovascular patients have routine, annual influenza vaccination

TARGET POPULATION

Children and adults with chronic conditions, including cardiovascular disease (CVD) and diabetes

INTERVENTIONS AND PRACTICES CONSIDERED

Vaccination against seasonal influenza (inactivated influenza vaccine)

MAJOR OUTCOMES CONSIDERED

- Target vaccination rates
- Effectiveness of influenza vaccine for secondary prevention of cardiovascular events

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Level of Evidence

Level of Evidence A Data derived from multiple randomized clinical trials or meta-analyses.

Level of Evidence B Data derived from a single randomized trial or nonrandomized studies.

Level of Evidence C Only consensus opinion of experts, case studies, or standard-of-care.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Class of Recommendation

Class I Conditions for which there is evidence and/or general agreement that a given procedure/therapy is beneficial, useful, and effective.

Class II Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of performing the procedure/therapy.

Class IIa Weight of evidence/opinion is in favor of usefulness/efficacy.

Class IIb Usefulness/efficacy is less well established by evidence/opinion.

Class III Conditions for which there is evidence and/or general agreement that a procedure/therapy is not useful or effective and in some cases may be harmful.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This statement was approved by the American Heart Association Science Advisory and Coordinating Committee on August 11, 2006, and by the American College of Cardiology Foundation Board of Trustees on August 7, 2006.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the weight of the evidence (Class I-III and Level A-C) can be found at the end of the "Major Recommendations" field.

Seasonal influenza represents a major preventable threat to the health of persons with cardiovascular disease (CVD). Clinical trials and observational studies have demonstrated that vaccination against influenza is associated with significantly reduced risk of cardiovascular death and nonfatal events. Vaccination is currently recommended for persons with diabetes, a condition common to patients with CVD. On the basis of this evidence, the American Heart Association (AHA) and American College of Cardiology (ACC) recommend inactivated influenza vaccination as a component of secondary prevention for persons with coronary disease and other atherosclerotic vascular conditions (**Class I, Level B**). This level of recommendation is based on the judgment that influenza vaccination should be administered to all persons with CVD (unless they have a contraindication to receiving the vaccine) and on evidence from a single randomized clinical trial and several nonrandomized population cohort studies.

Currently, below-target vaccination rates and disparities in vaccination coverage across different ethnic groups represent missed opportunities to maximize the preventive benefits of influenza vaccination. Providers who care for patients with CVD can increase influenza vaccination coverage among their patients by stocking the vaccine and promoting annual vaccination immunization with strong recommendations and standing orders.

Definitions:

Classification of Recommendations

Class I Conditions for which there is evidence and/or general agreement that a given procedure/therapy is beneficial, useful, and effective.

Class II Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of performing the procedure/therapy.

Class IIa Weight of evidence/opinion is in favor of usefulness/efficacy.

Class IIb Usefulness/efficacy is less well established by evidence/opinion.

Class III Conditions for which there is evidence and/or general agreement that a procedure/therapy is not useful or effective and in some cases may be harmful.

Level of Evidence

Level of Evidence A Data derived from multiple randomized clinical trials or meta-analyses.

Level of Evidence B Data derived from a single randomized trial or nonrandomized studies.

Level of Evidence C Only consensus opinion of experts, case studies, or standard-of-care.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Influenza vaccination is associated with a significantly reduced risk of cardiovascular events for individuals with known coronary and other atherosclerotic conditions, including prior cerebrovascular accident.

POTENTIAL HARMS

CONTRAINDICATIONS

CONTRAINDICATIONS

- It is currently recommended that individuals with cardiovascular disease (CVD) not receive the live, attenuated influenza vaccine because it has not been approved for use in persons with CVD or other conditions that increase the risk of influenza-related complications.
- Persons with known anaphylactic hypersensitivity to eggs or a history of Guillain-Barre syndrome should not receive the inactivated influenza vaccine without first consulting a physician. If a person eligible for vaccination has moderate-to-severe acute febrile illness, vaccination should be delayed until symptoms have resolved.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Low Vaccination Coverage Rates Among Persons With Cardiovascular Disease (CVD)

The American Heart Association (AHA) American College of Cardiology (ACC) recommend that the >12 million persons in the United States with cardiovascular conditions get annual influenza vaccination. Current influenza vaccination coverage among persons with heart disease is far below national coverage goals set in Healthy People 2010 (>60% for persons ≤ 65 years of age; >90% for persons ≥ 65 years of age): Only 1 in every 3 adults with heart disease (34%) received influenza vaccination in 2005, a level of coverage that is essentially unchanged from other below-target rates achieved in 2002. In 2005, vaccination coverage among older adults (≥ 65 years old) with heart disease was much higher (71%) than among middle-aged (50 to 64 years old) and younger (18 to 49 years old) adults with heart disease (41% and 23%, respectively). Non-Hispanic white adults had similar influenza vaccination rates (38%) to black adults (36%), but rates in both groups were higher than among Hispanic adults (30%).

Failure to vaccinate persons with cardiovascular conditions and disparities in vaccination coverage across age categories and ethnic groups represent major opportunities for healthcare providers to improve the care of this patient population. A central barrier to vaccination against influenza is that only about one half of cardiology practices nationwide stock influenza vaccine, as opposed to >70% of endocrinology practices and of generalist primary care practices and >90% of pulmonology practices.

Outpatient visits to cardiology practices present a superb but frequently missed opportunity to administer influenza vaccine to millions of adults with CVD, as do outpatient visits in primary care settings and hospitalizations for cardiovascular causes. A recent study suggests that the most effective ways to improve influenza vaccination rates among nonelderly adults with heart disease are for cardiology practices to have influenza vaccine available in their offices for patient visits, for

cardiovascular care providers to strongly recommend vaccination to their patients during vaccination season, and for practices to implement standing-orders protocols that permit staff to administer influenza vaccine to patients with cardiovascular indications without waiting in each case for a physician's order.

It is important to emphasize that strong recommendations from health professionals about vaccination against influenza can be very influential, especially for urban, predominantly black patients. Patient-level barriers to influenza vaccination, specifically for persons with CVD, have not been well characterized and should be examined in future research.

Providers and practices that provide care for patients with CVD should stock influenza vaccine annually. There is a choice of manufacturers, and the vaccines are considered equally effective. Ordering information for all manufacturers licensed to provide influenza vaccine in the United States for the 2006/2007 season is provided on the American Heart Association Web site (www.americanheart.org) and in the Table.

Table. How Providers Can Place an Order for Influenza Vaccine in the United States

| Influenza Vaccine Manufacturers* (Alphabetical Order) | How to Order for the 2006/2007 Influenza Season^{+,++} |
|--|---|
| GlaxoSmithKline | Call Fluarix Service Center at 1-866-475-8222 (choose option 1). |
| Novartis (formerly Chiron) | Call 1-800-244-7668 (choose option 2) to receive a list of vaccine distributors in your area. |
| Sanofi Pasteur | Set up a provider account and then place order at http://www.vaccineshoppe.com . |

*These are manufacturers of inactivated trivalent influenza vaccine. Live, attenuated intranasal influenza vaccine (FluMist; MedImmune) is not recommended for individuals with cardiovascular conditions.

⁺Providers are encouraged to order vaccine in the spring and summer for delivery in the fall before each influenza season.

⁺⁺Providers who wish to have more information about influenza vaccine should contact their local or state public health departments.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Oct 3

GUIDELINE DEVELOPER(S)

American College of Cardiology Foundation - Medical Specialty Society
American Heart Association - Professional Association

SOURCE(S) OF FUNDING

American Heart Association

GUIDELINE COMMITTEE

Writing Group

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention. The American Heart Association and the American College of Cardiology make every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

Writing Group Disclosures

| Writing Group Member | Employment | Research Grant | Other Research Support | Speakers' Bureau | Honoraria | Ownership Interest | Consultant/Advisory Board |
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This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Heart Association Web site](#).

Print copies: Available from the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596; Phone: 800-242-8721

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Methodology manual for ACC/AHA guideline writing committees. Available from the [American Heart Association Web site](#).

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on March 13, 2007. The information was verified by the guideline developer on April 20, 2007.

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