Complete Summary

GUIDELINE TITLE

Childhood immunizations.

BIBLIOGRAPHIC SOURCE(S)

Adetunji Y, Macklin D, Patel R, Kinsinger L. American College of Preventive Medicine practice policy statement: childhood immunizations. Am J Prev Med 2003 Aug;25(2):169-75. [51 references] PubMed

GUIDELINE STATUS

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SCOPE

DISEASE/CONDITION(S)

- Haemophilus influenza b
- Hepatitis B
- Varicella
- Diphtheria
- Tetanus
- Pertussis
- Measles
- Mumps
- Rubella

- Poliomyelitis
- Streptococcus pneumoniae

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Pediatrics
Preventive Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for childhood immunizations

TARGET POPULATION

Infants, children, and adolescents

INTERVENTIONS AND PRACTICES CONSIDERED

Childhood and adolescent vaccines, including:

1. Tetanus and diphtheria toxoids (Td)
2. Diphtheria, tetanus toxoids and acellular pertussis (DTaP)
3. Measles, mumps, and rubella (MMR)
4. Haemophilus influenzae type b (Hib) conjugate vaccine
5. Hepatitis B vaccine (HepB)
6. Varicella vaccine
7. Inactivated poliovirus vacicne (IPV)
8. Pneumococcal conjugate vaccine (PCV)
9. Pneumococcal polysaccharide vaccine (PPV)
10. Hepatitis A vaccine
11. Influenza vaccine

MAJOR OUTCOMES CONSIDERED

- Morbidity and mortality from vaccine-preventable diseases
- Vaccination rates

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

MEDLINE search, and reference lists from key articles

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The cost effectiveness of routine childhood immunizations has been well documented, with one estimate suggesting that for each dollar spent now on immunization, $10 to $14 will be saved by preventing diseases in the future.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Guidelines/recommendations from the following groups were reviewed:

1. American Academy of Pediatrics' (AAP´s) Committee on Infectious Diseases
2. Centers for Disease Control and Prevention's (CDC´s) Advisory Committee on Immunization Practices
3. American Academy of Family Physicians (AAFP)
4. U.S. Preventive Services Task Force (USPSTF)

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

All children without established contraindications should receive diphtheria and tetanus toxoids and acellular pertussis (DTaP), measles, mumps, and rubella (MMR), *haemophilus influenzae* type b (Hib), hepatitis B, varicella, inactivated polio vaccine (IPV), and pneumococcal conjugate vaccinations as outlined in the Unified Schedule of Childhood Immunizations and as detailed in the Advisory Committee on Immunization Practices (ACIP´s) General Recommendations on Immunization. Children in selected areas with high rates of hepatitis A should receive hepatitis A vaccination (Wharton et al., 2003). Children with special risk factors, such as compromised immune systems, may require additional immunizations (American Academy of Pediatrics, 2000).

All healthcare providers should adopt the Standards for Child and Adolescent Immunization Practices developed by the National Vaccine Advisory Committee outlined in Table 2 in the original guideline document, and promote the *Healthy People 2010* (United States Department of Health and Human Services, 2000) goal of 90% vaccination rate of 2-year-olds in their communities.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not explicitly stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Decreased morbidity and mortality from vaccine-preventable diseases
- Prevention of lost school and work days

- Community protection by decreasing the spread of infectious agents. The significant public health benefits of these vaccines far outweigh their infrequent harm.

Specific Benefits

Clinical studies of vaccines have shown them to be 85% to 100% effective after appropriate dosing, with the exception of pertussis, which is 62% to 92% effective. The clinical effectiveness of immunizations is best substantiated by the dramatic decline in incidence of disease since their institution. Refer to original guideline document for a discussion of the decline in incidence of specific diseases.

POTENTIAL HARMS

- Most of the adverse effects of immunizations, such as fever, local tenderness at the site of administration, and irritability, are mild and self-limited.
- Of the more serious side effects, the whole cell pertussis vaccine (DTwP) is most likely to cause adverse events with incidence of seizures or hypotonic-hyporesponsive episodes in 1 per 1750 doses. The rates of similar adverse events following immunization with acellular pertussis vaccine have not yet been determined, but because the diphtheria, tetanus, and acellular pertussis (DTaP) vaccine causes high fever less frequently than DTwP, seizures are anticipated to be much less likely following receipt of DTaP.
- The measles, mumps, and rubella (MMR) vaccine is rarely associated with encephalopathy (1 in 1 million doses).
- Eliciting a brief history prior to administration can minimize other risks such as transmission of disease with live-virus vaccines to immunocompromised individuals or the risk of anaphylaxis in egg-allergic individuals (e.g., MMR).
- The full list of adverse effects from immunizations is listed in the AAP´s *Red Book Report of the Committee on Infectious Diseases*.

QUALIFYING STATEMENTS

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Several controversies in the area of childhood immunizations have recently arisen. In response to recent studies showing acellular pertussis vaccine to be equally efficacious to the whole cell vaccine with fewer side effects, it is now the preferred option. Preliminary postlicensure studies suggested an increased risk of intussusception following vaccination with the recently licensed rotavirus vaccine. Although the incidence of intussusception was low (125 per 100,000 infant years), the concern led to a suspension of the recommendation for rotavirus vaccination. Case–control studies conducted subsequently resulted in the withdrawal of rotavirus vaccine. Also recent concerns about mercury-based preservatives in vaccines have led to the development of Thimerosal-free vaccines. Although there has been growing public concern about possible links of the measles, mumps, and rubella (MMR) vaccine to autism and inflammatory bowel disease, several studies have shown a lack of causal association. Similar concerns between hepatitis B vaccine and multiple sclerosis have not been validated. The Institute of Medicine Immunization Safety Review Committee recently found no epidemiologic evidence

supporting a causal relationship between multiple immunizations and an increase in the incidence of infections by other pathogens.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

In order to address the issues related to suboptimal immunization coverage levels in preschool children, the National Vaccine Advisory Committee (NVAC) developed the Standards for Child and Adolescent Immunization Practices, which includes 17 standards that constitute essential vaccine policies (see Table 2 in the original guideline document). In addition, vaccination registries, follow-up and reminder systems, incentives, and performance measures such as the Health Plan Employer Data and Information Set 3.0 (HEDIS) can enhance compliance, especially for preschool children.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

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

DATE RELEASED

1997 (revised 2003 Aug)

GUIDELINE DEVELOPER(S)

American College of Preventive Medicine - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Preventive Medicine

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Yemisi Adetunji, MD, MPH, Daniel Macklin, MD, MPH, Rita Patel, MD, MPH, Linda Kinsinger, MD, MPH

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Preventive Medicine (ACPM) Web site.

Print copies: Available from ACPM, 1307 New York Ave, N.W., Suite 200, Washington, DC 20005-5603.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on September 1, 1998. The information was verified by the guideline developer as of December 1, 1998. This summary was updated by ECRI on January 8, 2004. The updated information was verified by the guideline developer on January 29, 2004.

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