



2011 Adult Immunization Update

Andrew Kroger, MD, MPH
National Center for Immunization and Respiratory Diseases

5th Annual Western New York Adolescent and Adult Immunization Coalition Conference
Buffalo, NY

SAFER • HEALTHIER • PEOPLE™



Disclosures



No financial conflict or interest with the manufacturer of any product named during this course.

SAFER • HEALTHIER • PEOPLE™



Disclosures



During this presentation I will discuss an off-label use for adolescent/adult tetanus-toxoid, reduced diphtheria-acellular pertussis vaccine (Tdap)

SAFER • HEALTHIER • PEOPLE™



Overview



2011 adult schedule

Influenza vaccine

Tdap recommendations

Human papillomavirus vaccine

Pneumococcal polysaccharide recommendations

Zoster vaccine

(Break)

MMR and Varicella vaccines

Hepatitis B vaccine recommendations

Hepatitis A vaccine

SAFER • HEALTHIER • PEOPLE™



Influenza



ER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER

SAFER • HEALTHIER • PEOPLE™



2011-2012 Influenza Vaccine Composition



Same strains this year as last year:

- A/California/7/2009-like H1N1
- A/Perth/16/2009-like H3N2
- B/Brisbane/60/2008

SAFER • HEALTHIER • PEOPLE™



Duration of Immunity Following Influenza Vaccination



Protection against viruses that are similar antigenically to those contained in the vaccine extends for at least 6-8 months

There is no clear evidence that immunity declines more rapidly in the elderly

Additional vaccine doses during the same season do not increase the antibody response

The frequency of breakthrough infections has not been shown to be higher among persons vaccinated early in the season

Skowronski et al. *J Infect Dis* 2008;197:490-502

SAFER • HEALTHIER • PEOPLE™



Influenza Vaccination Recommendation



Annual influenza vaccination
is now recommended for
every person in the United
States 6 months of age and
older

MMWR 2010;59(RR-8)

SAFER • HEALTHIER • PEOPLE™



ER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER

EDUCATION • EDUCATIONAL • WORKPLACE HEALTH • ORGANIZATION • WORKPLACE SAFETY • TRAINING

SAFER • HEALTHIER • PEOPLE™

TO COMMUNITY • WORKING HEALTH • TRAINING • HEALTH SERVICES • ALLIANCE • ORGANIZATION • TRAINING

• COMMUNITY • ORGANIZATION • TRAINING • COLLEGE • GROUP • EDUCATION • TRAINING • EDUCATION



Live Attenuated Influenza Vaccine



Indications

Persons 2 through 49
years of age

- who are healthy (i.e., do not have an underlying medical condition that increases the risk of complication of influenza)
- who are not pregnant
- who do not have contact with a severely immunosuppressed person (hospitalized and in isolation)

MMWR 2010;59(RR-8)

SAFER • HEALTHIER • PEOPLE™



Shingles (Herpes Zoster)



ER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER

SAFER • HEALTHIER • PEOPLE™



Zoster



Generally associated with normal aging and with anything that causes reduced immunocompetence

Lifetime risk of 30% in the United States

Estimated 500,000- 1 million cases of zoster diagnosed annually in the U.S

SAFER • HEALTHIER • PEOPLE™



Zoster



ER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER

SAFER • HEALTHIER • PEOPLE™



Zoster: Complications

Post-herpetic neuralgia

Pain that lasts after rash clears,
sometime up to a year

Occurs in 20 percent of shingles cases

Highest risk in persons older than 60
years

SAFER • HEALTHIER • PEOPLE™

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

JUNE 2, 2005

VOL. 352 NO. 22

A Vaccine to Prevent Herpes Zoster and Postherpetic Neuralgia in Older Adults

M.N. Oxman, M.D., M.J. Levin, M.D., G.R. Johnson, M.S., K.E. Schmader, M.D., S.E. Straus, M.D., L.D. Gelb, M.D., R.D. Arbeit, M.D., M.S. Simberkoff, M.D., A.A. Gershon, M.D., L.E. Davis, M.D., A. Weinberg, M.D., K.D. Boardman, R.Ph., H.M. Williams, R.N., M.S.N., J. Hongyuan Zhang, Ph.D., P.N. Peduzzi, Ph.D., C.E. Beisel, Ph.D., V.A. Morrison, M.D., J.C. Guatelli, M.D., P.A. Brooks, M.D., C.A. Kauffman, M.D., C.T. Pachucki, M.D., K.M. Neuzil, M.D., M.P.H., R.F. Betts, M.D., P.F. Wright, M.D., M.R. Griffin, M.D., M.P.H., P. Brunell, M.D., N.E. Soto, M.D., A.R. Marques, M.D., S.K. Keay, M.D., Ph.D., R.P. Goodman, M.D., D.J. Cotton, M.D., M.P.H., J.W. Gnann, Jr., M.D., J. Loutit, M.D., M. Holodniy, M.D., W.A. Keitel, M.D., G.E. Crawford, M.D., S.-S. Yeh, M.D., Ph.D., Z. Lobo, M.D., J.F. Toney, M.D., R.N. Greenberg, M.D., P.M. Keller, Ph.D., R. Harbecke, Ph.D., A.R. Hayward, M.D., Ph.D., M.R. Irwin, M.D., T.C. Kyriakides, Ph.D., C.Y. Chan, M.D., I.S.F. Chan, Ph.D., W.W.B. Wang, Ph.D., P.W. Annunziato, M.D., and J.L. Silber, M.D., for the Shingles Prevention Study Group*

ABSTRACT

BACKGROUND

The incidence and severity of herpes zoster and postherpetic neuralgia increase with age in association with a progressive decline in cell-mediated immunity to varicella-

The authors' affiliations are listed in the Appendix. Address reprint requests to Dr. Oxman at the Shingles Prevention Study



Zoster Vaccine



Zostavax by Merck

Licensed May 2006

Live attenuated vaccine

Indicated for prevention of zoster and
post-herpetic neuralgia

SAFER • HEALTHIER • PEOPLE™



Zoster Vaccine



Indicated for persons 60 years old and older

Indicated for persons with current varicella immunity based on disease

Indicated regardless of a history of zoster

One dose, 0.6 cc subcutaneous injection

SAFER • HEALTHIER • PEOPLE™



Zoster Vaccine Criteria of Varicella Immunity



1. Laboratory evidence of immunity or laboratory confirmation of disease
2. Born in U.S. before 1980*
3. Health-care provider diagnosis of or verification of varicella disease
4. Health-care provider diagnosis of zoster

*Does not apply to health-care providers, immunosuppressed, or pregnant

SAFER • HEALTHIER • PEOPLE™



Health-care Provider Screening: Zoster Vaccine

Don't Ask (about a history of varicella)

Screening for a history of varicella disease is not necessary or recommended

Persons 60 years of age and older can be assumed to be immune regardless of their recollection of chickenpox (so don't ask)

SAFER • HEALTHIER • PEOPLE™



Health-care Provider Screening: Zoster Vaccine



Don't Test (it will just cause you trouble)

If tested and seronegative - 2 doses of
single antigen varicella vaccine
(Varivax[®]) separated by at least 4
weeks

Zoster vaccine – not indicated for persons
with immunity due to vaccine

SAFER • HEALTHIER • PEOPLE™



Zoster Vaccine: Simultaneous Vaccination



Package insert claims reduced immunogenicity of zoster vaccine when administered concomitantly with pneumococcal polysaccharide vaccine

BUT: Zoster efficacy NOT based on immunogenicity

SAFER • HEALTHIER • PEOPLE™



Zoster Vaccine: Simultaneous Vaccination



Zoster vaccine and
pneumococcal
polysaccharide vaccine
can be administered
simultaneously

SAFER • HEALTHIER • PEOPLE™



Streptococcus pneumoniae



Gram-positive
bacteria

90 known
serotypes

Polysaccharide
capsule important
virulence factor

Type-specific
antibody is
protective

SAFER • HEALTHIER • PEOPLE™



Pneumococcal Polysaccharide Vaccine



Not effective in children younger than 2 years

60%-70% against invasive disease

Less effective in preventing pneumococcal pneumonia

SAFER • HEALTHIER • PEOPLE™



Pneumococcal Polysaccharide Vaccine (PPSV23) Recommendations



Adults 65 years and older

Persons 19 years and older with

- Cigarette smoking
- asthma

Persons 2 years and older with

- chronic illness
- anatomic or functional asplenia
- immunocompromised (disease, chemotherapy, steroids)
- HIV infection
- environments or settings with increased risk
 - American Indian/Alaska Native 50 years old or older, if considered by local health to be at high risk

SAFER • HEALTHIER • PEOPLE™



Pneumococcal Polysaccharide Vaccine Revaccination



Routine revaccination of immunocompetent persons is not recommended

Revaccination recommended for persons 2 years of age or older who are at highest risk of serious pneumococcal infection

Single revaccination dose at least 5 years after the first dose

MMWR 1997;46(RR-8):1-24

SAFER • HEALTHIER • PEOPLE™



Pneumococcal Polysaccharide Vaccine Candidates for Revaccination



Persons ≥ 2 years of age
with:

- functional or anatomic asplenia
- immunosuppression
- transplant
- chronic renal failure
- nephrotic syndrome

Persons vaccinated at < 65
years of age

MMWR 1997;46(RR-8):1-24

SAFER • HEALTHIER • PEOPLE™



Pertussis



ER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER • HEALTHIER • PEOPLE • SAFER

SAFER • HEALTHIER • PEOPLE™



Tdap

Tdap reduces the risk of pertussis by 60% - 80%

Tdap approved ages

- 10 through 64 years for Boostrix
- 11 through 64 years for Adacel

Tdap not approved by the Food and Drug Administration for children 7 years through 9 years or adults 65 years or older

Wei SC et al. *Clin Infect Dis* 2010;51:315-21

SAFER • HEALTHIER • PEOPLE™



Tdap Recommendations for Adolescents/Adults



Persons 11 through 64 years of age who have not received Tdap should receive a dose followed by Td booster doses every 10 years

Adolescents should preferably receive Tdap at the 11 to 12 year-old preventive healthcare visit

MMWR 2011; 60 (No. 1):13-5

SAFER • HEALTHIER • PEOPLE™



New Tdap Recommendation for Adults



Persons 65 years old or older who anticipate or have close contact with an infant should receive a dose of Tdap if not already received

off-label recommendation. *MMWR* 2011; 60 (No. 1):13-5

SAFER • HEALTHIER • PEOPLE™



New Tdap Recommendations for Adolescents



Persons 7 through 10 years of age who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap

off-label recommendation. *MMWR* 2011; 60 (No. 1):13-5

SAFER • HEALTHIER • PEOPLE™



“Not fully immunized”

- fewer than 4 doses of DTaP
- 4 doses of DTaP and last dose was prior to age 4 years

MMWR 2011; 60 (No. 1):13-5

SAFER • HEALTHIER • PEOPLE™



Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis (Tdap) Vaccine from the Advisory Committee on Immunization Practices, 2010

Despite sustained high coverage for childhood pertussis vaccination, pertussis remains poorly controlled in the United States. A total of 16,858 pertussis cases and 12 infant deaths were reported in 2009 (1; CDC, unpublished data, 2009). Although 2005 recommendations by the Advisory Committee on Immunization Practices (ACIP) called for vaccination with tetanus toxoid, reduced diphtheria toxoid and acellular pertussis (Tdap) for adolescents and adults to improve immunity against pertussis, Tdap coverage is 56% among adolescents and <6% among adults (2,3). In October 2010, ACIP recommended expanded use of Tdap. This report provides the updated recommendations, summarizes the safety and effectiveness data considered by ACIP, and provides guidance for implementing the recommendations.

ACIP recommends a single Tdap dose for persons aged 11

the United States, the additional recommendations are made to facilitate use of Tdap to reduce the burden of disease and risk for transmission to infants (Box).

Timing of Tdap Following Td

Safety. When Tdap was licensed in 2005, the safety of administering a booster dose of Tdap at intervals <5 years after Td or pediatric DTP/DTaP had not been studied in adults. However, evaluations in children and adolescents suggested that the safety of intervals as short as 18 months was acceptable (6). Rates of local and systemic reactions after Tdap vaccination in adults were lower than or comparable to rates in adolescents during U.S. prelicensure trials; therefore, the safety of using intervals as short as 2 years between Td and Tdap in adults was inferred (4).

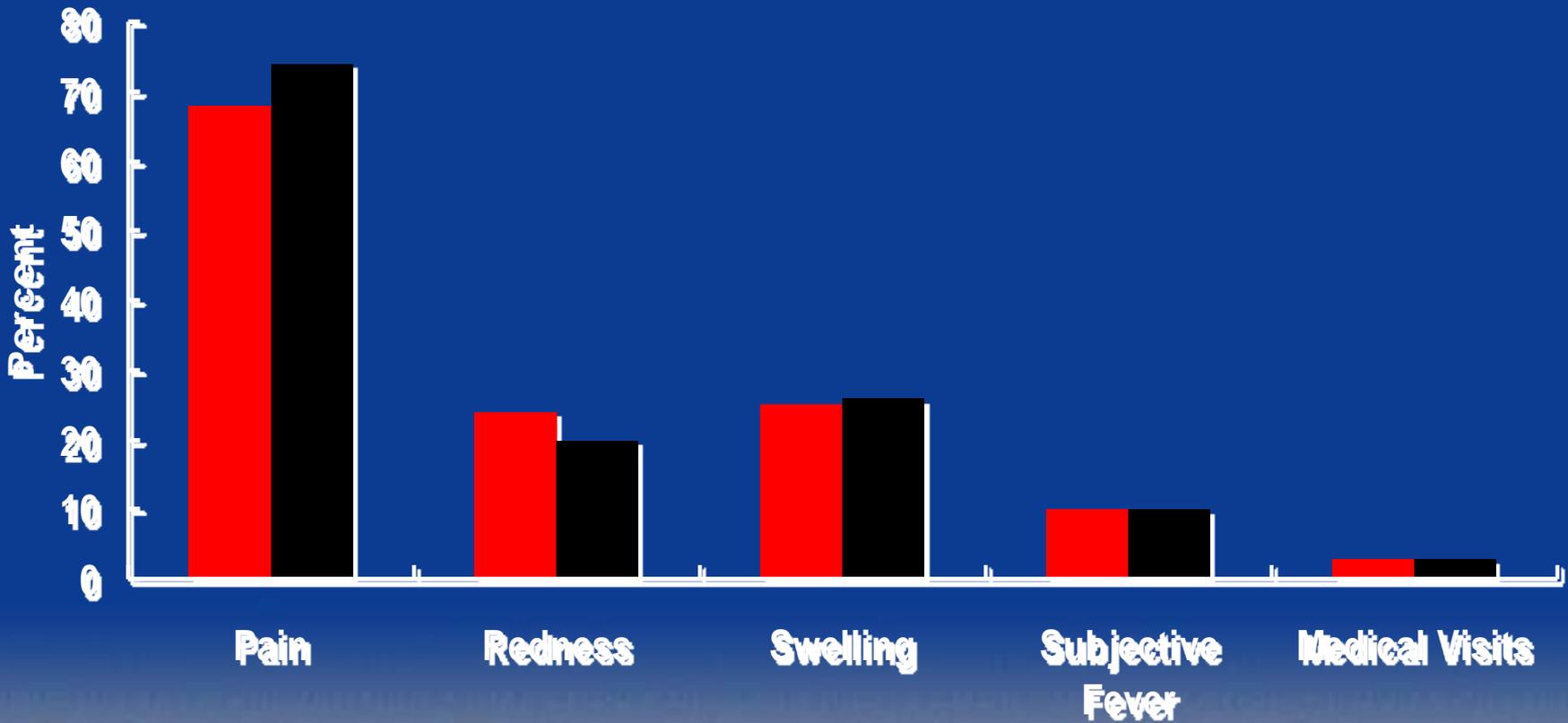
MMWR 2011; 60 (No. 1):13-5



Tdap Adverse Event Rates by Interval Since Previous Td/TT



■ < 2 yrs since Td/TT ■ ≥ 2 yrs since Td/TT



Talbot et al. *Vaccine* 2010;28:80011-7

Solicited Adverse Event

SAFER • HEALTHIER • PEOPLE™



New Tdap Interval Recommendations*

Tdap can be administered regardless of the interval since the last tetanus and diphtheria containing vaccine

ACIP concluded that while longer intervals between Td and Tdap vaccination could decrease the occurrence of local reactions, the benefits of protection against pertussis outweigh the potential risk for adverse events

*off-label recommendation. *MMWR* 2011; 60 (No. 1):13-5

SAFER • HEALTHIER • PEOPLE™



Tdap and Healthcare Personnel (HCP)*



HCP, regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since last Td dose

Tdap is not currently licensed for multiple administrations. After receipt of Tdap, HCP should receive routine booster immunization against tetanus and diphtheria according to previously published guidelines

Hospitals and ambulatory-care facilities should provide Tdap for HCP and use approaches that maximize vaccination rates (e.g., education about the benefits of vaccination, convenient access, and the provision of Tdap at no charge)

*off-label recommendation. Approved by ACIP on Feb 23, 2011

SAFER • HEALTHIER • PEOPLE™



Thank You



Hotline: 800.CDC.INFO

Email: nipinfo@cdc.gov

Website: www.cdc.gov/vaccines

SAFER • HEALTHIER • PEOPLE™