

# **Immunization Update 2011**

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Teleconference  
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# Disclosures

- **William Atkinson is a federal government employee with no financial interest or conflict with the manufacturer of any product named in this presentation**
- **The speaker will discuss the off-label use of meningococcal and pneumococcal conjugate and Tdap vaccines**
- **The speaker will not discuss a vaccine not currently licensed by the FDA**

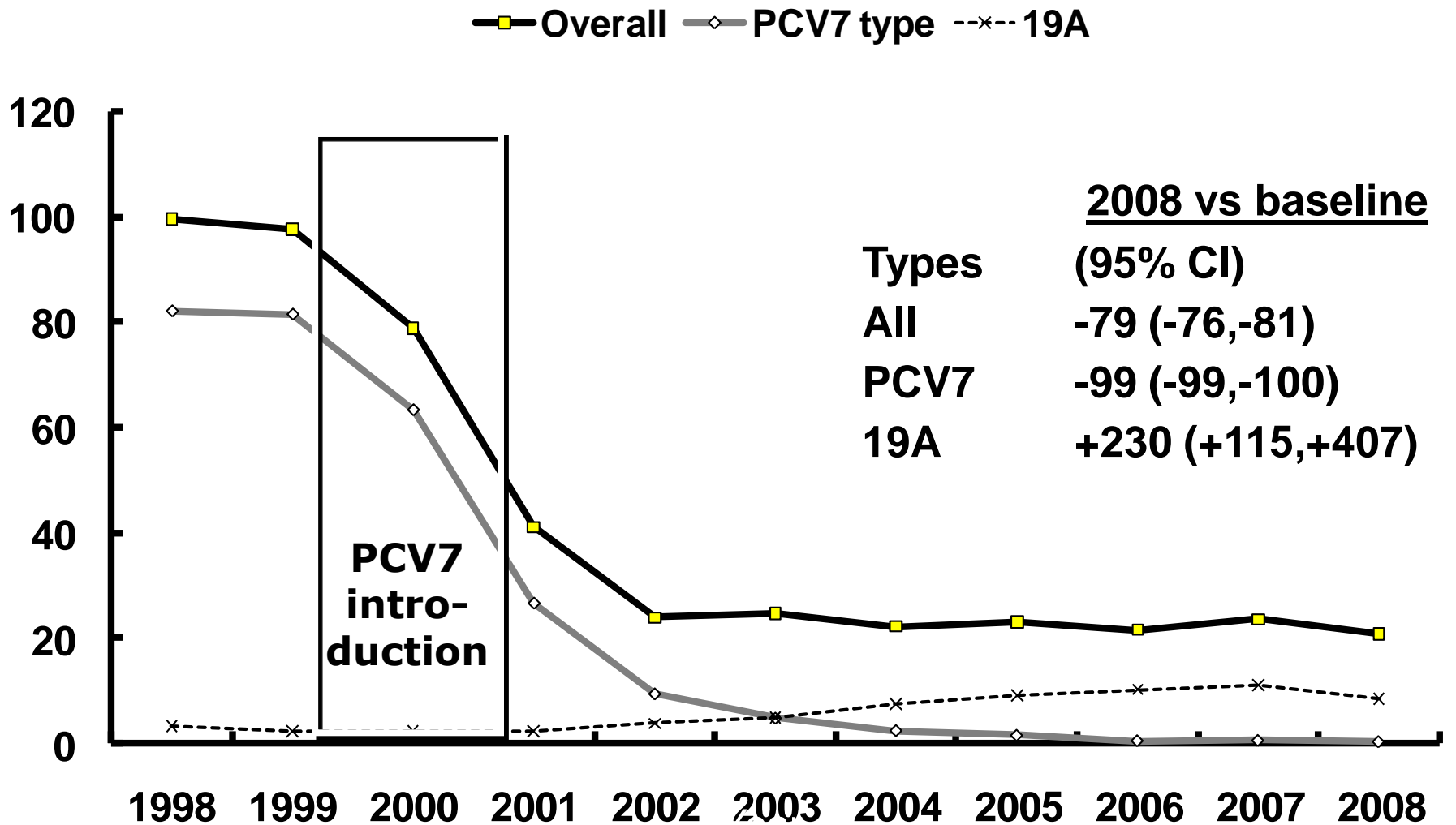
# **Childhood and Adolescent Immunization Schedules**

- Published at least annually since 1995**
- Child and adolescent schedules published by AAP, AAFP, and CDC in January or February of each year**
- Schedules for children 0 through 6 years and 7-18 years separated in 2007**
- 2011 schedule published as a QuickGuide in Morbidity and Mortality Weekly Report on February 11, 2011**

# Changes in the 2011 Schedule for Persons 0 Through 18 Years

- **Recommendations for PCV-13 added**
- **Guidance for administration of 1 or 2 doses of seasonal influenza vaccine based upon the child's history of monovalent 2009 H1N1 vaccination**
- **Use of Tdap among children aged 7 through 10 years who are incompletely vaccinated against pertussis is addressed**
- **Reference to a specified interval between Td and Tdap vaccination removed**
- **Addition of a routine 2-dose schedule of MCV4 for certain persons at high risk for meningococcal disease**
- **Recommendation for a routine adolescent booster dose of MCV4**

# Rates of Invasive Pneumococcal Disease Among Children <5 years old, 1998-2008



# **Pneumococcal Conjugate Vaccine, 13-valent (PCV13)**

- **Contains the same serotypes of *S. pneumoniae* as PCV7 plus 6 additional serotypes (including 19A)**
- **Approved by FDA for use among children 6 weeks through 71 months of age**
- **Same 4-dose schedule as PCV7**
- **Series started the PCV7 should be completed with PCV13 if possible**

# **ACIP Recommendations for PCV13 Supplemental Dose**

- **A single supplemental dose of PCV13 is recommended for children who have received a complete age-appropriate series of PCV7**
  - **all children 14 through 59 months of age**
  - **children 60 through 71 months of age with an underlying medical condition (including those who have already received a dose of PPSV)**

TABLE 2. Underlying medical conditions that are indications for pneumococcal vaccination among children, by risk group

Risk group	Condition
Immunocompetent children	Chronic heart disease*
	Chronic lung disease†
	Diabetes mellitus
	Cerebrospinal fluid leaks
	Cochlear implant
Children with functional or anatomic asplenia	Sickle cell disease and other hemoglobinopathies
	Congenital or acquired asplenia, or splenic dysfunction
Children with immunocompromising conditions	HIV infection
	Chronic renal failure and nephrotic syndrome
	Diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas and Hodgkin disease; or solid organ transplantation
	Congenital immunodeficiency <sup>§</sup>

Source: Advisory Committee on Immunization Practices, 2010.

\* Particularly cyanotic congenital heart disease and cardiac failure.

† Including asthma if treated with high-dose oral corticosteroid therapy.

§ Includes B- (humoral) or T-lymphocyte deficiency; complement deficiencies, particularly C1, C2, C3, and C4 deficiency; and phagocytic disorders (excluding chronic granulomatous disease).

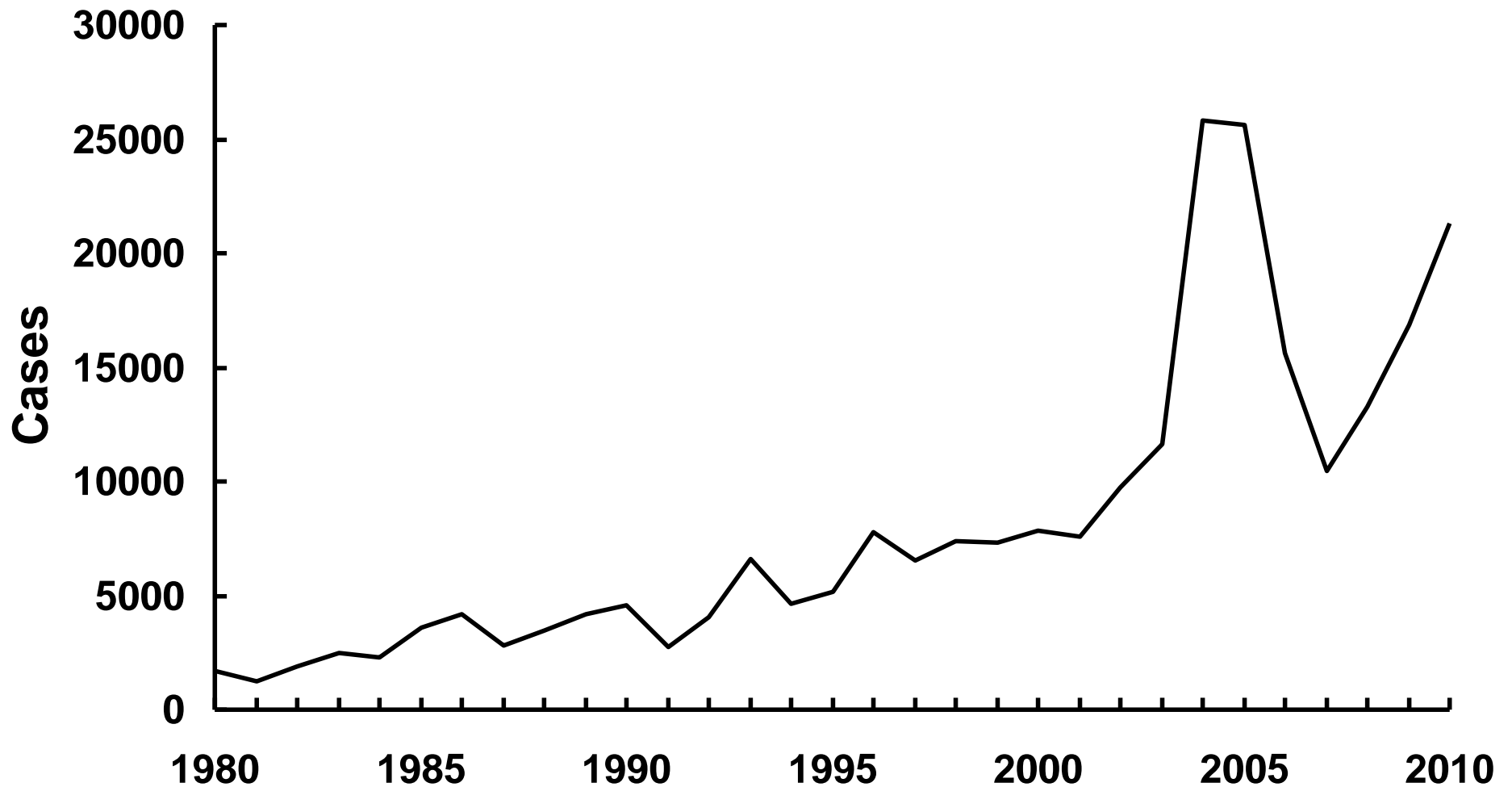


# ACIP Recommendations for PCV13 Supplemental Dose

- **A single dose of PCV13 may be administered to children 6 through 18 years of age who are at increased risk for invasive pneumococcal disease\***
  - **functional or anatomic asplenia, including sickle cell disease**
  - **HIV infection and other immunocompromising conditions**
  - **cochlear implant**
  - **CSF leak**

\*off-label recommendation. *MMWR* 2010;59(No. RR-11):1-19

# Pertussis - United States, 1980-2010\*



**\*2010 provisional data**

# 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**

# **Tdap Recommendations for Adolescents**

- Persons 11 through 18 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**

# **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\***
- **“Not fully immunized”**
  - **fewer than 4 doses of DTaP**
  - **4 doses of DTaP and last dose was prior to age 4 years**

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

# **New Tdap Recommendations for Adults\***

- Adults 65 years of age and older who have or who anticipate having close contact with an infant younger than 12 months of age and who have not previously received Tdap should receive a single dose of Tdap**
- Other adults 65 years of age and older may receive a dose of Tdap**

# **Tdap and Healthcare Personnel (HCP)\***

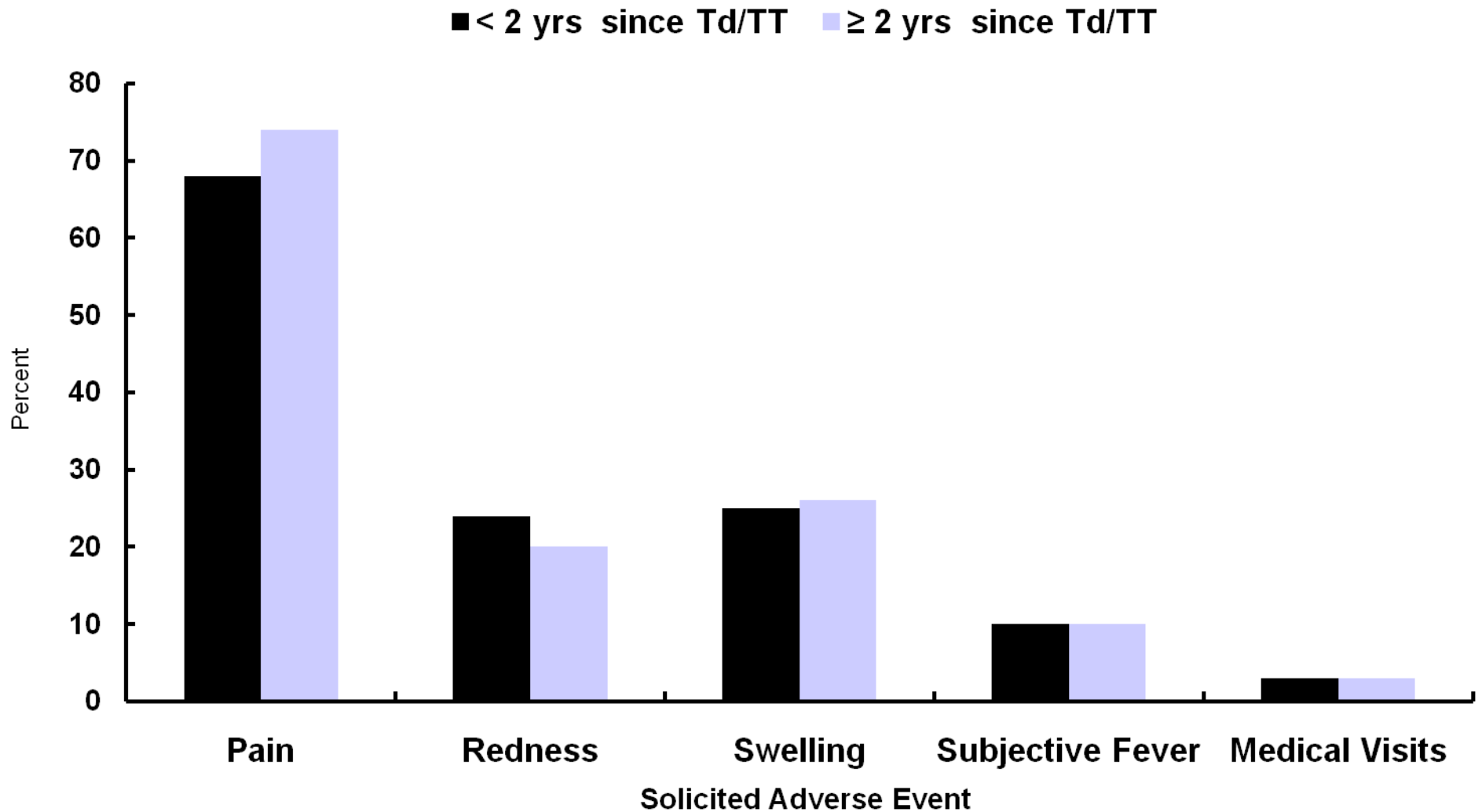
- **HCP, regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since last Td dose**
- **Tdap is not currently licensed for multiple administrations**
  - **after receipt of Tdap, HCP should receive routine booster 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)**

# **Td-Tdap Interval Recommendation\***

- **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**



# Tdap Adverse Event Rates by Interval Since Previous Td/TT



# **Meningococcal Conjugate Vaccine (MCV4) Issues**

## **Issue**

- Inadequate response to a single dose of MCV4**
- Waning immunity following 1 dose of MCV4**
- Routine vaccination of infants**

## **Solution**

- Routine 2-dose primary series**
- Revaccination of some MCV4 recipients**
- New vaccine or change in FDA licensure**

# Persons at Highest Risk of Meningococcal Disease or Suboptimal Vaccine Response

- **Complement deficiency**
  - very high antibody titer required to compensate for complement deficiency
- **Asplenia**
  - evidence of suboptimal response
- **HIV infection**
  - evidence of suboptimal response
- **Single dose primary series may not be sufficient to confer protection for persons with these high-risk conditions**

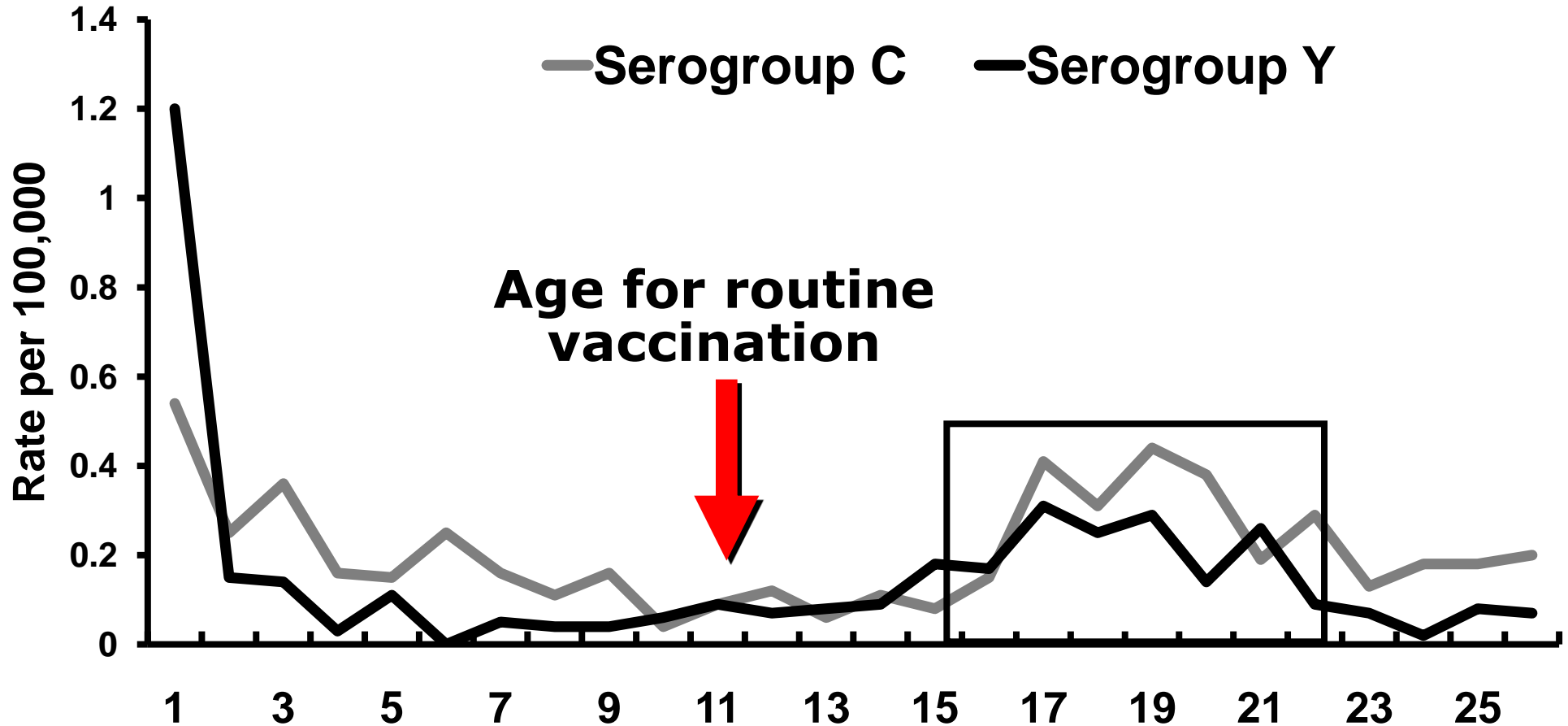
# **New MCV4 Recommendations**

- **Administer 2 doses of MCV4 at least 8 weeks apart to persons with persistent complement component deficiency and anatomic or functional asplenia, and 1 dose every 5 years thereafter**
- **Persons with persistent complement component deficiency and anatomic or functional asplenia who previously received 1 dose should receive a second dose at the earliest opportunity**

# **New MCV4 Recommendations**

- **HIV infection is not an indication for MCV4 vaccination**
- **However, some persons with HIV infection should receive MCV4 (adolescents, some international travelers, microbiologists, etc)**
- **Persons with HIV infection who are vaccinated with MCV4 should receive 2 doses at least 8 weeks apart**
- **If the person already received 1 dose administer a second dose if risk continues**

# Rates of Meningococcal Disease (C and Y) by Age, 1999-2008

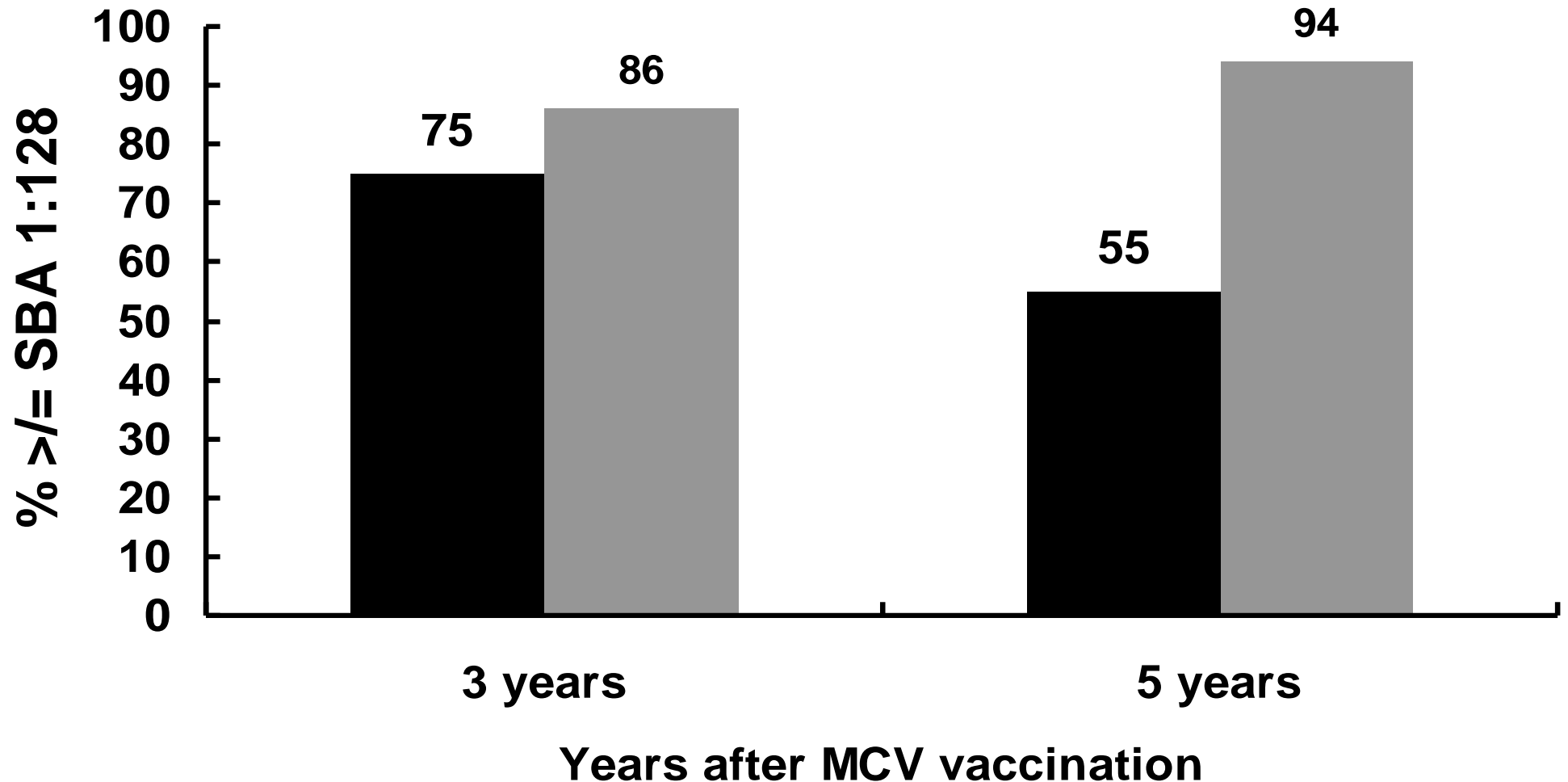


# MCV4 Revaccination

- **In its 2005 recommendations for MCV, ACIP made no recommendation about revaccination pending the availability of additional data**
- **Serologic data are now available that show significant decline in antibody 3-5 years after vaccination although few “breakthrough” cases have been reported**

# Seroprotection Rates Following MCV Vaccination

■ C ■ Y





# **New MCV4 Recommendations\***

- **New recommendations**
  - **administer MCV4 at age 11 or 12 years with a booster dose at 16 years of age**
  - **administer 1 dose at age 13 through 15 years if not previously vaccinated**
  - **for persons vaccinated at age 13 through 15 years administer a 1-time booster dose is recommended, preferably at or after 16 through 18 years of age**

\*off-label recommendation. *MMWR* 2011;60(No. 2):72-6.

# **New MCV4 Adolescent Vaccination Recommendations**

- The minimum interval between doses is 8 weeks**
- A booster dose is not recommended for healthy persons if the first dose is administered at 16-21 years of age**
- A booster dose is not recommended for healthy persons 22 years or older even if the first dose is administered at 11-15 years of age**
- The booster dose should always be MCV4 (not MPSV4)**

# MCV Revaccination Recommendations\*

- **Other high-risk persons recommended for revaccination**
  - microbiologists with prolonged exposure to *Neisseria meningitidis*
  - frequent travelers to or persons living in areas with high rates of meningococcal disease
- **Revaccinate every 5 years as long as the person remains at increased risk**
  - MCV for persons 2 through 55 years of age
  - MPSV for persons 56 years and older

\*off-label recommendation. *MMWR* 2009;58(No. 37):1042-3

# Interchangeability of MCV4 Brands

- **No data are available on the interchangeability of MCV4 brands**
- **Whenever feasible, the same brand of vaccine should be used for all doses of the vaccination series**
- **If vaccination providers do not know or have available the brand of vaccine previously administered, either vaccine can be used to continue or complete the series**

# **CDC Vaccines and Immunization Contact Information**

- **Telephone**                      **800.CDC.INFO**  
(for patients and parents)
- **Email**                              **nipinfo@cdc.gov**  
(for providers)
- **Website**                              **[www.cdc.gov/vaccines/](http://www.cdc.gov/vaccines/)**
- **Vaccine Safety**                      **[www.cdc.gov/vaccinesafety/](http://www.cdc.gov/vaccinesafety/)**