

# Hepatitis B Immunization of Adolescents, United States

Viral Hepatitis Prevention Board  
Ljubljana, Slovenia  
March 15-16, 2007

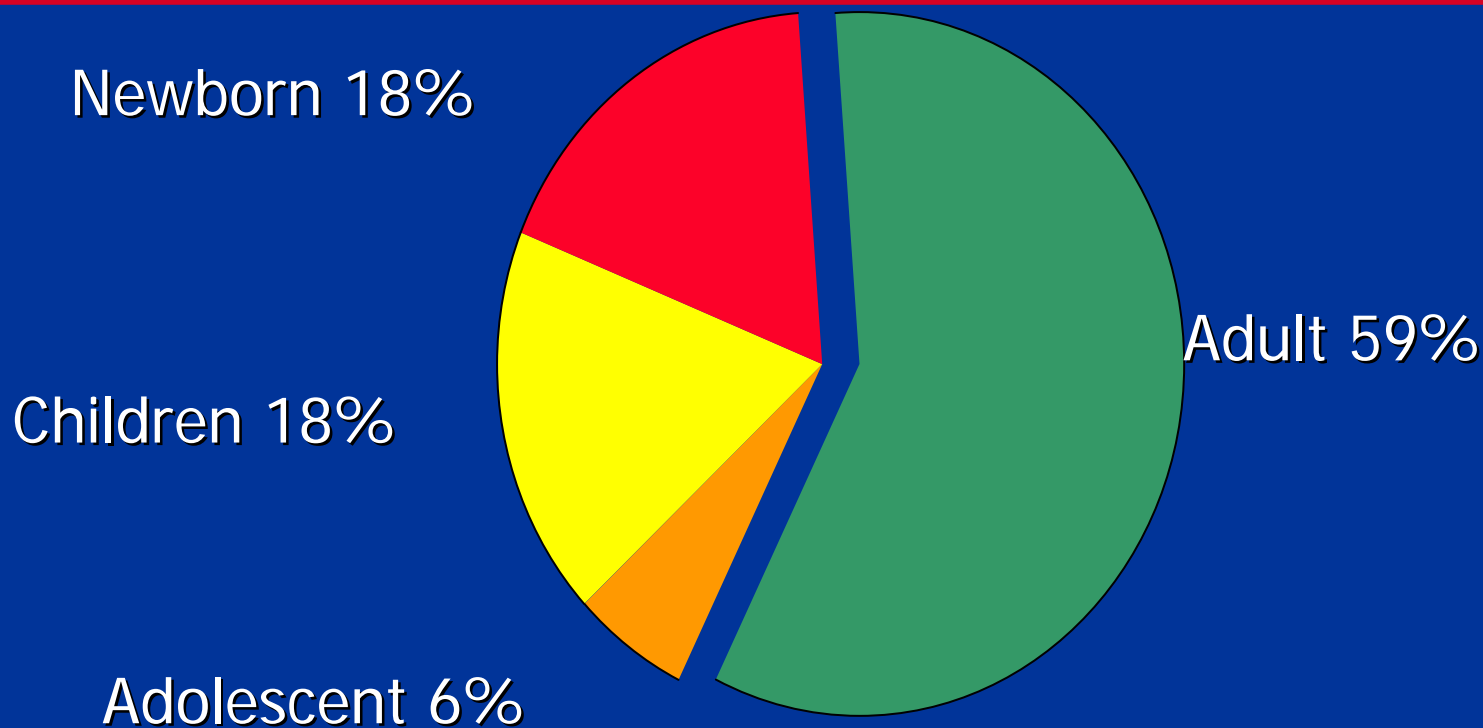


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# Estimated Age at Infection of Persons With Chronic HBV Infection Before Childhood Vaccination, United States

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Sources: National Health and Nutrition Examination Survey III  
N Engl J Med 1989;321:1301-5  
Pediatrics 1992;89:269-73  
Pediatrics 1995;96:1113-6

# Adoption of Comprehensive Immunization Strategy to Eliminate HBV Transmission-

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- Routine HBsAg screening of pregnant women (1988)
- Universal infant vaccination (1992)
- Catch-up vaccination
  - Children
  - Adolescents, 11-12 year olds (1995)
  - Adolescents, <19 year olds (1999)
  - Adults at risk for HBV infection

# Vaccination System in Brief (I), United States

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- Vaccine development- NIH, academia, industry
- Vaccine licensure- Food and Drug Administration (FDA)
- Vaccine safety monitoring- CDC, FDA,
- Vaccination recommendations- CDC
  - Others\*- ACIP, AAP, AAFP
  - Considerations- burden, benefits, risks, costs
  - Product – Harmonized Immunization Schedule

\*Advisory Committee on Immunization Practices, American Academy of Pediatrics, American Academy of Family Physicians

# Recommended Childhood and Adolescent Immunization Schedule UNITED STATES • 2005

Vaccine ▼	Age ▶	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	24 months	4-6 years	11-12 years	13-18 years
Hepatitis B <sup>1</sup>		HepB #1	HepB #2		HepB #3			HepB Series					
Diphtheria, Tetanus, Pertussis <sup>2</sup>			DTaP	DTaP	DTaP	DTaP			DTaP	Td	Td		
<i>Haemophilus influenzae</i> type b <sup>3</sup>			Hib	Hib	Hib	Hib							
Inactivated Poliovirus			IPV	IPV	IPV				IPV				
Measles, Mumps, Rubella <sup>4</sup>						MMR #1			MMR #2	MMR #2			
Varicella <sup>5</sup>						Varicella			Varicella				
Pneumococcal <sup>6</sup>			PCV	PCV	PCV	PCV			PCV	PPV			
Influenza <sup>7</sup>					Influenza (Yearly)			Influenza (Yearly)					
Hepatitis A <sup>8</sup>									Hepatitis A Series				

..... Vaccines below red line are for selected populations .....

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2004, for children through age 18 years. Any dose not administered at the recommended age should be administered at any subsequent visit when indicated and feasible.

Indicates age groups that warrant special effort to administer those vaccines not previously administered. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine

are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at [www.vaers.org](http://www.vaers.org) or by telephone, 800-822-7967.

Range of recommended ages  
Preadolescent assessment

Only if mother HBsAg(-)  
Catch-up immunization



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



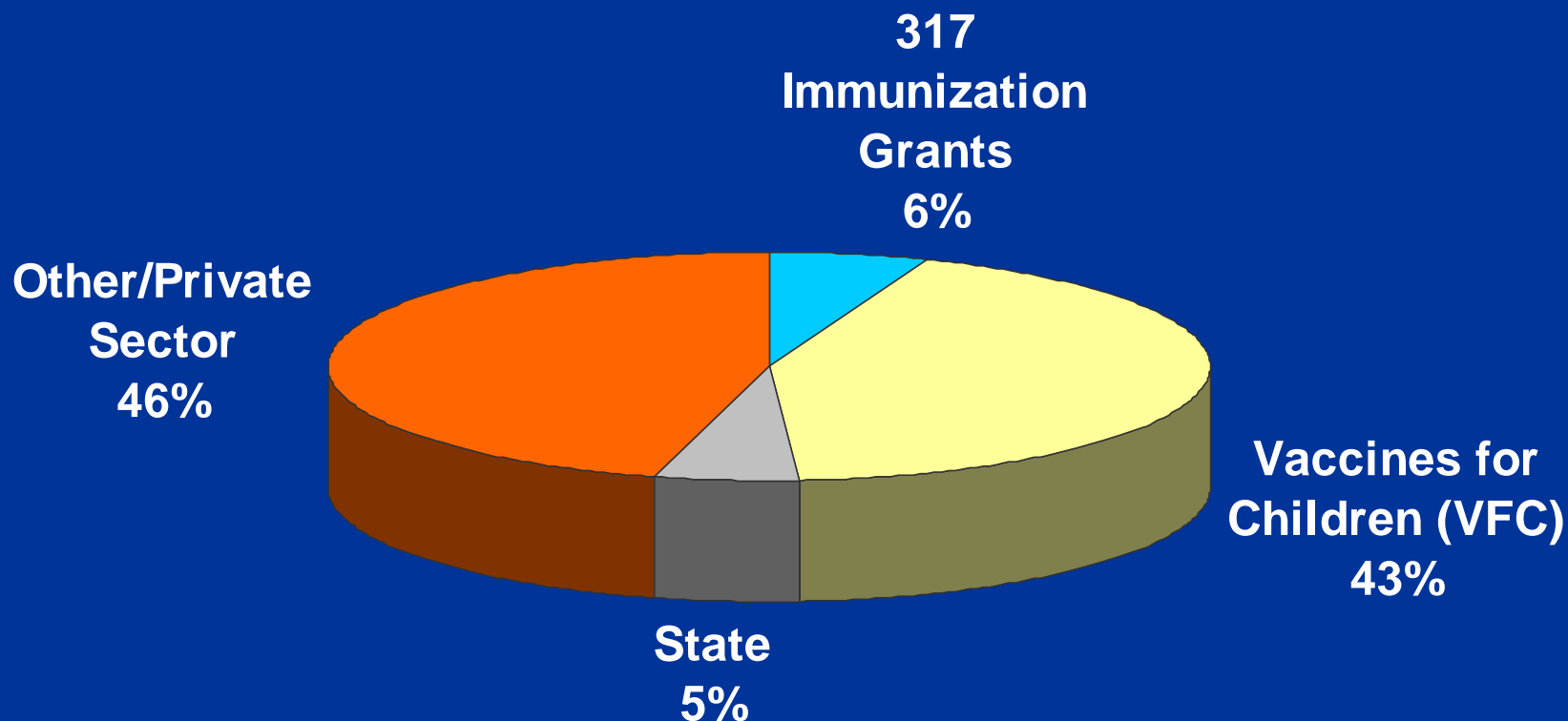
The Childhood and Adolescent Immunization Schedule is approved by:  
Advisory Committee on Immunization Practices [www.cdc.gov/nip/acip](http://www.cdc.gov/nip/acip)  
American Academy of Pediatrics [www.aap.org](http://www.aap.org)  
American Academy of Family Physicians [www.aafp.org](http://www.aafp.org)

# Vaccination System in Brief (II), United States

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- Implementation of Vaccination Policy-
  - Public sector- state and local public health programs
  - Private providers
- Funding
  - Public
    - ★ Vaccine for Children- persons < 19 yrs. without insurance
    - ★ Section 317- under-insured persons
    - ★ State/local funds
  - Private- insurance, self-pay

# Childhood Vaccine Doses Distributed by Funding Source, 2005



Source: Vaccine manufacturers Biologics Surveillance Data 2005

Note: Does not include influenza vaccine

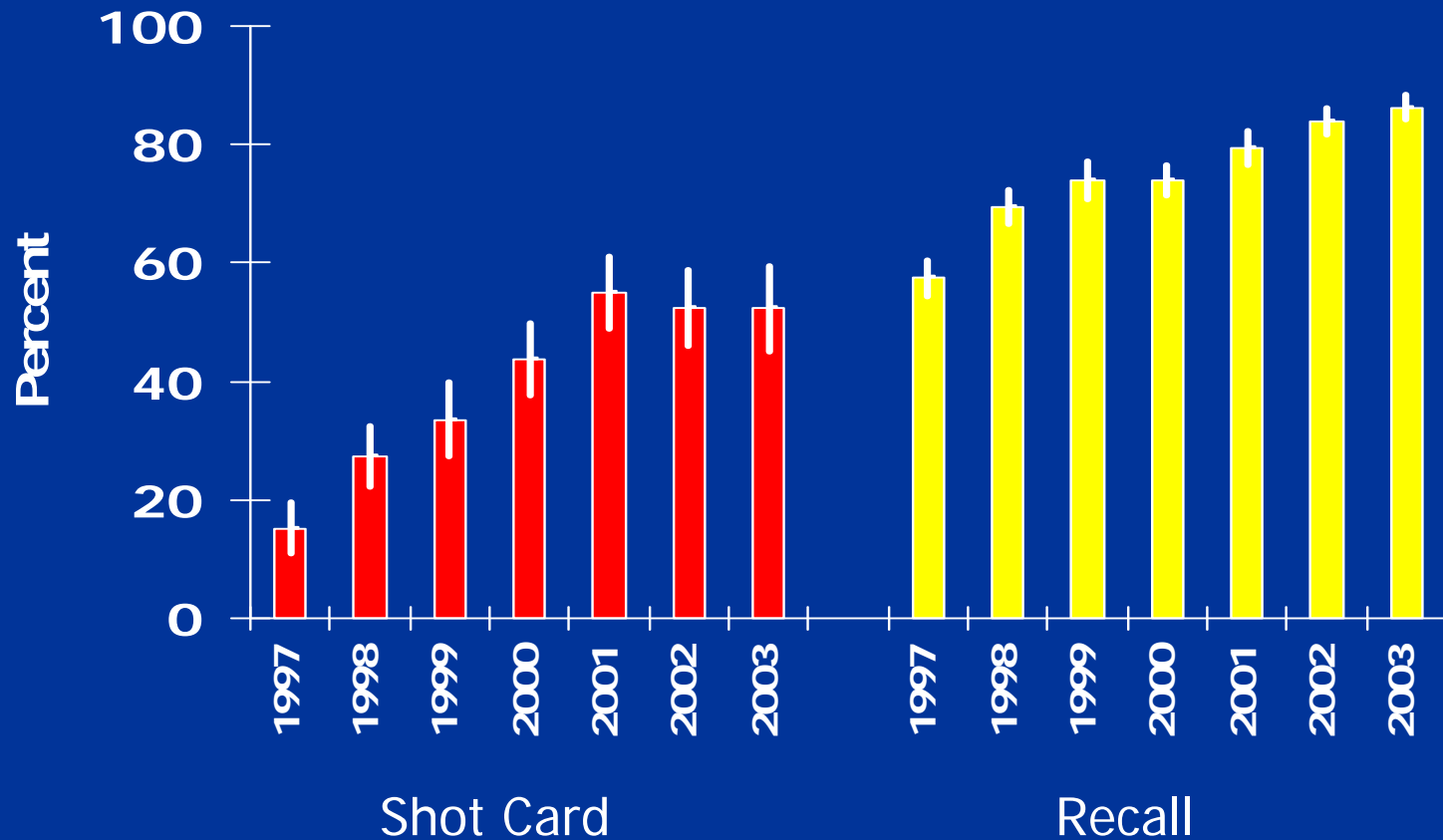
# Vaccine for Children Program Links Public and Private Providers

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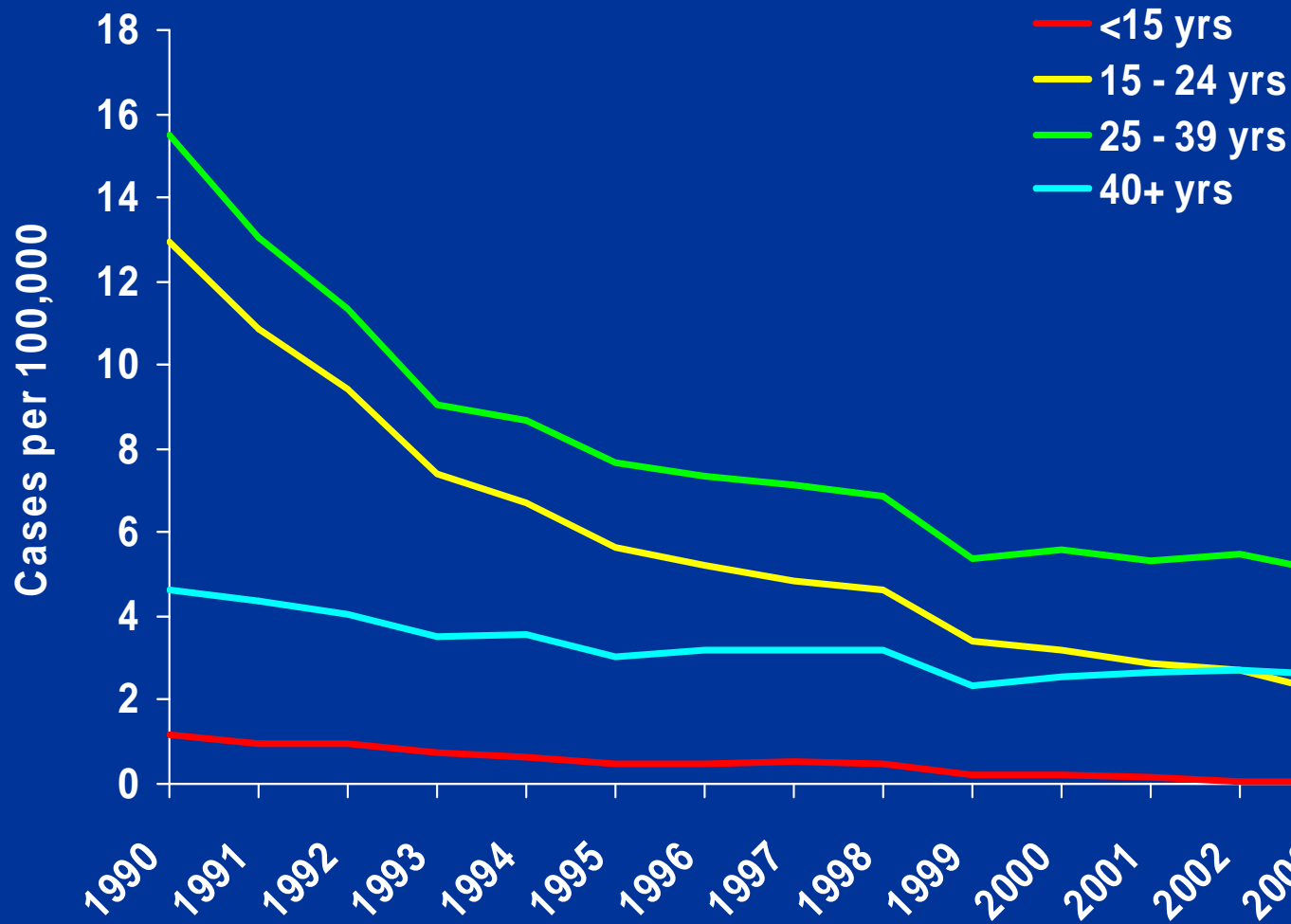
- VFC program has 45,000 provider sites
  - 75% of sites are private providers
  - 25% are public sector sites
- Collectively, VFC providers vaccinate 90% of children
  - VFC vaccine for VFC-eligible children
  - Private purchase vaccine for other children
- Improving VFC providers' practices improves vaccinations for almost all children



# Estimated vaccination coverage, 3+ Hepatitis B, adolescents 13-15 years of age, National Health Interview Survey, 1997-2003



# Acute Hepatitis B by Age, United States, 1990-2004

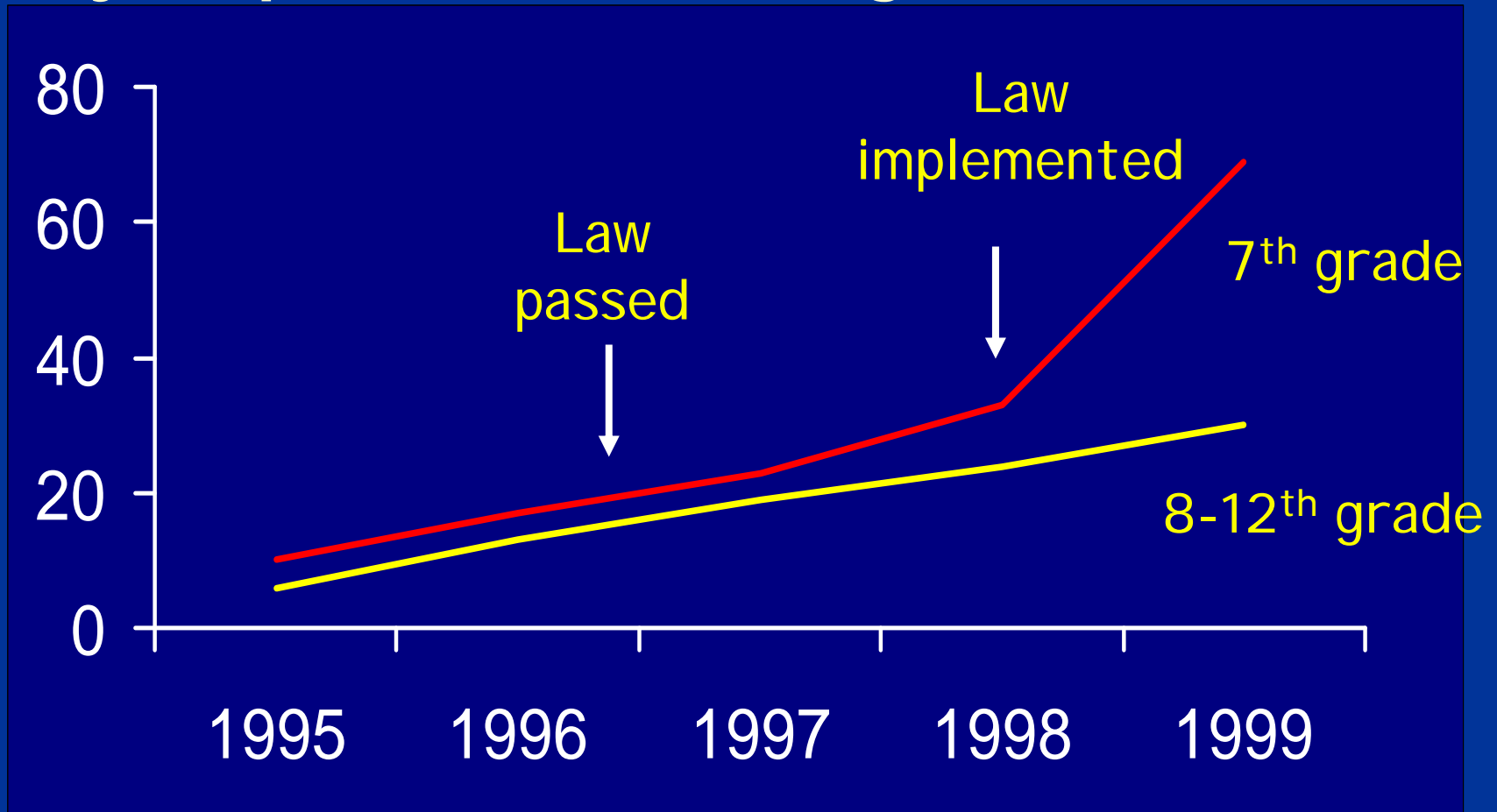


# Rationale for Catch-Up Hepatitis B Vaccination of Adolescents

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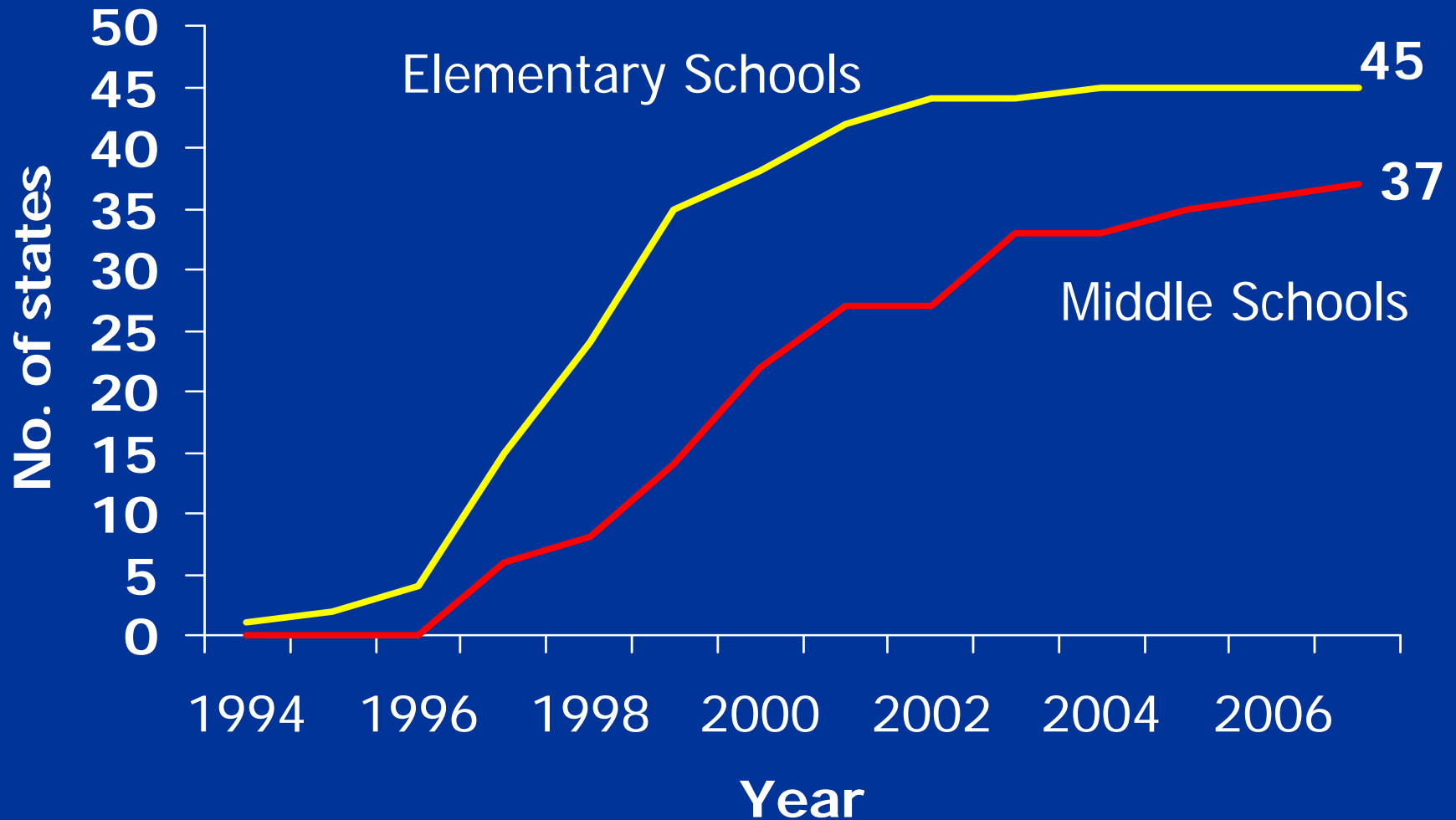
- Adolescents
  - Prevent sexual/blood transmission
    - ★ Period of initiation of risk behaviors
    - ★ Response to high case number (30,000, 1993)
  - Universal vaccination
    - ★ 11-12 years (1995)
    - ★ <19 yrs. (1999)
  - New strategies
    - ★ Routine adolescent health visit
    - ★ Outreach to Asian/Pacific Islander communities
    - ★ Middle school entry law

# Hepatitis B Vaccine Coverage Increased After Implementation of 7<sup>th</sup> Grade School Entry Requirement, San Diego\*



\*Using parent-held vaccination record

# States With Elementary or Middle School Hepatitis B Vaccination Requirements, 1994-2007



# Legal Mandates for Vaccination Require Public Support

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*Dallas Morning News* Published: February 06, 2007

## **Governor Perry of Texas orders HPV vaccine**

Surprise move mandates shots for schoolgirls to prevent sex virus that leads to cancer

*New York Times* Published: February 17, 2007

## **Furor on Rush to Require Cervical Cancer Vaccine**

*New York Times* Published: February 21, 2007

## **Merck to Halt Lobbying for Vaccine for Girls**

# Challenges for Hepatitis B Vaccination of Adolescents

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- Costs
  - More adolescents than children are uninsured
  - Underinsured adolescents can get free vaccine but at only ~3,000 designated health centers
- Variable use of preventive care services by adolescents
  - Adolescent health visit in past year
    - ★ Parent reports- 49%-89%
    - ★ Insurance coverage data-34%
- Limited number of vaccine providers
  - Fewer providers for adolescents than for children
  - Different providers for younger versus older adolescents
  - Need for nontraditional settings to reach high risk youth

## Catchup Vaccination of Previously Unvaccinated Adolescents

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### **New recommendations (2005):**

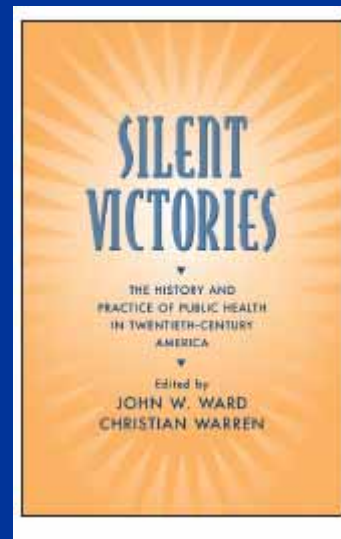
- Hepatitis B vaccination should be routinely provided in:
  - Juvenile correction facilities
  - Programs that serve high risk youth for STD, HIV/AIDS, and substance abuse treatment and prevention
- Promote vaccination in other settings (i.e., college entry)



# Summary

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- Hepatitis B vaccination of adolescents
  - has reduced disease incidence in this age group
  - will prevent infections in later life
  - requires specific strategies for implementation
  - remains a necessary intervention to eliminate hepatitis B transmission in the US



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