

Immunization

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



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Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-Preventable Diseases

Disease	20th Century Annual Morbidity [†]	2006 (final) ^{††}	Percent Decrease
Smallpox	48,164	0	100%
Diphtheria	175,885	0	100%
Measles	503,282	55	> 99%
Mumps	152,209	6,584	96%
Pertussis	147,271	15,632	89%
Polio (paralytic)	16,316	0	100%
Rubella	47,745	11	> 99%
Congenital Rubella Syndrome	823	1	> 99%
Tetanus	1,314	41	97%
<i>Haemophilus influenzae</i>	20,000	208*	99%

[†]Source: CDC. *MMWR* April 2, 1999. 48: 242-264

^{††}Source: CDC. *MMWR*. August 24, 2007 / 56(33);851-863

* Type b and unknown (< 5 years of age)



Impact of Newer Vaccines on Disease in US

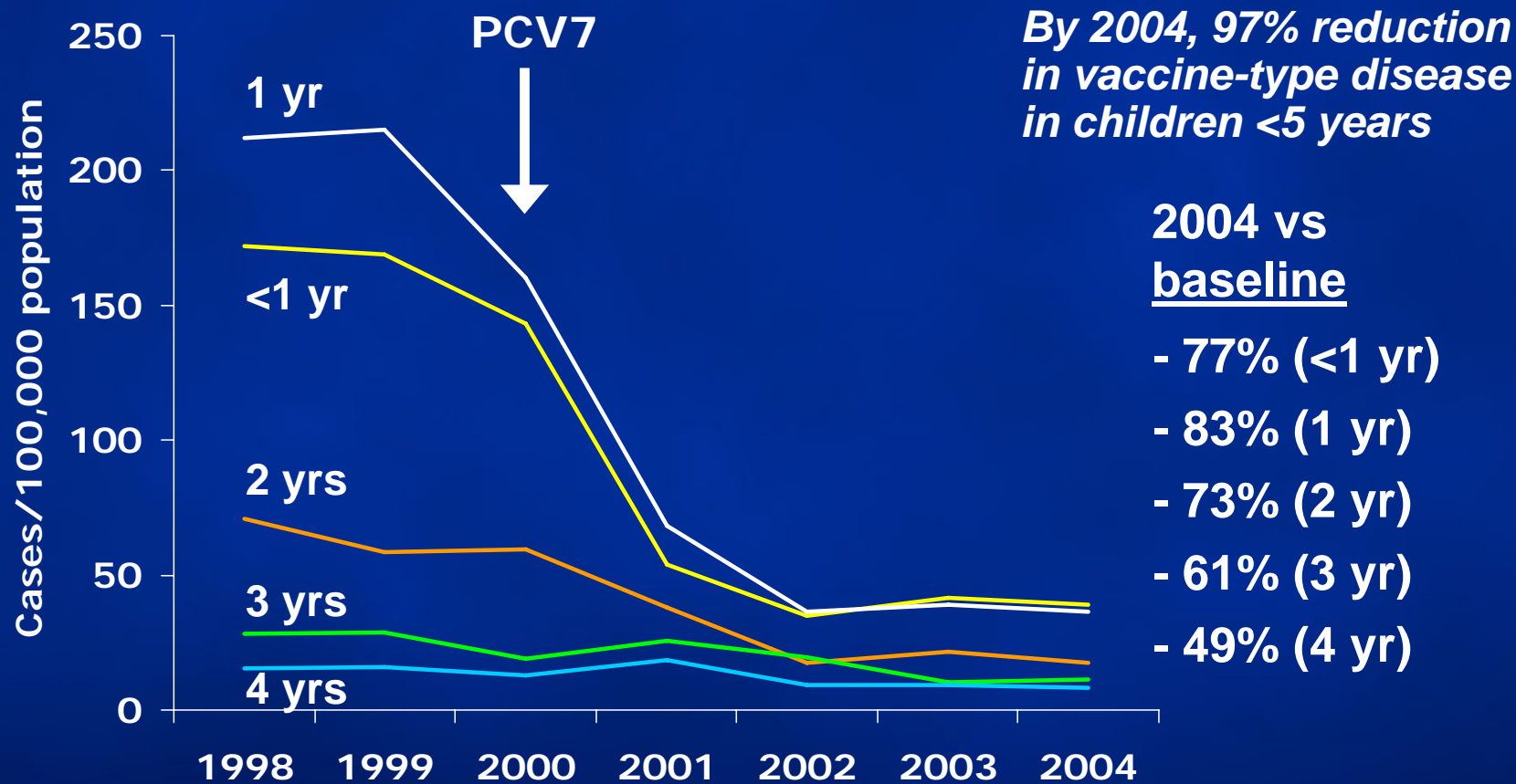
Disease	Pre-Vaccine Era Estimated Annual Morbidity †	2005 Estimated Morbidity †	Percent Decrease
Hepatitis A	117,333	19,183	84%
Hepatitis B (acute)	66,232	15,352	77%
Pneumococcus (inv.)			
All ages	63,067	40,325	36%
< 5 years of age	16,069	4,400	73%
Varicella	4,085,120	817,024	80%

† Unpublished CDC data, reported November 2006

** Type b and unknown (< 5 years of age)

Total Invasive Pneumococcal Disease Rates in Children <5 Years, ABCs, 1998-2004

Effect in Target Age Group



MMWR Sept 16, 2005 and CDC unpublished data from ABCs/Emerging Infection Program Network

Health Benefit and Beyond: *Return on Investment for Childhood Immunization Program*

- **Immunization is one of the few clinical preventive services that saves dollars as well as lives**
- **For each birth cohort vaccinated in accordance with the schedule*...**
 - **Society saves \$43.3B**
 - **Health care costs are reduced by \$9.9B**
 - **33,000 lives are saved**
 - **14M cases of disease are prevented**

Number of Vaccines in the Routine Childhood and Adolescent Immunization Schedule

1985

Measles
Rubella
Mumps
Diphtheria
Tetanus
Pertussis
Polio

7

1995

Measles
Rubella
Mumps
Diphtheria
Tetanus
Pertussis
Polio
Hib (infant)
HepB
Varicella

10

2006

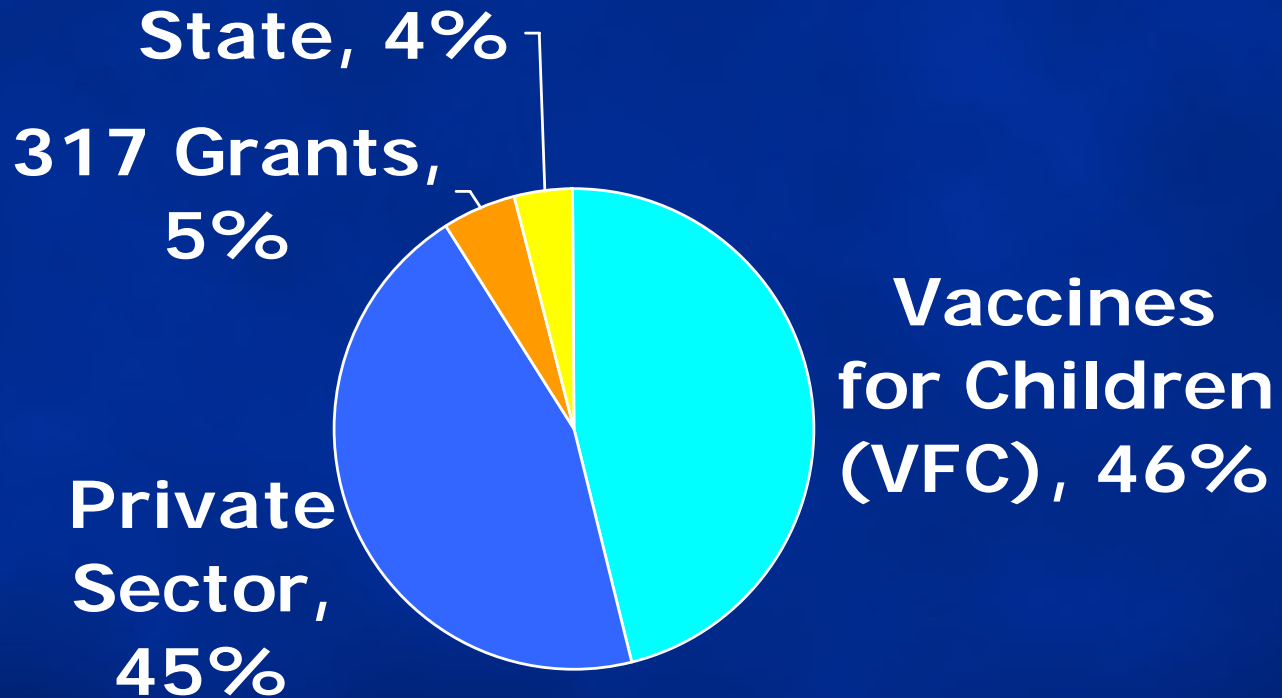
Measles
Rubella
Mumps
Diphtheria
Tetanus
Pertussis
Polio
Hib (infant)
Hep B
Varicella
Pneumococcal disease
Influenza
Meningococcal disease
Hep A
Rotavirus
HPV

16

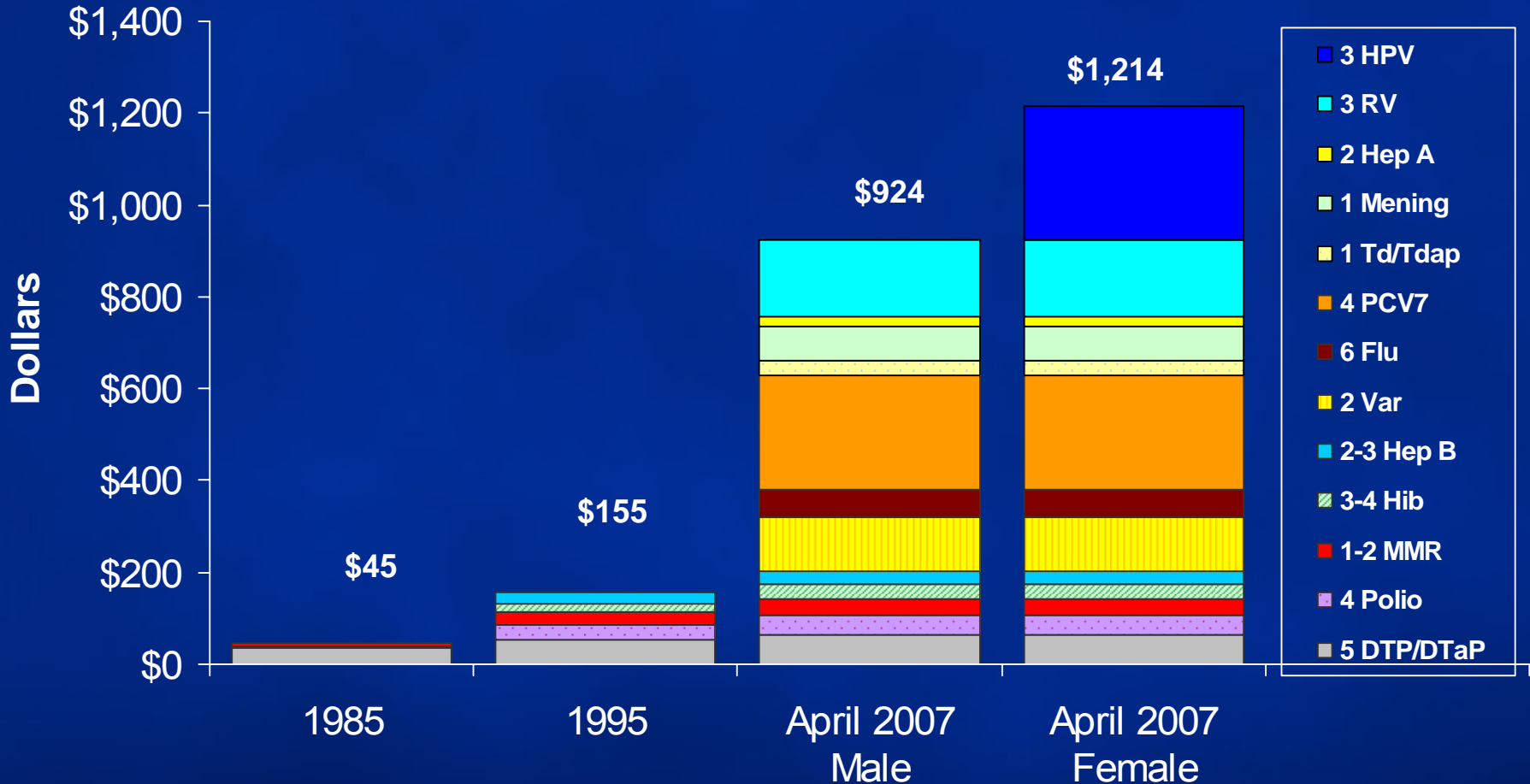
Human Papillomavirus (HPV) Vaccines

- HPV causes cervical cancer
 - Types 16 and 18 account for ~70% of cervical cancer
- One vaccine licensed in the U.S., another under development
 - HPV Types 16/18/6/11 (Merck)
 - HPV Types 16/18 (GSK)
- Studies have found a very high level of protection from HPV-associated precancerous lesions with both vaccines
- Vaccines must be given before a woman is infected with a given serotype in order to have protection from that serotype

Pediatric and Adolescent Vaccine Doses Distributed by Funding Source, CY2006



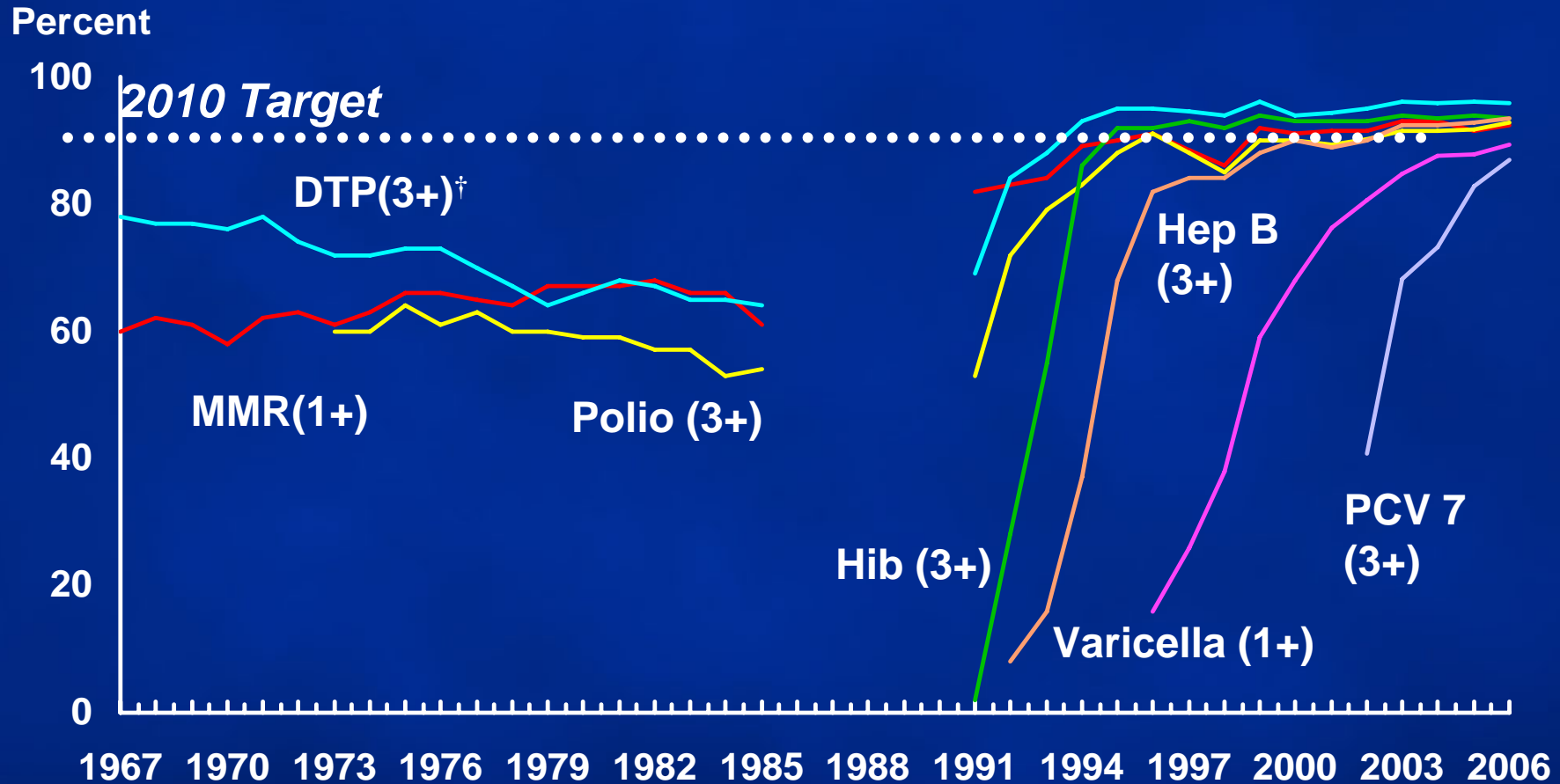
U.S. Federal Contract Prices for Vaccines Recommended Universally for Children and Adolescents: 1985, 1995, April 2007



1985 and 1995 represent the average federal contract price to account for price changes within the respective year.

April 2007 represents the minimum cost to vaccinate children and adolescents and is based on the federal contract price as of April 16, 2007.

Vaccine-Specific Coverage Rates Among Preschool-Aged Children



[†] DTP(3+) is not a Healthy People 2010 objective. DTP(4) is used to assess Healthy People 2010 objectives.

Note: Children in the USIS and NHIS were 24-35 months of age. Children in the NIS were 19-35 months of age.

Source: USIS (1967-1985), NHIS (1991-1993) CDC, NCHS, and NIS (1994-December 2006), CDC, NIP/NCIRD and NCHS; No data from 1986-1990 due to cancellation of USIS because of budget reductions.