

# Update on Progress toward achieving Immunization Objectives for Healthy People 2020

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## Comparison of 20<sup>th</sup> Century Annual Morbidity and Current VPD Morbidity

### HP2020 Immunization and Infections Disease (IID) Objectives-1.1 – 1.9

Disease	20 <sup>th</sup> Century Annual Morbidity <sup>†</sup>	2012 Reported Cases <sup>††</sup>	Percent Decrease
Smallpox	29,005	0	100%
Diphtheria	21,053	1	>99%
Measles	530,217	55	>99%
Mumps	162,344	229	>99%
<b>Pertussis</b>	<b>200,752</b>	<b>48,277</b>	<b>76%</b>
Polio (paralytic)	16,316	0	100%
Rubella	47,745	9	>99%
Congenital Rubella Syndrome	152	3	98%
Tetanus	580	37	94%
<i>Haemophilus influenzae</i>	20,000	30*	>99%

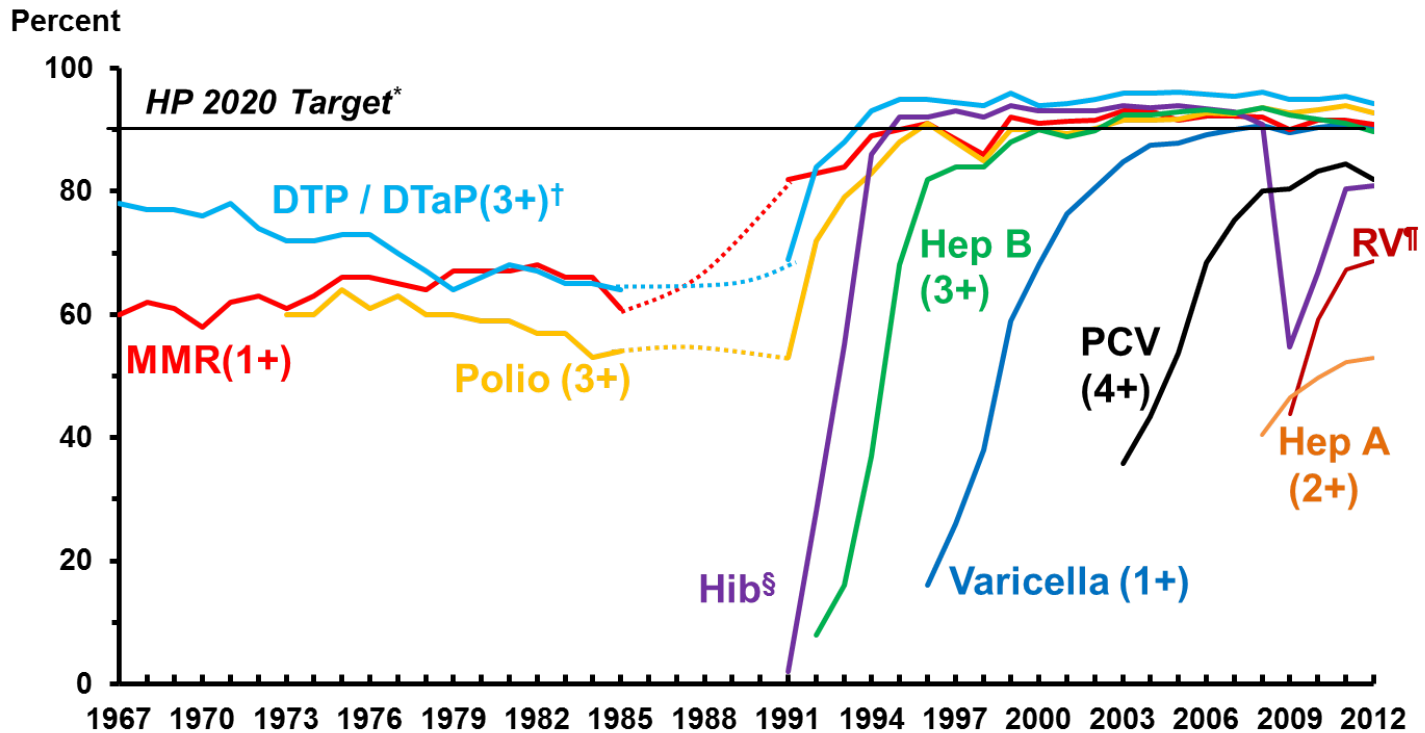
† JAMA. 2007;298(18):2155-2163

†† CDC. MMWR August 23, 2013;62(33);669-682. (final data)

\* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 13 cases of Hib are estimated to have occurred among the 210 reports of Hi (< 5 years of age) with unknown serotype.

# Vaccine-Specific Coverage Rates Among Preschool-Aged Children: 1967 – 2012

**HP2020 Objectives: IID-7**



\* Target is 80% for Rotavirus and 85% for Hepatitis A

† DTP/DTaP (3+) is not a Healthy People 2020 objective. DTaP (4) is used to assess Healthy People 2020 objectives.

§ Reflects 3+ doses through 2008, and Full Series (3 or 4 doses depending on type of vaccine received) 2009 and later

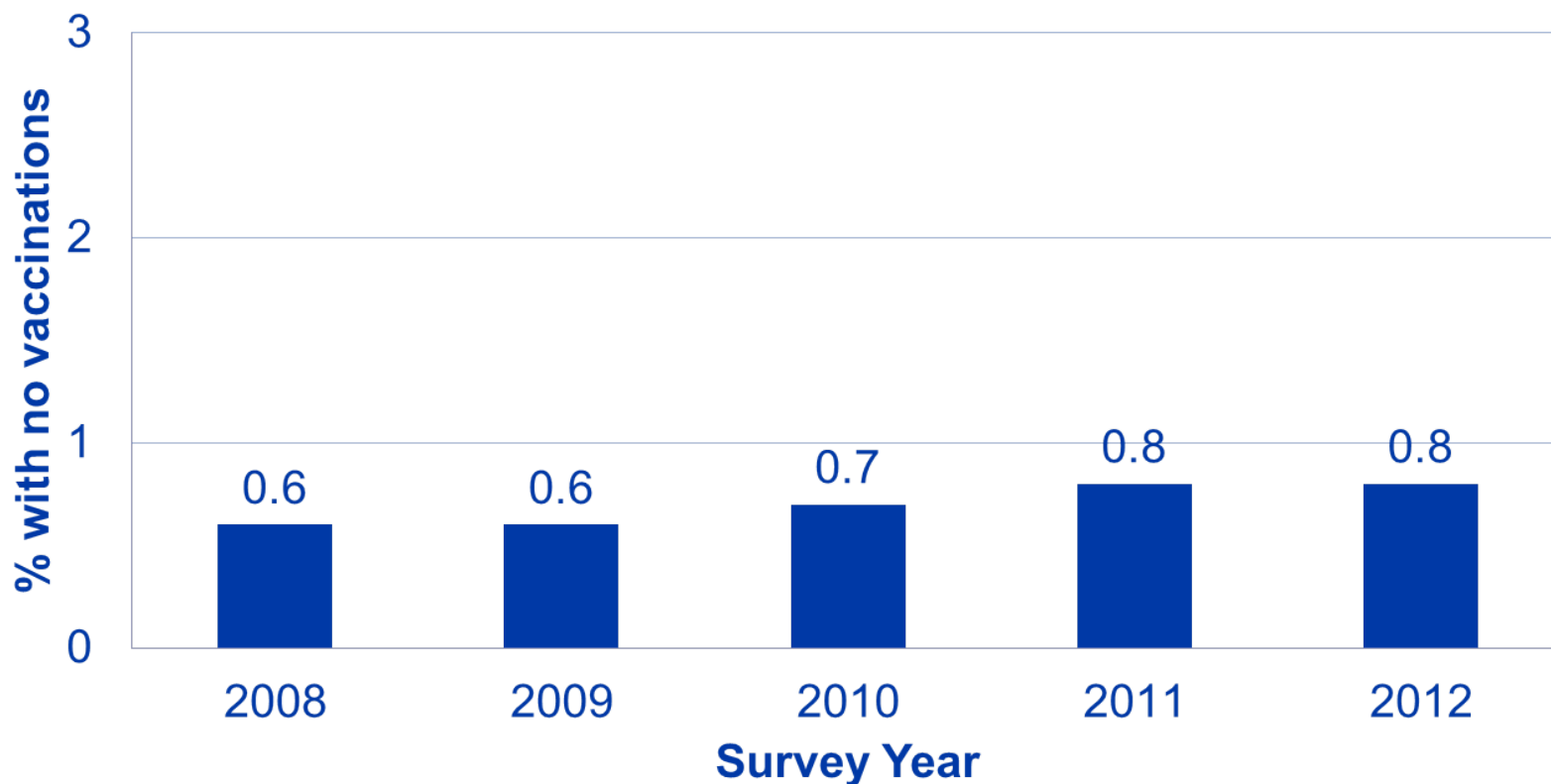
¶ 2 or 3 doses, depending on the type of rotavirus vaccine received

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 NCIRD, and NIS (1994-2012), CDC, NIP, NCHS and NCIRD; No data from 1986-1990 due to cancellation of USIS because of budget reductions.

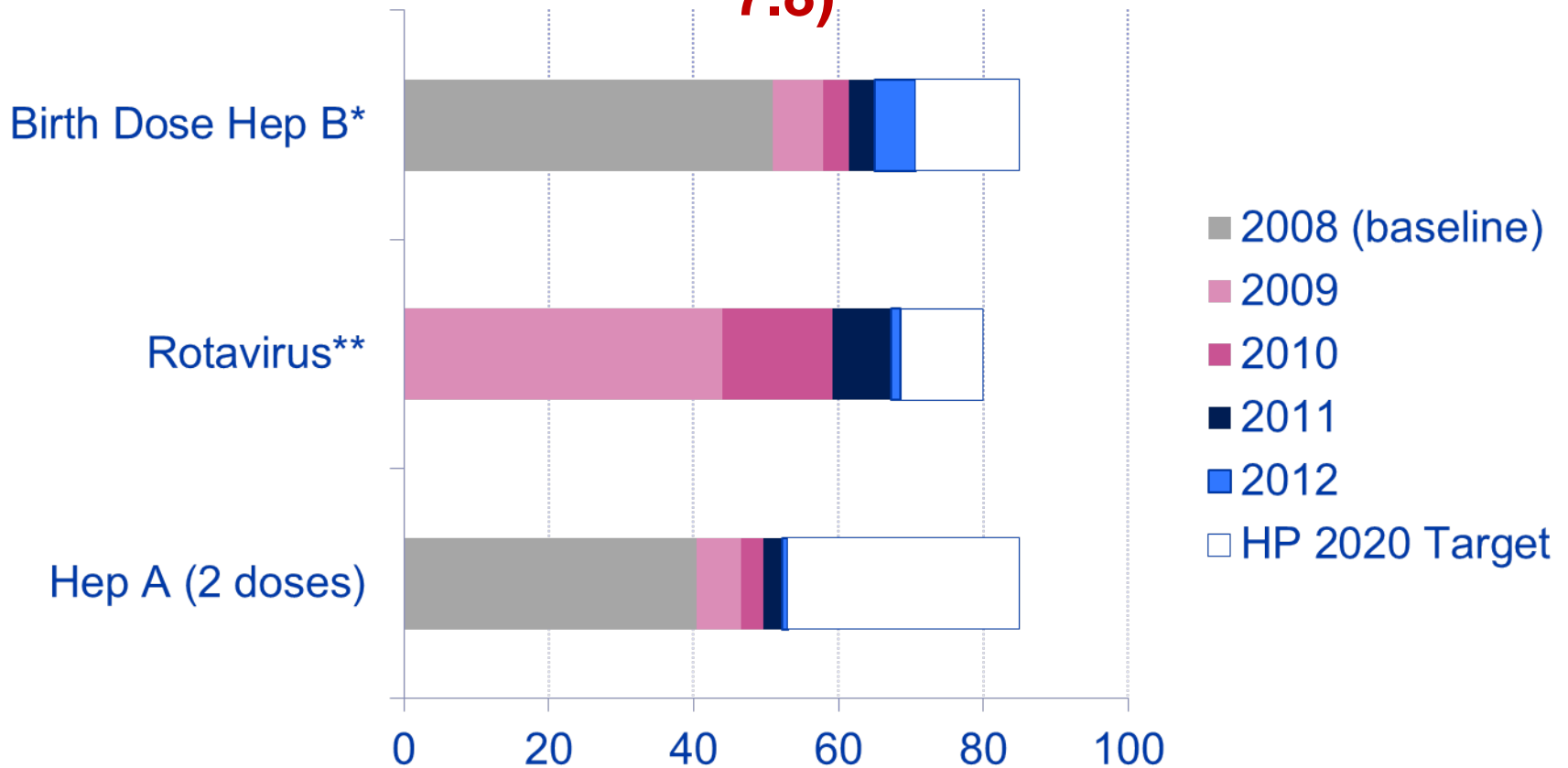
# IID-9: Children 19-35 Months Who Received No Vaccinations, 2008-2012, U.S.

Tracking Measure- Program goal to sustain percentage of <1%



Source: National Immunization Survey

# Estimated Vaccination Coverage, Children 19-35 Months, New Healthy People 2020 Objectives (7.9, 7.10, 7.8)



\* HP2020 target for birth dose of HepB is measured by birth cohort. Data shown are estimates from the 2005-2009 birth cohorts.

\*\* 2 or 3 doses, depending on the type of rotavirus vaccine received

Source: CDC, NIS

# Comparison of Pre-Vaccine Era Estimated Annual Morbidity with Current Estimate: Vaccine-Preventable Diseases

Disease	Pre-Vaccine	2012 Estimate (unless otherwise specified)	Percent Decrease
Hepatitis A	117,333†	2,890*	98%
Hepatitis B (acute)	66,232†	18,800*	72%
Pneumococcus (invasive)			
All ages	63,067†	31,600#	50%
<5 years of age	16,069†	1,800##	89%
Rotavirus (hospitalizations, <3 years of age)	62,500††	1,250###	98%
Varicella	4,085,120†	216,511####	95%

† JAMA. 2007;298(18):2155-2163

†† CDC. MMWR. February 6, 2009 / 58(RR02);1-25

\* CDC. Viral Hepatitis Surveillance - United States, 2011

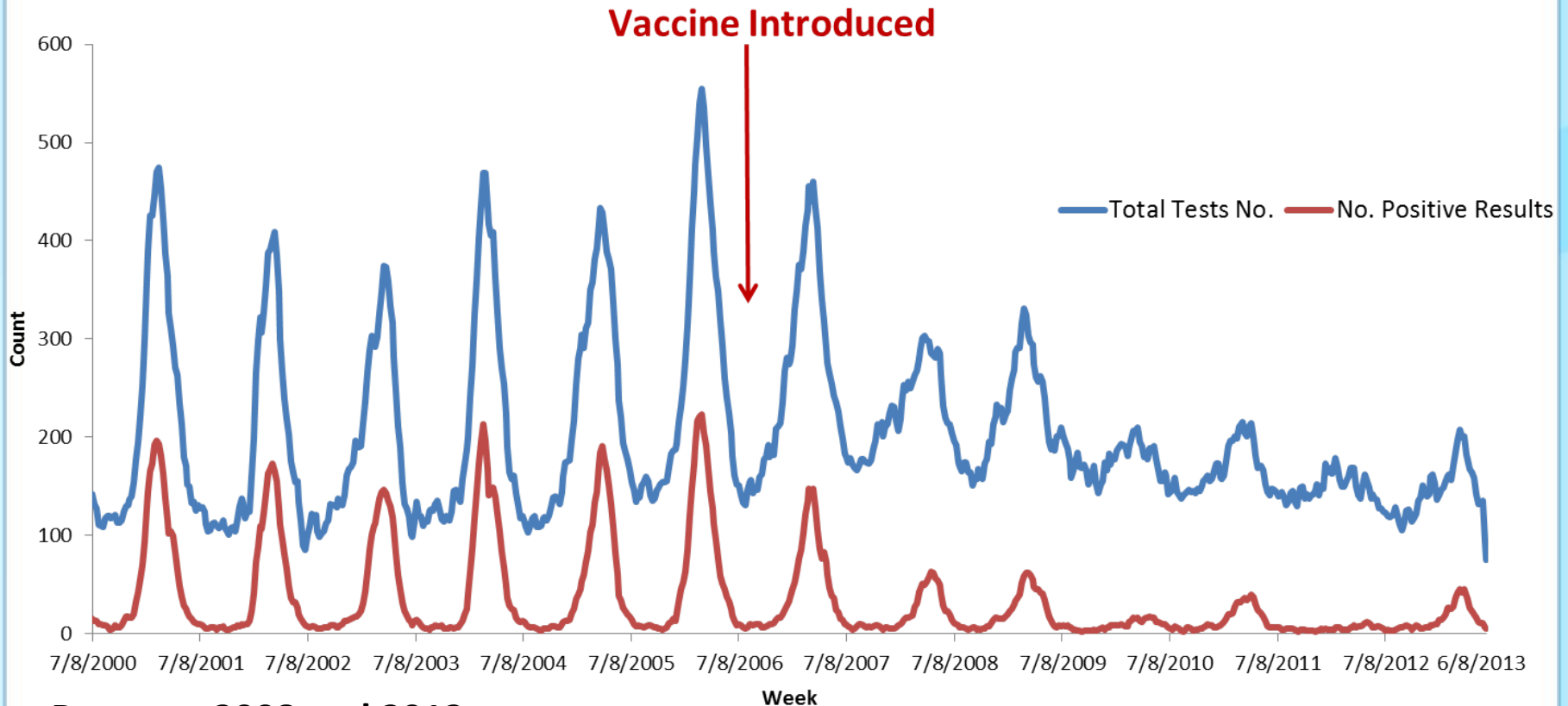
# CDC, Active Bacterial Core Surveillance Provisional Report; *S. pneumoniae* 2012

## CDC. Unpublished, Active Bacterial Core Surveillance

### New Vaccine Surveillance Network 2012 data (unpublished); U.S. rotavirus disease now has biennial pattern

#### CDC. Varicella Program 2012 data (unpublished)

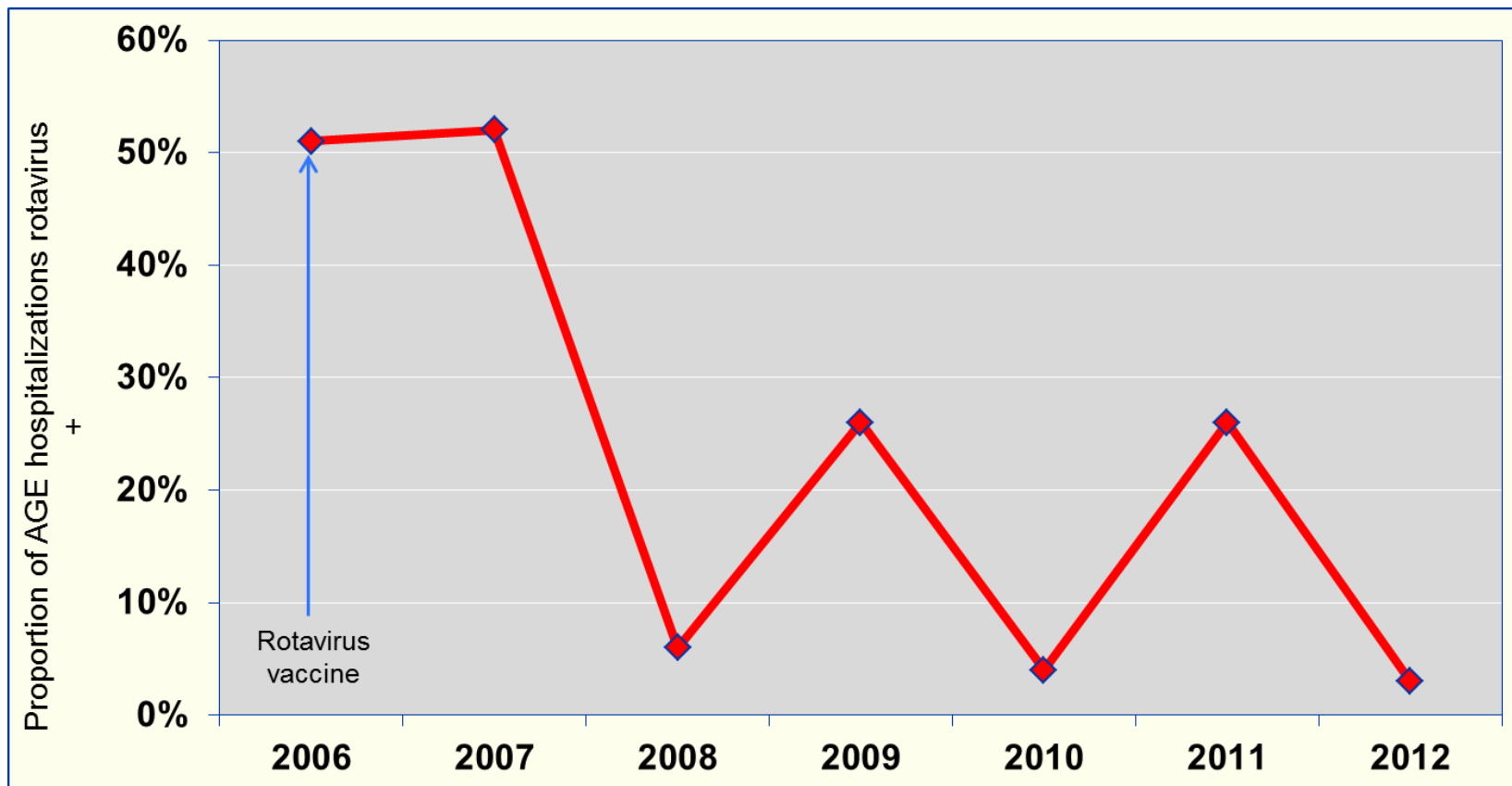
## Total rotavirus tests & the number testing rotavirus positive NREVSS laboratories, 2000–2013



### Between 2008 and 2012:

- 200,000-250,000 hospitalizations prevented among children < 5 years
- > \$900 million dollars saved in direct medical costs from averted rotavirus-related hospitalizations and ED visits

## Proportion of childhood acute gastroenteritis (AGE) hospitalizations test-positive for rotavirus, NVSN 2006-2012



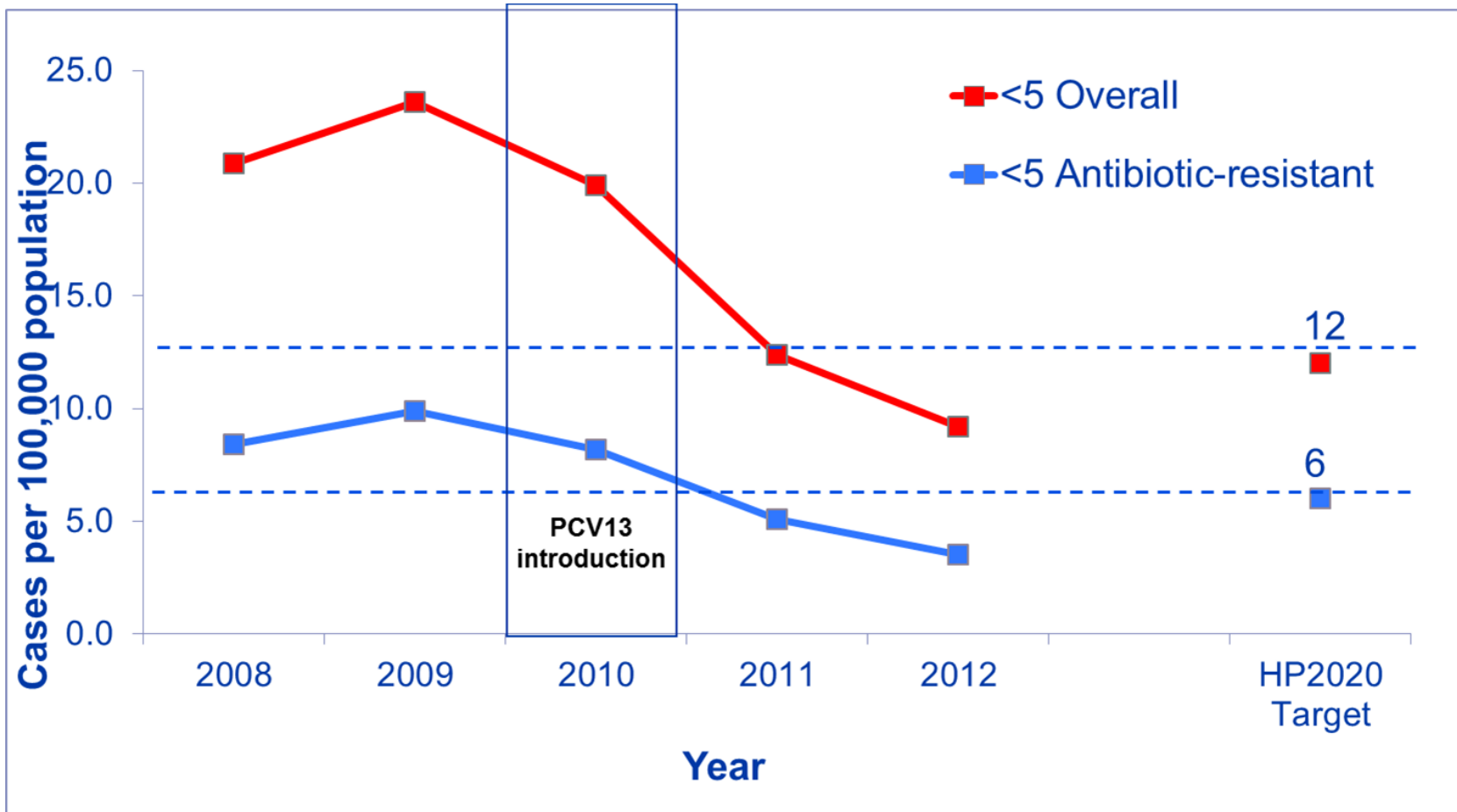
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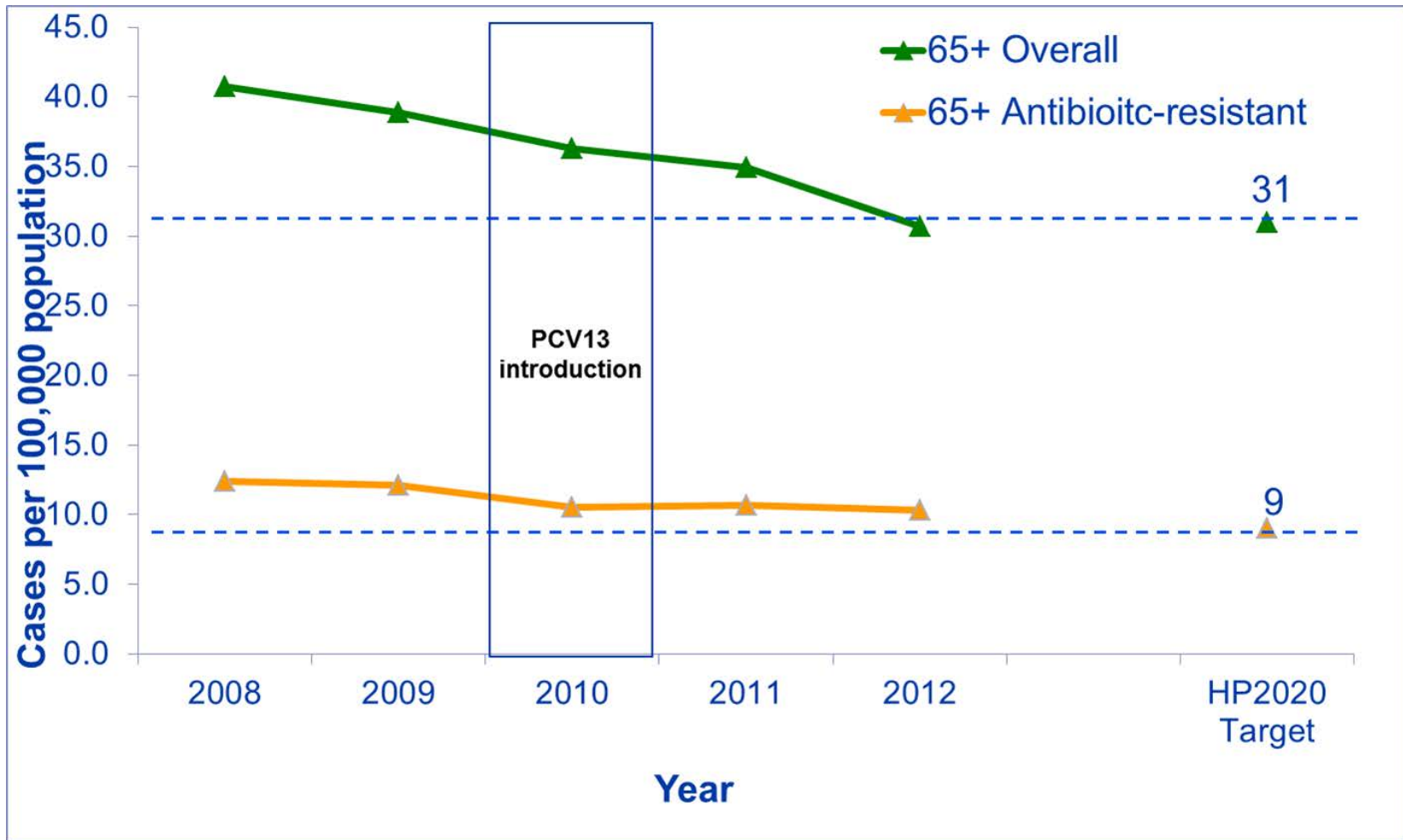
Sources: Payne DC, et al. *Clin Infect Dis* 2012. / and / Kilgore A, et al. *Vaccine* 2013. *New Vaccine Surveillance Network*



# IID-4: Incidence of Invasive Pneumococcal Disease in Children <5 years old

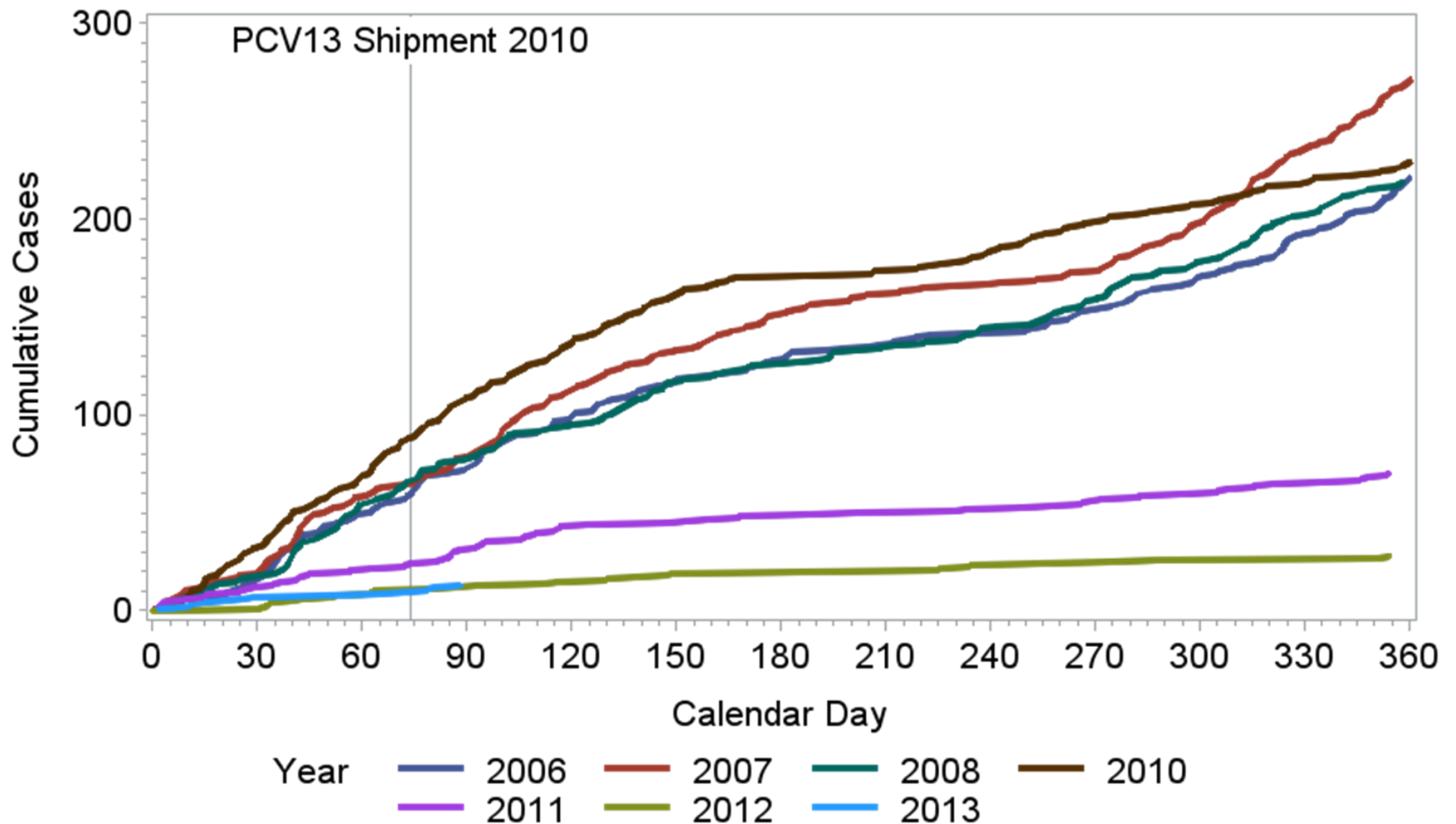


# IID-4: Incidence of Invasive Pneumococcal Disease in Adults $\geq 65$ years old



CDC Unpublished, Active Bacterial Core surveillance

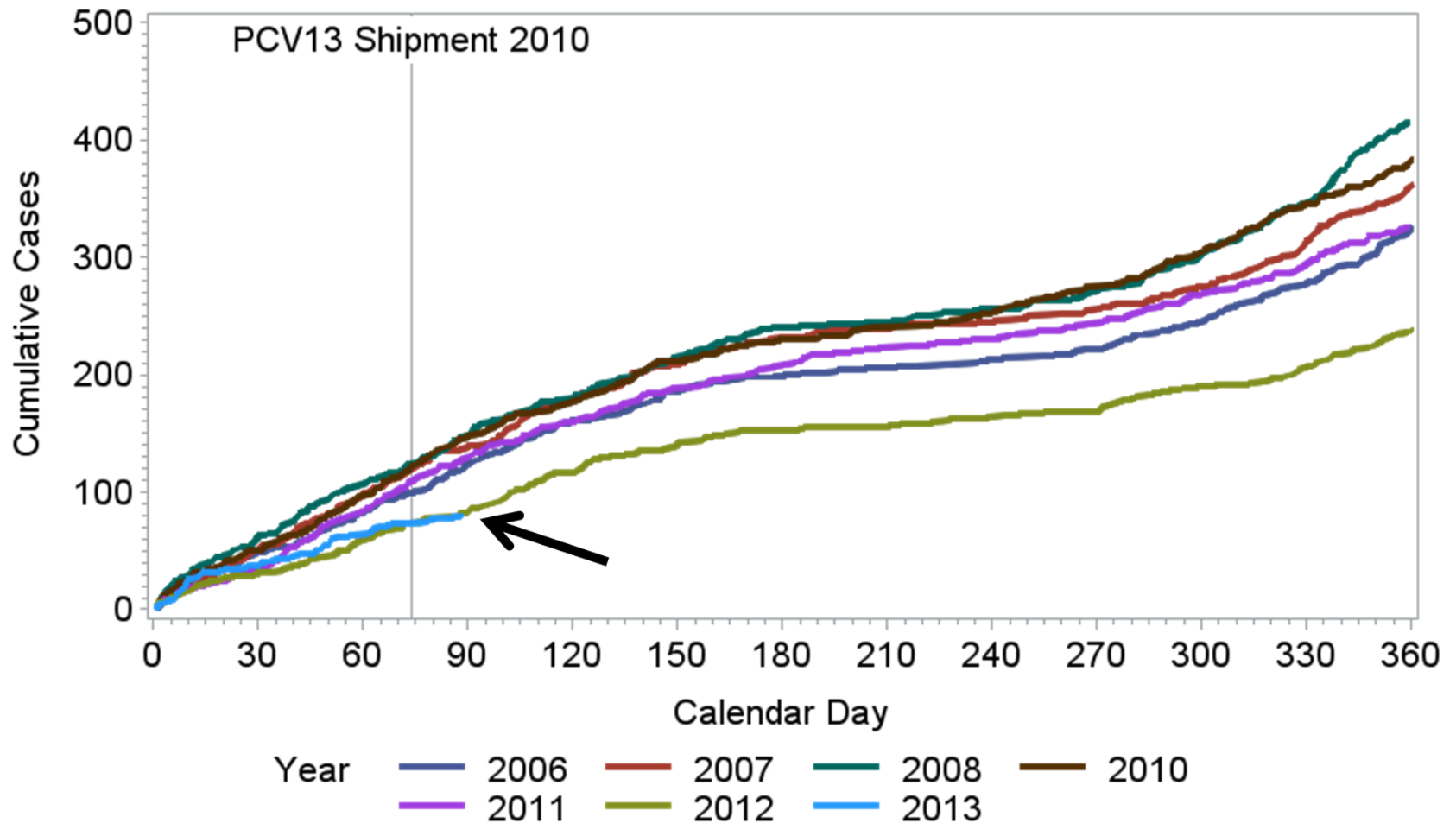
# Cumulative Cases of PCV5-type IPD among Children <5 years old, 2006-2008, and 2010-2013



CDC Unpublished, Active Bacterial Core surveillance

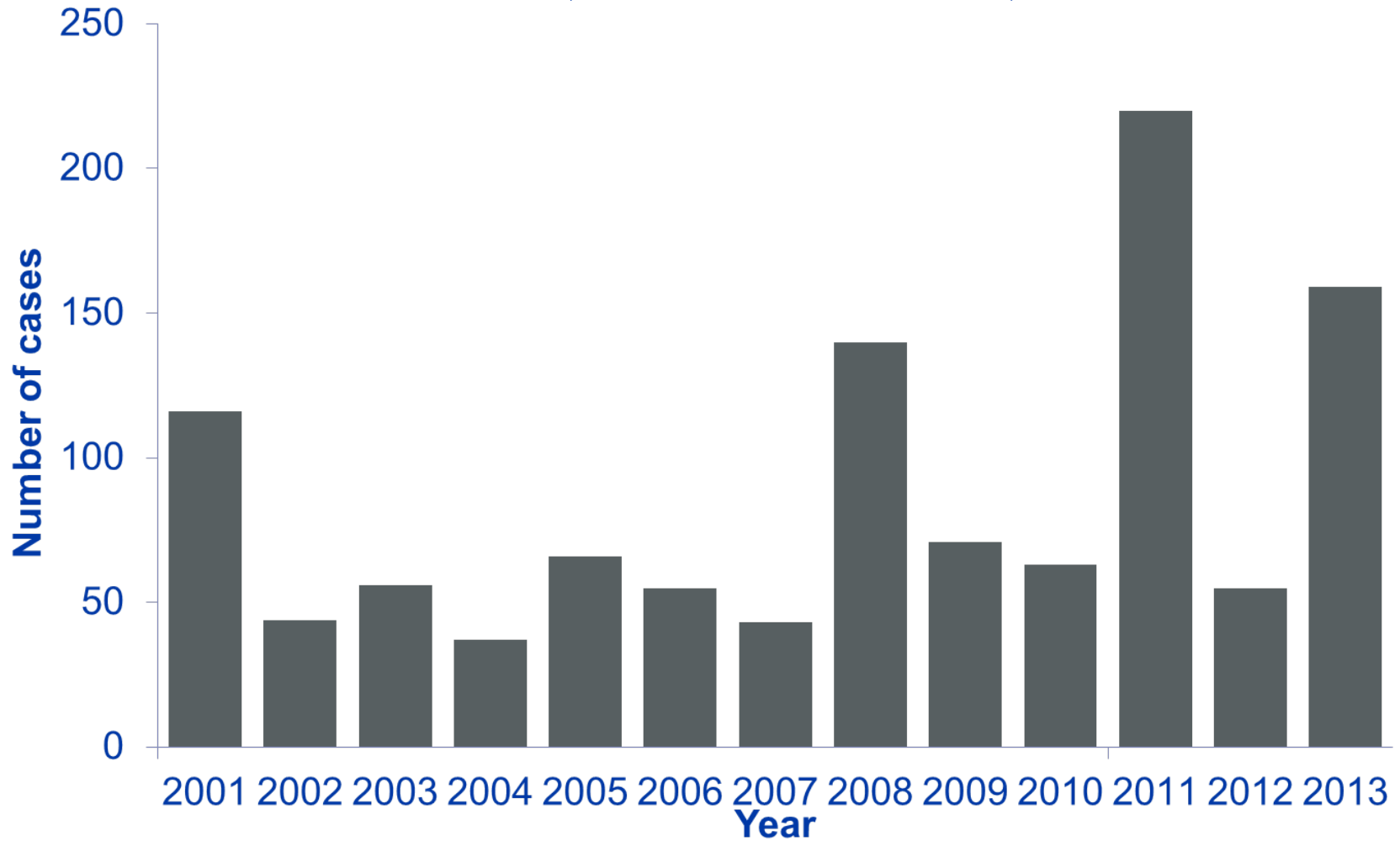
Note: Excludes 2009 pandemic year

# Cumulative Cases of PCV5-type IPD among Adults >64 years old, 2006-2008, and 2010-2013



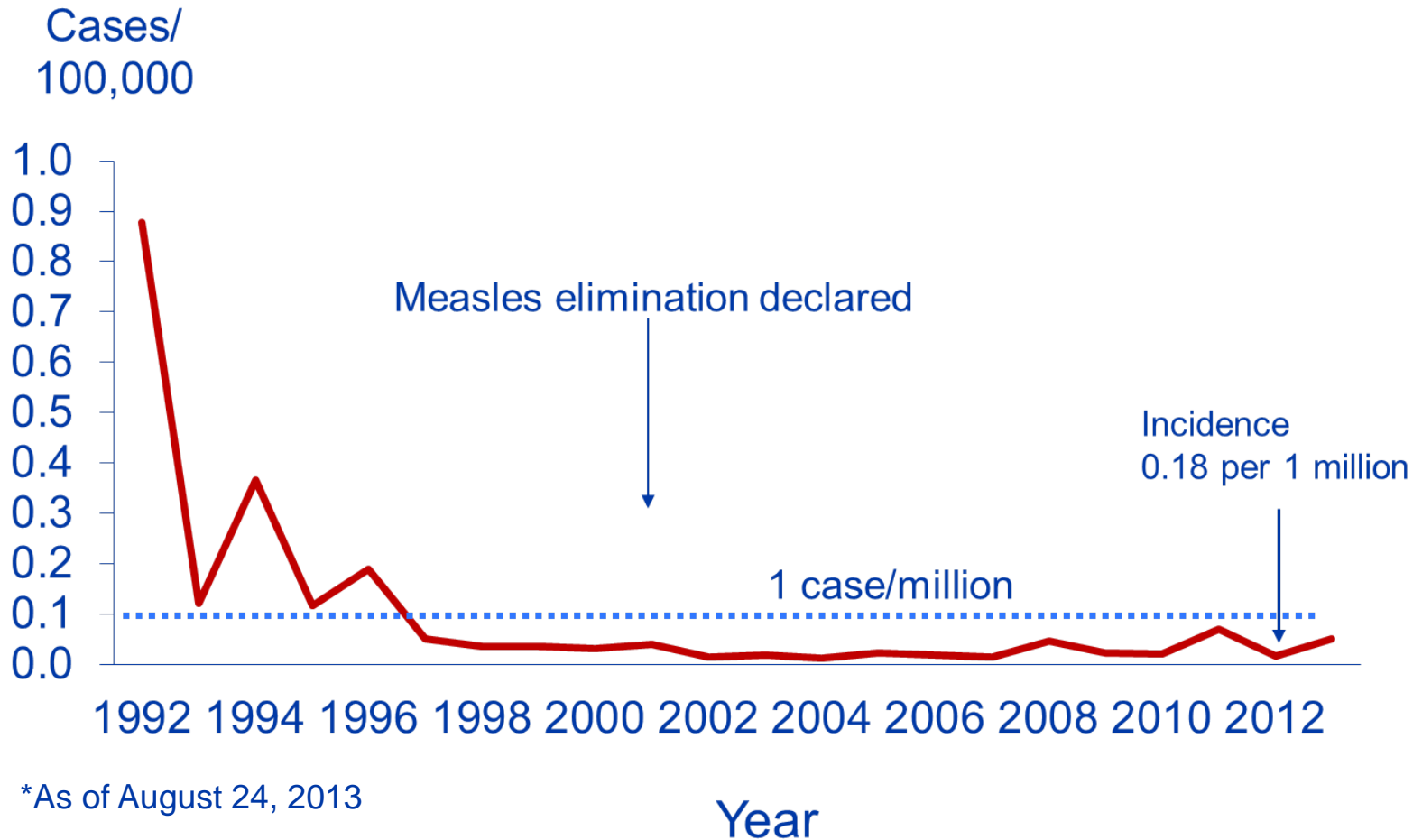
CDC Unpublished, Active Bacterial Core surveillance  
Note: Excludes 2009 pandemic year

## IID-1.4: Measles, United States, 2001-2013\*

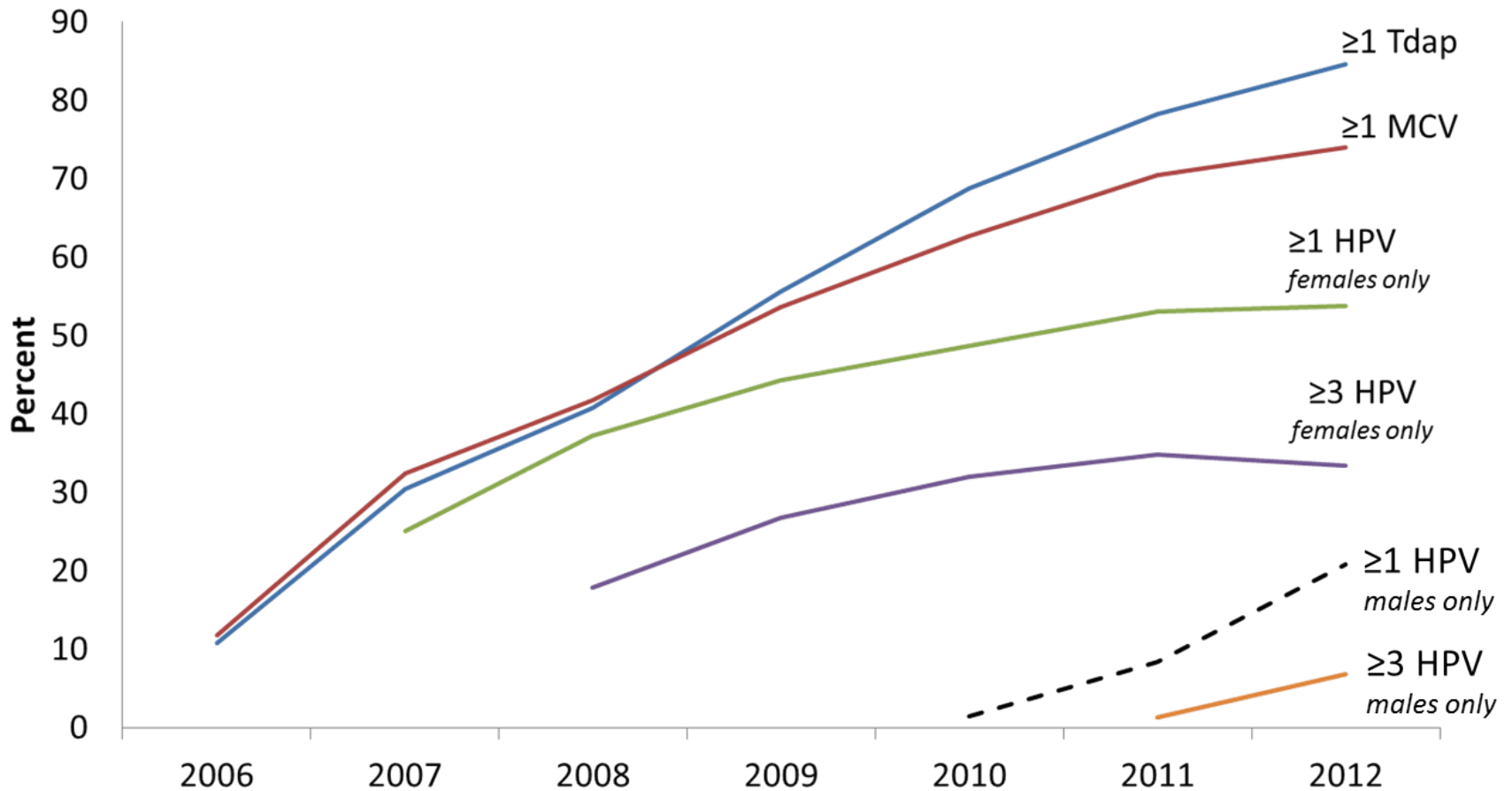


\*As of August 24, 2013

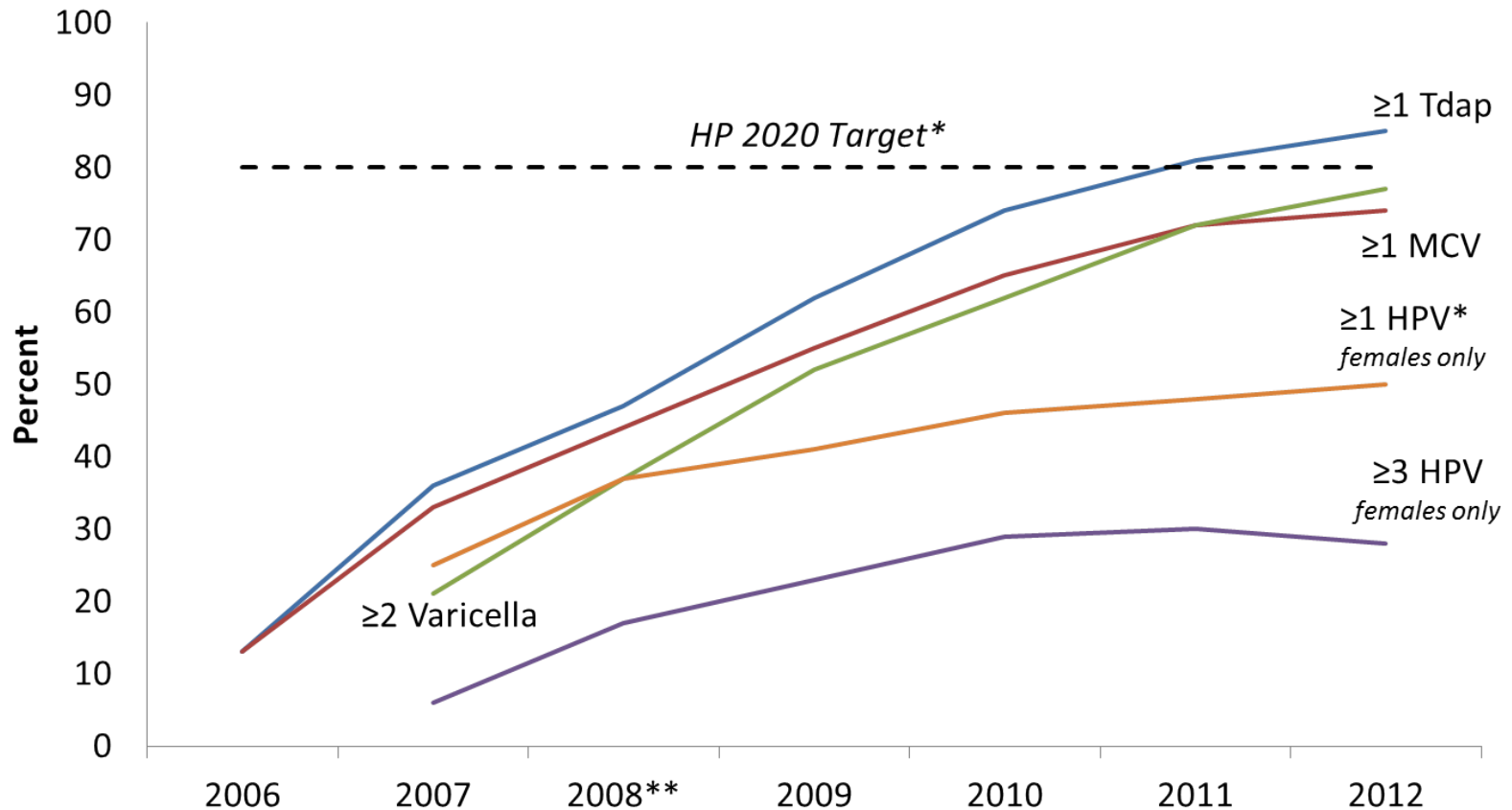
# IID – 4 Reported Measles Incidence United States, 1992-2013\*



# Adolescent Vaccine (13-17 years Old), United States, 2006-2012



# IID-11 Vaccination Coverage, Adolescents 13-15 years, 2006-2012 (NIS-Teen)

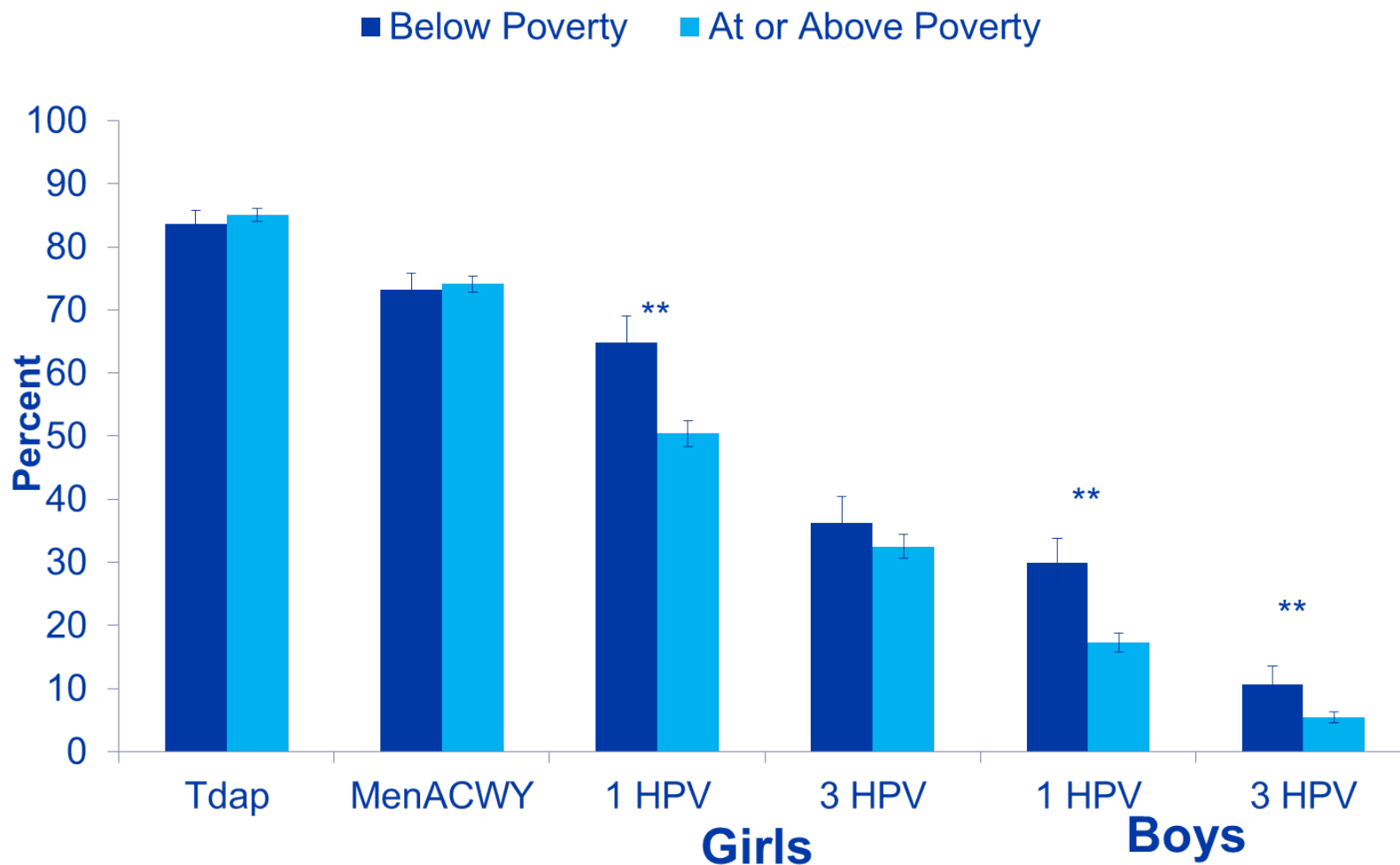


\* Target is 90% for 2 doses of varicella; ≥1 HPV is not an HP 2020 objective.

\*\* Baseline for HP 2020.

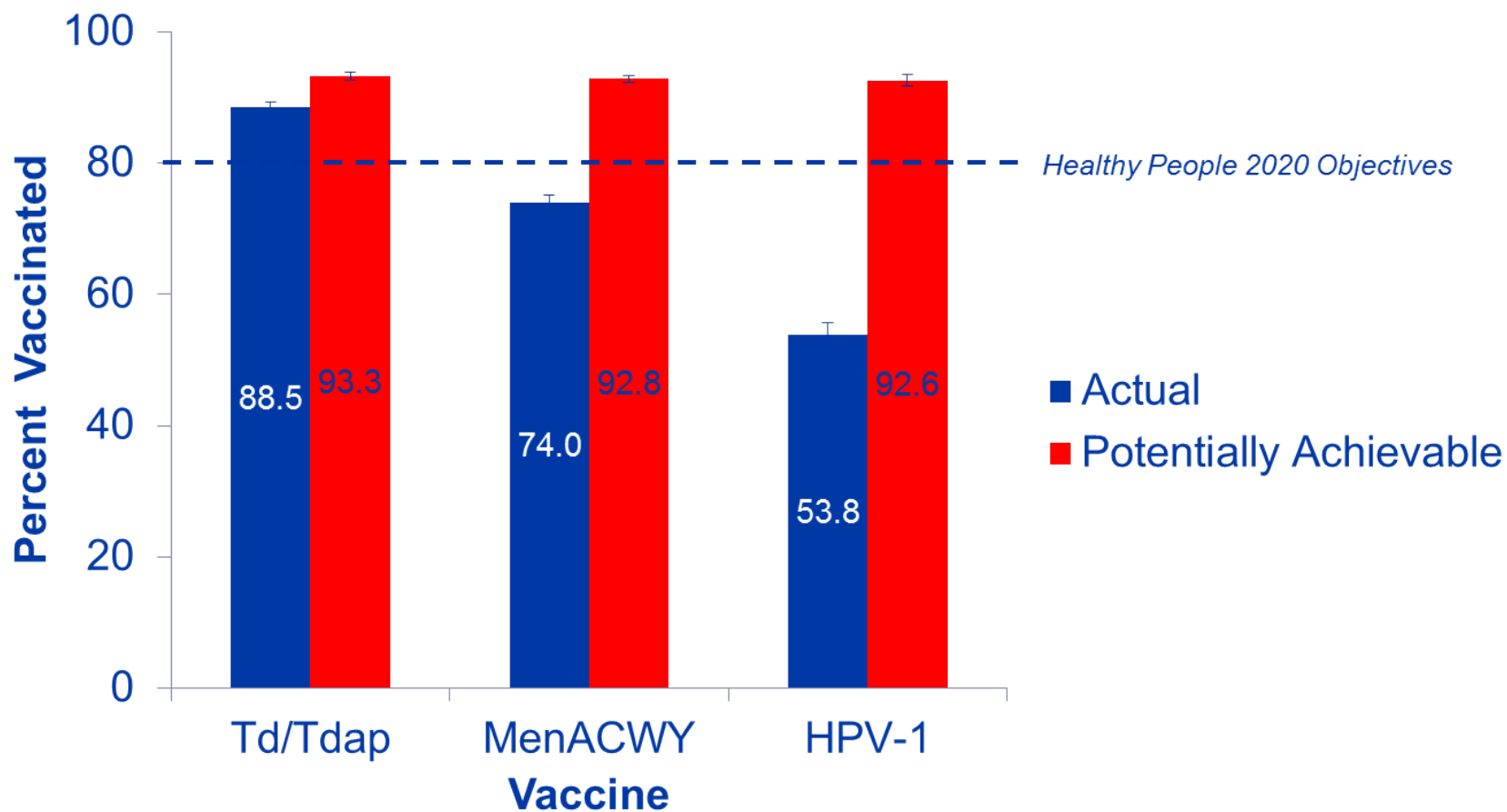


# Vaccination Estimates among Adolescents by Poverty Status, NIS-Teen, United States, 2012



\*\* statistically different ( $p < 0.05$ )

# Actual and potentially achievable vaccination coverage if missed opportunities were eliminated: NIS-Teen, 2012



HPV-1 coverage is among females only.

## **IID-19: Monitoring vaccination coverage at kindergarten entry**

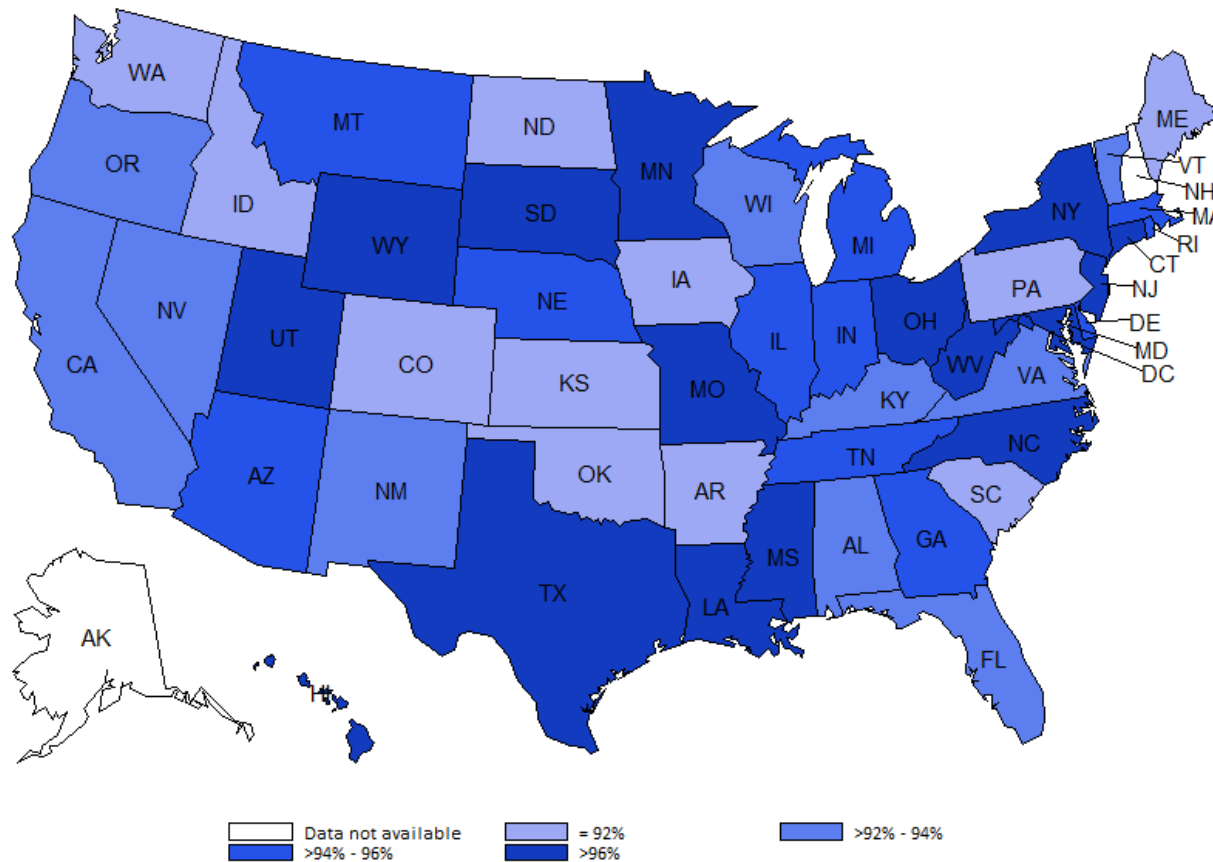
### **□ # states collecting kindergarten vax data according to CDC standards:**

- 2009 (Baseline) 13
- 2011-12 School year 20
- 2012-13 School year 12

**Vaccination Coverage Among Children in Kindergarten — United States, 2011–12 School Year. MMWR August 24, 2012 / 61(33);647-652**

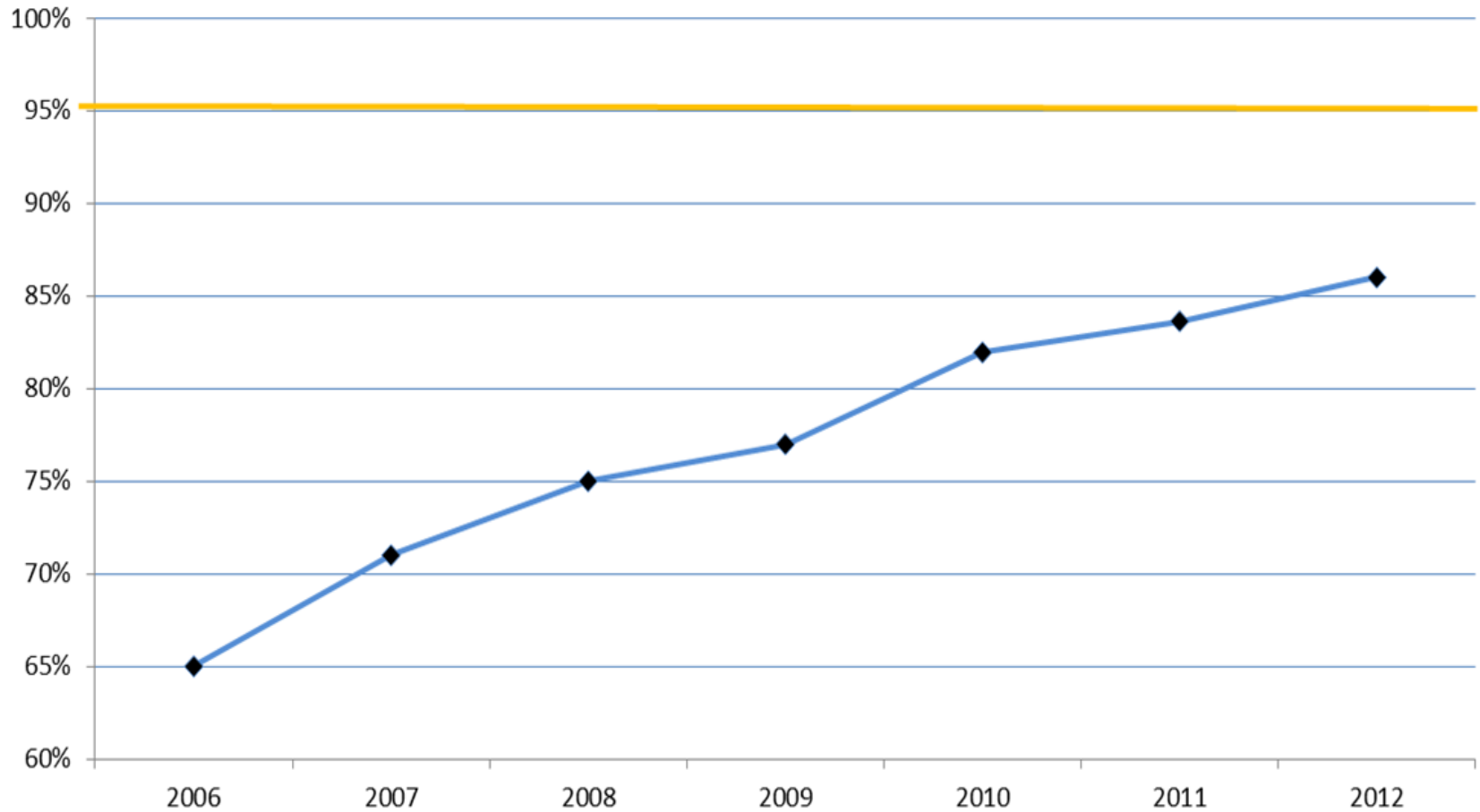
**Vaccination Coverage Among Children in Kindergarten — United States, 2012–13 School Year. MMWR August 2, 2013 / 62(30);607-612**

# IID 10.2 MMR Vaccination Coverage among Children in Kindergarten – 2012-2013 School Year

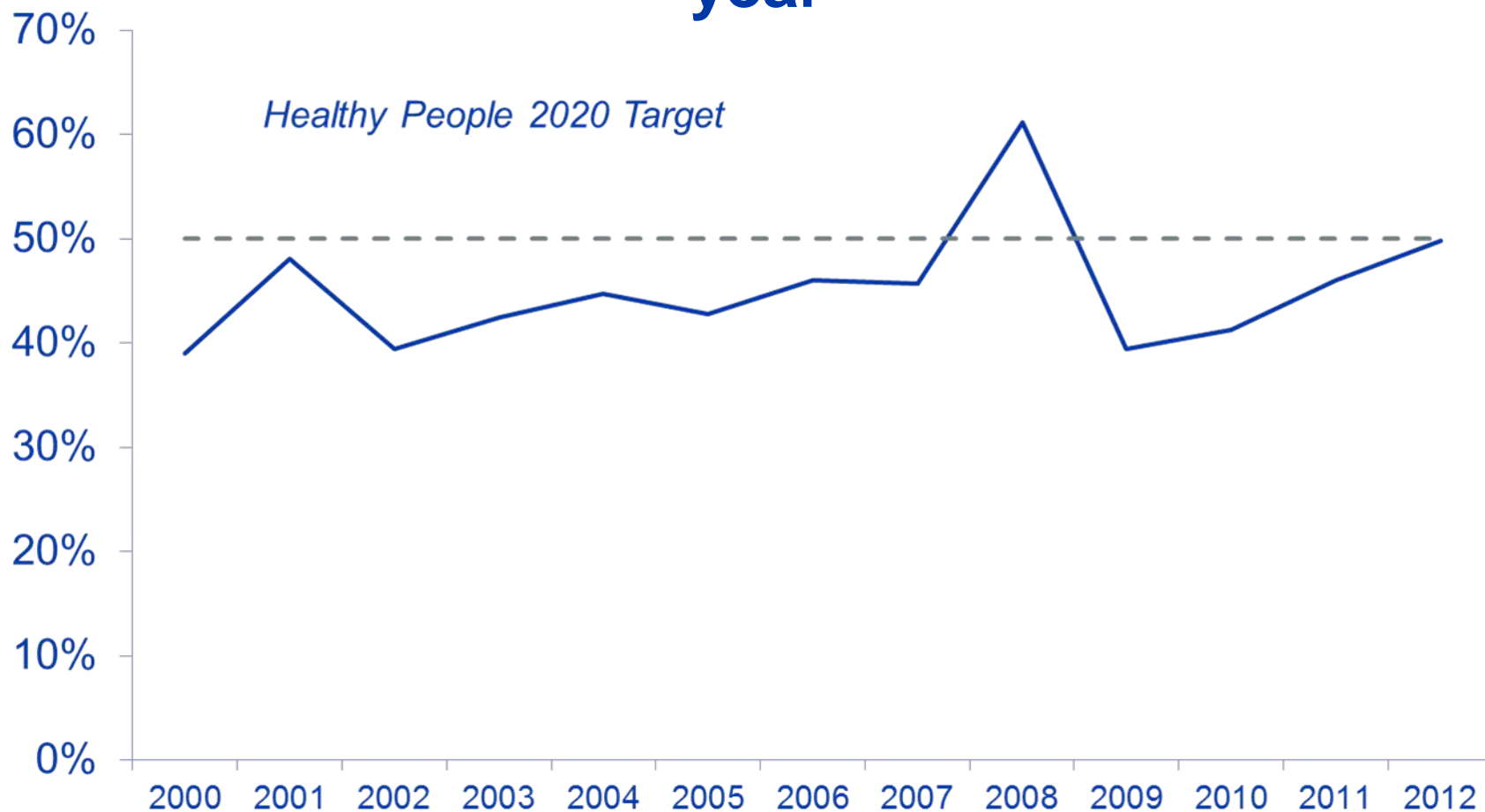


Vaccination Coverage Among Children in Kindergarten — United States, 2012–13 School Year. MMWR August 2, 2013 / 62(30);607-612

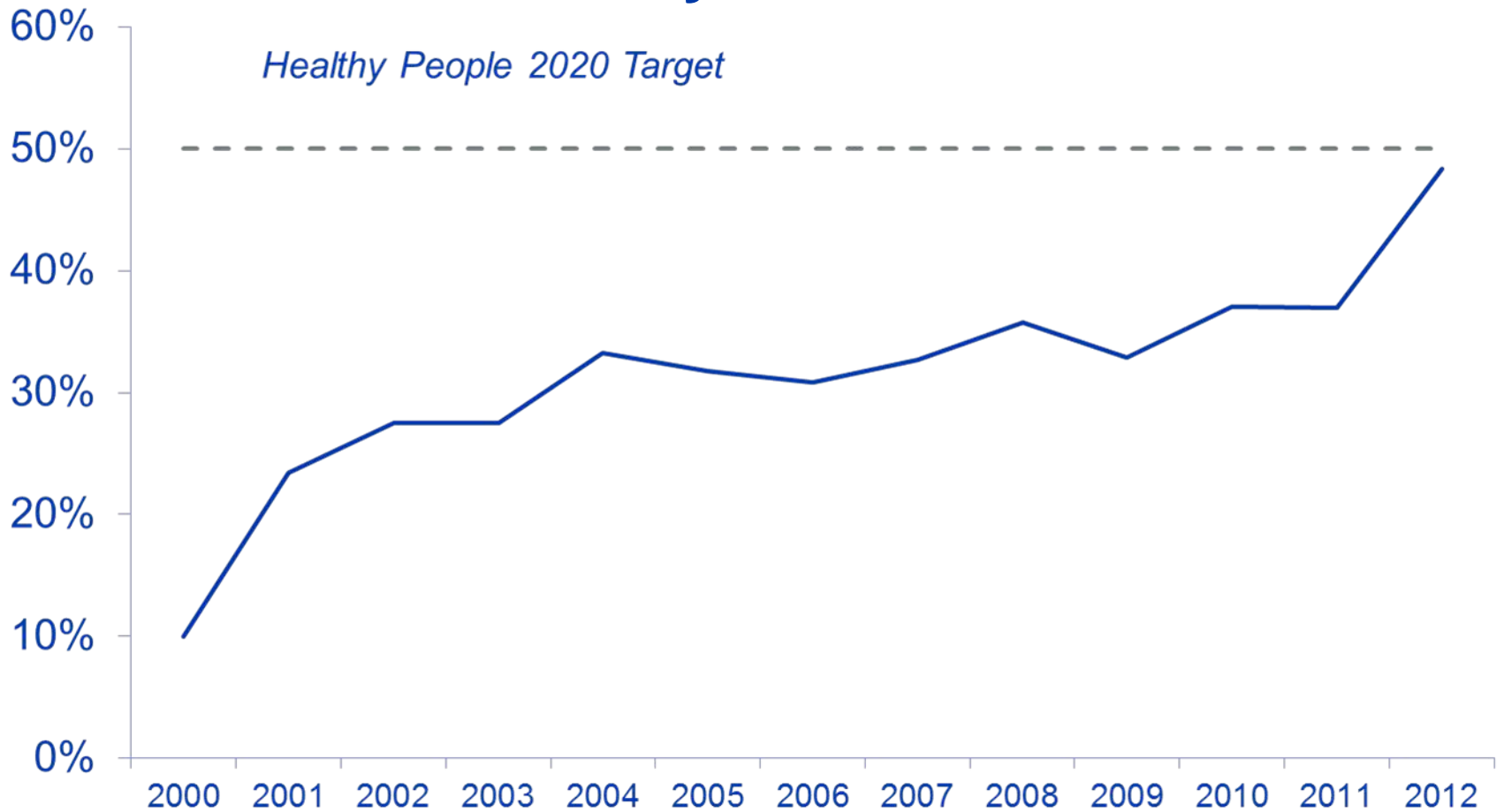
**IID-18 Increase the percentage of children under age 6 years of age whose immunization records are in a fully operational, population-based immunization information system (IIS)**



# **IID-17.1: Percentage of public providers who have had vaccination coverage levels among children in their practice population measured in the past year**



# **IID 17.2: Percentage of private providers who have had vaccination coverage levels among children in their practice population measured in the past year**



# Formerly Known as IID-12: Influenza Vaccination Objectives Now Consolidated

- Ten influenza vaccination coverage objectives consolidated into four:
  - Six months through 17 years of age (target 70%)
  - Adults 18+ (target 70%)
  - Healthcare Personnel (target 90%)
  - Pregnant Women (developmental pending data source, no target set)
- Approved May 15, 2013 by the HP2020 Federal Interagency Workgroup
  - Not yet updated on main HP2020 website
  - See Immunization and Infectious Disease progress review:
    - <http://www.healthypeople.gov/2020/topicsobjectives2020/downloads/HP2020IIDandGHProgressReviewData.xlsx>
    - [http://www.cdc.gov/nchs/healthy\\_people/hp2020/hp2020\\_IID\\_GH\\_progress\\_review.htm](http://www.cdc.gov/nchs/healthy_people/hp2020/hp2020_IID_GH_progress_review.htm)
- Will continue to track the various populations (e.g. high-risk adults, 65+, etc.) but will only report out for HP2020 on the four new objectives



# Coming Attractions: Influenza Vaccination Coverage

- September 26, 2013
  - MMWR will report influenza coverage among health care personnel and pregnant women from internet panels for 2012/13 flu season
  - 2012/13 influenza vaccination coverage for general population (NIS for 6 mos through 17 years and BRFSS for  $\geq 18$  years) will be posted on CDC website
  - Press conference organized by NFID will promote these results and 'launch' vaccination season

# Summary for 2012/13 HP2020

- Most VPDs low or decreasing
  - Sustained or improved immunization coverage
  - Herd (indirect) effects producing greater than expected impact (e.g., rota, PCV, Hep A, varicella)
- Immunization system monitoring issues
  - IIS expanding, but insensitive metric
  - Kindergarten coverage assessment
- Exceptions are Pertussis disease, HPV vaccine coverage (covered in other NVAC sessions)

# Acknowledgments

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