

Effect of a School Entry Vaccination Requirement on Racial and Ethnic Disparities in Hepatitis B Vaccination Coverage Levels Among Public School Students



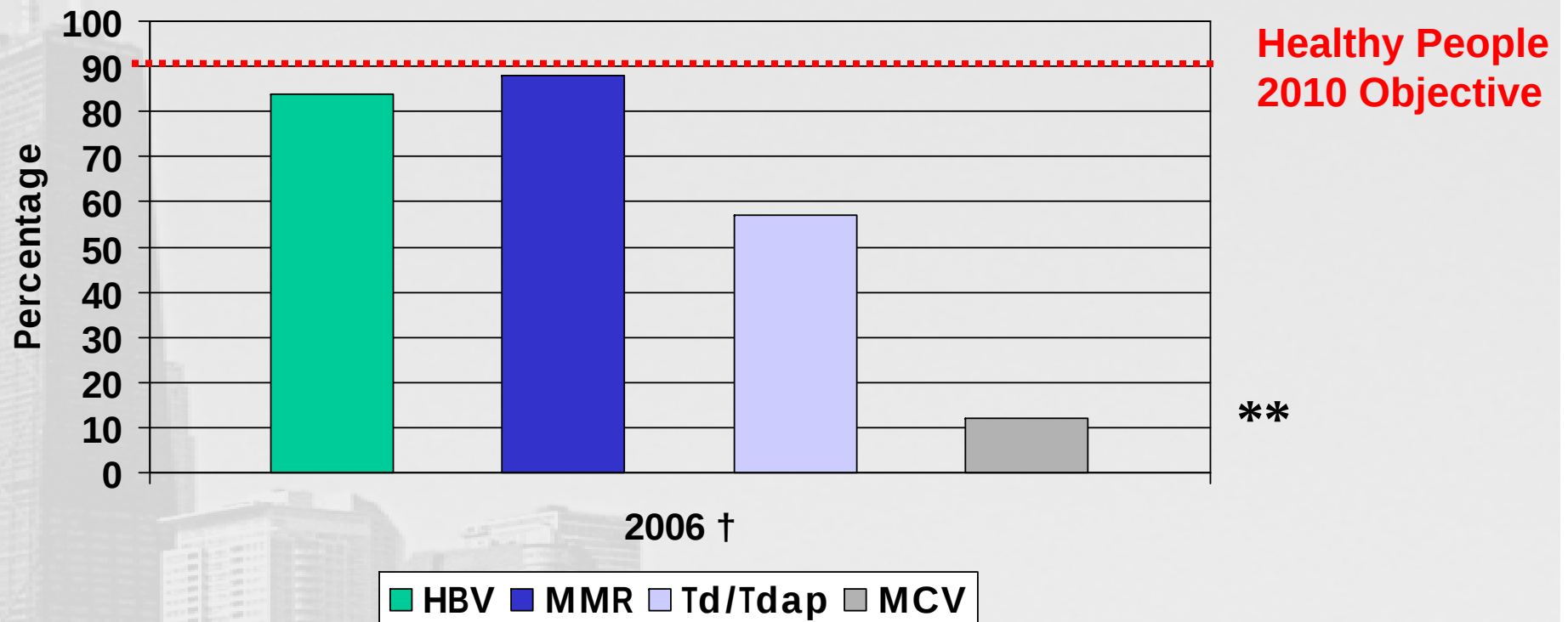
Department of Public Health
Immunization Program

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Hepatitis B Vaccine (HBV)

- **1991**
 - ACIP, AAP and AAFP recommended routine vaccination of newborns before hospital discharge
- **1994**
 - ACIP, AAP, and AAFP recommended expansion of routine vaccination to 11-12 year olds
- **1996**
 - ACIP, AAP, AAFP and AMA recommended a routine health-care visit at 11-12 years of age

National Vaccine Coverage Levels, 13-15 year olds, 2006



†National Immunization Survey – provider verified

** MCV coverage among 13-17 year olds

School-Entry Vaccine Requirements

- **State specific**
- **Created to decrease transmission of vaccine preventable diseases (VPD) in school settings**
- **Serve as a “safety net”**
- **Effective in reducing disease and outbreaks**

School-Entry Vaccine Requirements

- **Kindergarten requirements**

- Contributed to high coverage levels
- Decreased racial and ethnic disparities in kindergartners

- **Middle-school requirements**

- Contributed to high coverage levels
- Effect on racial and ethnic disparities in adolescents unknown
- 35 states have hepatitis b requirements

Illinois Vaccine Requirements

- **Kindergarten entry**
 - DTaP, IPV, MMR, Varicella
- **Fifth Grade entry**
 - Receipt of vaccines required at kindergarten entry
 - **Completion of 3 or more doses of hepatitis B vaccine**
 - Students who initiated vaccine series exempted for up to one year after initiation of the series
- **Ninth Grade entry**
 - Receipt of Td if 10 years from last DTaP
 - Receipt of all vaccines required at 5th grade entry
- **Medical and religious exemptions are allowed**

Objectives

- **Evaluate the effect of the 5th grade hepatitis B vaccine requirement (1997) on Chicago Public School students**
 - 1) vaccine coverage levels
 - 2) racial and ethnic disparities in vaccine coverage levels

Methods

- **Retrospective cohort study of CPS 12th grader students, 2000-2005**
- **All vaccination records verified and signed by nurse or physician before entry into CPS' health database**
- **CPS health database**
 - Vaccination dates
 - Date of birth
 - Race (self-reported as white, black, Hispanic, Asian, Native American)
 - Gender
 - Medical/religious exemption status

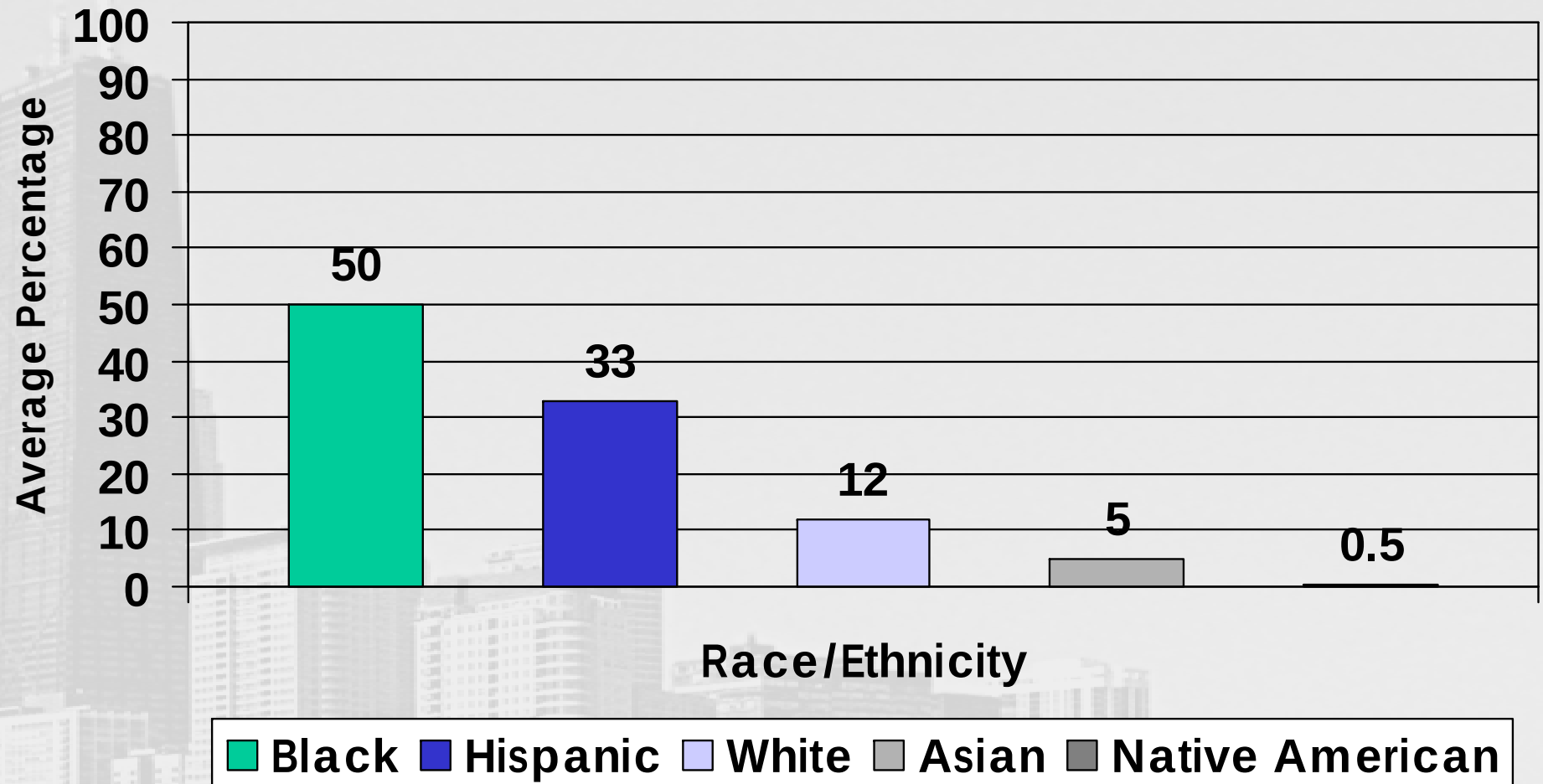
Student Cohorts

12 th Grade Entry	5 th Grade Entry	Cohort
2000	1993	Pre-mandate
2001	1994	Pre-mandate
2002	1995	Pre-mandate
2003	1996	Pre-mandate
2004	1997	Post-mandate
2005	1998	Post-mandate

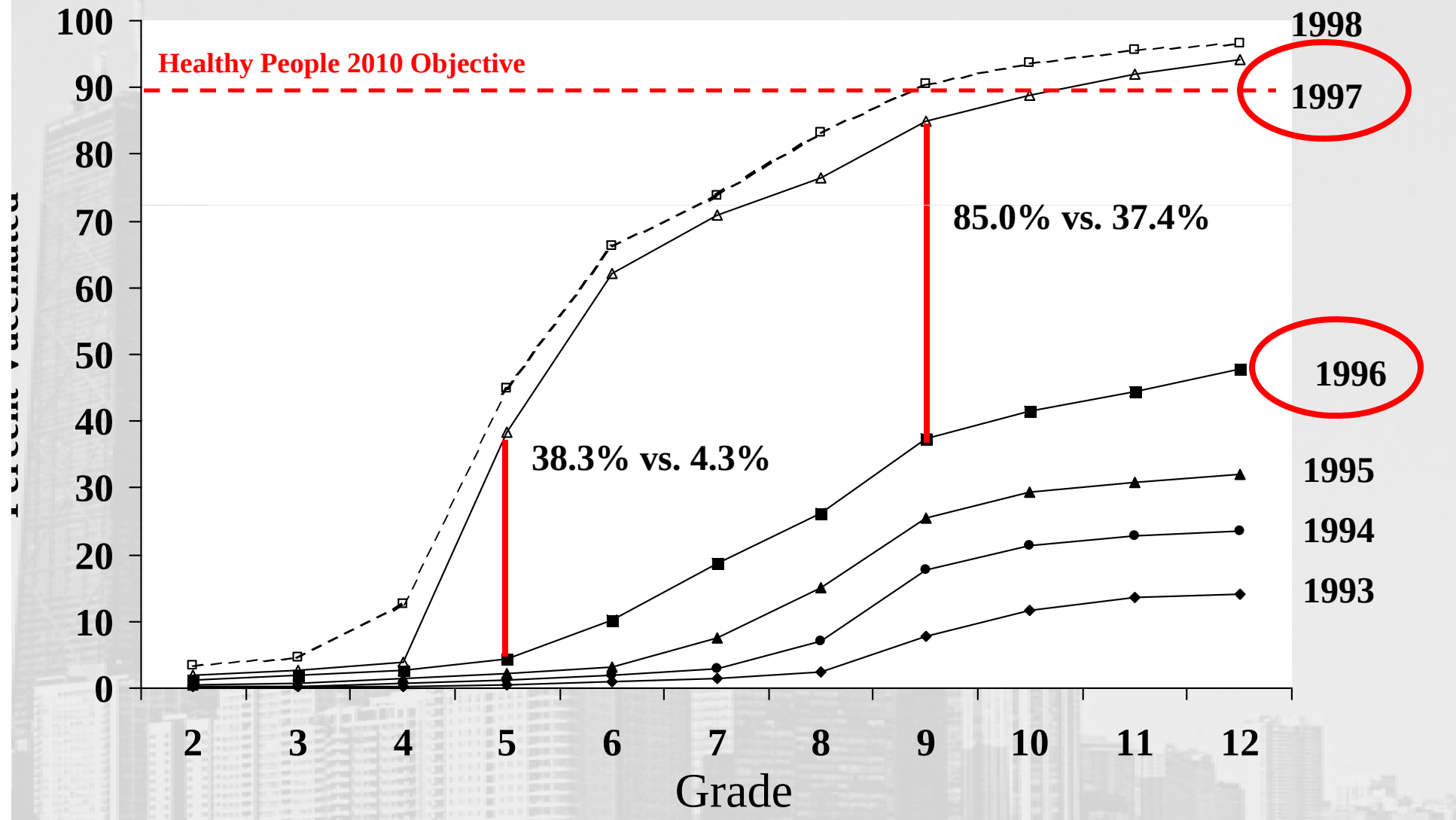
Coverage Level Determination

- **Hepatitis B coverage levels for each cohort from 2nd through 12th grades**
- **Compared coverage levels of pre-mandate to post-mandate cohorts**
- **Compared coverage levels by race and ethnicity at 5th and 9th grade entry**
 - Limited analysis to white, Hispanic, and black students

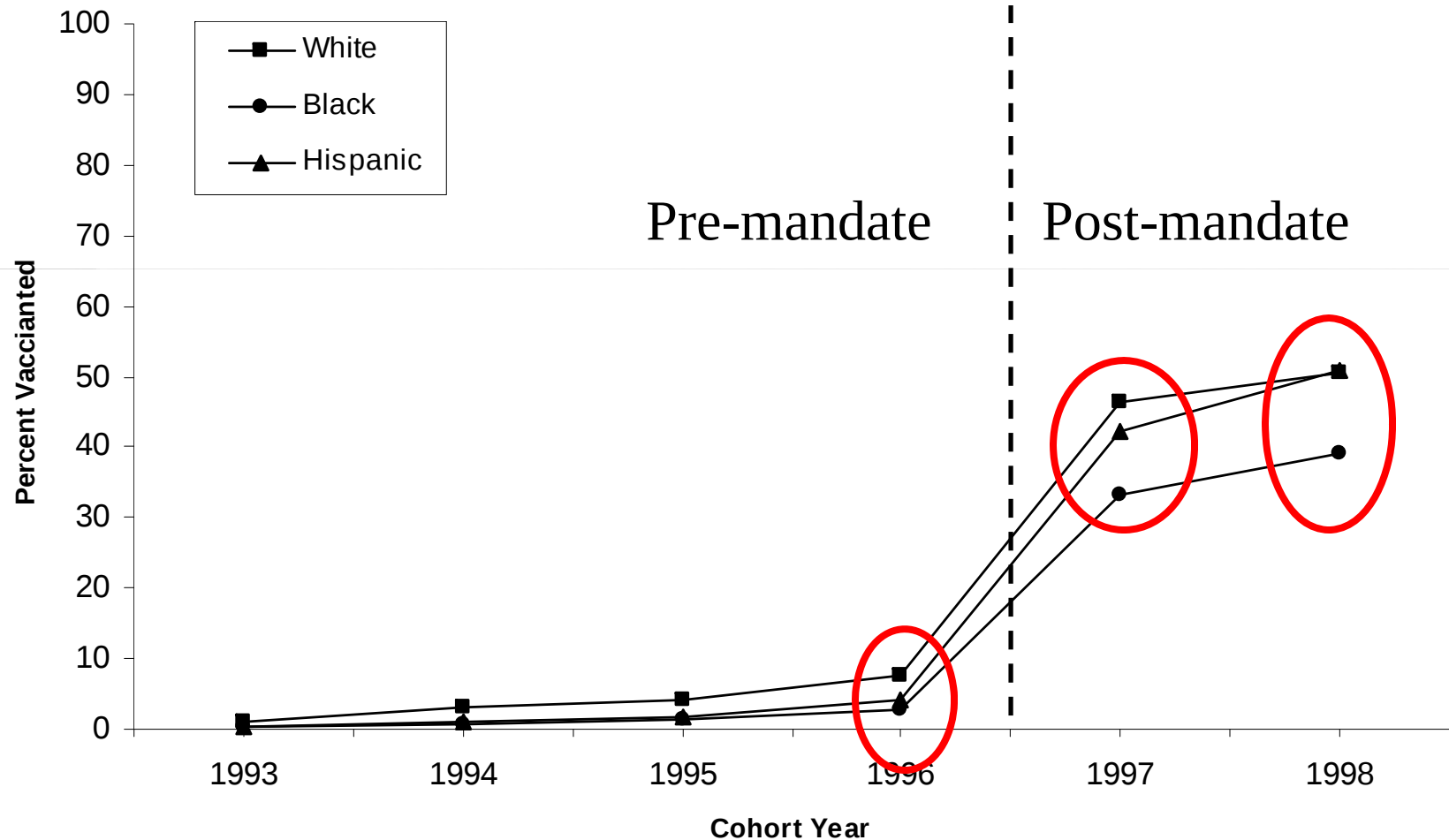
CPS High School Seniors, by Race, 2000-5 (n=106,541)



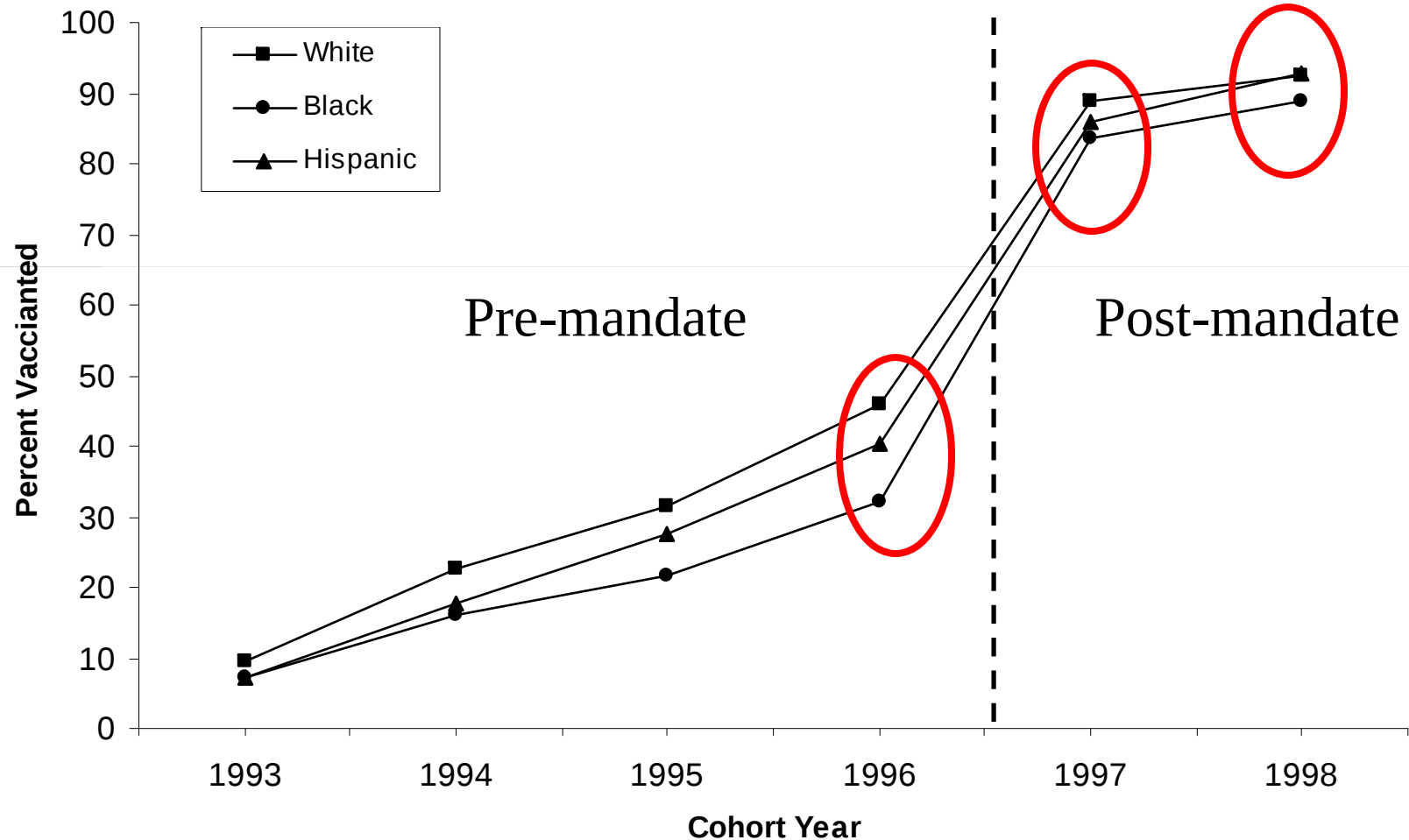
Hepatitis B Coverage Levels by Grade and Year



Hepatitis B Coverage Levels by Race/Ethnicity at 5th Grade Entry



Hepatitis B Coverage Levels by Race/Ethnicity at 9th Grade Entry



Limitations

- **Required enrollment through 12th grade**
 - Did not take into account failure rates and dropout rates
 - High school drop-out rates: 12.3 – 16.4%
 - Students who drop-out may be less likely to get vaccinated
- **Demographic characteristics and socioeconomic status of CPS students**
 - May not be representative of the population in the city or nation

Summary

- The Illinois mandate for ≥ 3 doses of hepatitis B vaccination before 5th grade entry resulted in a dramatic increase in vaccination coverage levels among CPS students
- The Illinois mandate also dramatically reduced racial and ethnic disparities in coverage levels at ninth grade entry

Discussion

- **School mandates may increase coverage levels for other recommended adolescent vaccines**
 - **Relevant to HPV**
 - Higher rates of HPV infections and cervical cancer among black and Hispanic women
- **Effectiveness with HBV a model for HPV vaccination**
 - HPV and HBV require three doses to complete the series
 - HPV and HBV prevent sexually transmitted infections

Factors to Consider before Requiring New Vaccines for School Entry

- **Illinois' HBV requirement was enacted 3 years after the recommendation for routine vaccination of adolescents**
 - Programs were established to educate the community and health care providers
 - All students had access to HBV regardless of insurance status
- **Premature adoption of new vaccine mandates**
 - Possible opposition from the community and health care providers
 - Burden of vaccinating a large amount of adolescents in a short period of time would stress health care providers, and public health and school systems

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