

# **Changes in Vaccine Distribution Associated with Conducting Vaccines for Children Program Accountability Using New York City's Citywide Immunization Registry**

**Melissa Mickle-Hope, MPH,**  
Vikki Papadouka, PhD, Amy Metroka, MPH, MSW,  
Jane Zucker MD, MSc

**2013 AIRA IIS National Meeting  
October 7, 2013  
Denver, Colorado**

# Citywide Immunization Registry (CIR) Background

- Started in 1997
- Vital records loaded twice a week
- ~125,000 births annually
- Mandatory reporting of immunizations for children 0-18 yrs, voluntary for adults  $\geq 19$  yrs with consent
  - City Health Code, State Law
  - Prior to 2005 reporting was mandatory for children 0-8 years

# New York City (NYC) and the Vaccines for Children Program (VFC)

- 8.2 million people, of which 1.9 million are 0-18 yrs
- VFC Vaccine Distribution
  - ~74% of NYC children 0-18 are eligible for vaccines distributed through VFC
    - ~66% are VFC eligible
    - ~1% are eligible for 317 funds (underinsured at non FQHCs)
    - ~7% are SCHIP eligible
- ~1,737 pediatric provider sites
  - ~90% report regularly to CIR
  - 88% (1,530) are enrolled in VFC

# Linking VFC and CIR (1)

- Vaccine accountability
  - Providers were submitting paper provider generated Doses Administered Reports (DAR)
  - Data was self-reported and unreliable
- Reduce duplicative process
  - Providers were reporting similar information to CIR and VFC Programs

## Linking VFC and CIR (2)

- Integration of CIR and VFC databases
  - CIR facility codes matched to VFC 'PINs'
  - All providers were called to verify facility code and PIN match
    - Took over 18 months
  - Once linked, CIR-generated DAR was produced for each VFC provider
- VFC provider clean up and reclassification
  - Standardized method of determining number of active VFC providers
  - QA activities done on providers to ensure sites were accurately categorized in Vacman database

# CIR-Generated DAR

- Report that compares:
  - Doses reported to the CIR
  - Doses distributed by VFC
- At onset the DAR numerator included all ‘Potentially eligible’ doses:
  - VFC Eligible
  - CHP-B
  - Missing/unknown
- In 2009 we no longer included doses with missing VFC eligibility in the numerator

# Implementation of CIR-Generated DAR

- Providers notified in January 2006 of policy change effective September 1, 2006
  - Provider generated DAR no longer accepted
  - Required to report to CIR  $\geq 90\%$  of doses shipped to receive full order
- Providers sent quarterly CIR-generated DARs beginning in June 2006

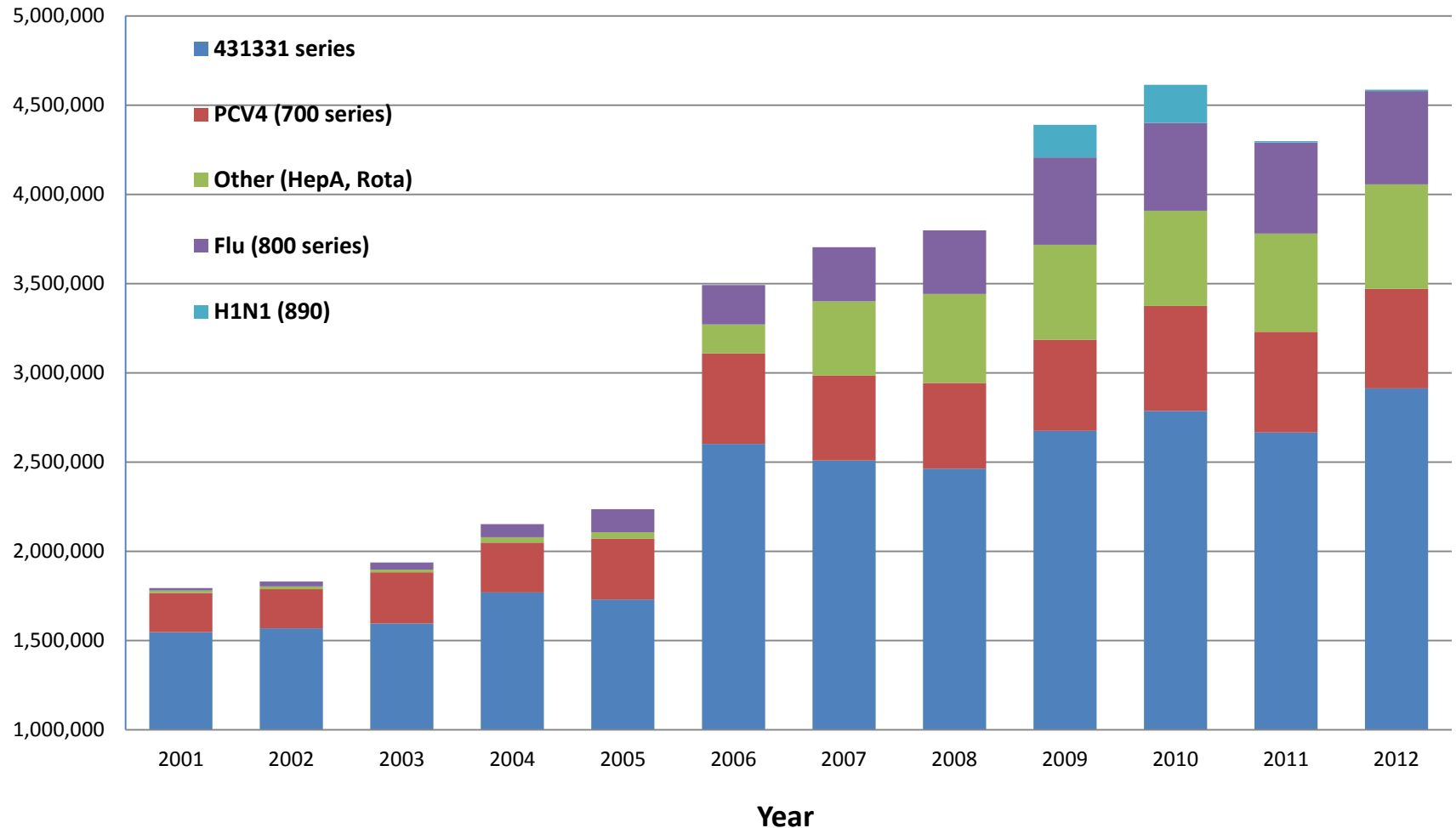
# Implementation of Ordering Policy Change

- Reduced vaccine orders based on CIR-Generated DAR
  - Above 80%: No reduction
  - 60% to 80%: 10% reduction
  - 30% to 60%: 25% reduction
  - Below 30%: 50% reduction

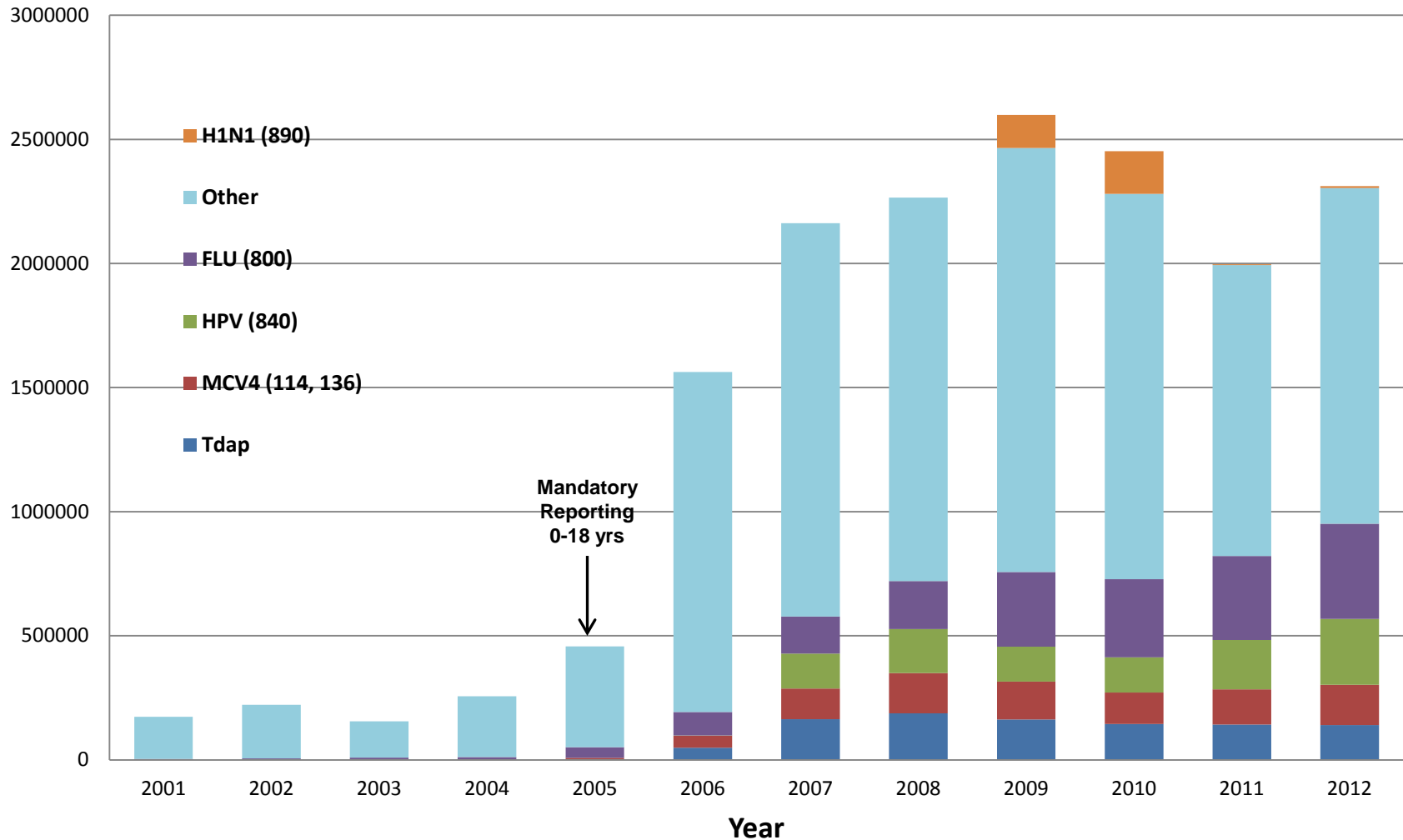


How has this policy change  
affected the CIR?

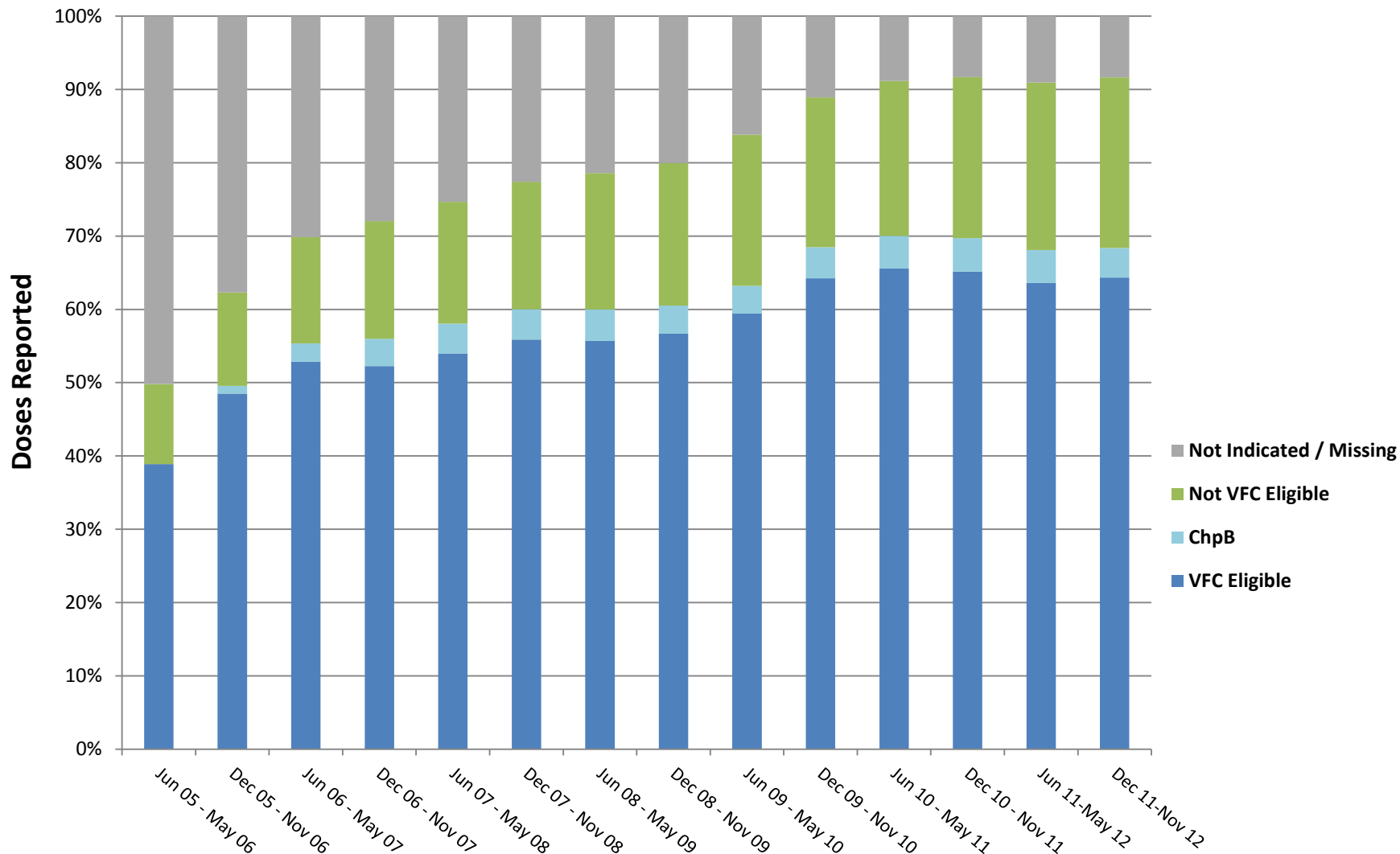
# Number of Immunizations Reported to the CIR 2001-2012, Children 0-<8 Years of Age



# Number of Immunizations Reported to the CIR 2001-2012, Children 8-18 Years of Age



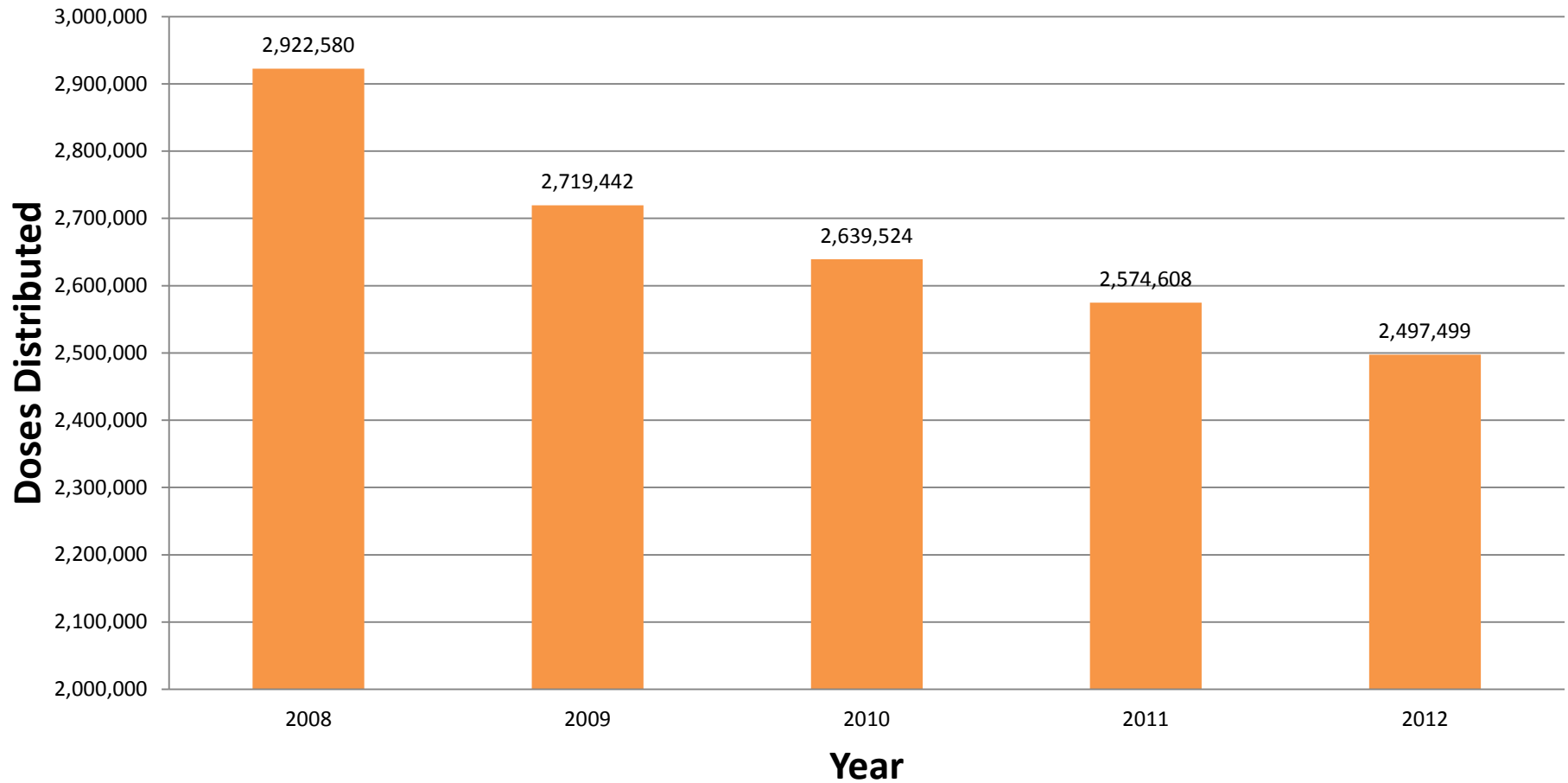
# VFC Eligibility Capture: Of all Doses Reported, Percent with VFC Eligibility Indicated



How has this policy change  
affected vaccine distribution?

# VFC Vaccine Distribution 0-18 yrs

## 2008-2012

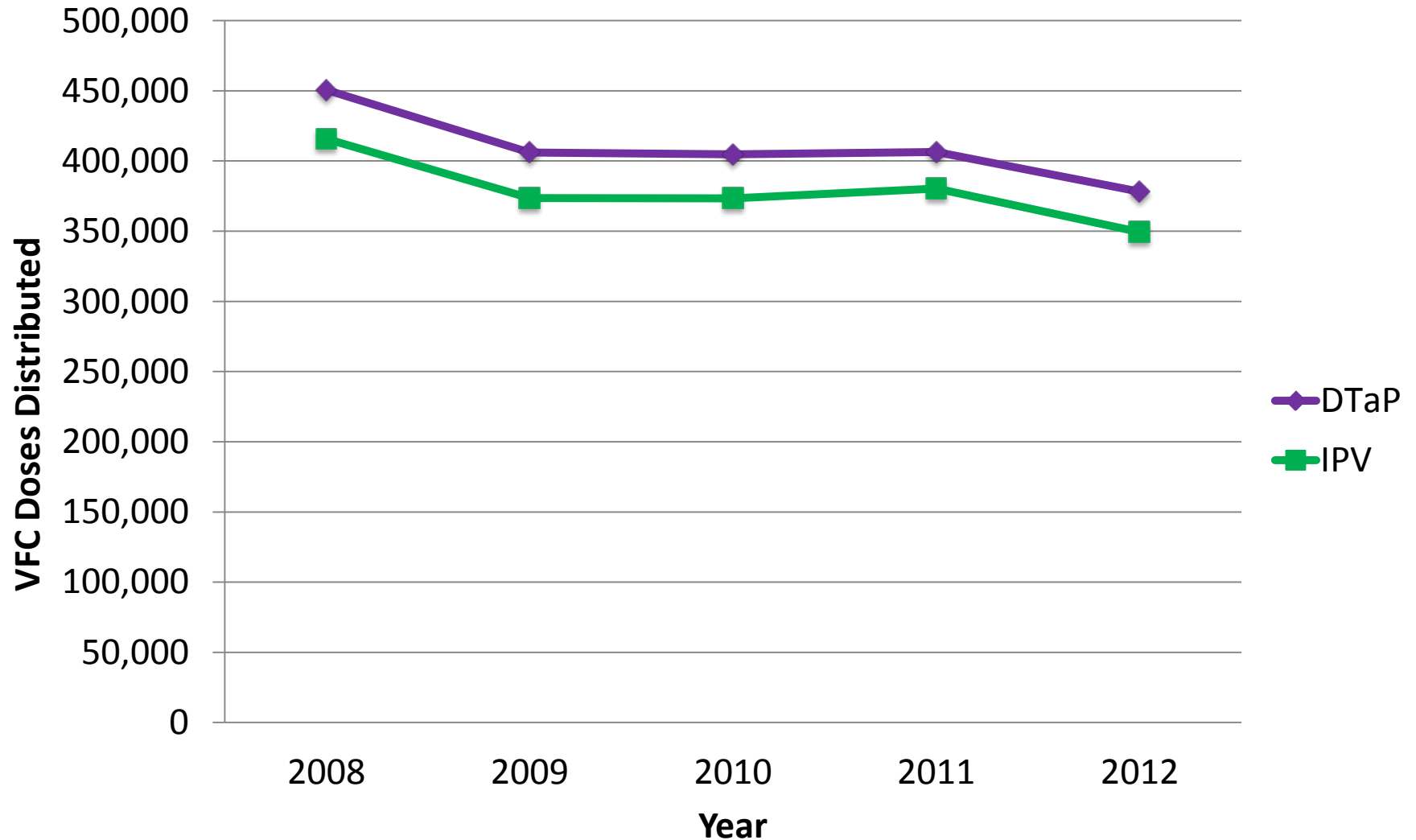


\* No Influenza Vaccine

# Distribution Analysis

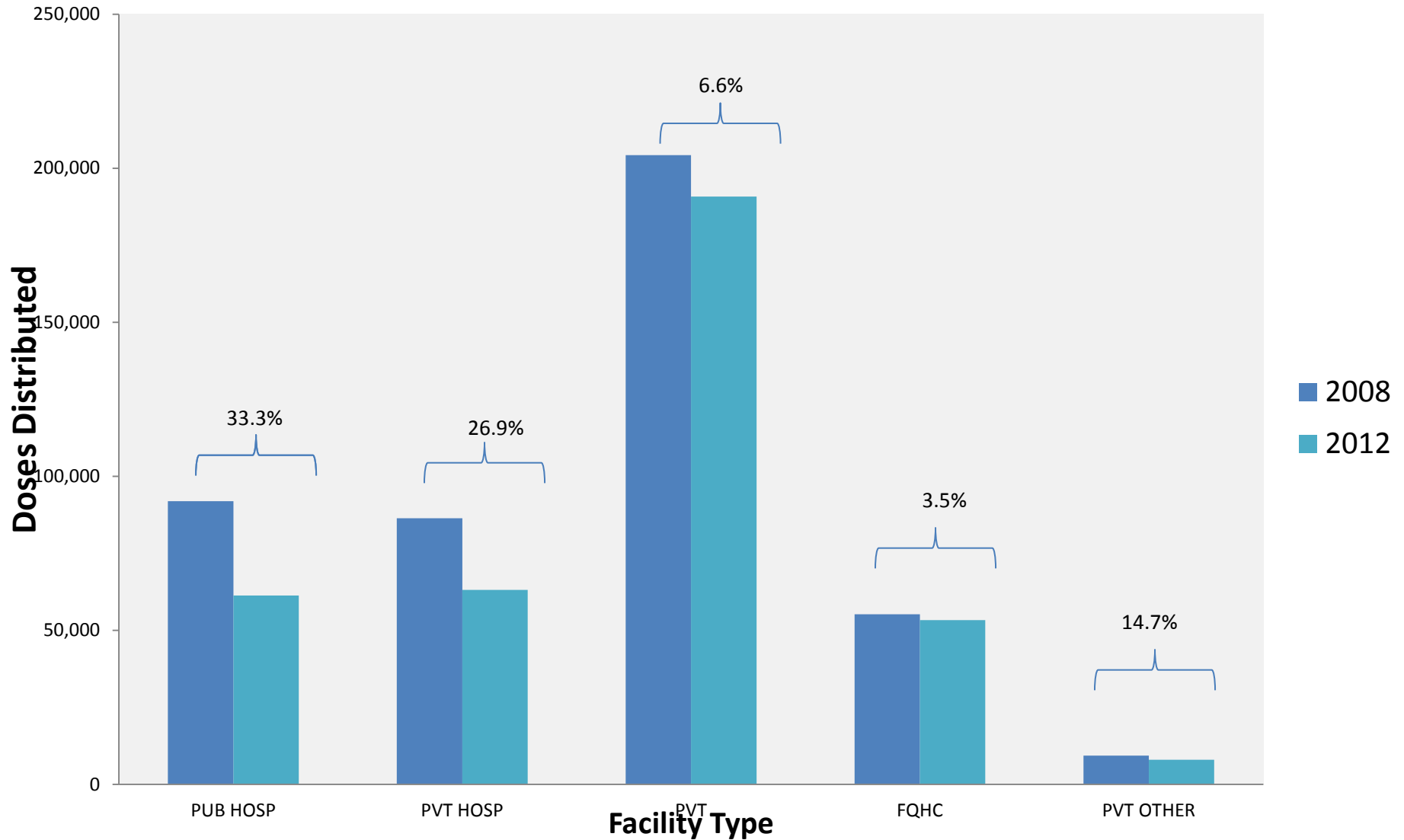
- VFC doses distributed were analyzed for trends from 2008-2012
  - After provider matching and cleanup occurred
  - After some major vaccines were introduced (ex. HPV, MCV4)
- DTaP and IPV vaccine distribution was analyzed
  - Recommendations remained the same
  - No vaccine shortages
- To control for increased use of combination vaccines, doses were counted by component

# DTaP and IPV Vaccine Doses Distributed

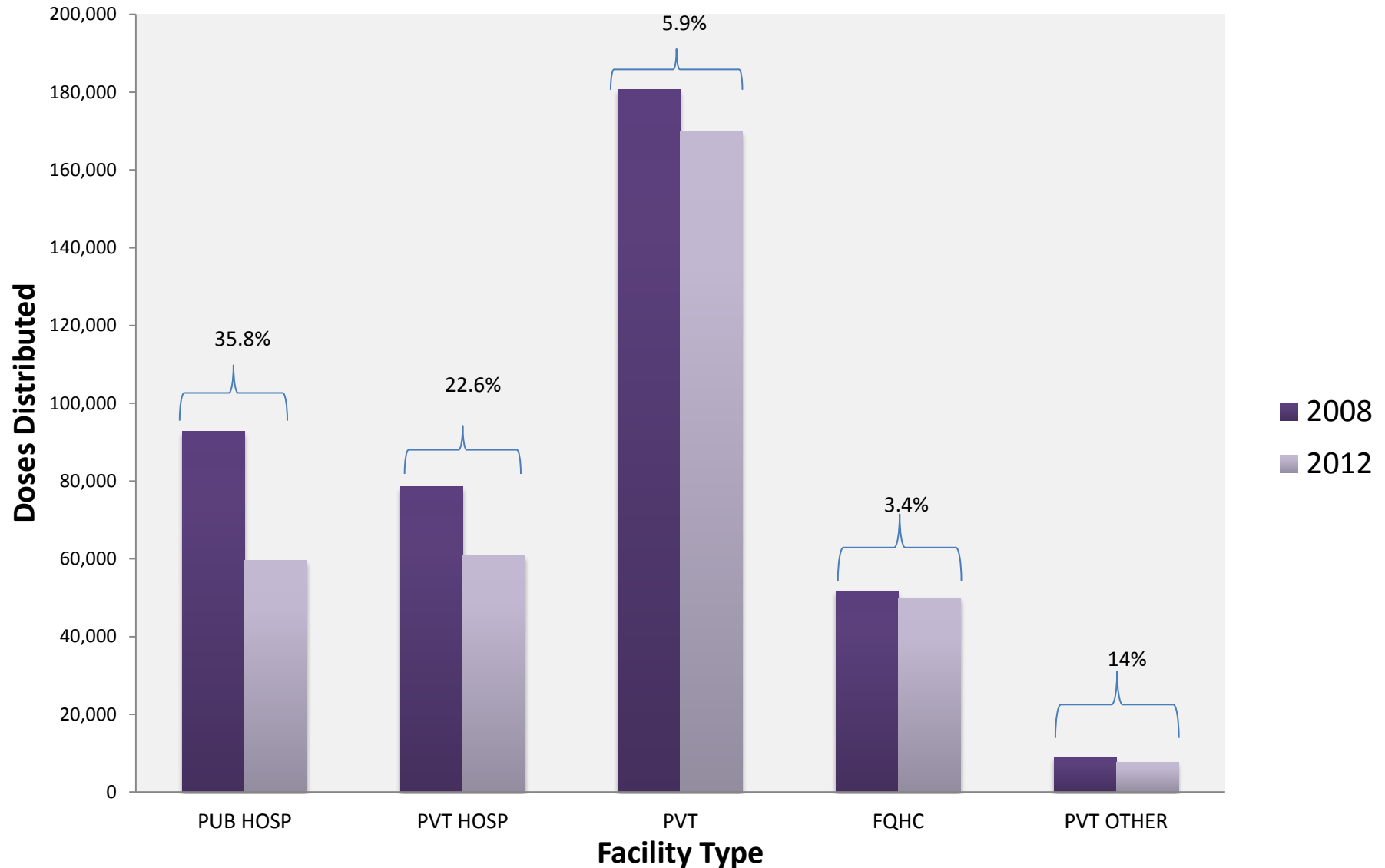




# DTaP Vaccine Distribution Between 2008 and 2012 by Facility Type



# IPV Vaccine Distribution Between 2008 and 2012 by Facility Type



# Cost Savings for 2012 (1)

- Price list for November 2012 used
- Cost savings calculated:
  - Doses of DTaP and IPV distributed 2008 not distributed in 2012
  - Proportion of vaccine product distributed in 2012
  - Combination vaccines
    - Convenience cost calculated:  
$$\frac{(\text{Cost of combination vaccine} - \text{Sum of cost of single vaccines})}{\text{\# of components in combo vaccine}}$$
    - Cost of single component vaccine + convenience cost

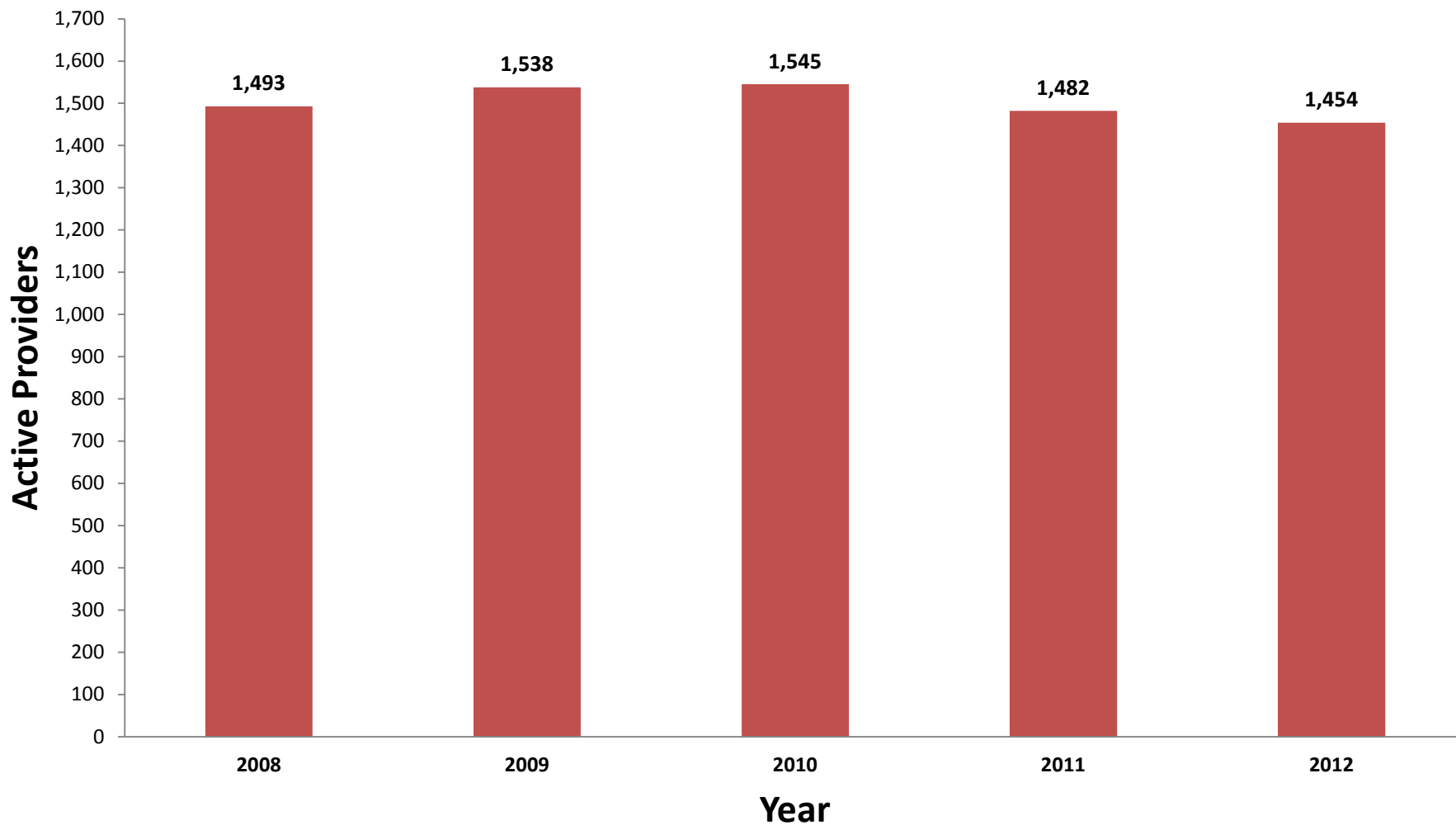
## Cost Savings for 2012 (2)

- DTaP cost savings: \$1,380,575
- IPV cost savings: \$1,086,874
- **Grand Total: \$2,467,449**

# Factors That Could Potentially Influence Distribution Data

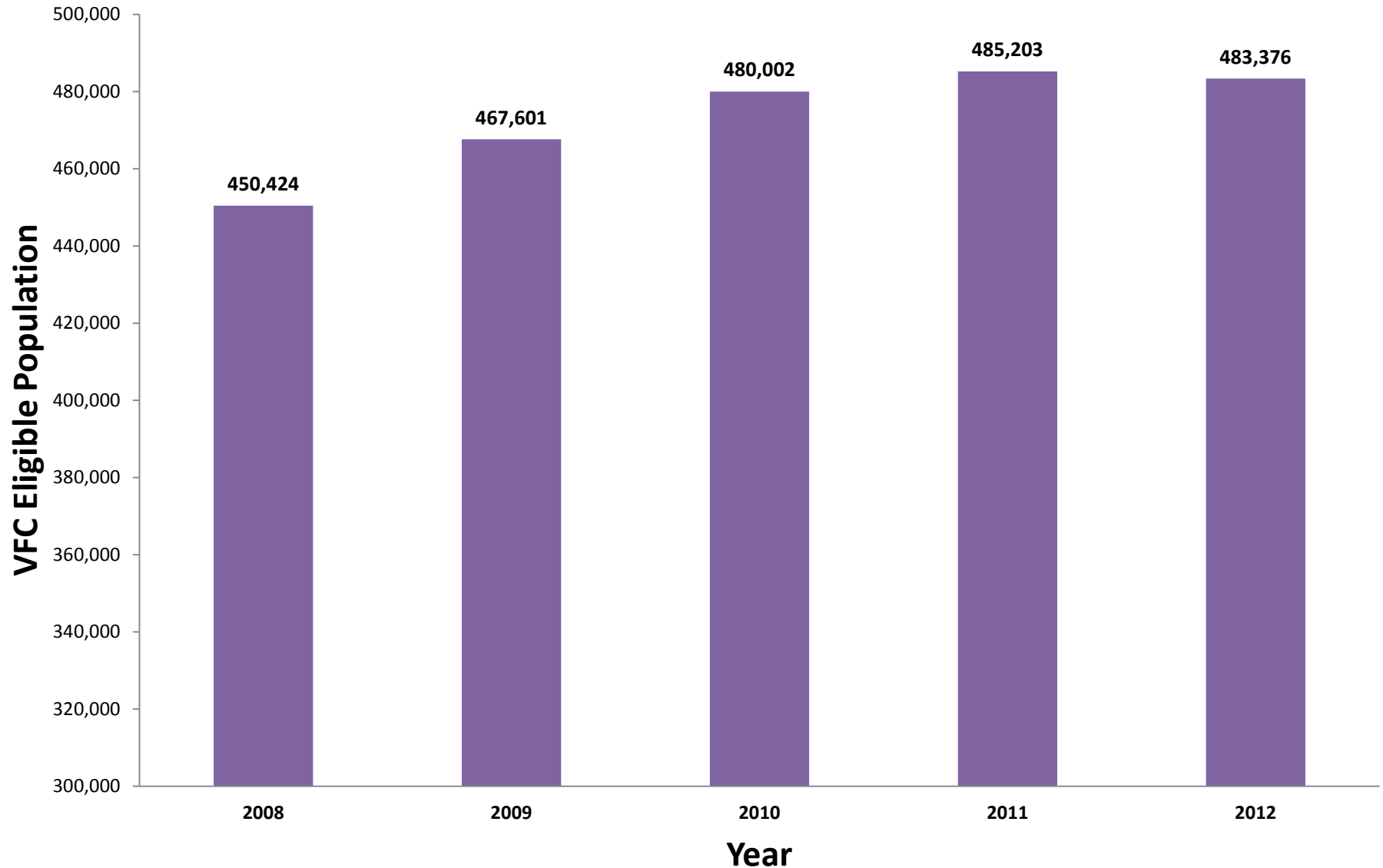
- Number of active VFC providers
- VFC Eligible Population
- Immunization Coverage
  - National Immunization Survey (NIS)
  - CIR

# Active VFC Providers

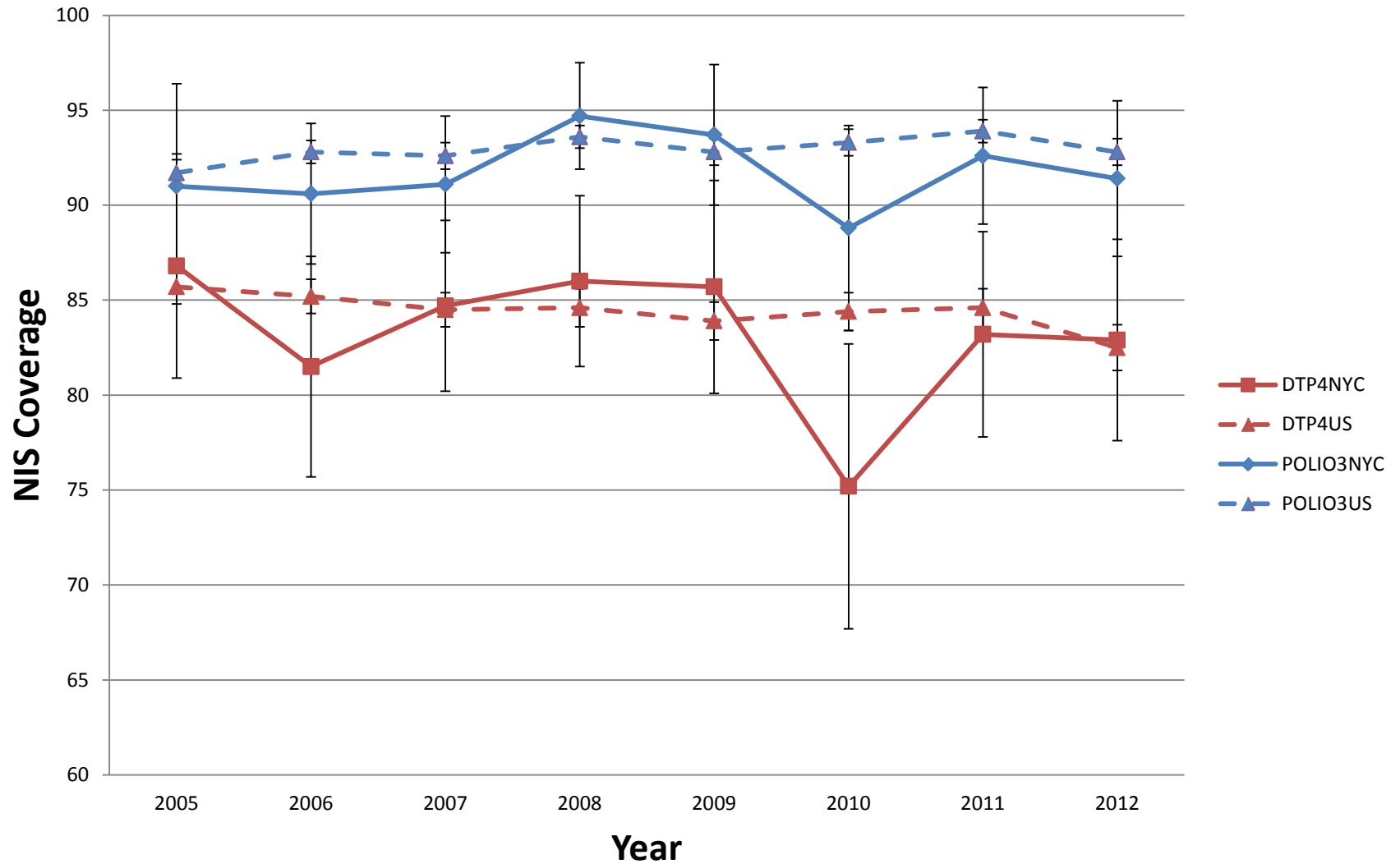


\* Providers were considered active if they ordered vaccine in that particular year

# NYC VFC-Eligible Population (0-6 Years)

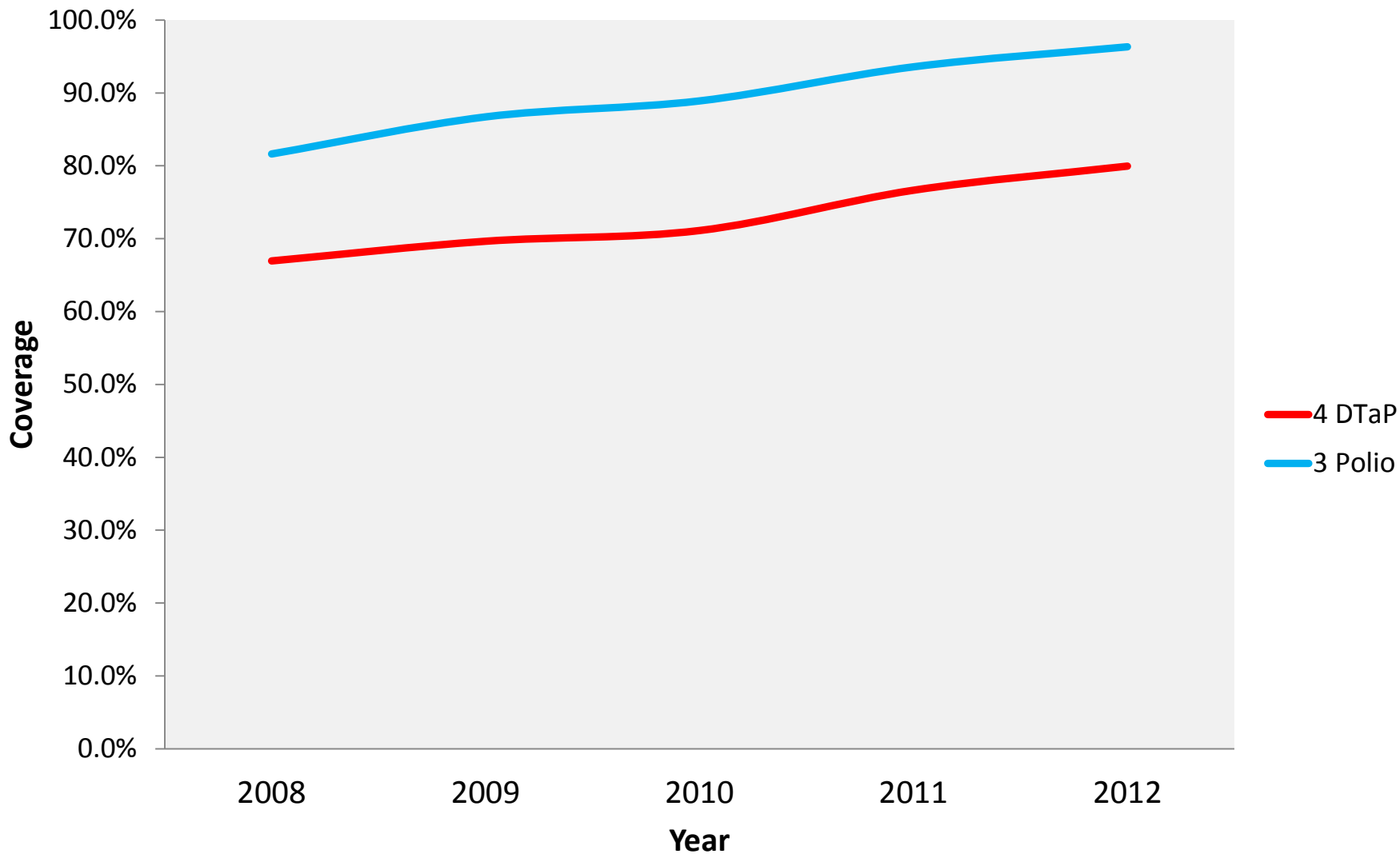


# National Immunization Survey Coverage Estimates

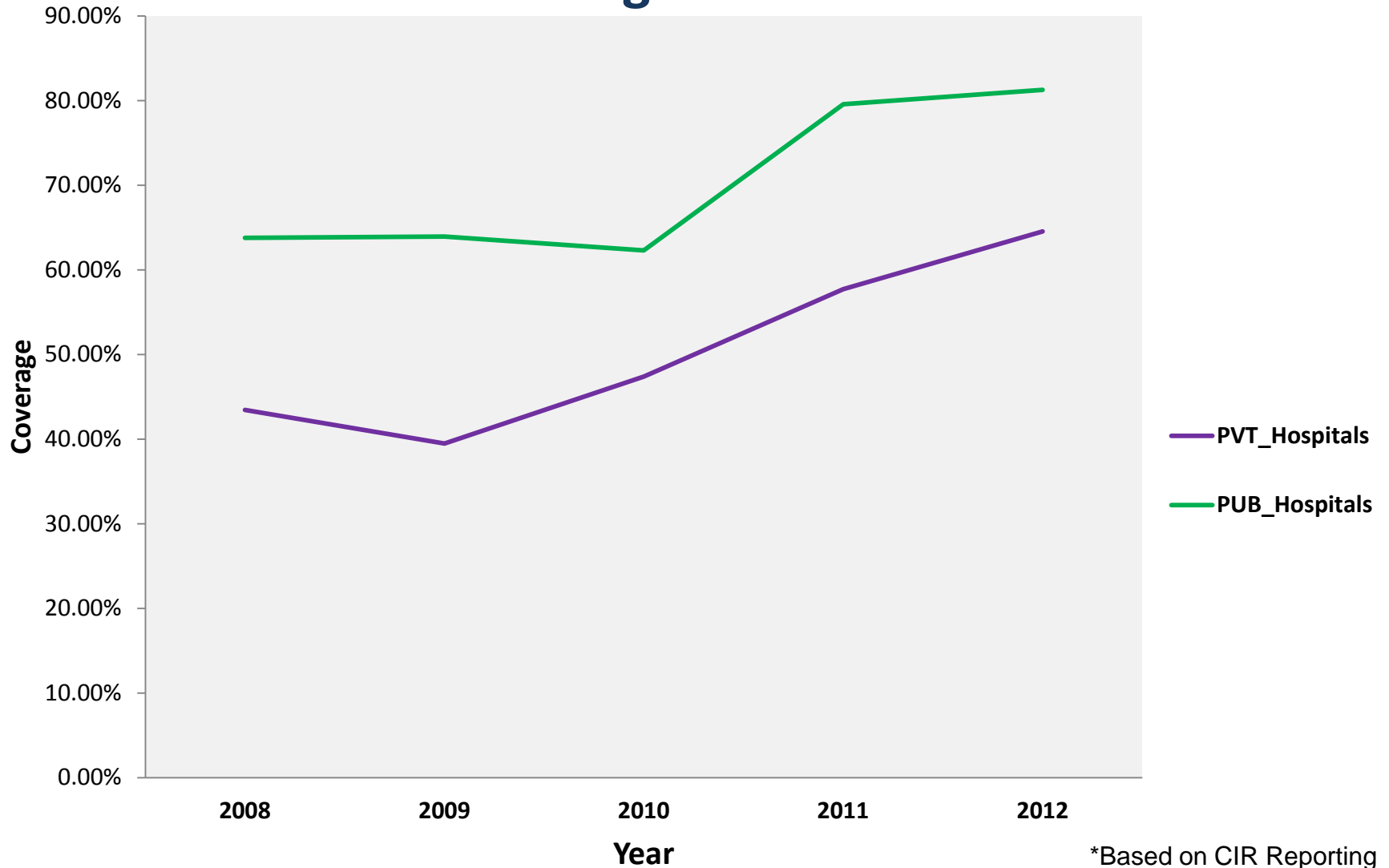




# CIR-Based Coverage Estimates



# Public & Private Hospital 24-35 month old (4:3:1:4:3:1) Coverage Estimates



# Summary

- Using the CIR for VFC vaccine accountability efforts is successful in reducing the number of VFC vaccines distributed leading to cost savings within the NYC immunization program
  - Major reductions seen in public and private hospital sites
- These reductions haven't affected immunization coverage and VFC provider participation
  - The number of active providers did not significantly decrease
  - Immunization coverage rates have remained consistent for NYC NIS and have increased when CIR data is used
  - Coverage rates have improved for public and private hospitals

# Thank You!

**Melissa Mickle-Hope**

42-09 28th Street-5th Floor

L.I.C, NY, 11101

Ph:347-396-2493

Fax:347-396-2559

[mmickle@health.nyc.gov](mailto:mmickle@health.nyc.gov)