

# IIS Sentinel Site Data: Uptake of HPV Vaccine in the United States

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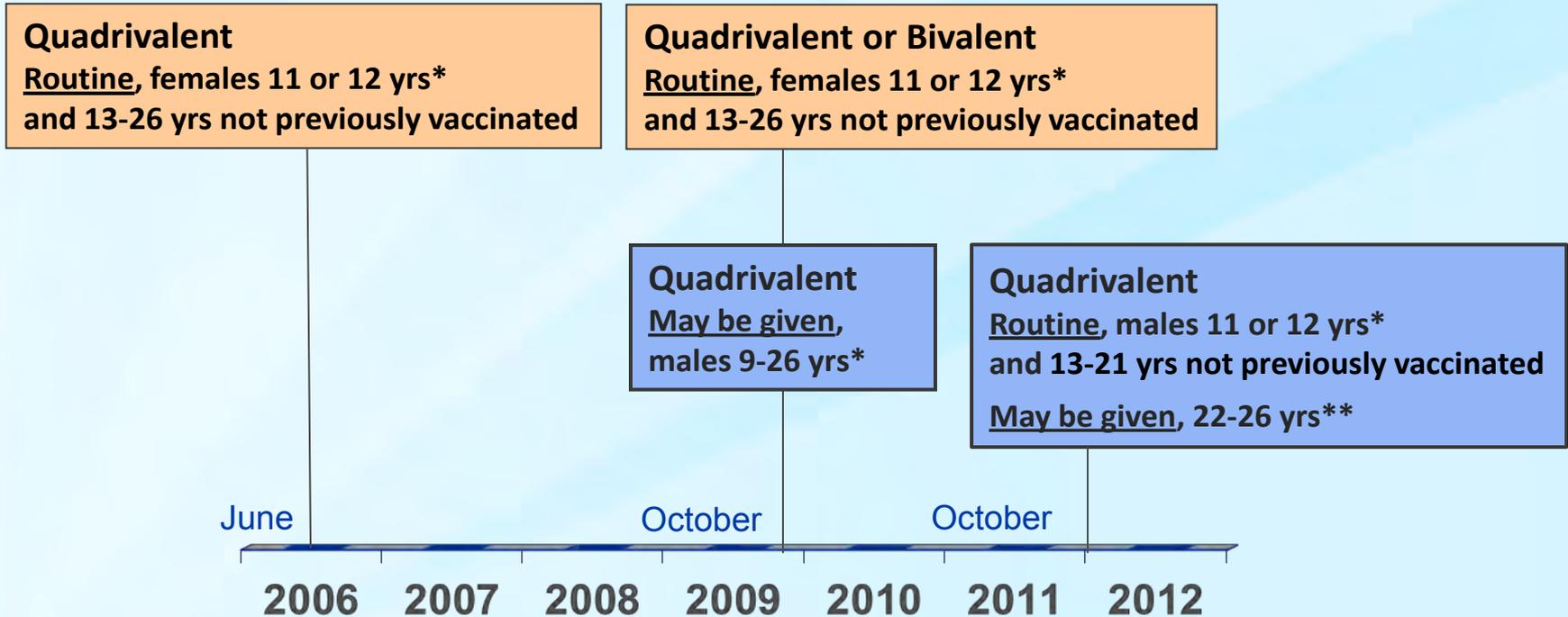


# Outline

- ❑ **Background**
- ❑ **Methods**
- ❑ **Results**
  - Coverage for males and females
  - Doses administered
  - Age at 1<sup>st</sup> vaccination

# **BACKGROUND**

# Evolution of recommendations for HPV vaccination in the U.S.



Quadrivalent (HPV 6,11,16,18) vaccine; Bivalent (HPV 16,18) vaccine

\*Can be given starting at 9 years of age; \*\* For MSM and immunocompromised males, quadrivalent HPV vaccine recommended through 26 years of age

# Sources of Vaccination Coverage Estimates

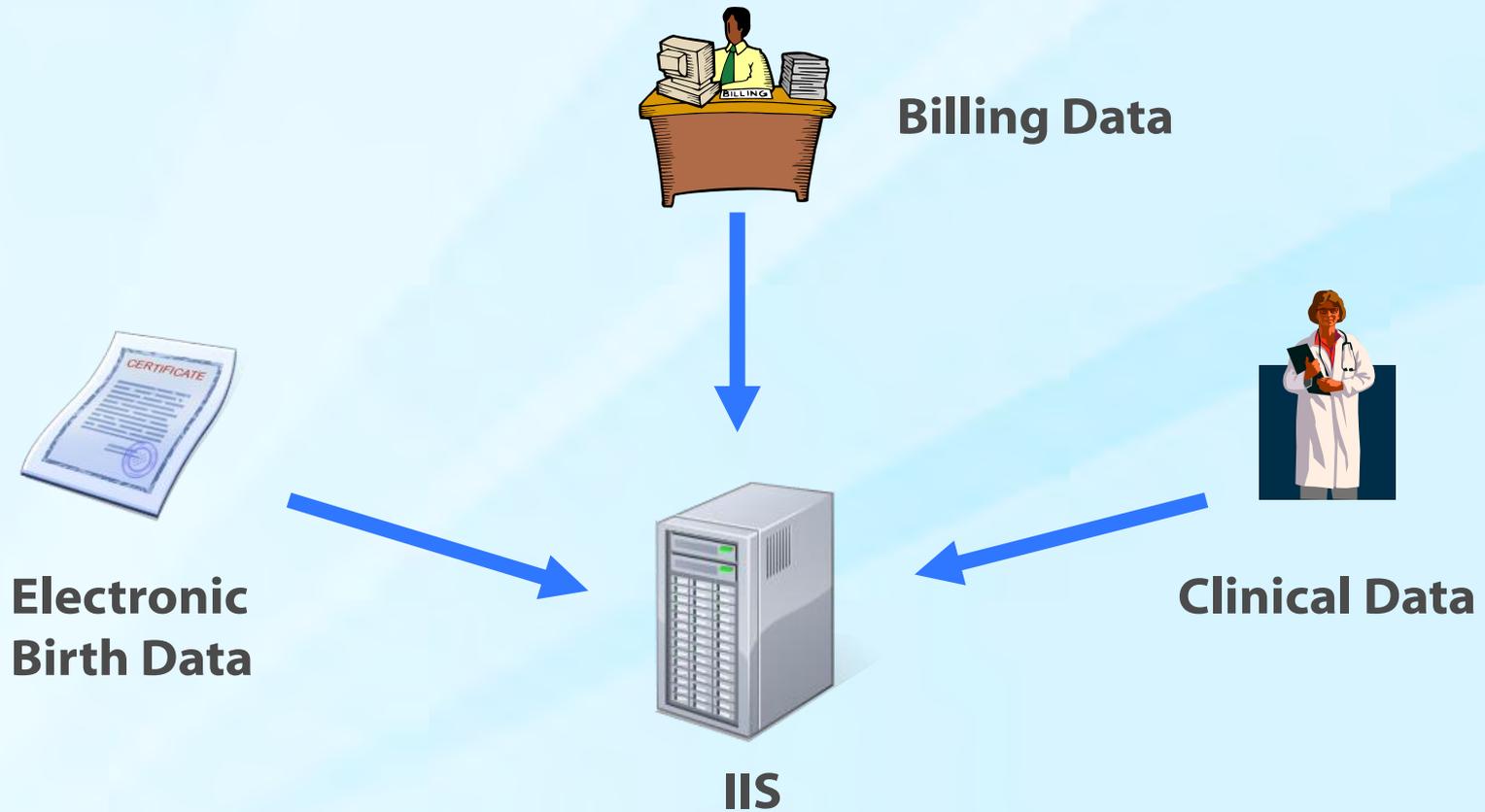
- ❑ **National Immunization Survey (NIS)- Teen**
  - Official estimates of vaccination coverage
  - Conducted annually to collect data on 13-17 year olds
  - MMWR published annually with estimates of vaccination coverage
  - Most recent data is for 2010\*
    - $\geq 1$  HPV: 48.7% of females
    - 3 HPV: 32.0% of females
- ❑ **Immunization Information Systems**

# **What are Immunization Information Systems (IIS)?**

**Immunization Information Systems are computerized systems that:**

- **Record all shots on all age groups given by all providers in a geopolitical catchment area**
- **Have functions and features needed by an immunization program (e.g. generate vaccination coverage reports)**
- **Have interoperability with other health information systems including Electronic Health Records (EHR)**

# Where do IIS data come from?



## IIS National Picture, 2010

- ❑ **48 states, DC + 5 cities with an IIS**
- ❑ **Population participating in the IIS**
  - Children 4 months - <6 years (2+ recorded immunizations): 18.8 million (82%)
  - Adolescents 11-17 years (2+ recorded adolescent immunization): 17.9 million (61%)
- ❑ **Provider site participation**
  - 12,215 public provider sites
  - 38,859 private providers sites
- ❑ **Timeliness**
  - Average of 6 weeks from birth to demographic record establishment
  - 71% of vaccination records reported 0-30 days after administration

# IIS Sentinel Site Project

## ❑ Purpose

- Population-based analysis and quality improvement of IIS data for immunization program assessment, evaluation, and to assist in disease surveillance activities

## ❑ Requirements

- >85% children <19 years participating in the IIS
- >85% of provider sites participating in the IIS
- >70% of doses administered reported 0-30 days after administration

## ❑ 8 sites funded 2008-2012

- Subsets of AZ, CO, OR, and WI
- All of MI, MN, ND, and NYC

## ❑ Cover 6.7 million children <19 years

# **METHODS**

## **Study Objectives**

- ❑ To determine HPV vaccination coverage from Q4 2009 – Q1 2012 for males and females**
- ❑ To determine the distribution of HPV vaccine doses administered to males and females from October 17, 2009 to March 31, 2012**
- ❑ To determine the age at first vaccination for males (Q4 2011) and females (Q3 2007 & Q4 2011)**

## Data Collection & Analysis

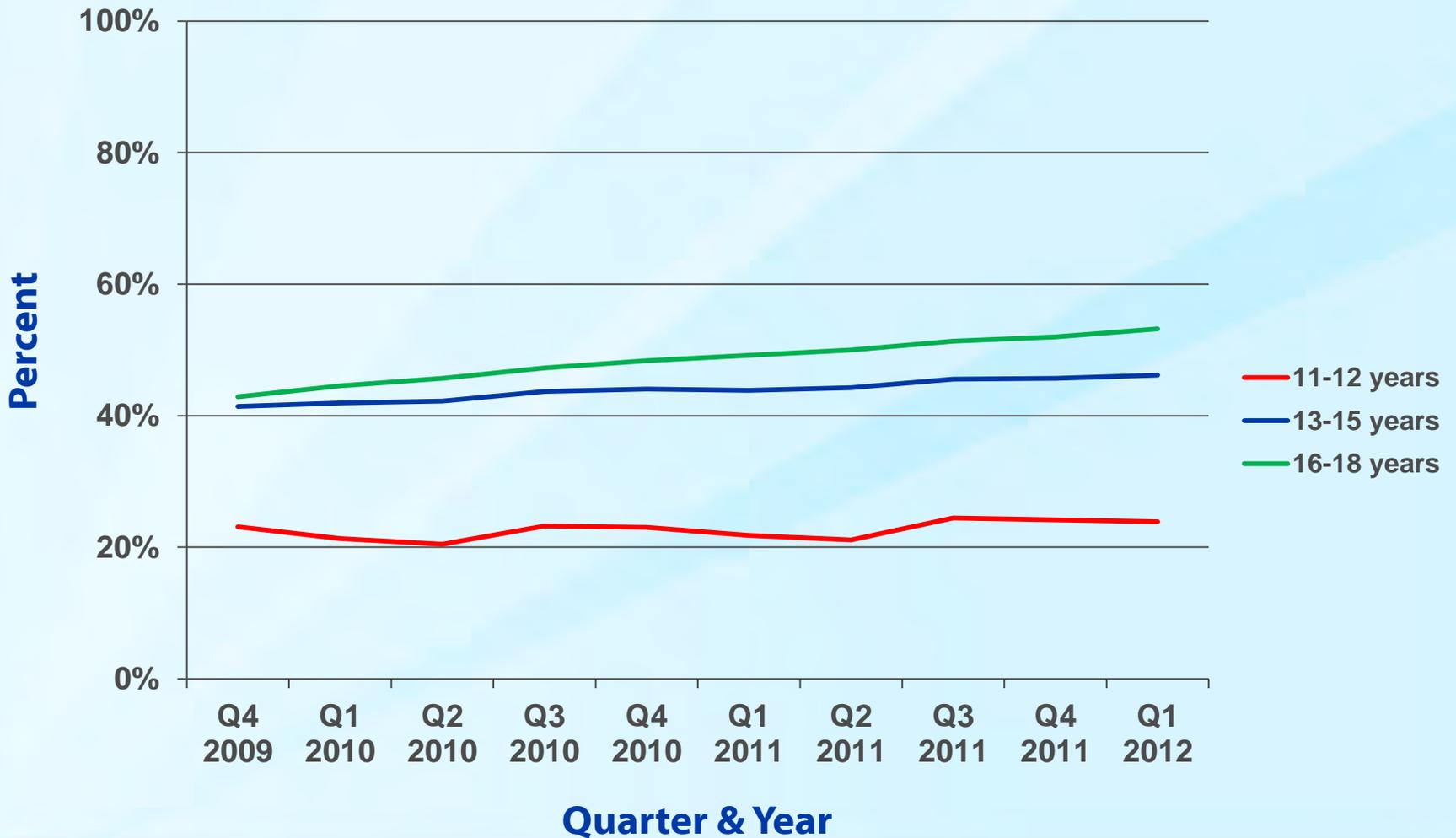
- ❑ **Birth cohorts defined by quarter for 11-12, 13-15, 16-18 year olds**
- ❑ **Vaccination status determined as of the end of the quarter**
  - $N \approx 2.9$  million adolescents each quarter
- ❑ **For each quarter and year, each IIS reported # vaccine recipients**
  - By number of doses received, age group, gender
- ❑ **Vaccination coverage calculated using US Census denominators for the Sentinel Site areas**

## Data Collection & Analysis (2)

- ❑ **Each IIS reported # of doses administered**
  - By age group and gender
  - Calculated weekly number of doses administered
- ❑ **Each IIS reported age at 1<sup>st</sup> HPV vaccination**
  - By age group and gender for selected quarters

# RESULTS

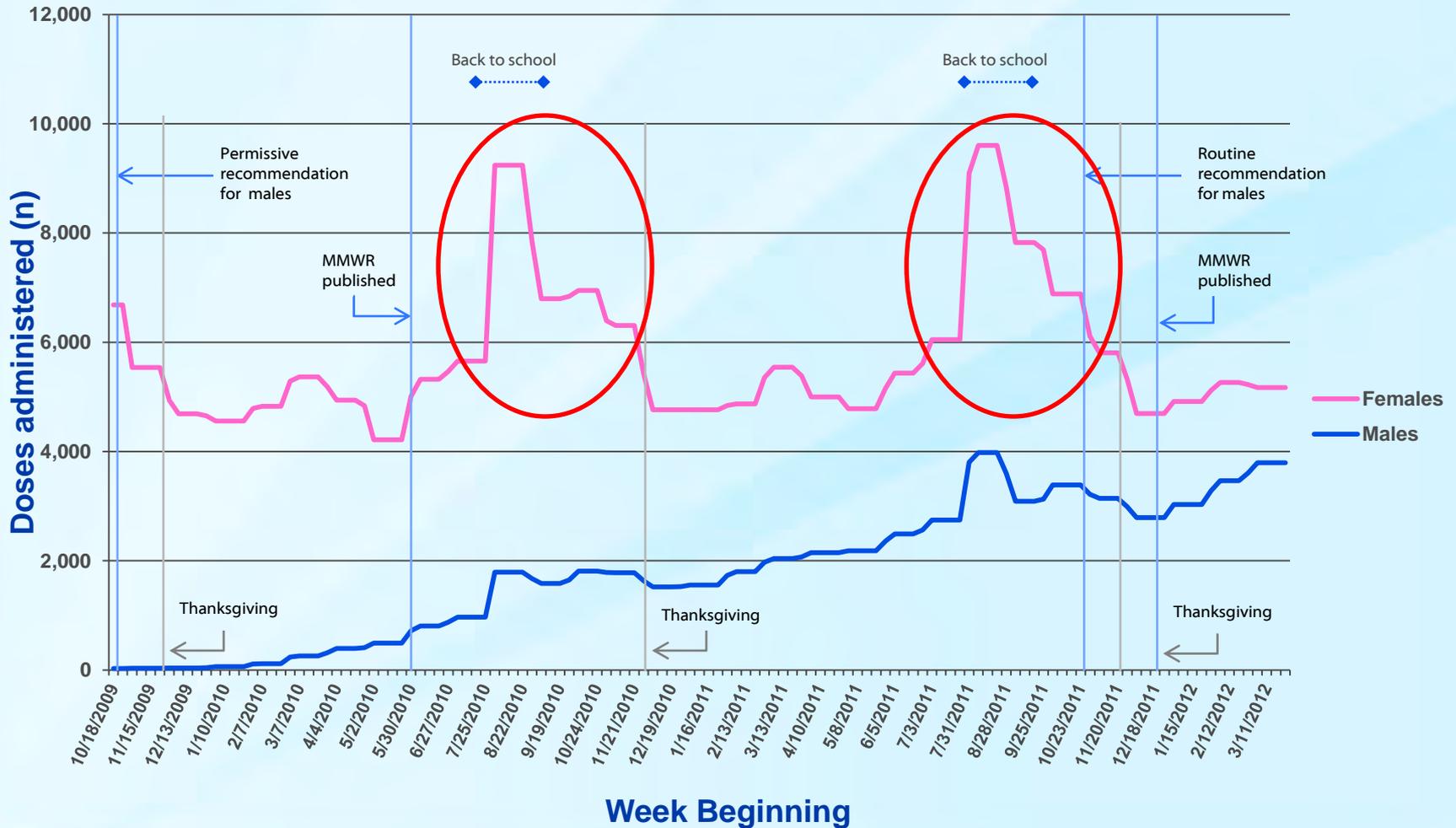
# Percent of adolescent females who received at least one dose of HPV vaccine, by age group and quarter, October 2009 - March 2012



# Percent of adolescent males who received at least one dose of HPV vaccine, by age group and quarter, October 2009 - March 2012



# HPV vaccine doses administered to 11-18 year olds by week and gender, October 18, 2009 - March 31, 2012



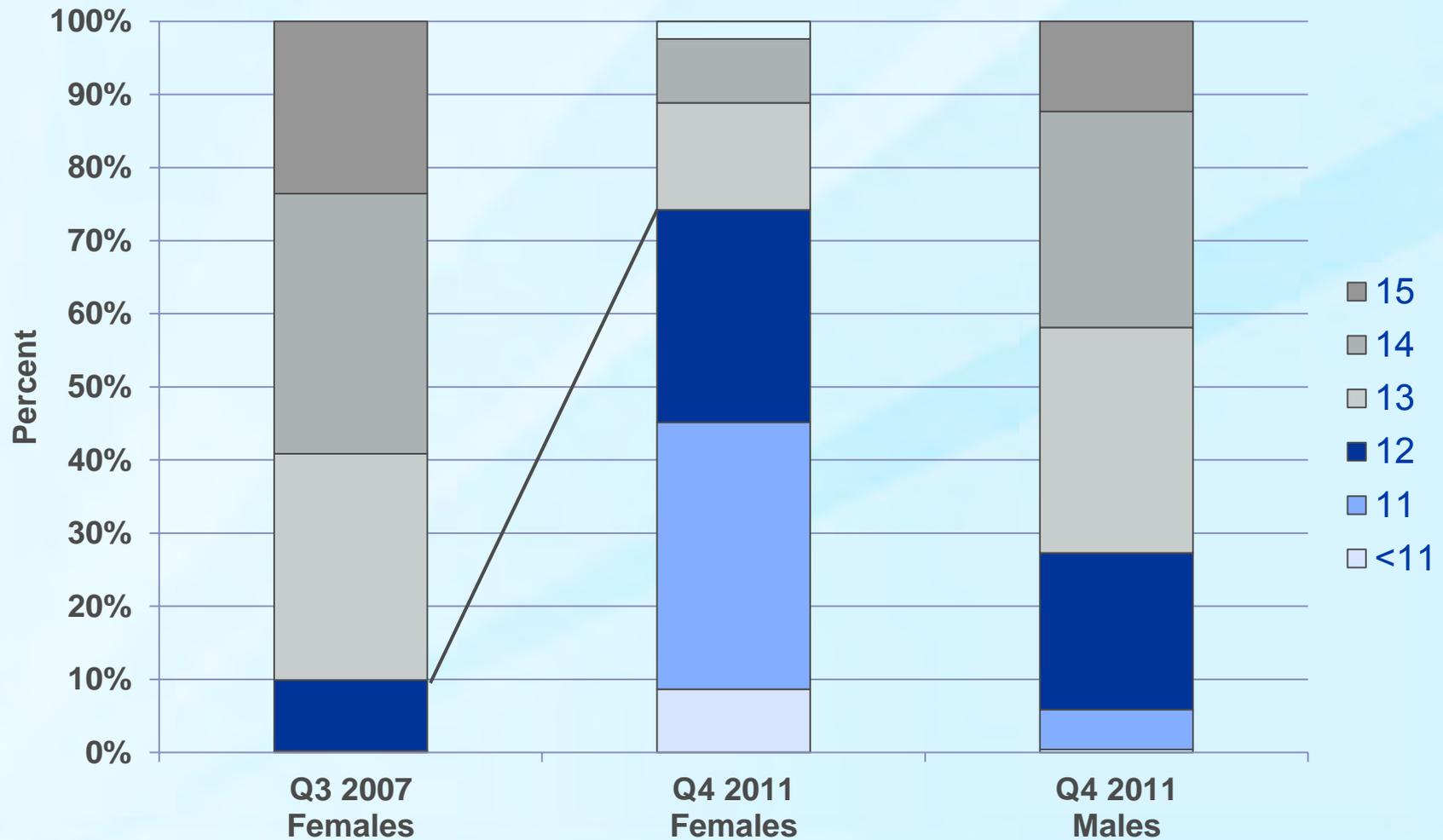
# HPV vaccine doses administered to 11-18 year olds in New York City by week and gender, October 18, 2009 - March 31, 2012



# Doses of HPV vaccine administered to females by calendar month, November 2009 – March 2012



# Age at 1<sup>st</sup> vaccination among 13-15 year olds, Quarter 3 2007 and Quarter 4 2011



## Summary

- ❑ **Increase in doses administered to and vaccination coverage for males**
- ❑ **Seasonal variation in doses administered to females, little change in coverage**
- ❑ **Larger percentage of females being vaccinated at the recommended age group**
- ❑ **2011 NIS-Teen data will be available at the end of August**

# Strengths & Limitations

## □ Strengths

- Population-based data
- Vaccination status assessed for more than 2.9 million adolescents
- Vaccination histories are provider-verified

## □ Limitations

- Results may not be generalizable to the entire US population
- Vaccination histories may be incomplete

# Acknowledgements

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