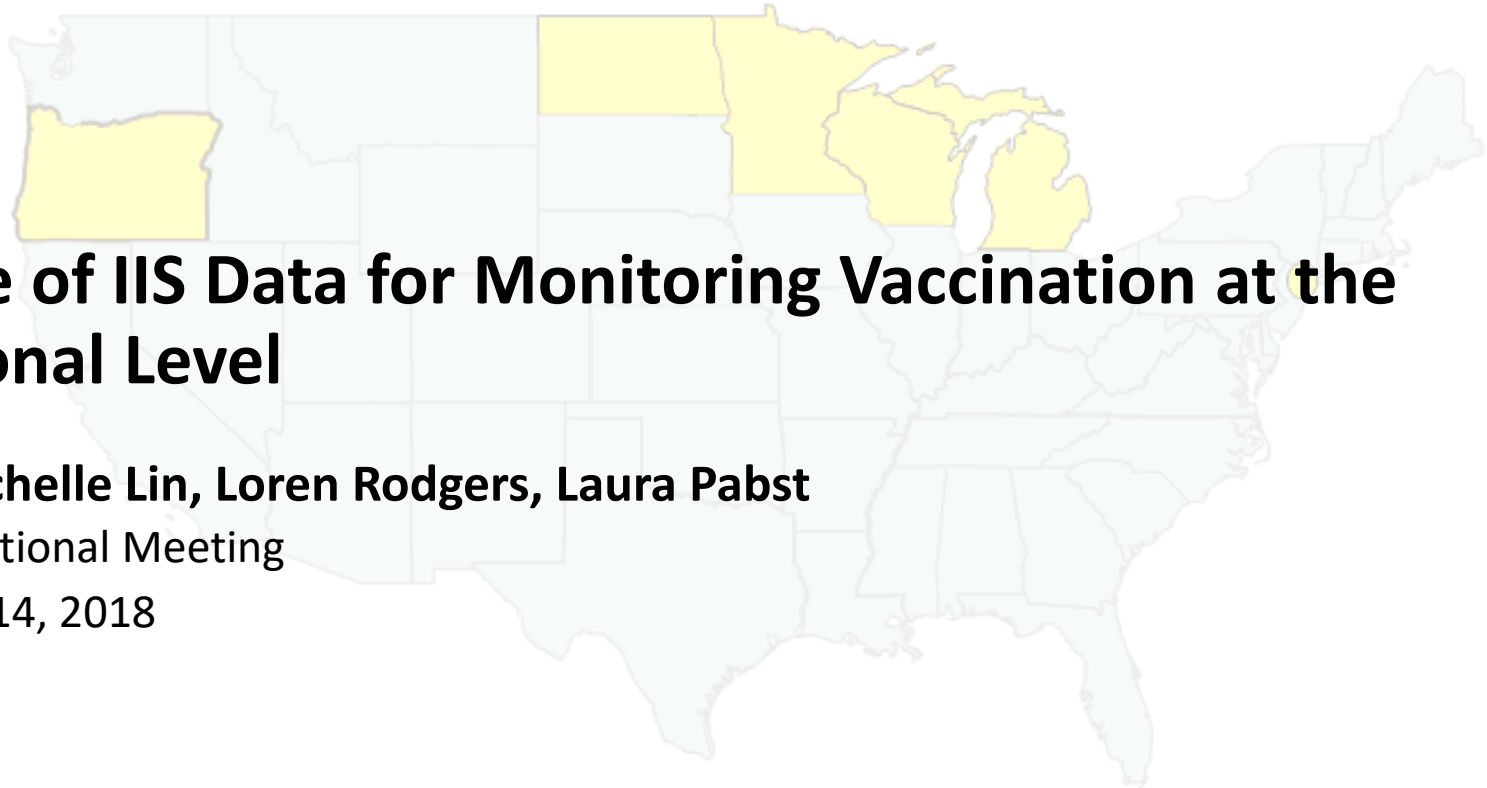


# Value of IIS Data for Monitoring Vaccination at the National Level

**Xia Michelle Lin, Loren Rodgers, Laura Pabst**

AIRA National Meeting

August 14, 2018

# Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

# Outline

- Background
- IIS Data Use Examples
- Conclusions

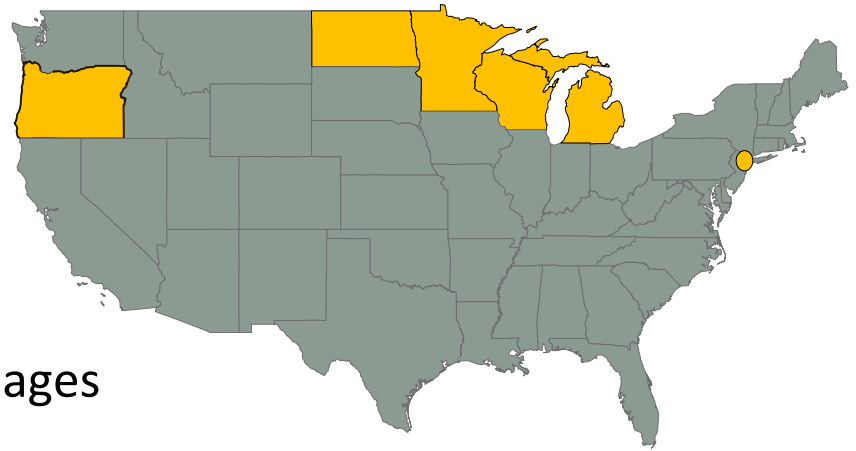
# Background

# Nationally Representative Surveys

- **Current methodology for US vaccination coverage**
  - Strengths
    - Consistent methodology across states
    - Nationally representative
  - Limitations
    - Response rates
    - Timeliness
  - Examples: National Immunization Survey (NIS) family, Behavioral Risk Factor Surveillance System, National Health Interview Survey, etc.

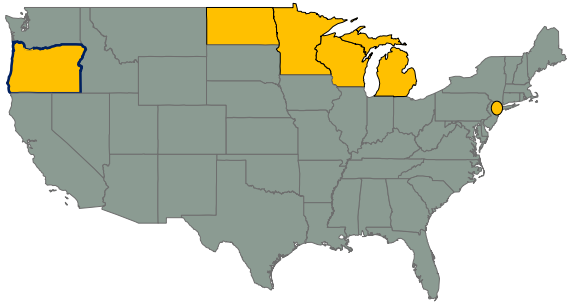
# IIS Sentinel Site Project

- **Six Sites (2013-2019): MI, MN, ND, NYC, OR, WI**
- **IIS Sentinel Site data**
  - Strengths
    - Provider-submitted
    - Population-based
    - Timely
    - Containing data for all pediatric ages
  - Limitation
    - May not be generalizable

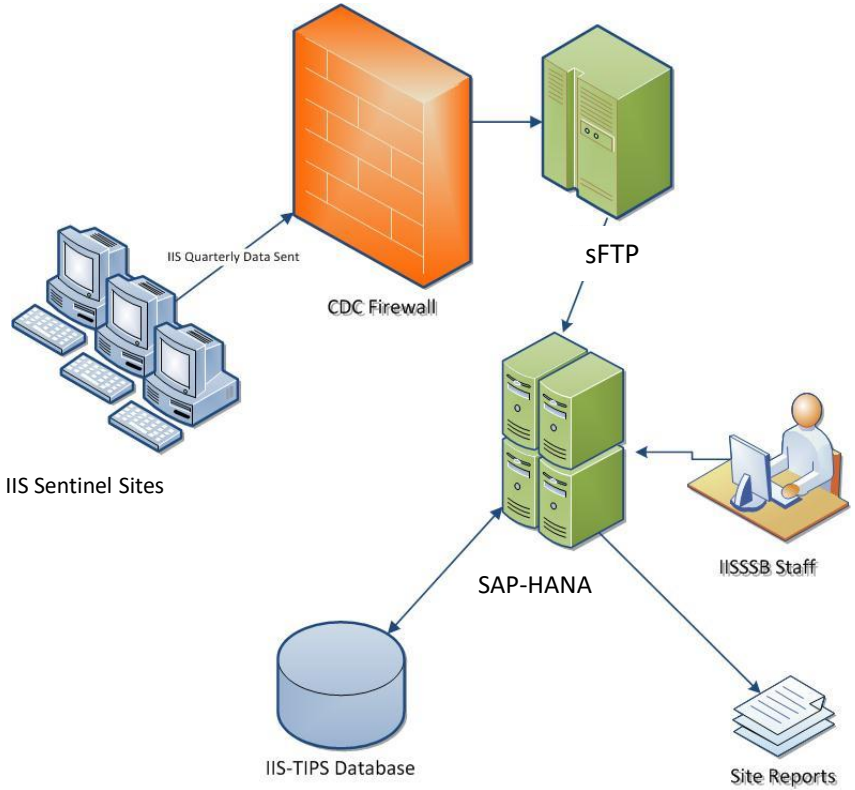


# IIS Sentinel Site Project

- IIS-Trends in Immunization Practices System (IIS-TIPS)
  - De-identified record-level data submission
  - Data use agreements
  - Data sharing committee
- Aggregated data from Sentinel Sites



# Current IIS-TIPS System



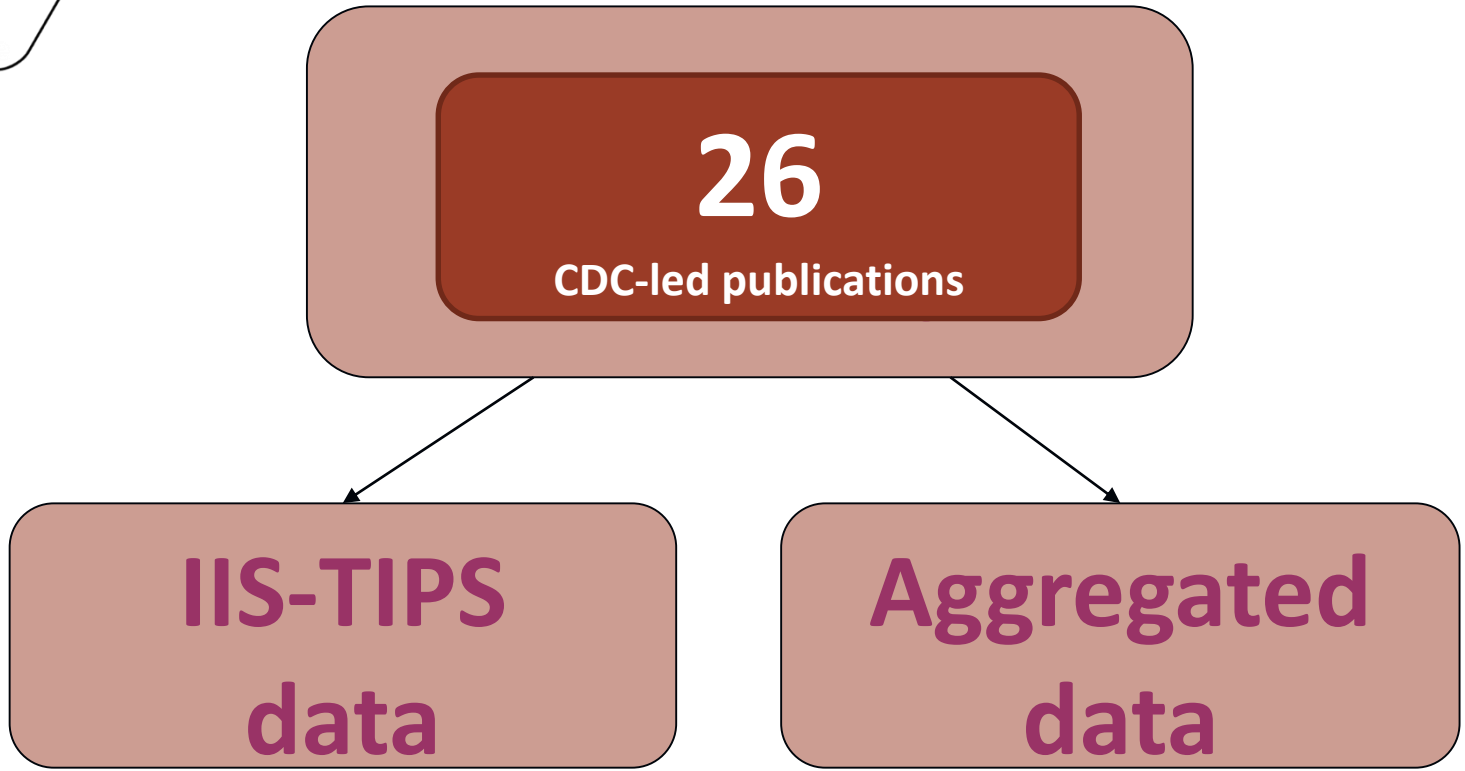
# IIS-TIPS Process Overview


IIS-TIPS business scenario is grouped into 6 distinct processes

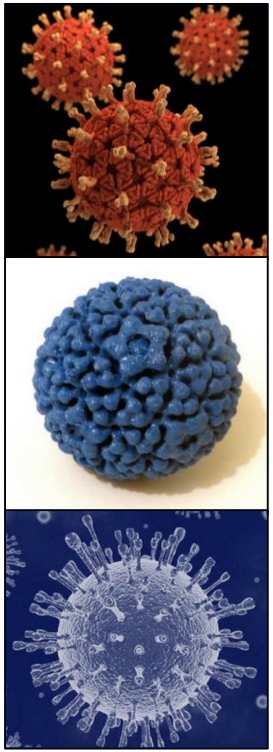
- Acquire IIS Sentinel Site data
- Perform data evaluation
- De-duplicate vaccination records
- Validate vaccinations according to CDSi
- Generate metrics/Key Performance Indicators (KPIs)
- Enable analysis and reporting

# IIS Data Use Examples

# Vaccine Usage Analyses



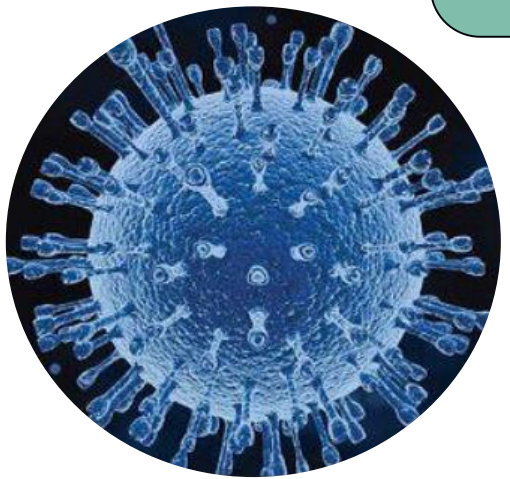
# Analyses Using IIS-TIPS Data



- Two-dose varicella vaccination coverage
- Quadrivalent flu vaccine uptake
- Rotavirus vaccine uptake
- LAIV market share
- Full and partial flu vaccination coverage, and two dose compliance
- Assessment of HPV vaccination at the recommended age
- Frequency and cost of vaccinations administered outside minimum and maximum recommended ages
- Pandemic preparedness
- Retrospective reclassification of HPV vaccination coverage
- NIS-IIS simulation
- MenACWY and MenB vaccine uptake
- Compliance with live vaccine recommendations

# LAIV Market Share

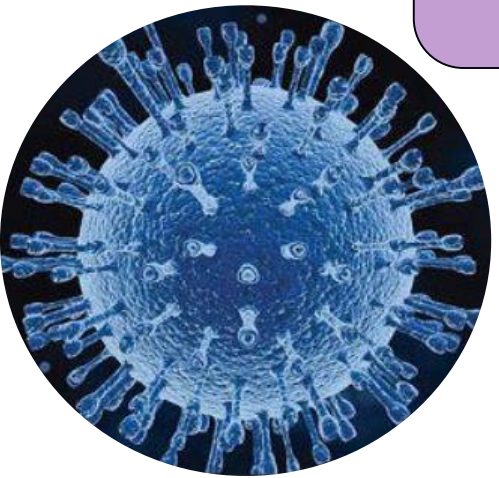
Market share for LAIV in press release supporting the 2016 ACIP vote



30% of 2.7 million flu vaccine doses

# Trends in Compliance with Two-dose Influenza Vaccine Recommendations

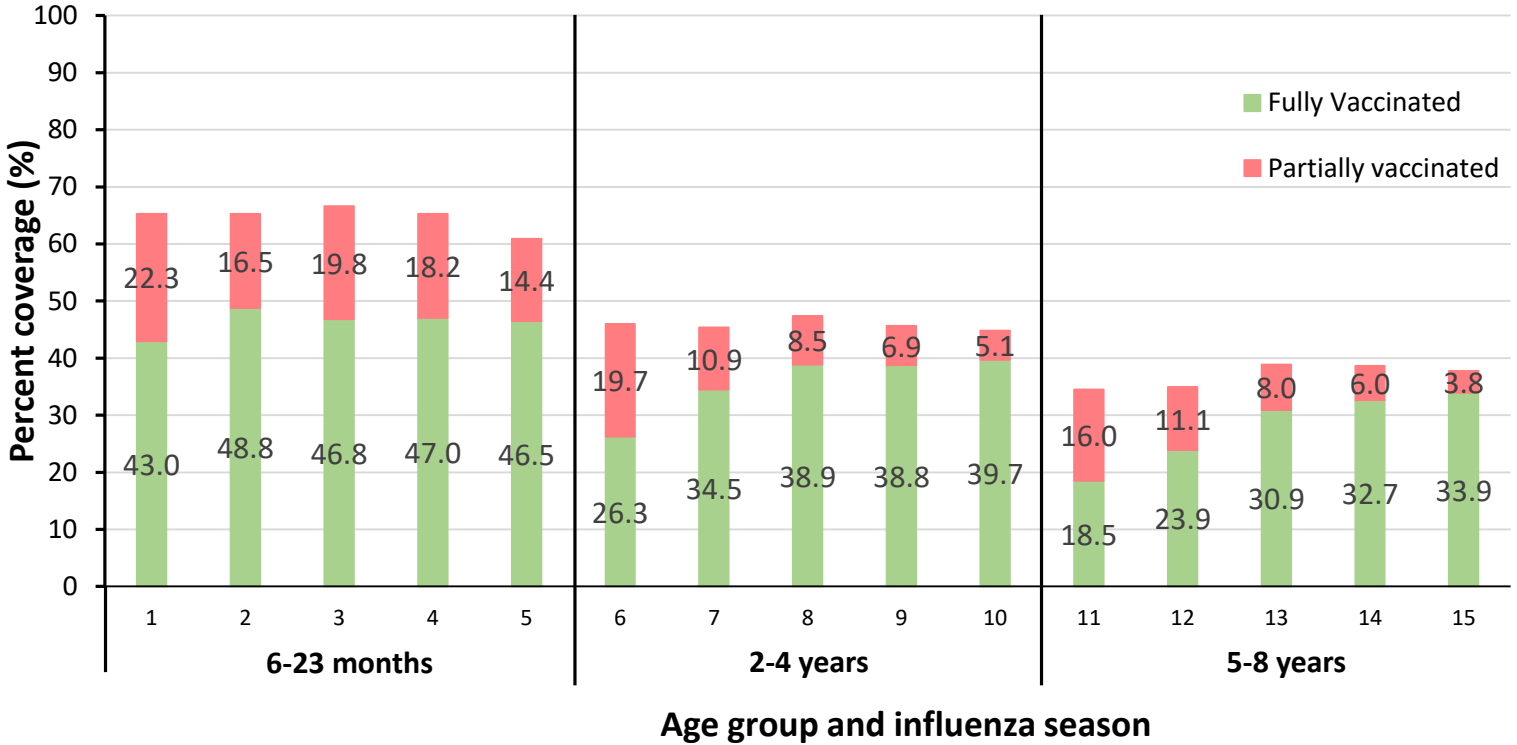
Trends in full influenza vaccination coverage



Trends in two-dose compliance

Lin X, Fiebelkorn AP, Pabst LJ. Vaccine 2016; 34(46):5623-28.

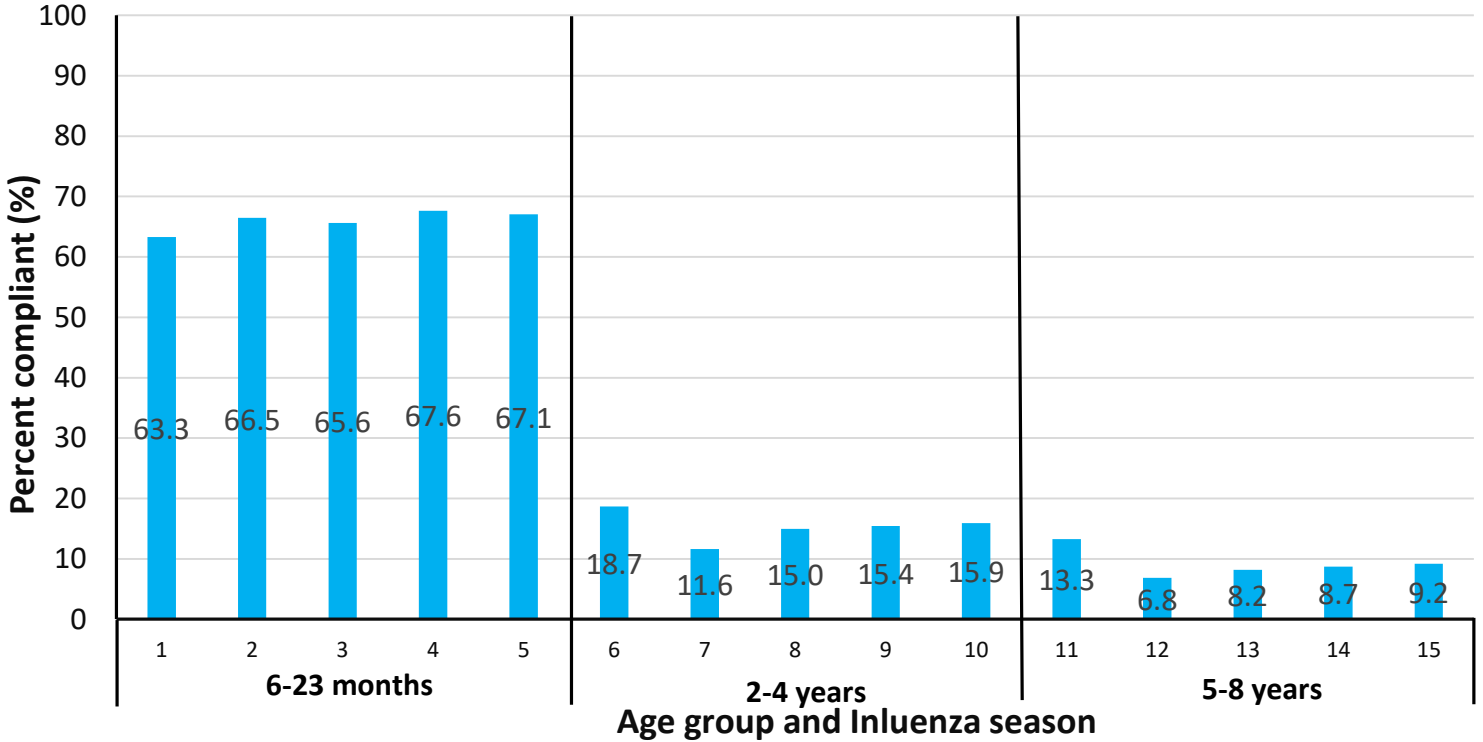
# Fig. 1 Influenza vaccination coverage* among sentinel site children aged 6 months through 8 years by age group and influenza season, 2010–2015




*Census data were used as denominators and Immunization Information Systems data from the six sentinel sites were used as numerators.

Lin X, Fiebelkorn AP, Pabst LJ. Vaccine 2016; 34(46):5623-28.

# Fig. 2 Two-dose compliance* with influenza vaccine recommendations among sentinel site children aged 6 months to 8 years by age group and influenza season, 2010–2015




*Two-dose compliance was defined as the percentage of children during each season who received at least two doses of influenza vaccine among those who required two doses and initiated the series.

Lin X, Fiebelkorn AP, Pabst LJ. Vaccine 2016; 34(46):5623-28.

FluVaxView
FluVaxView Interactive! +
Vaccination Trends
2017-18 Season +
2016-17 Season −
General Population Vaccination Coverage
General Population Early Season Vaccination Coverage
General Population Coverage Estimates for Local Areas and Territories
General Population Place of Flu Vaccination
Health Care Personnel Early Season Vaccination Coverage
Pregnant Women Early Season Vaccination Coverage
**Full and Partial Flu Vaccination Coverage in Young Children**
Prior Seasons +

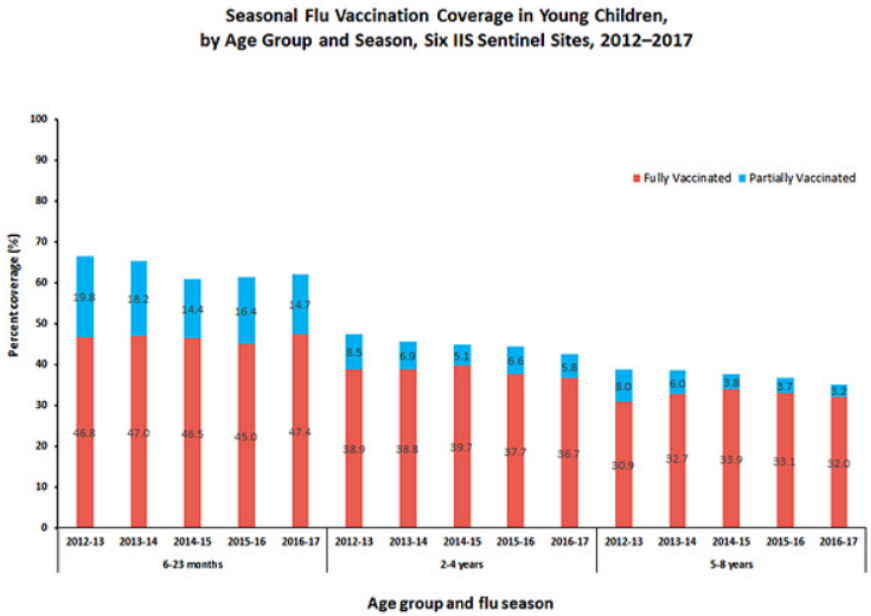
FluVaxView > 2016-17 Season

# Full and Partial Flu Vaccination Coverage in Young Children, Six Immunization Information Systems Sentinel Sites, 2012-13–2016-17

Language: English (US)

**DATA SOURCE**: Immunization Information Systems (IIS) data from IIS Sentinel Sites.

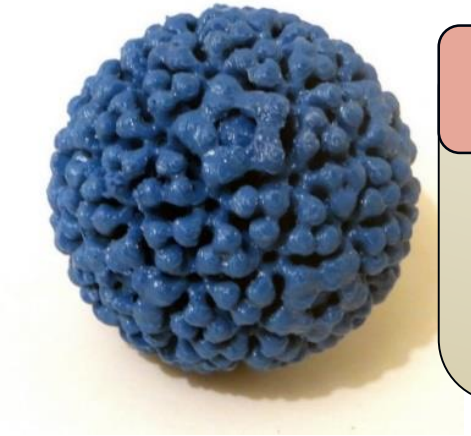
**Figure 1.**




## On This Page

# Impacts of Initiating HPV Vaccine at Age 9

Should the routine HPV vaccination recommendation be worded 9 through 12 years?



| Series Completion Before 15 | | |
|---|---|---|
| Initiation at 9-10 years | | Initiation at 11-12 years |
| 98% | vs | 92% |

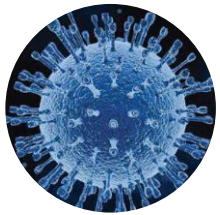
# Frequency and Cost of Vaccinations Administered Outside Recommended Ages — 2014

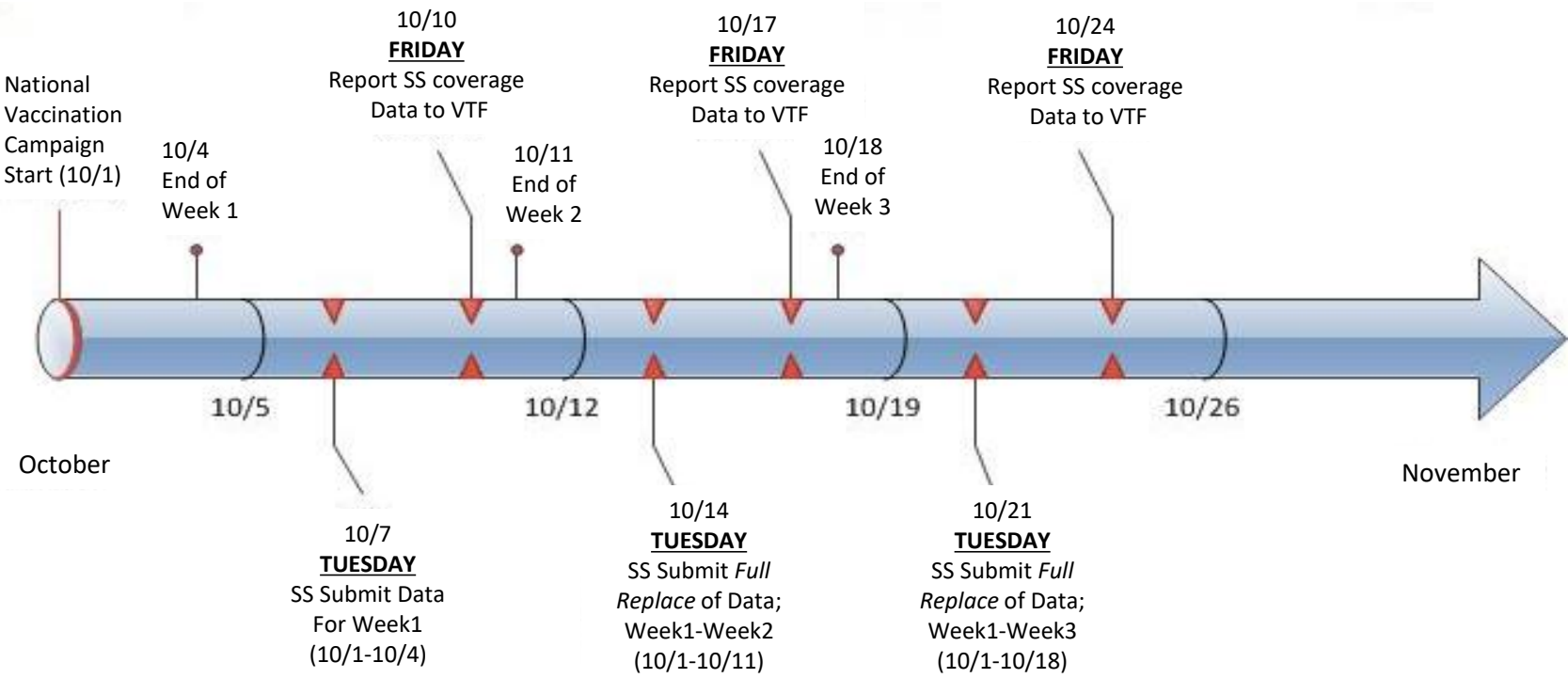
- 0.3% (9,755) of >3.4 million doses after max age
- Costs for required revaccination of influenza vaccine
  - $111, 964  for 1,344 doses

- 0.1% (9,542) of >7.5 million doses before min age
  - Most common:  quadrivalent injectable influenza vaccines (3,835) and DTaP-IPV (Kinrix, 2,509)
  - Revaccination costs where recommended: $179,179

Rodgers L, Shaw L, Strikas R, et al., J Pediatr 2018; 193: 164-171

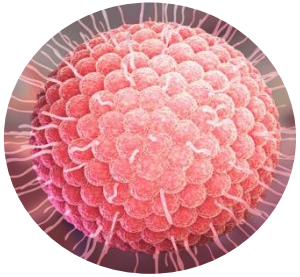
# Pandemic Preparedness

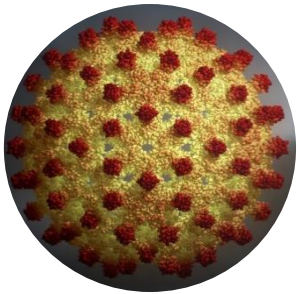




# Aggregated Zoster Vaccination Data from Sentinel Sites

- Informing ACIP vote to preferentially recommend Shingrix
- Hep B multi-dose series completion was used as proxy





- Data as key parameters in a cost-effective model
- Model as critical component of ACIP deliberations on a preferential recommendation for Shingrix

# Conclusion

# Conclusion

- IIS Sentinel Site data have been used to
  - Complement survey data and fill critical knowledge gap
  - Inform national policy-making process
  - Prepare pandemic reporting
- IIS data are critical for federal stakeholders

# Acknowledgement


- LaTreace Harris, CDC/IISSB
- IIS staff from the six Sentinel Sites
  - Michigan Department of Health and Human Services
  - Minnesota Department of Health
  - New York City Department of Health and Mental Hygiene
  - North Dakota Department of Health
  - Oregon Health Authority
  - Wisconsin Department of Health Services

# Questions?

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