Adolescent Vaccination Coverage Update
National Immunization Survey-Teen

Sarah Reagan-Steiner, MD, MPH
Immunization Services Division
National Center for Immunization and Respiratory Diseases

AIM Promising Practices Webinar
September 18, 2014
Outline

- National Immunization Survey (NIS)-Teen objectives
- NIS-Teen methodology
- 2013 vaccination coverage estimates
- Other applications of NIS-Teen data
NIS-Teen Objectives

- Assess national, state and selected local area vaccination coverage
  - Adolescent vaccines: Tdap, HPV, MenACWY
  - Catch-up vaccines: MMR, Varicella and Hepatitis B
- Monitor vaccination coverage trends and progress towards Healthy People 2020 objectives
- Identify disparities in vaccination coverage by selected socio-demographic characteristics
- Evaluate and refine ongoing strategies to improve vaccination coverage
- Monitor the introduction of new vaccines

Tdap = Tetanus, diphtheria,acellular pertussis, HPV = Human papillomavirus, MenACWY= Meningococcal conjugate, MMR=measles, mumps, rubella
NIS-Teen Methodology

- Annual survey implemented in 2006
  - Expanded in 2008 to obtain state and local level estimates
- Uses National Immunization Survey (NIS) sample frame methodology
  - Random digit dial telephone survey (landline and cell phone)
  - National sample of parents of adolescents aged 13-17 years
  - Provider record check mailed to verify vaccination history
  - Data are weighted to adjust for non-response and phoneless households
- All analyses limited to adolescents with provider reported vaccination histories

Source: MMWR. 2014;63;625-33
NIS-Teen Data Collection

- **Household questionnaire**
  - Socio-demographic characteristics (teen, maternal and household)
  - Health insurance status
  - Vaccination behavior, knowledge and intentions
  - Receipt of provider recommendation
  - Healthcare utilization (e.g., well-child visit at 11-12 yrs, healthcare visits in past year)

- **Provider record check questionnaire**
  - Teen vaccination history (types, dates administered)
  - Provider characteristics (e.g., physician specialty, type of facility)

Source: http://www.cdc.gov/nchs/nis/data_files_teen.htm
2013 NIS-Teen Results

- **CASRO response rates:**
  - 51.1% for landline sample
  - 23.3% for cell phone sample

- **Adequate provider data available for 18,264 adolescents**
  - 59.5% of landline interviews (6,039 adolescents)
  - 54.5% of cellphone interviews (12,225 adolescents)

Source: MMWR. 2014;63;625-33
National Estimated Vaccination Coverage Levels among Adolescents 13-17 Years, NIS-Teen 2006-2013

Source: MMWR. 2014;63;625-33
### Vaccination Estimates among Adolescents 13-17 Years by Poverty Status, NIS-Teen 2013

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Below Poverty</th>
<th>At or Above Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tdap</td>
<td>85</td>
<td>86</td>
</tr>
<tr>
<td>MenACWY</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>≥1 HPV</td>
<td>67</td>
<td>55</td>
</tr>
<tr>
<td>≥3 HPV</td>
<td>42</td>
<td>36</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥1 HPV</td>
<td>47</td>
<td>31</td>
</tr>
<tr>
<td>≥3 HPV</td>
<td>17</td>
<td>13</td>
</tr>
</tbody>
</table>

** statistically different (p<0.05)

Source: MMWR. 2014;63;625-33
HPV Vaccination Estimates among Adolescent 13-17 Years by Race/Ethnicity, NIS-Teen 2013

* Statistically different (P<0.05) from White-NH.
Source: MMWR. 2014;63;625-33
Estimated Vaccination Coverage of ≥ 1 Doses of HPV Vaccine* Among Female Adolescents Aged 13-17 Years†, National Immunization Survey - Teen, United States, 2013

*Human Papillomavirus (HPV) Vaccine, either quadrivalent or bivalent. Percentages reported among females only.
†Includes female adolescents born January 1995 through February 2001

National Coverage = 57%
(sample size=8,710)

- ≤ 44% (3)
- 45-54% (17)
- 55-64% (23)
- ≥ 65% (8)

Actual and potentially achievable vaccination coverage of ≥1 HPV vaccine by age 13 years among adolescent girls if missed opportunities* were eliminated, NIS-Teen 2007-2013 combined

*Missed opportunity defined as having a healthcare encounter where at least one vaccine was administered but HPV was not

MMWR. 2014; 63:620-4
## Top 5 reasons for not vaccinating adolescents with HPV vaccine – NIS-Teen 2013

<table>
<thead>
<tr>
<th>Reason</th>
<th>Parents of Boys</th>
<th>Parents of Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Recommended</td>
<td>22.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Not needed or necessary</td>
<td>17.9</td>
<td>14.7</td>
</tr>
<tr>
<td>Lack of knowledge</td>
<td>15.5</td>
<td>15.5</td>
</tr>
<tr>
<td>Not sexually active</td>
<td>7.7</td>
<td>11.3</td>
</tr>
<tr>
<td>Safety concern/Side Effects</td>
<td>6.9</td>
<td>14.2</td>
</tr>
</tbody>
</table>

Source: MMWR. 2014; 63:620-4
Percent of parents reporting that they received an HPV vaccine recommendation from their health-care provider, NIS-Teen 2013

Source: MMWR. 2014; 63:620-4
Summary of 2013 NIS-Teen findings

- Vaccination coverage significantly increased between 2012 and 2013 for all vaccines recommended for adolescents
  - HPV vaccination coverage remains low
- For some vaccines, coverage is significantly higher for:
  - Teens living below the poverty level (HPV vaccine)
  - Racial/ethnic minorities (MenACWY, HPV vaccine)
- Missed vaccine opportunities are common for HPV vaccine
- A recommendation for HPV vaccine is important
  - HPV vaccine should be recommended on the same day and in the same way as other recommended vaccines
Other Key NIS-Teen Findings

- Higher rates of HPV vaccine delay or refusal in girls who are non-Hispanic white, live in households with higher income, or are privately-insured \(^1\)

- Fifty-seven percent of girls initiating HPV series did so prior to age 13, and 46% did not complete series on-time \(^2\)

Sources: \(^1\) Dorell et al., Clin Pediatr (Phila) 2014. \(^2\) Dorell et al., Vaccine 2012
Immunization Program Opportunities

- Sampling additional areas of interest to obtain additional local area vaccination coverage estimates
- NIS-IIS match to evaluate completeness and quality of IIS vaccination histories vs. NIS

IIS=Immunization Information Systems
Acknowledgements

- Laurie Elam-Evans
- Jim Singleton
- Shannon Stokley
Thank you
sor1@cdc.gov

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: http://www.cdc.gov

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.