**BACKGROUND**

- In 2011, the Advisory Committee on Immunization Practices (ACIP) recommended that unvaccinated pregnant women receive Tetanus, Diphtheria, and Acellular Pertussis (Tdap) vaccine during pregnancy to minimize the significant burden of pertussis on infants.
- By contrast, the proportion of Tdap vaccination during delivery hospitalizations remained low and stable over time, with slight decreases from 2012 to 2015.

**METHODS**

**Study Population and Pregnancy Identification**

- Women aged 10-55 years who delivered a liveborn infant between January, 2010 and September, 2015
- Pregnancy start and end dates were calculated using a validated algorithm that incorporated diagnosis and procedure codes
- The algorithm identified an inpatient delivery hospitalization and pre/post-term delivery codes to determine pregnancy duration
- In absence of pre/post-term codes, pregnancy duration was set to 273 days
- Pregnancies were included if women were continuously enrolled in the health plan for at least 294 days before the admit date for delivery

**RESULTS**

**Table 1. Characteristics of Pregnancy Cohort**

<table>
<thead>
<tr>
<th>Maternal Age at Delivery (Years)</th>
<th>Total Number of Pregnancies</th>
<th>Number of Pregnancies (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19</td>
<td>94,005 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>1,015,266 (38.6%)</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>1,399,722 (53.2%)</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>120,567 (4.6%)</td>
<td></td>
</tr>
<tr>
<td>50-54</td>
<td>3,902 (0.1%)</td>
<td></td>
</tr>
</tbody>
</table>

**Calendar Year of Delivery**

- 2010: 450,830 (17.1%)
- 2011: 464,332 (17.6%)
- 2012: 466,295 (17.7%)
- 2013: 470,585 (17.9%)
- 2014: 457,745 (17.4%)
- 2015: 323,675 (12.3%)

**Presence of Any Preterm Birth**

- 188,441 (7.2%)

**Presence of Any Postterm Birth**

- 367,248 (13.9%)

- The percentage of liveborn deliveries among females aged 10-19 years and the percentage of preterm liveborn deliveries are slightly lower than national averages (5.8% and 9.6% in 2015, respectively).

**RESULTS CONTINUED**

**Figure 1. Tdap Vaccinations during Pregnancy Trimester or Delivery**

- Of the 2.6 million pregnancies identified, 15.5% (n=407,879) had a Tdap vaccination during pregnancy and 3.2% (n=84,172) had a Tdap vaccination during the delivery hospitalization

**Figure 2. Tdap Vaccinations during Pregnancy or Delivery by Year**

- The proportion of Tdap vaccination during pregnancy increased substantially over time, from 0.8% for deliveries in 2010 to 38.8% for deliveries in 2015
- Tdap vaccination during pregnancy increased by 2.1% from 2010-11, 3.5% from 2011-12, 3.3% from 2012-13, 1.7% from 2013-14, and 1.2% from 2014-15
- By contrast, the proportion of Tdap vaccination during delivery hospitalizations remained low and stable over time, with slight decreases from 2012-2015

**CONCLUSIONS**

- For the years analyzed, trends of Tdap vaccination during pregnancy in Sentinel’s PRISM program are comparable to national estimates
- This study demonstrated the feasibility of identifying vaccine exposures in pregnant women, which could facilitate vaccine safety or effectiveness surveillance using Sentinel’s PRISM program
- Mother-child linkages and characterization of other data elements would also be needed to conduct vaccine surveillance activities

**DISCLOSURE**

- This work was funded by U.S. Food and Drug Administration through the Department of Health and Human Services Contract # HHSF223201400030I
- The authors have no conflicts of interest to disclose
- Many thanks are due to Data Partners who provided data used in the analysis

**REFERENCES**

1. Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) in Pregnant Women — Advisory Committee on Immunization Practices (ACIP), 2012.

2. Of the 2.6 million births, 15.5% (n=407,879) had a Tdap vaccination during pregnancy and 3.2% (n=84,172) had a Tdap vaccination during the delivery hospitalization. The proportion of Tdap vaccination during pregnancy increased substantially over time, from 0.8% for deliveries in 2010 to 38.8% for deliveries in 2015, with the largest increases from 2011 to 2012 and 2012 to 2013. By contrast, the proportion of Tdap vaccination during delivery visits remained low and relatively stable over time, with slight decreases from 2012 to 2015.

3. Of the 2.6 million pregnancies identified, 15.5% (n=407,879) had a Tdap vaccination during pregnancy and 3.2% (n=84,172) had a Tdap vaccination during the delivery hospitalization.

4. This work was funded by U.S. Food and Drug Administration through the Department of Health and Human Services Contract # HHSF223201400030I.

5. The authors have no conflicts of interest to disclose.

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