Prenatal Care Utilization Trends in the Privately Insured Population from 2009-2015
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Background

Expand upon literature on the explanations for variation in prenatal care. This study examines utilization of specific prenatal care services (lab testing and obstetric ultrasounds) and compares the variation in utilization across age groups and individual risk characteristics.

Methods

Study Design and Population

We study a sample of women with employer sponsored insurance (ESI) who had a claim for a delivery (normal or C-section) within the years of 2009 and 2015. Further classified into individuals with one lab or ultrasound visit based on first and last date of a claim. Our resulting sample contained 3.25 million individuals consisting of 450,000 to 480,000 women per year. We analyzed the frequency of medical claims related to a lab test or ultrasound condensed to the first and last date of a claim to act as 1 visit.

CPT Codes and Risk Categories

Lab Test Codes: From our population, we acquired the 100 most frequent CPT codes related to a lab visit
Ultrasound Codes: Presence of one of 23 CPT codes
Risk Categories: Patient risk was categorized by age categories (<26, 26-34, >35) or presence of an ex-ante ICD code relating to diabetes mellitus, hypertension, multiple gestation, obesity, and/or previous C-section.

Results

Lab Utilization Distribution

Low Risk Pregnancies

High Risk Pregnancies

Number of Lab Visits

Percent of Age Group Total

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Number of Lab Visits

Percent of Age Group Total

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Ultrasound Utilization Distribution

Low Risk Pregnancies

High Risk Pregnancies

Number of Ultrasound Visits

Percent of Age Group Total

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Number of Ultrasound Visits

Percent of Age Group Total

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Utilization Descriptive Statistics

<table>
<thead>
<tr>
<th>Risk</th>
<th>Age</th>
<th>Mean Lab Visits</th>
<th>Mean Ultrasound Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk</td>
<td>Under 26</td>
<td>7.8</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>26-34</td>
<td>8.1</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Over 34</td>
<td>9.1</td>
<td>8.2</td>
</tr>
<tr>
<td>High Risk</td>
<td>Under 26</td>
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</tbody>
</table>

Discussion

Age categories had a greater effect on the number of mean visits for ultrasounds than labs
Presence of an ex-ante risk characteristic affected both ultrasounds and labs similarly
Large distribution in both types of prenatal care warrants further research

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