Postpartum LARC utilization and subsequent births among Delaware’s Medicaid population

November 7, 2017

Erin K. Knight, PhD, MPH
Associate Director, Center for Community Research and Service
Associate Director, University of Delaware Partnership for Healthy Communities
Research Team

Center for Community Research & Service, School of Public Policy & Administration, University of Delaware, Newark, DE

• Erin Knight, PhD, MPH
• Mary Joan McDuffie, MA
• Katie Gifford, PhD
• Hira Rashid, MA

Department of Health Services Administration, School of Public Health, University of Maryland, College Park, MD

• Michel Boudreaux, PhD

This research is funded through a University of Maryland grant with a private foundation.
The Delaware Context

Delaware (DE) has the highest unintended pregnancy rate in the country (~57% of pregnancies in DE were unintended in 2010)
- In 2010, 71.3% of unintended births were publicly funded, costing $94.2M in state & federal $

Adolescent pregnancy rates in DE are also higher than the national average according to 2013 data; most were unintended
- 1 in 5 adolescent births in DE were repeat births (two or more births before age 20), with a disproportionate concentration of risk among racial/ethnic minorities

In 2014, publicly supported family planning centers in the state served 30% of women, costing approximately $7.2M ($5.6M through Medicaid)
- This averted 3600 unintended pregnancies and saved $51.3M in public spending

(DHSC, 2013; Guttmacher Institute, 2017)
Research Objective

• To develop a baseline understanding of postpartum contraceptive utilization—specifically long acting reversible contraceptives (LARC)—among low income women, and examine relationships between postpartum LARC and subsequent births.

• This research is part of a larger evaluation of Delaware Contraceptive Access Now (Del-CAN), a new public-private partnership that aims to target the high rates of unintended pregnancies in DE, launched in 2016. This goal of this program is to facilitate access to all types of contraceptive for the women in Delaware. This research, focusing on postpartum LARC, helps create baseline data for ongoing monitoring of some of the expected Del-CAN program impacts.
Background & Significance

- Rapid repeat/short interval births\(^1\) (<18 months) are associated with higher risk for adverse birth outcomes
- Children born to adolescent mothers with repeat births have a significantly elevated risk for preterm birth, low birth weight and small size for gestation age
- Mothers with rapid repeat births are at higher risks for postpartum depression and other mental health issues
- Risk factors for unplanned and rapid repeat pregnancies are similar, and a majority (~55%) of rapid repeat pregnancies are unplanned; risk factors include low SES, younger age, and multiple prior births
- Socioeconomic and demographic factors associated with unintended pregnancies such as SES and race/ethnicity are also strongly related with contraceptive use; lower SES, Black and Hispanic women are significantly less likely to use contraception, and are at greater risk for method failure or discontinuation of contraceptive use (partly due to access barriers)
- Lower rates of method failure as well as higher one-year continuation rates are observed with methods that are not user-dependent— such as IUDs, implants and sterilization (LARC)
- Women at risk of rapid repeat birth are documented to have expressed the desire for LARC use, of which only are small percentage are able to actually gain access

\(^1\)Rapid repeat births are caused by short interval pregnancies, where the time between a live birth and the next pregnancy is less than 18 months (Copen et al, 2015); due to the small number of rapid repeat births in our sample, we report date on all subsequent births during the study period (2012-2014).
Research Design and Methodology

The data for this study were obtained from the DE Division of Medicaid & Medical Assistance under a partnership agreement with the University of Delaware’s Colleges of Health Sciences and Arts & Sciences.

A retrospective cohort study of Delaware Medicaid enrolled women ages 15-44, continuously eligible over a 3-year period (2012-2014), who had a birth in 2012, was conducted.

This study examines the relationships between LARC\(^2\) and the likelihood of subsequent birth during the study period by;

- Comparing the prevalence of subsequent births between women who opted for LARC (<60 days), and delayed or no LARC.
- Studying the characteristics of postpartum (PP) LARC recipients in relation to age, race and county of residence.
- Exploring the impact of delayed LARC insertion on subsequent births.

\begin{center}
\begin{tabular}{|c|c|}
\hline
LARC (<60 days) & LARC received within 60 days of the postpartum period. \\
\hline
Delayed LARC & LARC received after the 60 day postpartum period, but before the end of the study period \\
\hline
No LARC & No LARC received during the study period \\
\hline
\end{tabular}
\end{center}

\(^2\)Hormonal implant, Hormonal or Copper Intrauterine Device
Overall Sample Characteristics

The sample includes continuously eligible women in DE Medicaid (2012-2014) who gave birth in 2012 (n=2031)

Figure 1: Age in years
- 22 - 44: 75%
- 15 - 18: 18%
- 19 - 21: 7%

Figure 2: Racial Distribution
- Black: 42%
- White: 44%
- Hispanic: 12%
- Other: 2%

Figure 3: Distribution across County
- Kent: 22%
- New Castle: 52%
- Sussex: 26%
Postpartum LARC (<60 days)

Distribution of LARC (<60 days), and Delayed + No LARC in the sample

Immediate PP LARC, 67, 3%

No/Delayed LARC, 1964, 97%

Distribution of subsequent births in the sample

Subsequent Birth, 507, 25%

No subsequent Birth 1524, 75%
Sample Characteristics – LARC (<60 days)

Comparison group: Women who received delayed LARC (>60 days) or no LARC

**Figure 4:** Age breakdown of LARC Utilization

**Figure 5:** Racial breakdown LARC utilization

**Figure 6:** County-level breakdown LARC Utilization
A binary logistic regression was used to calculate the odds ratios of subsequent birth for women who received LARC (<60 days) as compared to women who received delayed (>60 days) or no LARC.

Women with a Medicaid financed birth in 2012 who received a postpartum LARC had 3.48 times higher odds of not having a subsequent birth as compared to women who delayed or had no LARC.

- Adjusting for age, increases the LARC odds ratio to 4.68.
- Younger women have lower odds of being in the “no subsequent birth” group.

* represents p<0.05, ** p<0.01 for the Wald chi-square test.
Postpartum LARC (study period)

Distribution of LARC utilization, <60 days, delayed and none:
- Immediate PP LARC, 67, 3%
- Delayed PP LARC, 230, 11%
- No LARC, 1734, 86%

Distribution of delayed LARC utilization by age:
- Younger (15-21), 75, 33%
- Older (22-44), 155, 67%
A binary logistic regression was used to calculate the odds ratios of subsequent birth for women who received LARC (<60 days) & delayed LARC (Any LARC) as compared to women who received no LARC.

Women who received any LARC had 1.77 times higher odds of not having a subsequent birth as compared to women who received no LARC.

- Adjusting for age, race and county does not clinically impact these odds ratios.

- After controlling for LARC, younger women (15-21) again had lower odds of being in the “no subsequent birth” group.

### Results – Postpartum LARC <60 days and Delayed Utilization

<table>
<thead>
<tr>
<th>Dependent Variable = Subsequent Births (1=Yes, 0=No)</th>
<th>Models (n=2031)</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any LARC</td>
<td>1.77**</td>
<td>1.28 – 2.44</td>
</tr>
<tr>
<td></td>
<td>Any LARC Age (15 – 21)</td>
<td>1.83**</td>
<td>0.68**</td>
</tr>
<tr>
<td></td>
<td>Any LARC Age (15 – 21) Black</td>
<td>1.85**</td>
<td>0.67**</td>
</tr>
<tr>
<td></td>
<td>Any LARC Age (15 – 21) White</td>
<td>1.07</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>Any LARC Age (15 – 21) Hispanic</td>
<td>1.08</td>
<td>1.07</td>
</tr>
<tr>
<td></td>
<td>Any LARC County (Kent)</td>
<td>1.86**</td>
<td>1.35 – 2.58</td>
</tr>
<tr>
<td></td>
<td>Any LARC County (Sussex)</td>
<td>0.67**</td>
<td>1.08</td>
</tr>
</tbody>
</table>

* represents p<0.05,  ** p<0.01 for the Wald chi-square test.
Conclusions and Implications

This study is the first systematic analysis of the impact of postpartum LARC on subsequent births among Delaware Medicaid enrollees.

A majority of women who opted to receive LARC within 60 days postpartum are older, non-white, and residents of the New Castle County.

We conclude that receiving LARC within 60 days postpartum resulted in different odds of subsequent repeat births among Delaware’s Medicaid population. In this study, using LARC resulted in higher odds of not having a subsequent birth as compared to women who delayed or had no LARC.

The experience of DE women enrolled in Medicaid appears to be similar to the experience of women in other states.

Findings of this study are consistent with earlier studies on the relative effectiveness of LARC methods on subsequent births.
Limitations & Future Research

- Repeat births lead to significantly poorer outcomes for mothers and children if the pregnancy is unintended. This study is limited in that it does not include and control for pregnancy intention in the analysis.
- Other limitation --- Lack of data on abortions or miscarriages

- **Future research will include:**
  - Analysis of immediate postpartum LARC (before discharge)
  - Pre-/Post- analysis of Del-CAN intervention
  - More comprehensive analysis using PRAMS and birth certificate data
  - Contraceptive choices, pregnancies, rapid repeat births
References


Thank you

Erin K. Knight, PhD, MPH
(pronouns: she/her/hers)
Associate Director, Center for Community Research & Service
Associate Director, UD Partnership for Healthy Communities
Assistant Professor, School of Public Policy & Administration
University of Delaware • 298E Graham Hall
Newark, DE 19716
Phone: 302-831-3264
eknight@udel.edu

Michel Boudreaux, PhD
Assistant Professor, Department of Health Services Administration
School of Public Health
University of Maryland
4200 Valley Drive, Suite 2242
College Park, Maryland 20742-2611

Center for Community Research & Service – Medicaid Research Program
Mary Joan McDuffie, MA, Director
https://www.sppa.udel.edu/ccrs/research-data/Health%20Policy%20Research/medicaid-research