2013 Iowa Medicaid
Birth Certificate Match Report

INTERPREGNANCY INTERVALS

Factors Associated with Short Interpregnancy Intervals

FACT SHEET PURPOSE

The purpose of the fact sheet is to explore the relationship between interpregnancy intervals and birth outcomes, such as low birth weight and preterm birth among women with Medicaid reimbursed births. The report also explores how interpregnancy intervals vary by maternal demographic factors, such as age, race, educational level, and access to prenatal care and WIC among women with Medicaid reimbursed births.

BACKGROUND

Medicaid is a state/federal program that provides health insurance for certain groups of low-income people, including pregnant women. Iowa Medicaid is administered by the Iowa Department of Human Services through the Iowa Medicaid Enterprise. In Iowa, pregnant women may be eligible for Medicaid if their household income is below 375 percent of the federal poverty level. In 2013, the labor and delivery costs for nearly 39 percent of Iowa resident births were reimbursed by Medicaid (38.9%; n=15,212 of 39,013 births).

OPTIMAL PREGNANCY INTERVALS

The interpregnancy interval is defined as the number of months between a previous live birth and the date of the woman's last menstrual period(9). Though there is not an official recommendation for the optimal interpregnancy period, experts suggest 18 to 24 months as the ideal time period between pregnancies[1,2,3,4]. Historically, researchers have reported that women who become pregnant within 18 months after a previous birth are at increased risk for having a low birth weight infant or a preterm birth[3,5,6,7,8,9]. In a previous publication, we did not detect adverse birth outcomes based on interpregnancy intervals (Interpregnancy intervals – 2012[10]). However, in the 2012 publication, we created only two categories of interpregnancy intervals (18 months or less and 19 months or more). In this report we examine interpregnancy intervals by four categories (6 months or less, 7 – 12 months, 13 – 18 months, and 19 or more months).

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[10] http://www.idph.state.ia.us/hpcdp/common/pdf/family_health/2012_medicaid_intervals.pdf

DATA SOURCES

Data for this report were derived from a matched file of the 2013 birth certificate and Medicaid paid claims for calendar year 2013. Medicaid status was based on a paid claim for any one of the delivery related diagnostic related groups (DRGs). We used paid claims for maternal diagnostic related groups for vaginal and cesarean deliveries, 765 through 775. Birth certificate data were used to calculate interpregnancy intervals and for maternal demographic characteristics including age, race, ethnicity, level of education, prenatal care initiation, WIC participation, and infant birth outcomes. Medicaid status was determined by whether the birth certificate linked to a paid claim for any one of the delivery related DRGs.

RESULTS

Overall, 9.5 percent (n=820) of mothers had an interpregnancy interval of six months or less (Figure 1). Eleven percent (n=980) of mothers had an interpregnancy interval of seven through 12 months; 12.1 percent (n=1,043) of mothers had an interpregnancy interval of 13 through 18 months, and 67 percent (n=5,804) of mothers had an interpregnancy interval of 19 months of more.

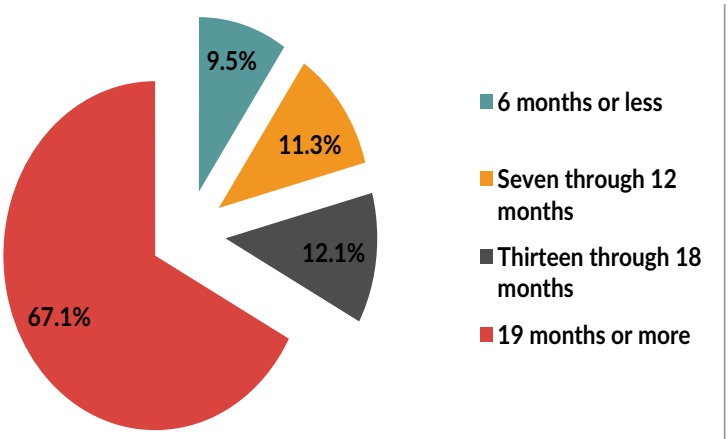
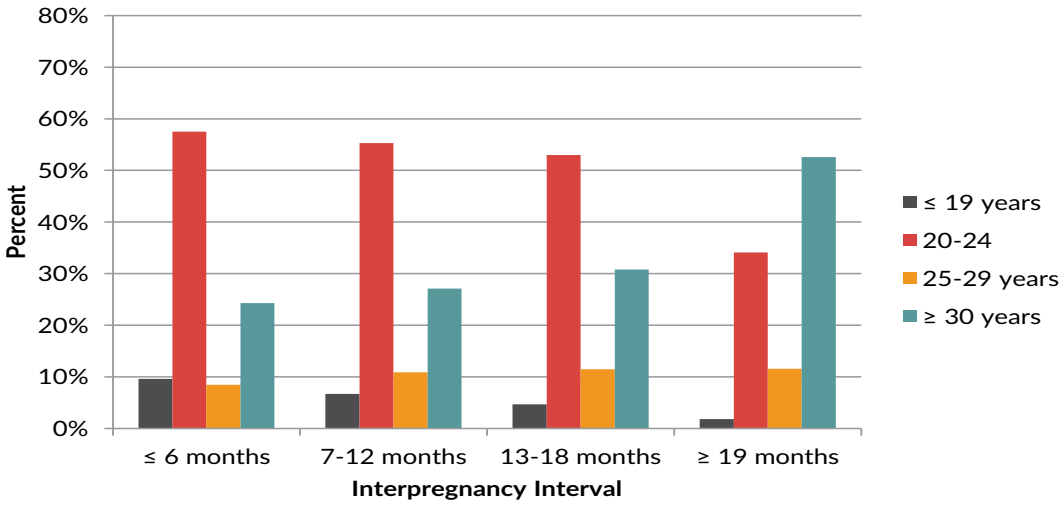


Figure 1. Interpregnancy intervals among women with a Medicaid reimbursed birth, Iowa 2013

Interpregnancy intervals by maternal demographic characteristics

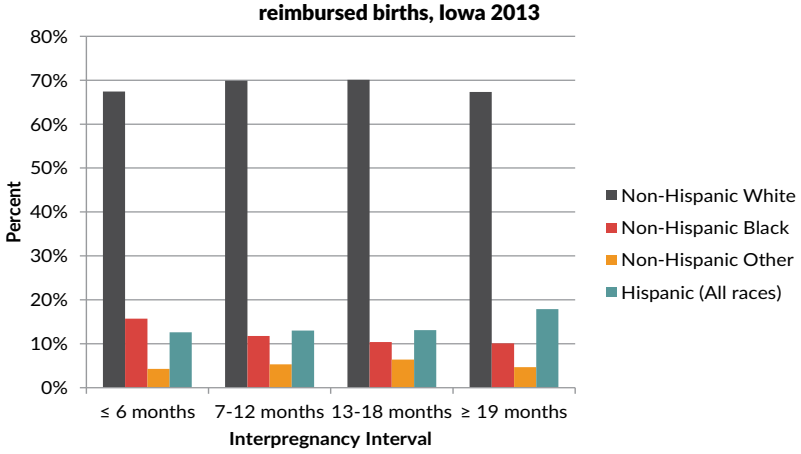
Figure 2. Maternal age by interpregnancy interval, Medicaid reimbursed births, Iowa 2013



Maternal Age

Age and interpregnancy intervals were inversely related. Women ages 24 and younger had shorter pregnancy intervals compared to women ages 25 and older (Table 1).

Figure 3. Maternal race/ethnicity by interpregnancy interval, Medicaid reimbursed births, Iowa 2013



Maternal Race/Ethnicity

Non-Hispanic Black women had the shortest interpregnancy intervals. Non-Hispanic White women and non-Hispanic women of other races had the highest percentage of interpregnancy intervals of 13 to 18 months. Hispanic women had the longest interpregnancy intervals (Figure 3).

Maternal Educational Level

Women with shorter interpregnancy intervals were less likely to have a high school education than women with longer interpregnancy intervals.

Table 1. Maternal demographic characteristics, access to care, and birth outcomes by interpregnancy interval, Medicaid reimbursed births, Iowa 2013

Characteristic	≤ 6 months n = 820	7-12 months n = 980	13-18 months n = 1,043	≥ 19 months n = 5,804	*P*-value
Maternal age					<.0001
≤ 19 years	62 (7.6%)	50 (5.1%)	37 (3.6%)	74 (1.3%)	
20-24 years	371 (45.2%)	412 (42.0%)	413 (39.6%)	1,378 (23.7%)	
25-29 years	230 (28.1%)	316 (32.2%)	353 (33.8%)	2,226 (38.4%)	
≥ 30 years	157 (19.2%)	202 (20.6%)	240 (23.0%)	2,126 (36.6%)	
Maternal race/ethnicity					<.0001
Non-Hispanic White	553 (67.4%)	685 (69.9%)	731 (70.1%)	3,906 (67.3%)	
Non-Hispanic Black	129 (15.7%)	116 (11.8%)	108 (10.4%)	584 (10.1%)	
Non-Hispanic Other	35 (4.3%)	52 (5.3%)	67 (6.4%)	275 (4.7%)	
Hispanic (All races)	103 (12.6%)	127 (13.0%)	137 (13.1%)	1,039 (17.9%)	
Maternal education (≥ 12 years)	325 (39.6%)	435 (44.5%)	499 (47.8%)	2,697 (46.5%)	0.001
First trimester prenatal care initiation	524 (64.1%)	712 (73.6%)	799 (77.4%)	4,634 (80.3%)	<.0001
Participation in WIC	631 (77.0%)	688 (70.4%)	696 (66.9%)	3,927 (67.9%)	<.0001
Low birth weight	50 (6.1%)	44 (4.5%)	54 (5.2%)	295 (5.1%)	0.49
Preterm birth	115 (14.1%)	137 (14.0%)	136 (13.0%)	657 (11.3%)	0.02

Interpregnancy intervals by maternal access to care

First trimester prenatal care initiation

The percentage of women that initiated prenatal care in the first trimester increased with increasing interpregnancy intervals (Table 1).

WIC enrollment during pregnancy

The highest percentage of women participating in WIC was among women with an interpregnancy interval less than 6 months.

Interpregnancy intervals by infant birth outcomes

Low birth weight infants

The percentage of women who gave birth to a low birth weight infant did not significantly differ by interpregnancy interval (Table 1).

We did not observe an association between interpregnancy intervals and having a low birth weight infant after adjusting for maternal age, maternal race/ethnicity, maternal education, first trimester prenatal care initiation, and participation in WIC (Table 2).

Table 2. Association between interpregnancy interval and having a low birth weight infant, Medicaid reimbursed births, Iowa 2013

Characteristic	Low birth weight
Interpregnancy interval	
≤ 6 months	1.26 (0.87, 1.81)
6-12 months	1.01 (0.69, 1.46)
12-18 months	1.06 (0.75, 1.52)
≥ 18 months	Ref
Maternal age	
≤ 19 years	0.81 (0.43, 1.51)
19-24 years	0.72 (0.55, 0.93)
25-29 years	1.09 (0.77, 1.56)
≥ 30 years	Ref
Maternal race/ethnicity	
Non-Hispanic white	1.09 (0.63, 1.88)
Non-Hispanic black	1.98 (1.11, 3.55)
Hispanic (All races)	0.66 (0.35, 1.23)
Non-Hispanic other	Ref
Maternal education (≥ 12 years)	0.88 (0.69, 1.12)
First trimester prenatal care initiation	0.89 (0.68, 1.17)
Participation in WIC	0.82 (0.65, 1.05)

Table 3. Association between interpregnancy interval and having a preterm birth, Iowa 2013

Characteristic	Preterm birth not adjusted for previous preterm birth	Preterm birth adjusted for previous preterm birth
Interpregnancy interval		
≤ 6 months	1.33 (1.07, 1.66)	1.35 (1.08, 1.69)
6-12 months	1.28 (1.04, 1.57)	1.30 (1.06, 1.61)
12-18 months	1.17 (0.95, 1.43)	1.14 (0.92, 1.40)
≥ 19 months	Reference group	Reference group
Maternal age		
≤ 19 years	0.98 (0.66, 1.47)	1.05 (0.70, 1.58)
20-24 years	0.82 (0.69, 0.97)	0.83 (0.70, 0.99)
25-29 years	0.79 (0.67, 0.92)	0.80 (0.68, 0.94)
≥ 30 years	Reference group	Reference group
Maternal race/ethnicity		
Non-Hispanic white	0.83 (0.62, 1.12)	0.77 (0.57, 1.05)
Non-Hispanic black	1.20 (0.86, 1.68)	1.11 (0.79, 1.56)
Hispanic (All races)	0.81 (0.58, 1.12)	0.77 (0.55, 1.07)
Non-Hispanic other	Reference group	Reference group
Maternal education (≥ 12 years)	0.93 (0.81, 1.07)	0.91 (0.79, 1.06)
First trimester prenatal care initiation	1.12 (0.95, 1.32)	1.13 (0.95, 1.33)
Participation in WIC	0.85 (0.74, 0.98)	0.84 (0.73, 0.97)
Previous preterm birth	N/A	3.84 (3.21, 4.60)

Preterm birth

The percentage of women who gave birth to a preterm infant was significantly higher among women with an interpregnancy interval of 6 months or less compared to women with interpregnancy intervals of 13 through 18 months and 19 or more months (Table 1).

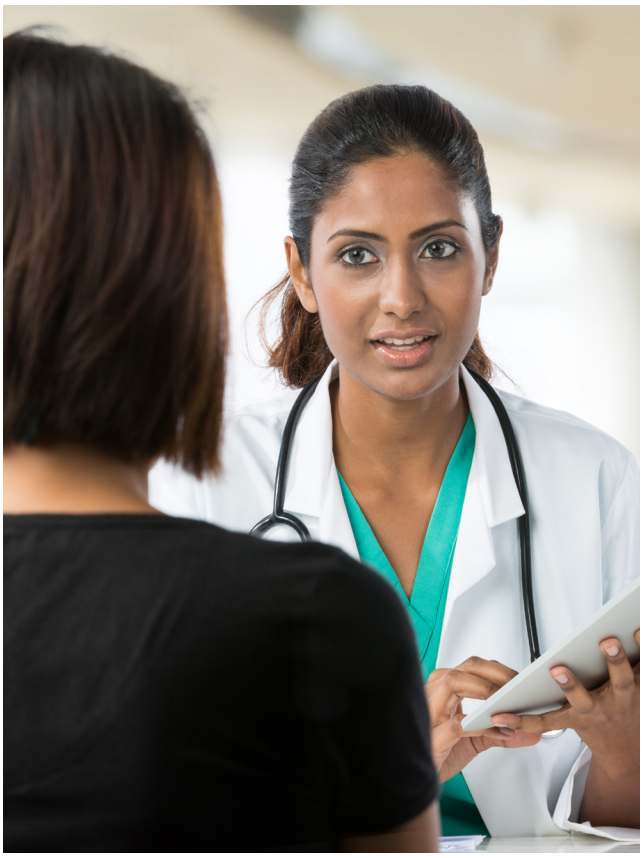
Women with a preterm birth were 33 percent more likely to have an interpregnancy interval of less than 6months and 28 percent more likely to have an interpregnancy interval between 6 and 12 months compared to women with an interpregnancy interval of more than 19 months after adjusting for maternal age, maternal race/ethnicity, maternal education, first trimester prenatal care initiation, and participation in WIC. This association remained after adjusting for a previous preterm birth (Table 3).

DISCUSSION

In 2013, most women who reported shorter interpregnancy intervals were younger less educated mothers who were non-Hispanic. Women with interpregnancy intervals of six months or less were significantly less likely to initiate prenatal care in their first trimester, while more frequently reporting receipt of WIC during pregnancy.

In a previous publication, we did not detect adverse birth outcomes based on interpregnancy intervals (Interpregnancy intervals – 2012[11]). However, in the 2012 publication, we created only two categories of interpregnancy intervals (18 months or less and 19 months or more). By examining interpregnancy intervals by four categories we were better able to delineate the relationship between birth outcomes and short interpregnancy intervals. We did not detect a significant association between infant low birth weight and interpregnancy intervals. However, even after controlling for maternal demographic factors and access to care, shorter interpregnancy intervals (≤ 12 months) were associated with pre-term birth. This relationship held true regardless of the mother's history of a preterm birth.

Discussing a woman's reproductive life plan and goals with her prenatally can support better outcomes for future children she may wish to have, and aid her in making better choices for birth control and fertility planning post-partum.



RECOMMENDATIONS FOR PROVIDERS

- Incorporate education about optimal interpregnancy intervals during prenatal and post-partum care with your patients.
- Explain to women the risks associated with short interpregnancy intervals, not only for her educational and career goals, as well as family needs, but also for her baby.
- Encourage a discussion to determine what the woman's plans are for post-partum contraception during routine prenatal care and post-partum care visits.
- Encourage Medicaid providers to take advantage of Medicaid coverage for immediate post-partum placement of long-acting reversible contraceptives. See INFORMATIONAL LETTER NO. 1349[12]

[11] http://www.idph.state.ia.us/hpcdp/common/pdf/family_health/2012_medicaid_intervals.pdf
[12] https://dhs.iowa.gov/sites/default/files/1349%20Long%20Acting%20Reversible%20Contraception.pdf

RECOMMENDATIONS FOR WOMEN

- Though you cannot always time exactly when conception will happen, experts recommend that women wait anywhere between 18 months to two years to conceive again after giving birth – this is better for your health and for your baby's.
- Talk to your health care provider about family planning, birth control methods, and conception strategy if you do plan on getting pregnant within this time range. He or she may be able to advise you of the benefits and risks.
- Develop a post-partum birth control plan before your baby is born. Often times a new baby brings new adjustments to everyone in the family, making a routine more difficult at first. By planning ahead, you, (your partner), and your health care provider will know what your long term goals are and will be able to better work together to achieve them.
- Identify barriers to post-partum birth control and talk to your health care provider about the best contraceptive choice for you.
- Consider the impact of an unintended closely spaced pregnancy on your family.

WHAT IS THE IOWA MEDICAID – BIRTH CERTIFICATE MATCH PROJECT?

The Iowa Medicaid - Birth Certificate Match Project is supported by an inter-departmental agreement between the Iowa Department of Human Services and the Iowa Department of Public Health/Bureaus of Family Health and Health Statistics. The purpose of the project is to describe the characteristics of pregnant Medicaid recipients, their behaviors during pregnancy and at hospital discharge, their receipt of pregnancy related services, and their birth outcomes. This information can be used to improve programs and policies to benefit Medicaid recipients.

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ADDITIONAL INFORMATION

For additional information or to obtain copies of this fact sheet, write or call:

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