2012 Iowa Medicaid
Birth Certificate Match Report

Disparities in prenatal care initiation and birth outcomes by Medicaid reimbursement status

Disparities

Fact sheet purpose

The purpose of this report is to describe differences in prenatal care access and birth outcomes by Medicaid reimbursement status among Iowa for resident births during calendar year 2012. This information can be used to guide decision makers in implementing programs that improve the prenatal care access and birth outcomes among the women and infants who rely on Medicaid coverage for prenatal care and delivery costs.

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 300 percent of the federal poverty level.

Data sources

Data for this report were derived from a matched file of the 2012 birth certificate and Medicaid paid claims for calendar year 2012. 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 DRGs 765 through 775. DRGs 765 through 775 are the reporting categories for vaginal and cesarean deliveries. The birth certificate was used for maternal demographic characteristics including age, race/ethnicity and public health region. The birth certificate was also used to obtain infant birth outcomes. Infant deaths were obtained from the infant death certificate and linked to the birth certificate.

Prenatal care (PNC) initiation can be calculated using data reported on the birth certificate. The calculation is derived from the first date of prenatal care and the woman's last menstrual period (LMP). It is as follows: (first date of PNC) – LMP +14. Days are then converted to months. Months one through 3 are coded as the first trimester, months 4 through 6 the second trimester and months 7 through 10 are coded as the third trimester. A category for no prenatal care was also created. Records with missing data were excluded from the final result.

In 2012 there were 38,686 resident births in Iowa. Medicaid reimbursed the labor and delivery costs of 40 percent of Iowa resident births (40.3%; n=15,598).

Results

Prenatal care initiation

Of all resident births, less than one percent (0.7%; n=263) of the records were missing the data needed to complete the PNC initiation variable. Also, less than one percent (0.590; n=172) of women reported that they did not receive any prenatal care.

Table 1. First trimester PNC initiated overall and by Medicaid status, Iowa 2012

Overall		Medicaid		Non-Medicaid	
Number	%	Number	%	Number	%
32,289	84.0	11,887	76.7	20,402	89.0

Overall, eighty-four percent (84.0%) of women initiated PNC within their first trimester (Table 1). Women with a Medicaid reimbursed birth were significantly less likely to initiate PNC during their first trimester compared to women with births that were not reimbursed by Medicaid (76.7% vs. 89.0%). Significance was determined at $p < 0.05$.

In examining PNC initiation by maternal race/ethnicity, regardless of Medicaid status, non-Hispanic white women were significantly more likely to initiate PNC during their first trimester (86.7%) than non-Hispanic Black women (67.9%), non-Hispanic women of other races (75.8%), or Hispanic women (71.8%) (Table 2).

At the same time, regardless of race/ethnicity, women with a Medicaid reimbursed delivery were significantly less likely to initiate PNC during their first trimester compared to women without a Medicaid reimbursed delivery.

Table 2. First trimester PNC initiated by maternal race/ethnicity, overall and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Race/ethnicity[1]	Number	%	Number	%	Number	%
Non-Hispanic whites	27,562	86.7	8,909	80.5	18,653	89.9
Non-Hispanic Blacks	1,345	67.9	1,068	66.5	277	73.7
Non-Hispanic women of other races	1,135	75.8	384	61.8	751	85.6
Hispanics	2,237	71.8	1,522	69.2	715	78.0
Total	32,279	84.1	11,883	76.7	20,396	89.0

[1] Due to missing race/ethnicity data Table 2 totals differ from Table 1 totals

By age, first trimester PNC initiation generally increased with age. Among women ages 19 and younger, there was not a significant difference in the percentage first trimester PNC by Medicaid status (Table 3).

Among women ages 20 and older, similar to race/ethnicity, women with a Medicaid reimbursed delivery were significantly less likely to initiate PNC during their first trimester compared to women without a Medicaid reimbursed delivery.

Table 3. First trimester PNC initiated by maternal age, overall and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Age	Number	%	Number	%	Number	%
17 and younger	453	67.9	362	68.2	91	66.9
18 to 19	1,394	75.2	1,112	75.7	282	73.3
20 to 24	7,106	79.0	4,404	76.7	2,702	83.2
25 to 29	11,139	86.6	3,531	78.6	7,608	90.9
30 to 34	8,628	88.0	1,721	76.8	6,907	91.3
35 and older	3,569	84.3	757	73.9	2,812	87.6
Total	32,289	84.0	11,887	76.7	20,402	89.0

Regardless of Public Health Region[2], women with a Medicaid reimbursed delivery were significantly less likely to initiate PNC during their first trimester compared to women without a Medicaid reimbursed delivery (Table 4).

Table 4. First trimester PNC initiated by public health region, overall and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Public Health Region	Number	%	Number	%	Number	%
PHR 1 – Central Iowa	10,626	85.7	3,440	75.5	7,186	91.5
PHR 2 - North Iowa	2,226	77.1	778	71.4	1,448	80.4
PHR 3 – Northwest Iowa	3,478	83.2	1,499	77.6	1,979	88.0
PHR 4 – Southwest Iowa	2,447	81.6	1,013	75.4	1,434	86.6
PHR 5 – Southeast Iowa	3,411	83.8	1,530	81.5	1,881	85.7
PHR 6 – East/Central Iowa	10,101	85.1	3,627	77.1	6,474	90.3
Total	32,289	84.4	11,887	76.7	20,402	89.0

[2] Click on Public Health Region for a regional map

Infant low birth weight[3]

Table 5. Infant LBW overall and by Medicaid status, Iowa 2012

Overall		Medicaid		Non-Medicaid	
Number	%	Number	%	Number	%
2,559	6.6	1,098	7.0	1,461	6.3

Overall, six percent (6.6%) of infants born during calendar year 2012 were born at a low birth weight (LBW) (Table 5). Infants born to women with a Medicaid reimbursed birth were significantly more likely to be born at a LBW than infants born to women with births that were not reimbursed by Medicaid (7.0% vs. 6.3%).

Table 6. Infant LBW by maternal race/ethnicity and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Race/ethnicity	Number	%	Number	%	Number	%
Non-Hispanic whites	2,046	6.4	766	6.9	1,280	6.1
Non-Hispanic Blacks	217	10.9	161	10.0	56	14.7
Non-Hispanic women of other races	117	7.8	50	8.0	67	7.6
Hispanics	178	5.7	121	5.5	57	6.2
Total	2,558	6.6	1,098	7.0	1,460	6.3

In examining infant LBW by race/ethnicity, although Hispanic women had the lowest percentage of LBW infants, this percentage was not significantly different from that of non-Hispanic white women (5.7% vs. 6.4%) (Table 6). By Medicaid status, non-Hispanic white women with a Medicaid reimbursed birth were significantly more likely to give birth to a LBW infant compared to non-Hispanic white women whose delivery was not reimbursed by Medicaid (6.9% vs. 6.1%). In contrast, non-Hispanic Black women whose delivery was not reimbursed by Medicaid were significantly more likely to give birth to a LBW infant compared to non-Hispanic Black women whose delivery was reimbursed by Medicaid (14.7% vs. 10.0%).

[3] Low birth weight refers to infants born at a weight of 2499 grams or less

Table 7. Infant low birth weight by maternal age, overall and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Age	Number	%	Number	%	Number	%
17 and younger	55	8.2	40	7.5	15	10.9
18 to 19	143	7.8	109	7.4	34	8.8
20 to 24	630	7.0	377	6.5	253	7.7
25 to 29	805	6.2	333	7.4	472	5.6
30 to 34	608	6.2	159	7.1	449	5.9
35 and older	318	7.5	80	7.7	238	7.4
Total	2,559	6.6	1,098	7.0	1,461	6.3

By age, infant LBW was highest among women less than age 19 and those 35 and older (Table 7). However, by Medicaid status, the percentage of infants born with LBW did not differ significantly among women less than age 19 and those 35 and older. Women ages 20 to 24 whose delivery was not reimbursed by Medicaid were significantly more likely to give birth to a LBW infant compared to women 20 to 24 whose delivery was reimbursed by Medicaid (7.7 vs. 6.5%). Whereas women with a Medicaid reimbursed birth ages 25 to 29 (7.4% vs.5.6%) and 30 to 34 (7.1% vs.5.9%) were significantly more likely to give birth to a LBW infant compared to women of the same ages whose delivery was not reimbursed by Medicaid.

Pre-term birth[4]

Table 8. Pre-term deliveries overall and by Medicaid status, Iowa 2012

Overall		Medicaid		Non-Medicaid	
Number	%	Number	%	Number	%
4,226	11.4	1,819	12.2	2,407	10.8

Overall, eleven percent (11.4%) of infants born during calendar year 2012 were pre-tern deliveries (Table 8). Infants born to women with a Medicaid reimbursed birth were significantly more likely to be born pre-term than infants born to women with births that were not reimbursed by Medicaid (12.2% vs. 10.8%).

Table 9. Pre-term deliveries and by maternal race/ethnicity and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Race/ethnicity	Number	%	Number	%	Number	%
Non-Hispanic whites	3,392	11.0	1,257	11.8	2,135	10.6
Non-Hispanic Blacks	295	15.6	226	14.8	69	18.9
Non-Hispanic women of other races	182	12.6	94	15.7	88	10.4
Hispanics	355	11.9	241	11.5	114	12.9
Total	4,224	11.4	1,818	12.2	2,406	10.8

In examining pre-term births by race/ethnicity, the overall percentage of pre-term infants born to non-Hispanic Black women was significantly higher than all other racial and ethnic groups (Table 9). By Medicaid status, non-Hispanic white women with a Medicaid reimbursed birth were significantly more likely to give birth to a pre-term infant compared to non-Hispanic white women whose delivery was not reimbursed by Medicaid (11.8% vs. 10.6%).

Likewise, non-Hispanic women of other races with a Medicaid reimbursed birth were significantly more likely to give birth to a pre-term infant compared to non-Hispanic women of other races whose delivery was not reimbursed by Medicaid (15.7% vs. 10.4%). In contrast, non-Hispanic Black women whose delivery was not reimbursed by Medicaid were significantly more likely to give birth to a pre-term infant compared to non-Hispanic Black women whose delivery was reimbursed by Medicaid (18.9% vs. 14.8%).

[4] Pre-term birth is defined as a birth prior to 37 weeks of gestation

Table 10. Pre-term births by maternal age, overall and by Medicaid status, Iowa 2012

	Overall		Medicaid		Non-Medicaid	
Age	Number	%	Number	%	Number	%
17 and younger	95	15.3	69	14.0	26	20.3
18 to 19	213	12.2	164	11.8	49	13.6
20 to 24	970	11.2	623	11.3	347	11.2
25 to 29	1,289	10.3	529	12.3	760	9.3
30 to 34	1,098	11.5	285	13.2	813	11.0
35 and older	561	13.7	149	15.1	412	13.3
Total	4,226	11.4	1,819	12.2	2,407	10.8

By age, the percent of pre-term infants was highest among women 17 and younger (15.3%) and significantly greater than the percentage of pre-term births among women of all other age groups (Table 10). The percent of pre-term infants born to women 35 and older (13.7%) was significantly higher than women between the ages of 20 to 34. By Medicaid status, differences in the percent of pre-term births were significant among women ages 17 and younger and those between the ages of 25 to 34. Specifically, women ages 17 and younger whose delivery was not reimbursed by Medicaid were significantly more likely to deliver pre-term compared to women 17 and younger with a Medicaid reimbursed delivery (20.3% vs. 14.0%). Women ages 25 to 29 (12.3% vs. 9.3%) and those 30 to 34 (13.2% vs. 11.0) with Medicaid reimbursed deliveries were more likely to deliver a pre-term infant compared to women whose delivery was not reimbursed by Medicaid.

Infant mortality[5]

Table 11. Infant deaths and infant mortality overall and by Medicaid status, Iowa 2012

Overall		Medicaid		Non-Medicaid	
Number	Rate	Number	Rate	Number	Rate
174	4.5	82	5.2	92	4.0

Overall, the infant mortality (IM) rate in Iowa for calendar year 2012 was 4.5 per 1000. The IM rate is significantly higher among infants born to women with a Medicaid reimbursed birth compared to women without a Medicaid reimbursed birth.

Table 12. Infant deaths and infant mortality rate among non-Hispanic whites and non-Hispanic Blacks, Iowa 2012

Non-Hispanic Black and Non-Hispanic White		Non-Hispanic White		Non-Hispanic Black		Non-Hispanic Black/ Non-Hispanic White ***ratio***
Number	Rate	Number	Rate	Number	Rate	Ratio
158	4.6	138	4.3	20	10.0	2.4

Because the number of infant deaths is relatively small, it was not feasible to examine IM by Medicaid status with race/ethnicity or maternal age. However, overall the IM rate among non-Hispanic Black infants is significantly higher than that of non-Hispanic white infants. The ratio of 2.4 means that non-Hispanic Blacks have 2.4 times the IM rate as non-Hispanic whites.

[5] The infant mortality rate is defined as the number of infant deaths prior to 364 days of life per 1000 live births.

Discussion

Entry into prenatal care in the first trimester of pregnancy is important because of its potential for improving the health of pregnant women and their newborns through early identification and treatment of medical conditions such as diabetes and high blood pressure. Early entry into prenatal care is also an opportunity for women to receive health education to promote folic acid supplement (to prevent certain birth defects) and to address behavioral factors such as poor nutrition and smoking.

Ideally, all pregnant women would start prenatal care in the first trimester. However, women with Medicaid reimbursed deliveries were less like to initiate PNC during their first trimester compared to women whose deliveries were not reimbursed by Medicaid. The difference in PNC initiation was consistent across maternal age, race/ethnicity, and public health region.

Likewise, overall, women with Medicaid reimbursed deliveries were more likely to give birth to a low birth weight infant, deliver their infant early, and to experience the death of an infant before its first birthday. At the same time, by race/ethnicity, birth outcomes varied by Medicaid status. For example, non-Hispanic Black women without a Medicaid reimbursed delivery were more likely to give birth to a LBW infant or deliver a pre-term infant. Keep in mind however, that LBW and pre-term delivery are not mutually exclusive.

By age, younger women without a Medicaid reimbursed delivery were more likely to give birth to a low birth weight infant or deliver their infant early compared to women with a Medicaid reimbursed birth. On the contrary, women between the ages of 25 to 34 with a Medicaid reimbursed delivery were more likely to give birth to a low birth weight infant or deliver their infant early compared to women without a Medicaid reimbursed birth.

The most striking difference in outcomes is that of IM, particularly among non-Hispanic Black infants. Non-Hispanic Blacks have 2.4 times the IM rate as non-Hispanic whites.

Recommendations

Although it may be difficult to draw a cause and effect relationship between early entry into PNC, adverse birth outcomes and infant mortality, early entry into PNC has the potential to improve the health of pregnant women and their newborns.

Outreach to women of child-bearing age, particularly young women, those of racial and ethnic minorities, and Medicaid eligible women, about the importance of starting prenatal care early in pregnancy is important. At the same time, it is important that once women get this message that a sufficient number of health care providers will accept Medicaid-eligible patients.

Programs to address the racial disparities in birth outcomes and infant mortality are paramount.

In addition to prenatal care, preconception and interconception care are important for all women and men to promote personal health and support healthy infant development if the woman becomes pregnant.

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.

Acknowledgements

The Iowa Department of Public Health acknowledges the Maternal and Child Health Epidemiology Program, Field Support Branch, Division of Reproductive Health, National Center for Chronic Disease Prevention and Public Health Promotion, Centers for Disease Control and Prevention for analytic support and preparation of this fact sheet.

ADDITIONAL INFORMATION

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

Iowa Department of Public Health
Bureau of Family Health
321 E. 12th Street
Des Moines, IA 50309

Toll-free at 1-800-383-3826

IDPH Iowa Department of Public Health

Iowans Working Together...
Doing What Works