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Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data

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Introduction

Colorado Medicaid is a public health insurance program for low-income children and families, pregnant women, persons with disabilities and the elderly. In 2006, there were over 335,000 women in Colorado on Medicaid, 39 percent of which were of child bearing age (15 to 44 years old).[1] Medicaid enables women who are pregnant to access the prenatal care they need for a healthy pregnancy and birth. Women who are pregnant and have an income up to 133 percent of the Federal Poverty Level (FPL) are eligible for the Medicaid program.

The Colorado Department of Public Health and Environment (CDPHE), in collaboration with the Centers for Disease Control and Prevention (CDC), collects extensive perinatal data on pregnant women annually through the Colorado Pregnancy Risk Assessment Monitoring System (PRAMS) including maternal characteristics, pregnancy risk factors, prenatal health care utilization and birth outcomes. These data are generalizable to all births in Colorado. In addition, PRAMS asks women to identify the type of primary health insurance used to cover their prenatal care. Using data from the 2006 PRAMS women's characteristics, pregnancy risk factors, health care utilization and birth outcomes were compared between women who were on Medicaid and women who were not on Medicaid.

Methodology

PRAMS is an ongoing, population-based surveillance system designed to supplement vital records and to generate state-specific perinatal health data. Each month, a stratified random sample comprised of approximately 5 percent of Colorado women who recently had a baby are selected from eligible birth certificates. This sample is stratified by region of residence (Denver Metro, Other Metro, Rural) and birth weight (low, adequate) to ensure an adequate sample in the rural and low birth weight categories. Selected women are asked to complete the PRAMS questionnaire, which addresses a variety of health and psychosocial issues such as prenatal care, maternal use of alcohol and cigarettes, breastfeeding, stress, and infant health.

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The data presented in this report represent live births to Colorado resident mothers between January 1, 2006 and December 31, 2006. In 2006, a total of 2,888 women were selected to participate in PRAMS and 2,023 (70%) of those women completed surveys. Significant differences were tested by examining the overlap of the 95 percent confidence intervals between the prevalence estimates of women who had prenatal care paid for by Medicaid (women on Medicaid) compared to women who had prenatal care paid for by a payer other than Medicaid (women not on Medicaid.) All differences reported here are statistically significant, marked by an asterisk, unless otherwise noted. All analyses were performed using SAS-callable SUDAAN 9.0.1 statistical software.

Methodology

Demographics

As seen below in Table 1, which describes Colorado women who recently gave birth, women on Medicaid differ on most demographic characteristics compared to women not on Medicaid.

Table 1. Demographic characteristics of mothers who recently gave birth by Medicaid status, Colorado PRAMS, 2006

Demographic	Medicaid %	Medicaid 95% CI^	Not on Medicaid %	Not on Medicaid 95% CI^
Maternal Age				
15-19 yrs*	16.2	(12.7, 20.5)	4.1	(2.9, 5.8)
20-24 yrs*	37.8	(32.2, 43.7)	14.1	(11.6, 17.2)
25-34 yrs*	38.2	(32.7, 44.0)	59.5	(55.7, 63.2)
35+ yrs*	7.8	(5.0, 11.9)	22.3	(19.3, 25.6)
Race/Ethnicity				
White/Non-Hispanic*	41.7	(36.3, 47.3)	73.1	(69.1, 76.8)
White/Hispanic*	48.2	(42.4, 54.1)	19.7	(16.4, 23.5)
Black	8.3	(5.1, 13.2)	3.1	(1.7, 5.6)
Asian American/Pacific Islander*	0.9	(0.3, 2.3)	3.6	(2.5, 5.3)
American Indian/Native Alaskan	1.0	(0.4, 2.2)	0.5	(0.2, 1.2)
Education				
<12 yrs*	41.5	(35.6, 47.7)	10.5	(8.0, 13.8)
12 yrs*	36.3	(31.1, 41.9)	19.5	(16.7, 22.7)
>12 yrs*	22.2	(18.1, 26.9)	69.9	(66.1, 73.5)
Marital Status				
Married*	51.3	(45.4, 57.1)	87.9	(85.0, 90.3)
Other*	48.7	(42.9, 54.6)	12.1	(9.7, 15.0)

^ Confidence Interval

* Statistically significant difference

Mothers in the PRAMS survey are categorized into four age categories: 15-19, 20-24, 25-34, and 35 and older. A greater proportion of women on Medicaid were under 25 years old (54.0%) than women not on Medicaid (18.2%). The greatest proportion of women in both groups was in the 25-34 year-old age category. The racial and ethnic breakdown of women was different between women on Medicaid and women not on Medicaid. A greater proportion of white/Hispanic women were on Medicaid when compared to women not on Medicaid. A lesser proportion of women on Medicaid identified themselves as white/Non-Hispanic (41.7%) and Asian American/Pacific Islander (.09%) than women not on Medicaid (73.1% and 3.6% respectively). Women in the survey are categorized based on the years of education they have completed. In 2006, a greater proportion of women on Medicaid (41.5%) had less than 12 years of education than women not on Medicaid (10.5%). A lesser proportion of women on Medicaid were married (51.3%) than women not on Medicaid (87.9%).

Perinatal Risk Factors

A healthy pregnancy is influenced by many factors. Identifying risk factors that affect pregnancy is an important part of preconception and prenatal care. Perinatal risk factors were compared between women on Medicaid and not on Medicaid, and are presented below in Table 2.

Table 2. Perinatal risk factors of mothers who recently gave birth by Medicaid status, Colorado PRAMS, 2006

	Medicaid %	Medicaid 95% CI^	Non Medicaid %	Non Medicaid 95% CI^
Unintended pregnancy*	58.2	(52.2-63.9)	29.9	(26.4-33.6)
Timeliness of prenatal care*	24.7	(20.0-30.1)	11.5	(9.3-14.1)
Multivitamin use during pregnancy*	17.8	(13.8-22.8)	39.7	(36.0-43.5)

^ Confidence Interval

* Statistically significant difference

Unintended pregnancy

Unintended pregnancy is defined as those that are unwanted (pregnancy not wanted at any time) or mistimed (pregnancy not wanted until some time in the future) at the time of con-

ception. Women who experience unintended pregnancies may be at risk for late or inadequate prenatal care, often smoke or drink because they may be unaware they are pregnant, or have an increased chance of having a baby with low birth weight. A greater proportion of women on Medicaid reported their pregnancy was unintended (58.2%) than women not on Medicaid (29.9%).

Timeliness of prenatal care

Prenatal care is important for a healthy pregnancy and baby. It is during prenatal care that health care workers are able to address many maternal and fetal problems. A greater proportion of women on Medicaid (24.7%) had not received prenatal care as early as they wanted when compared to women not on Medicaid (11.5%).

Multivitamin use during pregnancy

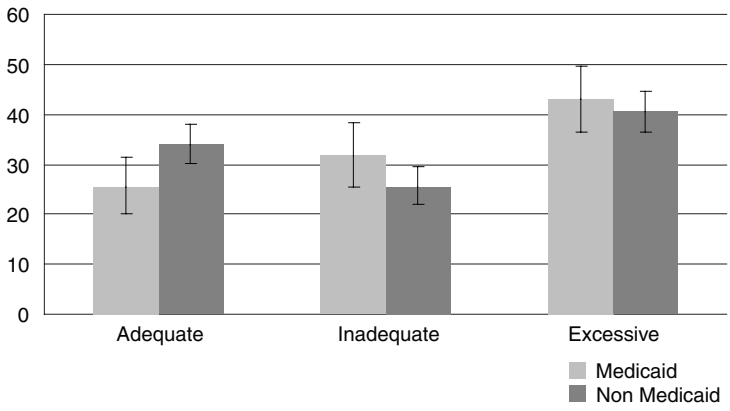
A multivitamin that includes at least 400 ug of folic acid a day has been shown to reduce the incidence of neural tube defects.[2] A lesser proportion of women on Medicaid (17.8%) took a multivitamin every day of the week during pregnancy than women not on Medicaid (39.7%).

Maternal weight gain during pregnancy

Inadequate weight gain during pregnancy has been identified as a common problem in Colorado, with about one in four women failing to gain adequately during pregnancy. Although gaining too much weight during pregnancy can lead to serious health problems such as gestational diabetes, gaining too little can also be problematic and is associated with an increased incidence of low birth weight. The Institute of Medicine uses a body mass index measure in combination with pregnancy weight gain to yield categories of inadequate, adequate and excessive weight gain.

As seen in Figure 1, there was no statistical difference between the proportion of women on Medicaid and women not on Medicaid in any of the weight gain categories.

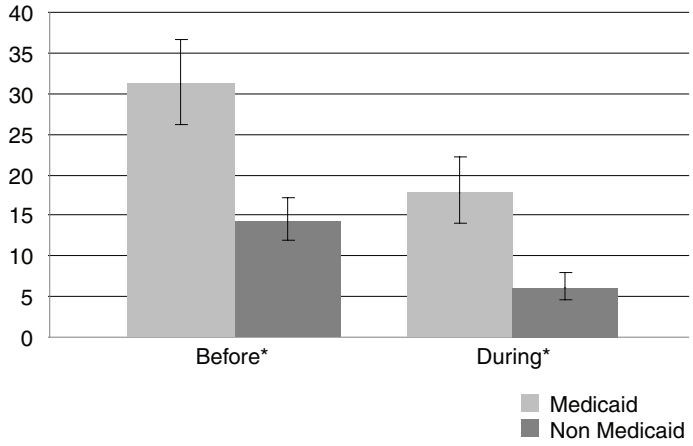
Figure 1. Weight gain during pregnancy in mothers who recently gave birth by Medicaid status (including 95% confidence intervals), Colorado PRAMS, 2006



Smoking before and during pregnancy

Smoking during pregnancy has been proven to be detrimental to the health of the fetus, including an increased risk of low birth weight. As seen in Figure 2, a greater proportion of women on Medicaid smoked cigarettes during the three months before (31.2%) and the last three months of their pregnancy (17.7%) when compared to women not on Medicaid (14.3% and 6.1%, respectively). The proportion of women who smoked during pregnancy decreased during pregnancy for both groups, however the decrease was larger for women on Medicaid.

Figure 2. Smoking before and during pregnancy in mothers who recently gave birth by Medicaid status (including 95% confidence intervals), Colorado PRAMS, 2006

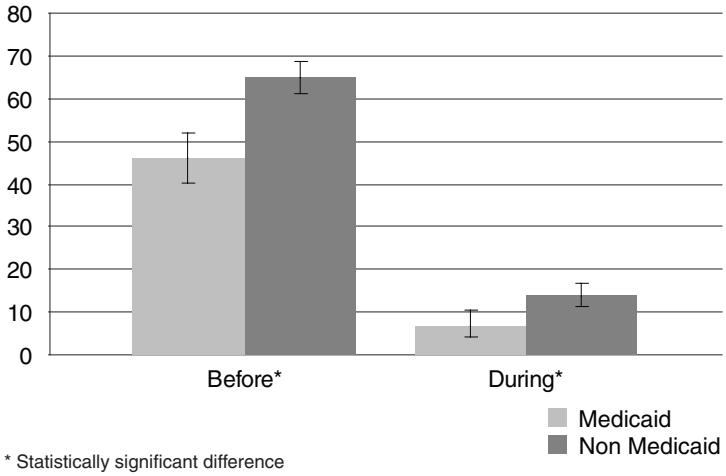


* Statistically significant difference

Drinking alcohol before and during pregnancy

Like smoking, drinking alcohol can have many adverse health effects on a fetus. Fetal alcohol syndrome (FAS) is a disease characterized by physical and mental disabilities and social or behavioral problems. As seen in Figure 3, a lesser proportion of women on Medicaid drank alcohol during the three months before (45.9%) and the last three months of their pregnancy (6.8%) when compared to women not on Medicaid (65.0% and 13.7%, respectively).

Figure 3. Drinking before and during pregnancy in mothers who recently gave birth by Medicaid status (including 95% confidence intervals), Colorado PRAMS, 2006



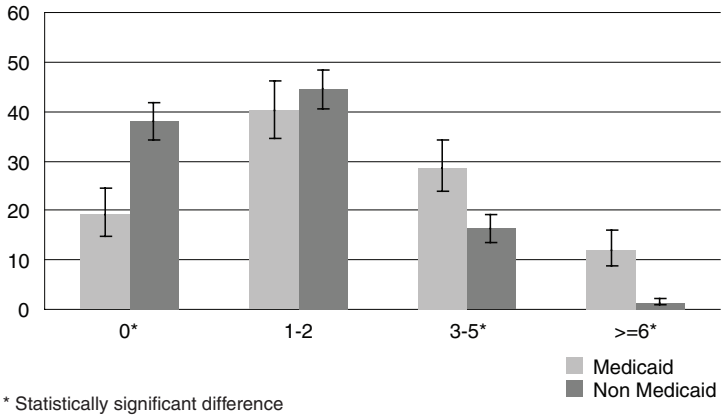
* Statistically significant difference

Stress during pregnancy

Stress is known to cause many health problems and stress during pregnancy can be detrimental not only to the mother but the fetus as well. Figure 4 shows the number of stressors that women reported during their pregnancies. The types of stressors include moving, unpaid bills, arguments with partners or husbands, hospitalization of a family member, job loss, death of a family member or friend, family problems, alcohol or drugs, separation or divorce from spouse, homelessness, jail, physical fighting and partner not wanting the pregnancy.

A greater proportion of women on Medicaid had a high number of stressors, three to five (28.7%) and greater than six (11.9%) stressors than women not on Medicaid (16.2% and 1.4%, respectively).

Figure 4. Total number of stressors reported by mothers who recently gave birth by Medicaid status (including 95% confidence intervals), Colorado PRAMS, 2006



* Statistically significant difference

Health Care During Pregnancy

Women who receive prenatal care have better birth outcomes than women who do not. It is during prenatal care that many aspects of a healthy pregnancy can be addressed. In the survey, mothers are asked if their health care worker talked with them about specific health and safety topics during their prenatal visits. As seen in Table 3, health care workers spoke with women who were on Medicaid about important pregnancy topics as frequently if not more frequently than women not on Medicaid.

Table 3. Health topics health care workers discussed with mothers who recently gave birth by Medicaid status, Colorado PRAMS, 2006

	Medicaid		Non Medicaid	
	%	95% C.I.^	%	95% C.I.^
How smoking could affect baby*	77.8	(72.3, 82.5)	65.5	(61.7, 69.2)
How drinking alcohol could affect baby	76.6	(71.2, 81.4)	70.5	(66.8, 74.0)
How using illegal drugs could affect baby*	77.0	(71.8, 81.4)	57.6	(53.7, 61.4)
Medicines that are safe during pregnancy	90.7	(87.4, 93.2)	90.9	(88.4, 92.9)
Testing for birth defects*	80.7	(75.4, 85.1)	92.7	(90.4, 94.5)
HIV testing*	81.6	(76.9, 85.6)	71.9	(68.2, 75.3)
Using a seat belt during pregnancy	59.1	(53.3, 64.7)	52.5	(48.6, 56.4)
Physical abuse by husband/partner*	58.9	(53.1, 64.5)	37.7	(34.1, 41.5)
Signs and symptoms of preterm labor	85.5	(81.0, 89.1)	88.1	(85.4, 90.4)
Early labor	87.2	(83.0, 90.5)	88.7	(86.1, 90.8)
Getting your baby's hearing tested*	66.1	(60.5, 71.4)	50.5	(46.6, 54.4)
Breastfeeding*	88.8	(84.9, 91.8)	80.1	(76.9, 83.0)
Postpartum birth control	84.2	(79.9, 87.8)	81.5	(78.3, 84.3)

^ Confidence Interval
* Statistically significant difference

A greater proportion of women on Medicaid discussed smoking, using illegal drugs, physical abuse, having their infant's hearing tested and breastfeeding with their health care worker than did women not on Medicaid, as seen above in Table 3.

Birth Outcomes

Birth outcomes are important indicators of the overall health of the infant population. Many birth outcomes for women in Colorado are close to or in excess of public health goals or professional recommendations. There was not a significant difference in most birth outcomes between women who were on Medicaid and not on Medicaid on most birth outcomes, as seen in Table 4.

Table 4. Birth outcomes for mothers who recently gave birth by Medicaid status, Colorado PRAMS, 2006

	Medicaid		Non Medicaid	
	%	95% C.I.^	%	95%C.I.^
Low birth weight	9.1	(7.9, 10.4)	7.7	(7.2, 8.2)
Ever breastfed*	85.5	(80.5, 89.3)	92.4	(90.1, 94.3)
Baby's hearing tested	91.5	(87.1, 94.5)	94.3	(92.1, 96.0)
Infant brought home in car seat	99.8	(99.4, 100.0)	99.4	(98.8, 99.7)
Home has working smoke alarm	93.5	(89.9, 95.8)	94.8	(92.6, 96.4)
There are no loaded firearms in house	96.6	(92.7, 98.4)	92.8	(90.6, 94.5)
Infant sleeps on back	79.2	(74.1, 79.2)	81.2	(78.0, 84.1)
Infant had well-baby checkup	97.6	(94.4, 99.0)	98.6	(97.6, 99.2)
Post partum depression*	4.0	(2.1, 7.8)	0.4	(0.2, 1.0)

^ Confidence Interval
* Statistically significant difference

Breastfeeding

A lesser proportion of women on Medicaid breastfed their babies after birth (85.5%) than women not on Medicaid (92.4%). While there is a significant difference between the two groups of women both groups are above the *Healthy People 2010* goal of 75 percent.

Postpartum Depression

A significantly greater proportion of women on Medicaid reported always feeling depressed, down or hopeless (4.0%) after giving birth than women not on Medicaid (0.4%).

Conclusions

A higher percentage of mothers in Colorado on Medicaid are younger, white/Hispanic, have less than 12 years of education and are not married than mothers not on Medicaid. Significantly more women on Medicaid enter into pregnancy with risk factors such as an unintended pregnancy, smoking before and during pregnancy, and being abused by a partner or spouse than women not on Medicaid.

Even though more women on Medicaid enter into prenatal care later than they would like to when compared to women not on Medicaid, women on Medicaid speak with their health care worker about important pregnancy-related topics such as smoking, drinking, using illegal drugs, safety issues, breastfeeding, testing for HIV and birth defects as often if not more frequently than women not on Medicaid.

Despite having more risk factors during pregnancy, birth outcomes for women on Medicaid are not significantly different than women not on Medicaid, and meet or exceed public health goals and professional recommendations such as having their baby's hearing tested and bringing their infant home in a car seat. The two birth outcomes where women on Medicaid differ from women not on Medicaid are breastfeeding

and post partum depression. A lesser proportion of women on Medicaid breastfed their children than women who were not on Medicaid. However the proportion of women on Medicaid who breastfeed is still 10 percent greater than the *Healthy People 2010* goal of 75 percent.

Medicaid is an important public health insurance program that ensures medical care to a high risk group of women and their children. Based on the 2006 PRAMS survey data, women on Medicaid received the same if not slightly better prenatal counseling from their health care worker and have birth outcomes similar to women not on Medicaid.

References

1. Health Care Policy and Financing, Medicaid Management Information System, 2006.

2. Centers for Disease Control. Recommendations for the use of folic acid to reduce the number of cases of spina bifida and other neural tube defects. MMWR 1992;41 (No. RR-14).