

GESTATIONAL WEIGHT GAIN - METHOD OF DELIVERY and PREGNANCY OUTCOMES



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Fact Sheet Purpose

The purpose of this fact sheet is to summarize the major pregnancy outcomes according to gestational weight gain (GWG) among Iowa women with Medicaid reimbursed births during 2011. This information may be used to guide decision makers in implementing programs that improve the health outcomes of the women and infants who rely on Medicaid coverage.

Background

Medicaid is a health insurance program that includes prenatal care coverage for low income pregnant women. It is funded by both state and federal dollars and is administered by the State of Iowa's Department of Human Services. In Iowa, pregnant women may be eligible for Medicaid if their household income is below 300 percent of the federal poverty level.

In 2009, the Institute of Medicine (IOM) re-examined the guidelines for how much weight should be gained during pregnancy. This change in recommendations was prompted by a growing awareness that a large percentage of today's women are entering pregnancy overweight or obese and that they are gaining too much weight during pregnancy. This adds to the already high

burden of chronic diseases associated with excess weight and has potentially negative consequences for the baby.

Current recommendations from the IOM advise women to gain weight according to their pre-pregnancy Body Mass Index (BMI). See Table 1 for the new guidelines. Note that teenagers who are pregnant are advised to follow the same recommendations as are provided for adult women. Recommendations for women having twins are provisional. Women who are pregnant with twins in the normal BMI category should aim to gain 37-54 pounds; overweight women, 31-50 pounds; and obese women, 25-42 pounds. Recommendations for underweight women pregnant with multiples are not available at this time.

TABLE 1 New Recommendations for Total and Rate of Weight Gain During Pregnancy, by Pre-Pregnancy BMI

Pre-Pregnancy BMI	BMI (kg/m ²)	Total Weight Gain Range (lbs)	Rates of Weight Gain 2nd and 3rd Trimester (Mean Range in lbs/wk)
Underweight	<18.5	28-40	1 (1-1.3)
Normal weight	18.5-24.9	25-35	1 (0.8-1)
Overweight	25.0-29.9	15-25	0.6 (0.5-0.7)
Obese (includes all classes)	≥30.0	11-20	0.5 (0.4-0.6)

Consequences of Inappropriate Weight Gain

Women with a low pre-pregnancy BMI and low GWG are more likely to have a low birthweight infant and experience a preterm birth. During the second and third trimesters low maternal weight gain is a determinant of fetal growth, and is associated with smaller than average birthweights and an increased risk of delivering an infant with fetal growth restriction.

Overweight and obese women with excessive GWG are at risk for increased risk of first trimester and recurrent miscarriages, increased risk of birth defects including neural tube defects, anencephaly, anomalies of the heart and intestinal tract, omphaloceles, orofacial clefts, and multiple congenital anomalies of the central nervous system, difficulty in perinatal ultrasound diagnosis, stillbirth, preeclampsia, gestational hypertension, gestational diabetes, Type II diabetes, preterm delivery, cesarean section, increased risk with use of anesthesia, failure of epidural insertion, difficulty monitoring maternal blood pressure, macrosomic infant, slow progress in labor, difficulty in fetal monitoring, increased risk of operative vaginal delivery, increased risk of shoulder dystocia, increase risk of wound infections, increase risk postpartum hemorrhage, breastfeeding difficulties, prolonged hospital stay and increased risk of thromboembolism. Weight loss before pregnancy is known to reduce these risks.

Data Sources

Data for this report was derived from a matched file of the 2011 birth certificate and Medicaid paid claims for calendar year 2011. Paid claims were used for maternal diagnostic groups (DRGs) 370 through 375, which are the reporting categories for vaginal and cesarean deliveries. The birth certificate was used for maternal demographic characteristics; including age, race, ethnicity and level of education, as well as pre-pregnancy BMI, GWG, method of delivery and pregnancy outcomes. Medicaid status was based on a paid claim for any one of the delivery related DRGs. There were 15,317 births in Iowa reimbursed by Medicaid in 2011. Please note that missing data were not included in the analyses and that percentages are rounded, as such, total values may not equal 15,317 births or 100%, respectively.

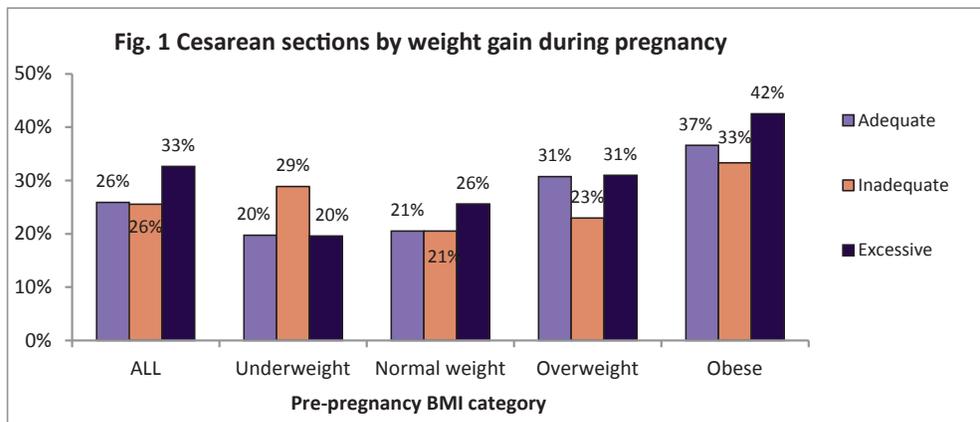


Cesarean Sections According to GWG Among Iowa Medicaid Mothers

Cesarean Sections

In 2011, 29% (n=4,463) of all Medicaid reimbursed deliveries were by cesarean section. Of these, 58 percent (n=2,587) gained an excessive amount of weight during pregnancy, regardless of pre-pregnancy BMI category (Figure 1).

In all pre-pregnancy BMI categories, except underweight women, the majority of cesarean sections were with women who had excessive GWG. In underweight women, those who gained an inadequate amount had a greater percentage of cesarean sections than other underweight women (29%, n=54).

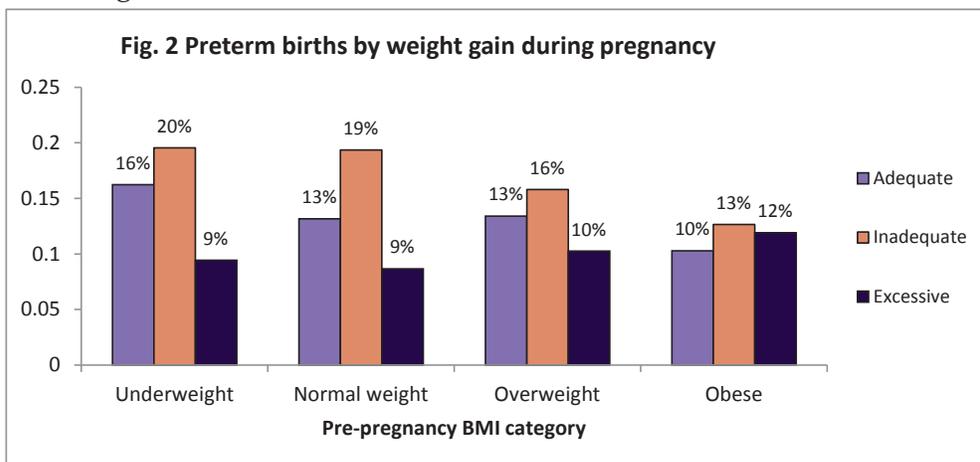


Birth Outcomes According to GWG Among Iowa Medicaid Mothers

Preterm Births

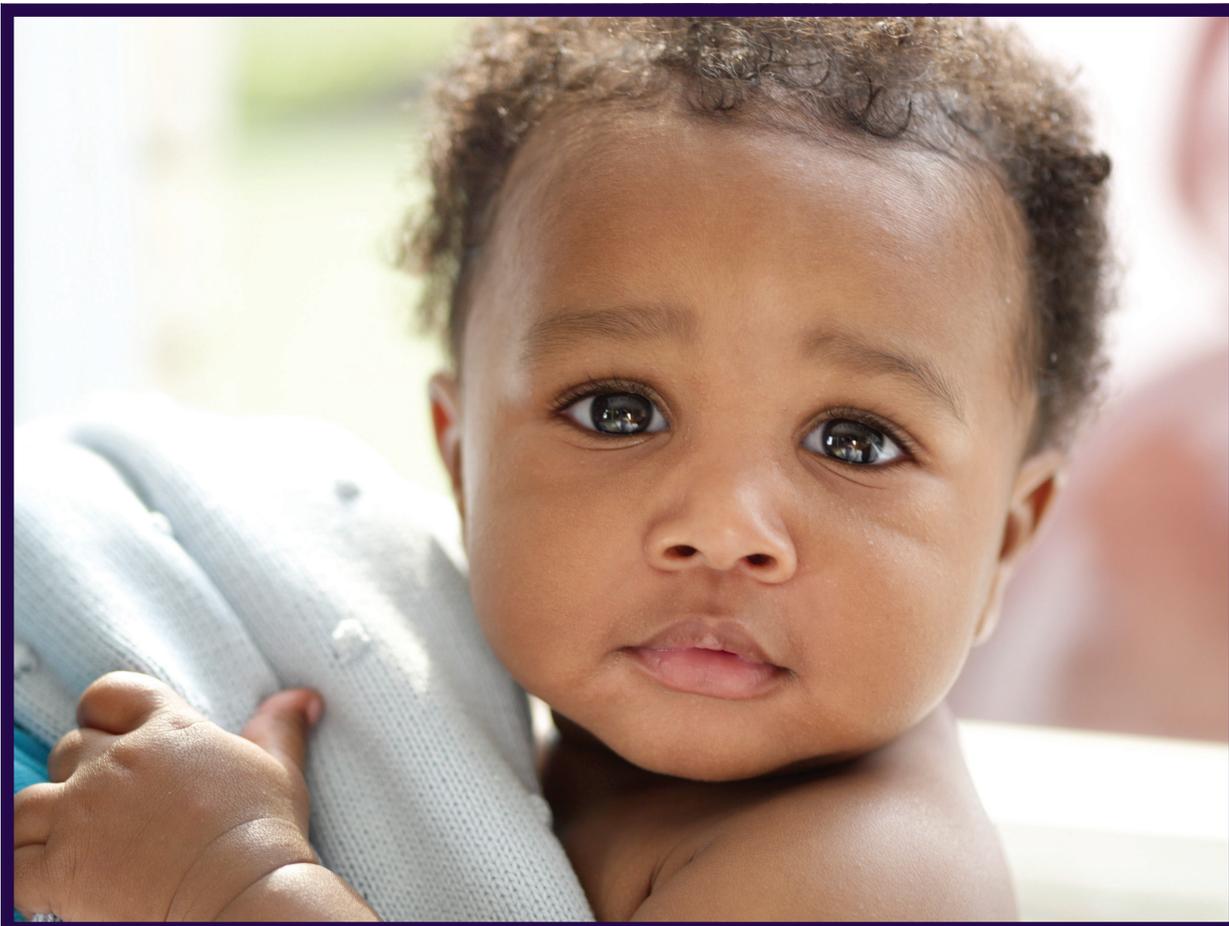
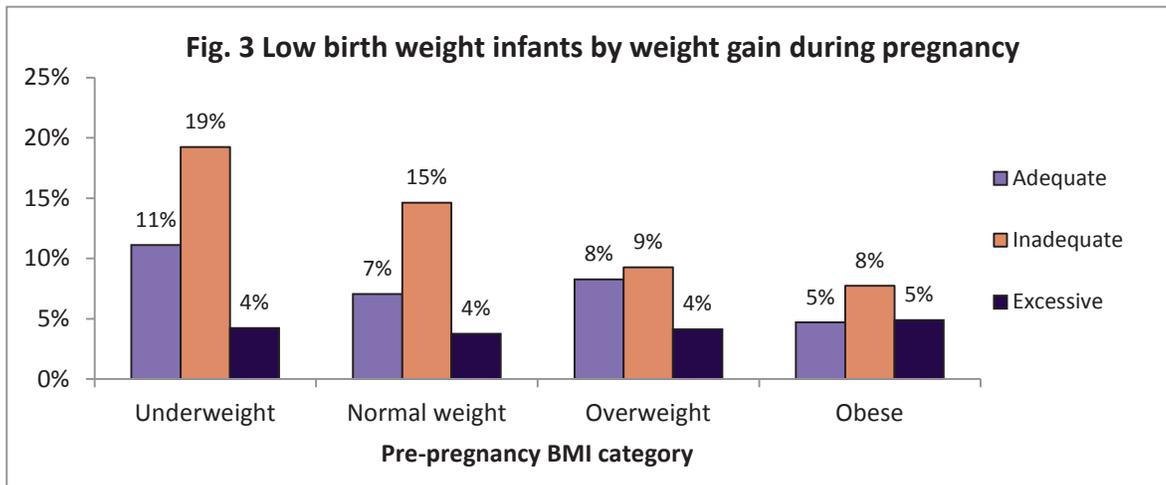
In 2011, 12% (n=1,816) of Medicaid reimbursed births were preterm. Regardless of pre-pregnancy BMI categories, the majority of preterm births were among women who had excessive GWG (44%, n=785).

However, looking at within pre-pregnancy BMI categories, those women who had inadequate GWG had the highest proportion of preterm births in each category (Figure 2). Among underweight and normal weight women, inadequate GWG accounted for 20% (n=35) and 19% (n=259), respectively, of preterm births for women in those pre-pregnancy BMI categories. There was little variation in the number of preterm births to obese women, regardless of GWG.



Low birthweight infants

In 2011, 7% (n=999) of Medicaid reimbursed births resulted in low birthweight infants. Regardless of pre-pregnancy BMI, there was little variation in the percentage of low birthweight infants according to whether women gain an adequate, inadequate or excessive amount of weight during pregnancy (Figure 3). However, when looking at within pre-pregnancy BMI categories, the proportion of low birthweight babies was greater among those women who had an inadequate GWG for all categories. Of the underweight women, 19% (n=54) of low birthweight infants were to those who had inadequate GWG. For obese women, this was 8% but the frequency was higher (n=1,094).



Discussion

Birth outcomes are associated with women's pre-pregnancy BMI categories. Following IOM recommendations for GWG can decrease the likelihood for having a preterm birth, delivering a low birthweight baby or delivering via cesarean section. All of these outcomes have long term consequences. Premature babies are at higher risk for health and developmental problems, including cerebral palsy, mental retardation, and visual and hearing impairments amongst others. Low birthweight babies are at risk

for necrotizing enterocolitis, respiratory distress syndrome and other serious problems during the newborn period. Mothers who deliver via cesarean section have longer recovery periods and longer hospital stays and are at increased risk for infection and hemorrhage. Achieving a healthy BMI before pregnancy and gaining the recommended amount of weight can help to prevent these outcomes.

Recommendations

For Women:

- Work towards a healthy BMI before becoming pregnant.
- Follow the IOM guidelines for weight gain during pregnancy. Eating a healthy diet and physician recommended exercise can help.
- Achieve a healthy BMI postpartum. Talk to your doctor about resources that may be available to help. Breastfeeding can help you to lose weight after delivery and prevent infant obesity.



For Providers:

- Adopt the IOM weight gain recommendations and ensure that this information is available to all women of child-bearing age as part of preconception health care.
- Counsel pregnant women on physical activity as appropriate to the individual woman's needs. The American College of Obstetrics and Gynecology (ACOG) recommends 30 minutes of physical activity per day during pregnancy. The American Diabetes Association has endorsed exercise as 'a helpful adjunctive therapy' for gestational diabetes.
- Talk to women about their reproductive life plan to prevent unintended pregnancies. Recommend an appropriate form of birth control to help space pregnancies. Pregnancy spacing allows women to attain a healthy weight prior to a future pregnancy.
- Refer women to a Title V Maternal Health agency for dietary counseling. Refer to the link below for more information. http://www.idph.state.ia.us/hpcdp/common/pdf/mh_map.pdf

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/Bureau of Family Health and Bureau of Health Statistics. The purpose of this project is to monitor and describe the characteristics of pregnant Medicaid recipients, their receipt of pregnancy related services, and their birth outcomes. The resulting information can be used to improve programs and policies to benefit Medicaid recipients.

Additional Information

For additional information or to obtain copies of this fact sheet, write or call the Iowa Department of Public Health, Bureau of Family Health, at 321 East 12th Street, Des Moines, IA 50319 or toll-free at 1-800-383-3826.

References:

Centers for Disease Control and Prevention (2006). Recommendations to improve preconception health and health care — United States: a report of the CDC / ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. *MMWR* 2006 55(No. RR-6):[1-22].

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