

Characteristics of  
**GESTATIONAL  
WEIGHT GAIN**



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## Fact Sheet Purpose

The purpose of this fact sheet is to summarize the characteristics of 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 adult women. Recommendations for women having twins are provisional. Women 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 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 <sup>2</sup> )	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 first trimester and recurrent miscarriages, birth defects including neural tube defects, anencephaly, anomalies of the heart and intestinal tract, omphaloceles, orofacial clefts, 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, operative vaginal delivery, shoulder dystocia, wound infections, postpartum hemorrhage, breastfeeding difficulties, prolonged hospital stay and thromboembolism. Weight loss before pregnancy is known to reduce these risks.

Postpartum weight retention can lead to maternal obesity and complications during subsequent pregnancies. Women who gain one BMI unit (approximately 7 lbs.) are at a 20-40% higher risk of developing gestational diabetes, gestational hypertension and having a large for gestational age birth during their next pregnancy. Additionally, up to 50% of women who develop gestational diabetes may develop Type II diabetes within 5 years of pregnancy.

## 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 and GWG. 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.



## Description of GWG in Medicaid Mothers in Iowa

Over 50% of Iowa Medicaid mothers in 2011 were either overweight (25%, n=3,826) or obese (30%, n=4,526) before becoming pregnant (Fig. 1). Normal weight women accounted for 41% (n=6,306) of Medicaid mothers in 2011, while underweight women were 4% (n=659) of the population.

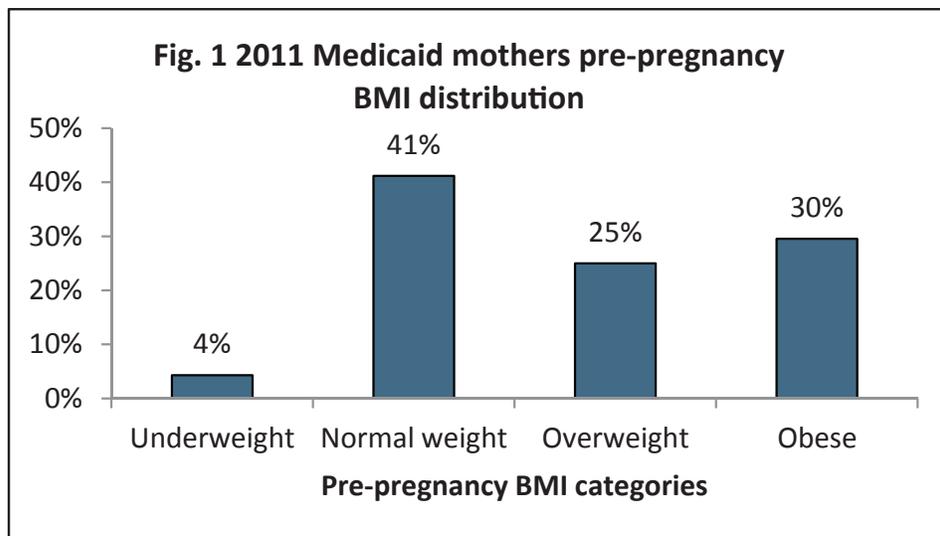
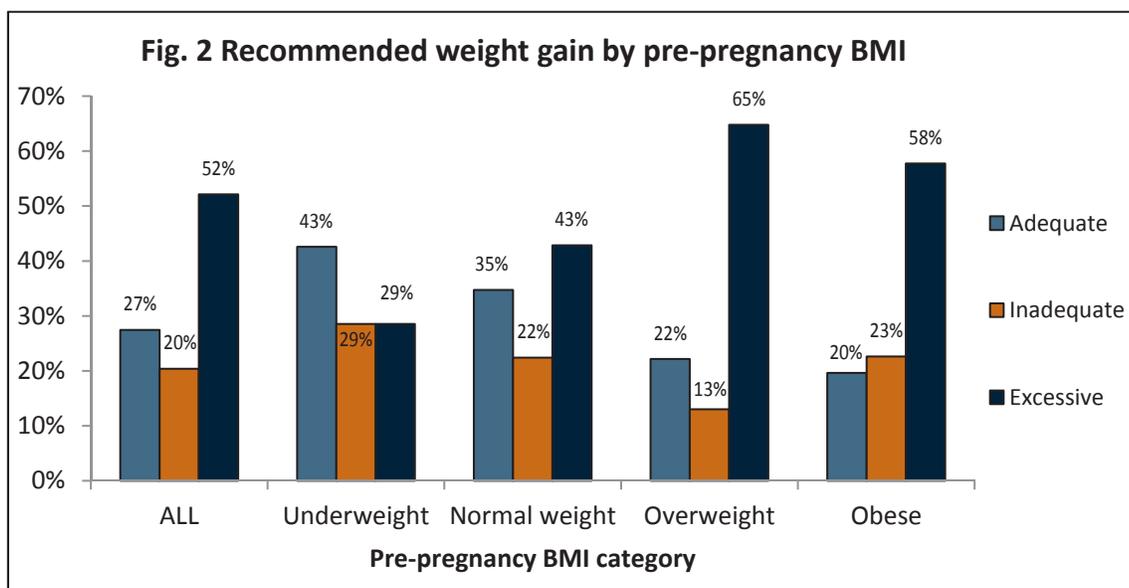
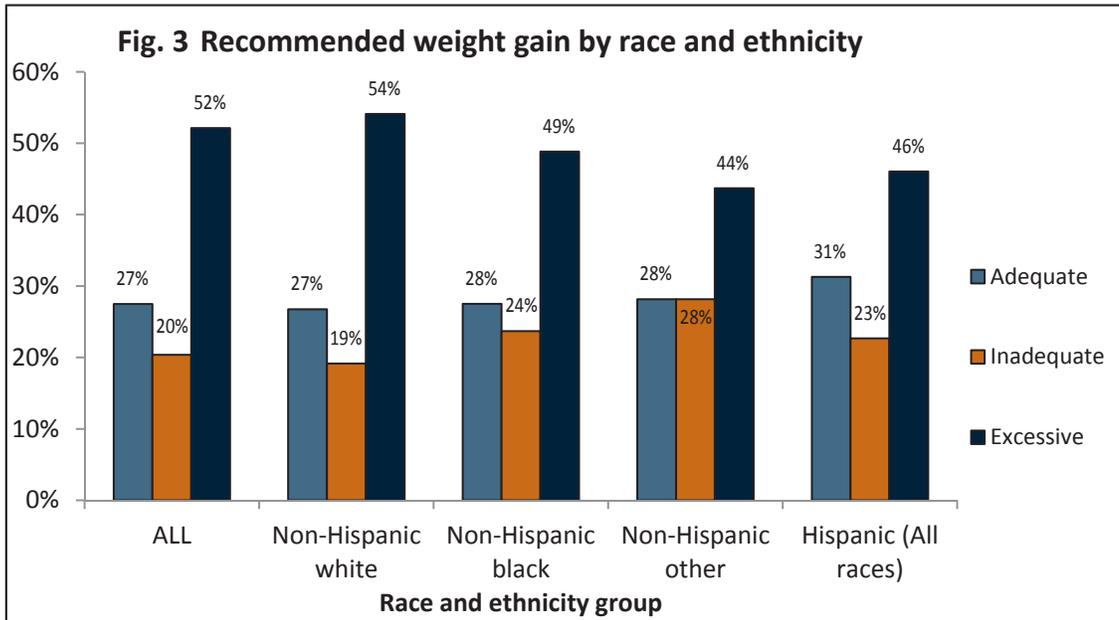


Figure 2 illustrates GWG according to the mother's pre-pregnancy BMI. Overall, 27% (n=4,185) of women gained the amount of weight recommended by the IOM according to their pre-pregnancy BMI. Women who were underweight or normal weight had the highest proportion of adequate weight gain (43%, n=279 and 35%, n=2,185, respectively). The majority of women had excessive GWG, with the highest proportion of excessive GWG being in those women who were overweight (65%, n=2,471) or obese (58%, n=2,575) before their pregnancy.

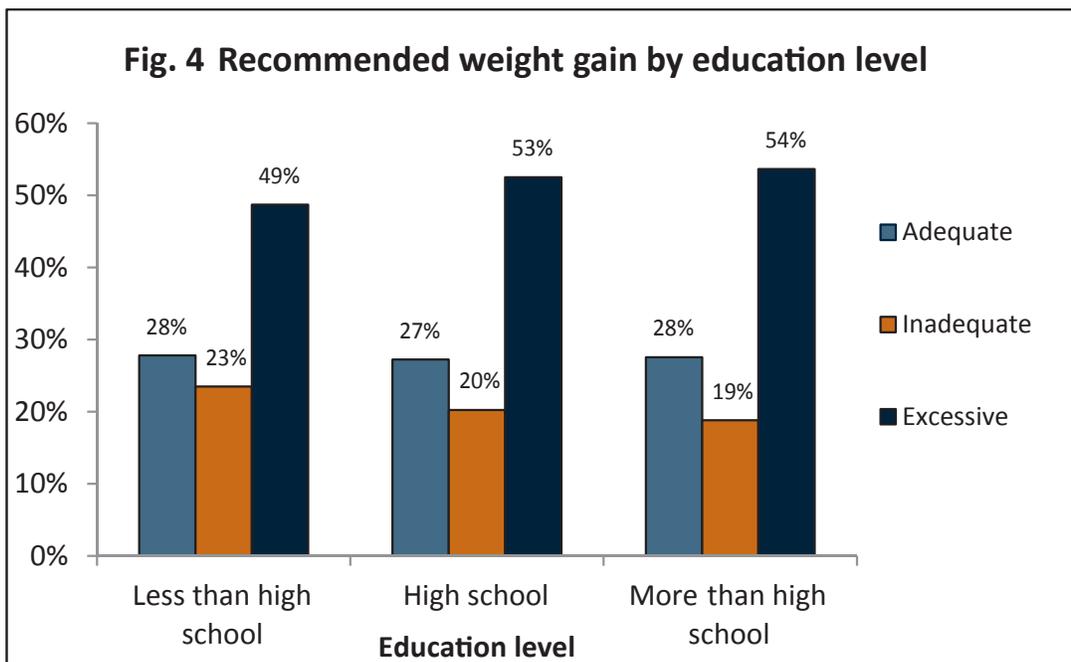


The proportion of women who gained adequate, inadequate or excessive weight according to the IOM guidelines did not differ greatly by race, ethnicity, education level, age or receipt of WIC benefits.

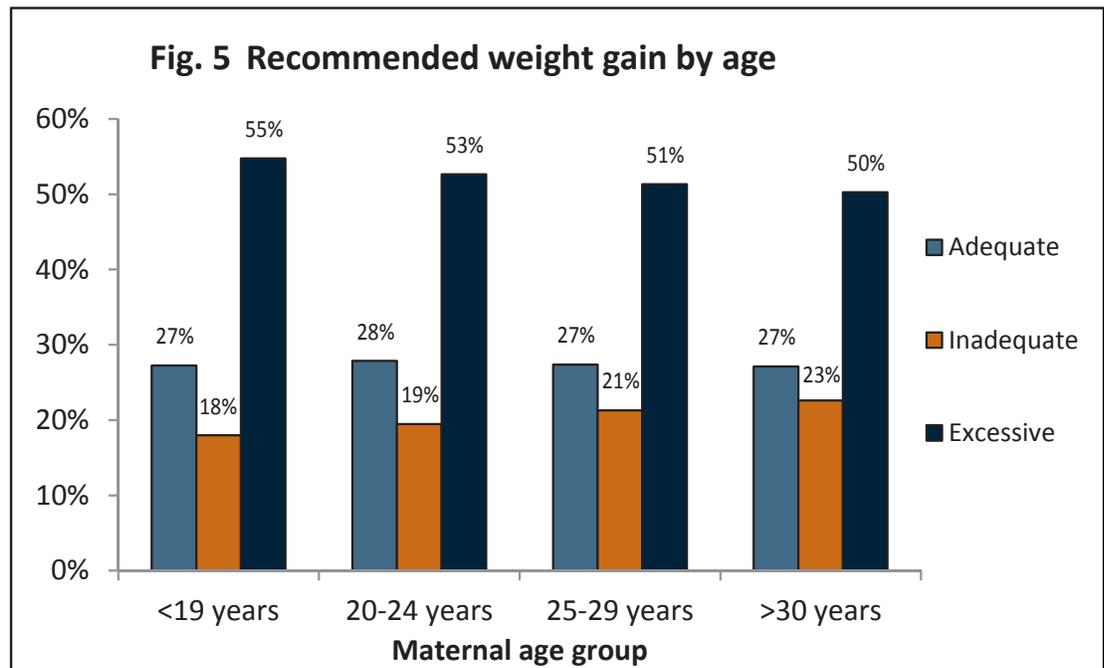
Non-Hispanic white women had the highest proportion of excessive GWG, however, there was little variation in the number of women with excessive GWG across all groups (range: 54 to 46%). Similarly, all racial and ethnic groups were within 4 percentage points of each other for adequate GWG (range: 27 to 31%).



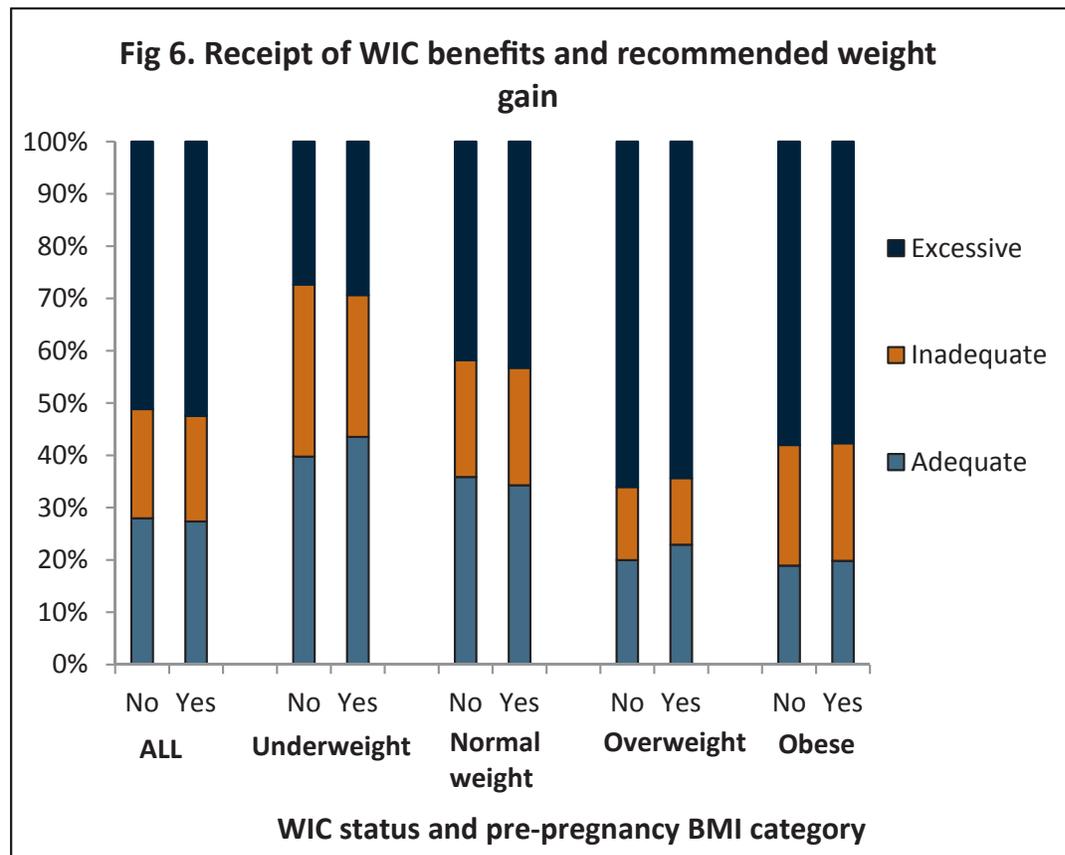
The proportion of women with adequate, inadequate and excessive GWG was similar for those with less than a high school education, those with a high school education or more than a high school education. Adequate GWG ranged from 27 to 28%, while inadequate GWG and excessive GWG ranged from 19 to 23% and 49 to 54%, respectively.



Age also did not influence whether or not women followed the IOM GWG recommendations. The range of adequate GWG for all age groups (under 19, 20-24, 25-29 and over 30 years of age) was 27 to 28%, while inadequate GWG and excessive GWG ranged from 18 to 23% and 50 to 55%, respectively.



The proportion of women who had adequate, inadequate and excessive GWG was similar for those women who received WIC benefits and those who did not. This was true across all pre-pregnancy BMI categories.



## Discussion

Women with Medicaid coverage are not gaining weight according to the 2009 IOM guidelines. Only 27% of women gained an adequate amount of weight during their pregnancy for their pre-pregnancy BMI category. Twenty percent had inadequate weight gain, while 52% gained an excessive amount of weight during pregnancy based on their pre-pregnancy BMI category. Gaining too much weight during pregnancy can impact both the mother's and the infant's health. Entering pregnancy at a healthy

BMI can reduce the risk of complications including preterm birth, having a low birthweight baby, gestational diabetes and hypertension, and delivering by cesarean section, amongst other challenges. Excessive GWG can have long term consequences, including increased risk for Type II diabetes, gestational diabetes in a future pregnancy and childhood obesity for the infant. Achieving a healthy BMI before pregnancy is essential to the long-term health of both mother and child.

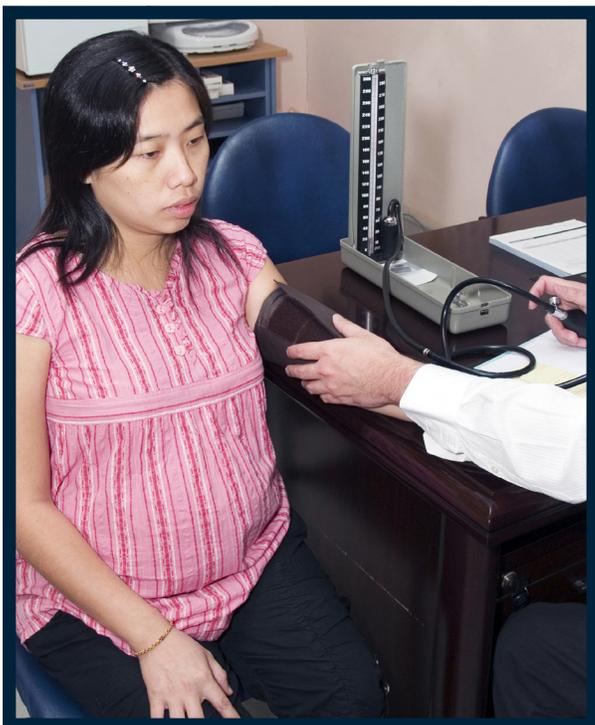
## Recommendations

### 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.
- 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](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].

Rasmussen, K., & Yaktine, A. (2009). *Weight gain during pregnancy: Reexamining the guidelines*. Washington D.C.: The National Academies Press.

Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. (2011, October 17). Preventing and managing chronic disease to improve the health of women and infants. Retrieved from <http://www.cdc.gov/reproductivehealth/WomensRH/>

