



# Assessing Gestational Weight Gain Patterns and Nutritional Services Available to Pregnant Women at Optimus Healthcare

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## Background

Excessive Gestational Weight Gain (E-GWG) can lead to maternal health complications, including gestational diabetes, pre-eclampsia and increased risk for C-section. This study seeks to assess the magnitude of E-GWG among Optimus clients, evaluate staff awareness of nutrition services available for pregnant women at Optimus, and identify approaches to enhancing pregnancy outcomes through optimum GWG that can be made available to Optimus clients.

## Methods

- Electronic Health Records (EHR) of women who utilized Optimus' prenatal services in 2013 were retrieved and de-identified (n=1068).
- Women were excluded if they were missing (a) 1<sup>st</sup> trimester visit with weight, (b) 3<sup>rd</sup> trimester visit with weight, (c) delivery date, or (d) height. Complete data was available for 175 women.
- Analyses were performed using the statistical programs SAS 9.3 and Stata 12.0.
- An anonymous, online survey was distributed to Optimus staff in the OB/GYN departments of two clinics (n=17) to describe knowledge of current nutritional services available to pregnant Optimus clients, and identify suggestions for improvement. Five staff completed the survey.

## Objectives

1. Determine the weight change pattern of pregnant women who used Optimus' prenatal services in 2013.
2. Characterize staff knowledge of nutrition services currently available for the program's clients.
3. Assess potential areas of improvement in these nutrition services.





## Results: Medical Record Data

- 22.6% of Optimus clients gained less than recommended
- 32.2% gained within the recommended guidelines
- 45.0% gained more than recommended
- Average weight gain varied significantly by baseline BMI (see Table).
- Baseline BMI was the only significant predictor of pregnancy weight gain in a multiple regression analysis controlling for maternal age, education and previous births. Race, ethnicity and gestational age at first visit were not significant predictors of pregnancy weight gain.
- Women who were overweight (BMI 25.0-29.9) at baseline had more than 5 times the risk of excessive weight gain (adjusted OR=5.1), while women who were obese (BMI $\geq$ 30.0) at baseline had more than 4 times the risk of excess weight gain in comparison with women who were normal weight at baseline.

Baseline BMI Category	N(%) N=175	ACOG recommended range of total weight gain per category (lbs)	Range of actual weight gain from trimester 1 o 3 (lbs)			
			mean	std	min	max
Underweight (<18.5)	4 (2.3%)	28-40	38.0	7.6	30.0	45.0
Normal weight (18.5-24.9)	56 (32%)	25-35	28.1	13.2	-1.0	71.0
Overweight (25-29.9)	51 (29%)	15-25	28.9	14.2	-2.0	65.0
Obese (>29.9)	64 (36.6%)	11-20	20.4	17.1	-44.0	58.0

## Results: OB-GYN Staff Survey

Cost, time and emotional barriers were identified as potential barriers to caring for pregnant women with unhealthy gestational weight gain at Optimus. Staff identified “moms groups”, nutritionist consultation for all pregnant women, family-centered care and mid-day classes as resources they would like to see implemented at/through Optimus to support healthy GWG in its pregnant clients. Optimus’ staff believe that patients should be offered Group classes on nutrition and pregnancy (60%, n=3), and also should be offered resources for pregnancy-friendly exercise (40%, n=2).

### Staff perceptions of clients’ GWG:

*What percentage of clients experience GWG that is too low?*

- 3 of 5 said 0–10% of clients
- 2 of 5 said 10–30% of clients

*What percentage of clients experience GWG that is too high?*

- 1 of 5 said 10–30% of clients
- 4 of 5 said 40–60% of clients

## Recommendations

- Special nutrition education services should be offered to women who represent the highest risk groups at Optimus (women who are overweight or obese at baseline, teenage mothers and those of advanced maternal age, those with only middle school education or lower, as well as African American women).
- Nutritionist consultation for all pregnant women, family-centered care, mid-day classes and exercise programs are resources that Optimus could offer its patients.
- However, cost, time and emotional barriers should be accounted for when designing nutritional and other support services for Optimus' clients.
- Efforts are needed to ensure accurate and complete data in the EMR system for future analyses to be more complete.

## Conclusion

As has been found in other settings, women who are overweight or obese prior to pregnancy are at a significantly increased risk of excessive gestational weight gain. Interestingly, race, ethnicity and maternal age were not significant predictors of excessive weight gain.

Optimus staff consider that increased availability of nutrition education services, and increased variety in format and scheduling (group, daytime) are important approaches to consider in addressing the challenge of unhealthy weight gain in this population.

## Limitations

- 1) Complete data was available on less than 20% of the women who received prenatal care in 2013. Missing data and errors in the EMR entries seriously restricted the available subjects, and we do not know how representative of the entire Optimus OB/GYN client base the patients with complete data are.
- 2) Low staff survey response rate (29.4%)

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## References

<sup>1</sup>Weight gain during Pregnancy: Re-examining the Guidelines. Institute of Medicine. May 2009. Available at [www.iom.edu/pregnancyweightgain](http://www.iom.edu/pregnancyweightgain).