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## Appropriate Gestational Weight Gain

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UNIVERSITY OF SAN DIEGO

Hahn School of Nursing and Health Science

DOCTOR OF NURSING PRACTICE PORTFOLIO

by

Eugelyn Opalec Santos

A portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE

UNIVERSITY OF SAN DIEGO

In partial fulfillment of the

requirements for the degree

DOCTOR OF NURSING PRACTICE

May/2016

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### **Acknowledgement**

I would like to express my sincerest gratitude to everyone who has supported me during my pursuit of a Doctor of Nursing Practice degree from the University of San Diego.

First and foremost, I would like to thank God for helping me choose this path. I had my doubts a few times during the past three years, but you carried me during my toughest times and lit my path to graduation. I am truly blessed.

Next, I would like to thank my family. To my father and grandparents in heaven, thank you for watching over me. To my mother, who worked so hard to make ends meet just to see her children succeed. To my husband, Chris, thank you for being so patient, understanding, and for your occasional help with editing. To my children, Catherine, Cameron, and Christian, I want you to know that hard work does pay off. To my siblings, thanks for watching my children when I needed to do school related stuff.

To my professors, thank you Dr. Susan Instone, your support, guidance, encouragement, and DNP project related revisions was instrumental to my graduation. You are a true role model and I was privileged to have you as my faculty chair. Thank you to Joelle Lackey and Kristin Spivey for allowing me to participate in the Healthy Women Healthy Children program. To Dr. Sue Hoyt, thank you keeping me on track to graduation and for all your revisions. To Dr. Mary Jo Clark, thank you for all your input during my search for a DNP project. Although you retired from academia, you still cared enough to check in on me. It truly meant a lot to me. Lastly, thank you Dr. Shelley Hawkins for accepting me into the Doctor of Nursing Practice program.

### **Purpose in Pursuing the Doctor of Nursing Practice**

Many years ago, I worked as a clinical laboratory scientist, and after five years, I felt there was another career meant for me. During this time of awakening, sadly my father was diagnosed with Non-Hodgkin's Lymphoma. Also at that time my husband and I were currently helping with my mother-in-law's residential care facility. I found that the compassion and kindness the nurses exhibited while they cared for my father, and the rewarding feeling I too felt caring for adults with developmental disabilities paved the path towards my pursuit of a degree in nursing. I eventually graduated with a second Bachelor of Science in Nursing from San Diego State University.

### **Nursing Experience**

For almost four years, I worked as a registered nurse at Rady Children's Hospital neonatal intensive care unit (NICU). In that unit, I was able to apply my undergraduate education to my nursing practice. The nursing process of assessment, diagnosis, planning, implementation, and evaluation was essential in providing the neonates I cared for with excellent care. While working in the NICU, I had many opportunities to work with neonatal nurse practitioners and physicians. I thought of possibly pursuing a career in medicine, but the desire changed after seeing first-hand how the medical and nursing model differed. The nursing model appeared more patient-oriented, which was more in-line with my beliefs and values.

### **Graduate Education**

After researching about graduate level nursing education, I applied to University of San Diego's (USD) Doctorate of Nursing Practice (DNP) degree. I felt that USD's core

values of academic excellence, knowledge, community, ethical conduct, and compassionate service were congruent with my beliefs and values. I applied to the DNP program because of all the benefits it will provide to the health care sector and nursing profession. The DNP program is innovative because I feel that it prepares nursing leaders with advanced nursing competencies and knowledge; a foundation in information technology, business management, quality improvement, evidence-based practice, health care policy; parity with other doctorate prepared professions; and a supply of future nurse educators.

### **Conclusion**

I aspire to be a doctorate prepared nurse practitioner and to work at a community-based clinic caring for an underserved population. As I would acquire more experience, I would like to teach at a college and to lead medical missions in third world countries. I feel that the Doctor of Nursing Practice is my calling and I do not want to miss my chance to make a positive impact in society.

## APPROPRIATE GESTATIONAL WEIGHT GAIN

Eugelyn O. Santos, DNP

Hahn School of Nursing and Health Science

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### *Author Note*

Kristin A Spivey, Miracle Babies; Joelle Felton Lackey, Miracle Babies.

## Abstract

Over the past 30 years, excessive weight gain during pregnancy among American women has been a significant concern, resulting in serious health consequences to mothers and their newborns. During 2011, 48% of U.S. women gained more than the ideal amount of weight during pregnancy. Several international studies have also documented that excessive weight gain during pregnancy is associated with adverse maternal and neonatal outcomes. As a result, one in ten babies were born prematurely in the United States in 2014. Based on the Institute of Medicine's (IOM) guidelines (2009), the purpose of this project was to implement the Healthy Women Healthy Children (HWHC) program at a southern California community clinic to reduce excessive prenatal weight gain.

Process: The HWHC curriculum was a 12-week weight management intervention. Participants attended weekly nutrition or exercise-focused classes and were weighed at every other encounter. The number of times they met the weekly IOM weight gain guidelines over the 12-week program was recorded.

Outcomes: Eleven participants were followed over a 12-week period. The frequency with which the participants met the IOM weekly weight gain guidelines averaged 68%; the range was 20%-100%; and the median rate was 67%.

Discussion: The Healthy Women Healthy Children curriculum assisted pregnant women to make lifestyle changes in order to prevent excessive gestational weight gain.

Conclusion: Advanced practice registered nurses can lead initiatives in the prevention of excessive gestational weight to make a positive impact on maternal and fetal outcomes.



## Appropriate Gestational Weight Gain

Over the past 30 years, excessive weight gain during pregnancy among American women has been a significant concern, resulting in serious health consequences to mothers and their newborns, including prematurity. In 2011, 48% of United States (U.S.) women gained more than the ideal weight during pregnancy (Center for Disease Control & Prevention [CDC], 2012). In 2014, one in ten babies in the United States were born prematurely (CDC, 2015); it has been estimated that the cost to care for one premature newborn in the neonatal intensive care unit (NICU) is approximately \$51,600, with a total annual cost of \$26 billion (IOM, 2007). Research has shown that prevention of excessive weight gain during pregnancy can decrease neonatal adverse outcomes.

### **External Evidence**

Research links inappropriate weight gain during pregnancy to adverse maternal and neonatal outcomes. Baeten, Bukusi, and Lambe (2001) conducted a cohort study and found that overweight and obese women were at an increased risk for preeclampsia, eclampsia, and gestational diabetes. They also found that overweight and obese women were more likely to have premature deliveries. The Agency for Healthcare Research and Quality (2008) found strong evidence supporting an association between gestational weight gains and small-for-gestational-age (SGA) infants, large-for-gestational-age (LGA) infants, macrosomia, low birth weight, and preterm labor. Ruager-Martin, Hyde, and Modi (2010) found that obese mothers were at risk for miscarriage, still birth, gestational diabetes, gestational hypertension, pre-eclampsia, delivery complications, and maternal death. Furthermore, they found that maternal obesity was associated with congenital anomalies, SGA, fetal overgrowth, preterm labor, and neonatal mortality.

Additional research found that there is an association between increased gestational weight gain and the risk of macrosomia (Gesche & Nilas, 2015).

After investigating the consequences of gestational weight gain on maternal and fetal health in the context of the worldwide obesity epidemic, the Institute of Medicine (IOM; 2009) revised its gestational weight gain guidelines, changing the body mass index (BMI) criteria. The IOM now utilizes the International Obesity Task Force values, which are also being utilized by the World Health Organization and the National Institute of Health, to emphasize the importance of weight status. The new guidelines recommend that women who are in the underweight and normal weight category should gain one pound per week during their second and third trimesters. For women who are overweight, the IOM suggests gaining 0.6 pounds per week, while obese women should only gain 0.5 pounds during the same interval (IOM, 2009).

Several studies document the effectiveness of diet and exercise in reducing gestational weight gain. Hui et al., (2012) conducted a randomized control trial in Winnipeg, Canada to assess newly developed exercise and dietary interventions' effects on excessive gestational weight gain. One hundred-ninety participants were randomly assigned to either the intervention group or to the control group. The intervention group had significantly lower (35.3%, chi-square 7.10, 95% CI 0.47-0.90,  $P = 0.008$ ) EGWG compared to the control group (Hui et al., 2012).

Thangaratinam et al., (2012) performed a systematic review and meta-analysis to evaluate the effects of gestational dietary and lifestyle interventions on maternal and fetal weight. Forty-four randomized control trials (RCT) studying the effects of diet, physical activity, and a mixed approach on maternal weight were identified. The RCTs included

7,278 women. The review found that any intervention compared to the control group had a 1.42 kg reduction in gestational weight gain (95% confidence interval [CI] 0.95 to 1.89 kg). This review also found that there was a reduced risk of pre-eclampsia (relative risk [RR] 0.74, 0.60 to 0.92) and shoulder dystocia (relative risk 0.39, 0.22 to 0.70) in the intervention groups (Thangaratinam et al., 2012).

Rauh et al., (2013) conducted a clustered randomized controlled trial to evaluate the effects of a lifestyle intervention on gestational weight gain. Two hundred-fifty women in Munich, Germany were recruited to participate in this study. The study found that the intervention group gained an average of 14.1 kg, and the control group gained an average of 15.6 kg, representing a statistically significant -1.7 kg (95% CI: - 3.0 to -0.3) lower weight gain (Rauh et al., 2013).

Muktabhant et al., (2015) performed a systematic review to evaluate the effects of diet or exercise, or both on gestational weight gain and pregnancy complications. Sixty-five randomized control trials were included in the review. Forty-nine RCTs, which included 11,444 women, were identified for the meta-analysis. The systematic review found that diet or exercise, or both interventions had an overall 20% (average RR 0.80, 95% CI, 0.73 to 0.87) reduction in EGWG on average (Muktabhant et al., 2015).

These studies provided the foundation for community efforts to promote the health of pregnant women and their babies. One such initiative has been spearheaded by Miracle Babies, a non-profit organization, founded in 2009. Their mission is to improve the well being of women and children and to provide support to families with newborns in the NICU. Miracle Babies developed the Healthy Women Healthy Children (HWHC) program to assist pregnant women to make lifestyle changes that would benefit their

unborn child (Miracle Babies, 2016). Miracle Babies' staff provides initial consultation to community settings interested in implementing their program.

The HWHC program was modeled after Kaiser Permanente's Healthy Moms randomized control trial (Vesco et al., 2012). The HWHC and Healthy Moms programs were both weight management programs focused on limiting gestational weight gain. The Healthy Moms and HWHC program both encouraged moderate physical activity. Healthy Moms encouraged 30 minutes per day, while HWHC encouraged 150 minutes per week. The programs differed in their nutritional focus. The HWHC did not encourage a single nutritional approach while the Healthy Moms study utilized the Dietary Approaches to Stop Hypertension (DASH) program. The Healthy Moms study had one hundred and fourteen participants and the ability to randomize participants (Vesco et al., 2012), while the HWHC program did not. Both programs ultimately decreased gestational weight gain.

### **Local Evidence**

In 2012, the Maternal and Infant Health Survey (MIHA) reported that 42.5% of pregnant women in California and 48.5% of pregnant women in San Diego County had excessive weight gain (California Department of Public Health, 2015). In addition, the County of San Diego Health and Human Services Agency reported 2015 data about an underserved area in the north inland portion of the County where 48.62% of the residents spoke Spanish, 35.8% had a household income of less than \$35,000, and that 24.61% of the residents had not earned a high school diploma (San Diego County Health and Human Services Agency, 2015). At one of the only community clinics in this region, two

out of every three pregnant women were obese, based on their pre-pregnancy body mass index.

### **Project Goal**

The purpose of this project was to implement the Miracle Babies' HWHC program in this setting in order to assist women gain the recommended amount of weight during pregnancy. These guidelines were based on the 2009 Institute of Medicine's gestational weight gain guidelines.

### **Project Process**

Recruitment of the community clinic participants for Miracle Babies' HWHC program was achieved by advertisement, clinic referrals, and weekly phone calls. During September 2015, a Miracle Babies' representative went to the community clinic to hand out flyers in order to recruit potential participants. At prenatal visits, clinic partners and providers informed pregnant women about the HWHC program. During the first few weeks of the curriculum, automated calls were made to all the potential participants to remind them about each upcoming HWHC class. The project population consisted of pregnant women who were medically screened by their providers to participate in the project. Forty-two pregnant women were eligible to participate. There were no exclusion criteria. All applicants signed consent forms. A research team and an Advisory Board from Miracle Babies and from the community clinic evaluated and approved the HWHC program. Approval from the University of San Diego's Institutional Review Board was obtained to disseminate the findings of the project.

Stakeholder groups include the HWHC staff, instructors, a data collector, the Miracle Babies' medical director, and the community clinic's medical director. The

HWHC personnel consisted of the Miracle Babies' program director, instructors, and a volunteer nurse practitioner student. The instructors also included a volunteer student who was majoring in nutrition and a yoga instructor. Since 50% of the pregnant women served by the clinic only spoke Spanish, a bilingual instructor from Miracle Babies was added to the team. The volunteer nurse practitioner student collected the project data.

Four weeks before implementation of the program, the stakeholders held a 3-hour meeting at the Miracle Babies' headquarters to discuss the details of the HWHC program. Important information was shared by email or by phone. A week before the program's official start date participants and HWHC stakeholders held an introductory meeting.

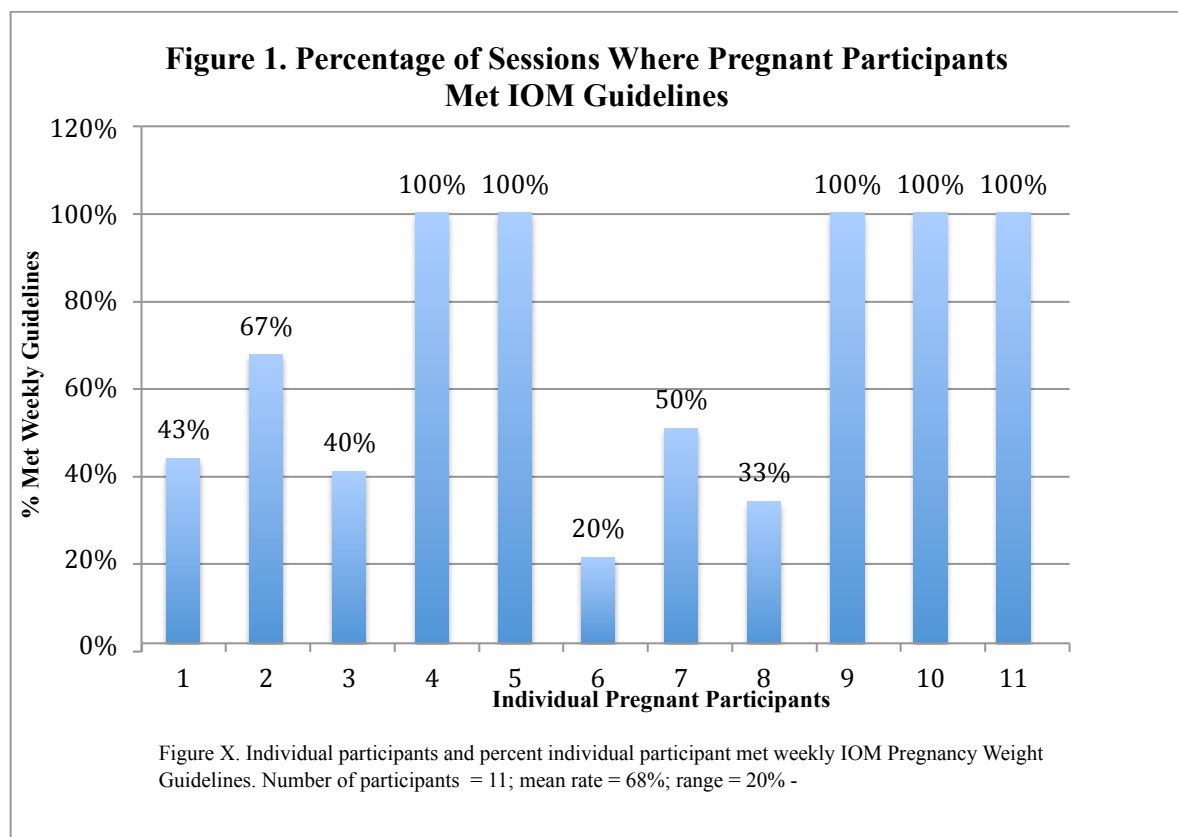
Participants attended a bi-weekly class that focused on nutrition or exercise. The project took place over three major holidays, including Thanksgiving, Christmas, and New Year's Day. Participants were educated on nutritional topics such as making healthy food choices, reading food labels, using *My Plate* for healthy portions, eliminating sugar-rich drinks, meal planning, and making healthy choices when eating at restaurants. During alternate weeks, participants attended an instructor-led exercise class that encouraged 150 minutes per week of moderate-intensity aerobic activity.

To evaluate the HWHC program's effectiveness, the participants' weights were recorded in a data collection log. A Tanita HD-351 scale, calibrated with a known weight, was used to weigh the participants who were instructed to remove as much outerwear as possible, including their shoes, and anything in their pockets.

## **Outcomes**

Eleven participants were followed over a 12-week period. Because of the low turnout during the first class, Miracle Babies' recruiters phoned each participant's house

phone or cellular phone to inform them about each upcoming HWHC class. Data about weekly weight gain and the number of times each individual attended the weekly sessions were recorded. The average rate at which the women met the IOM's weekly weight gain guidelines was 68%, with a range of 20-100%, and a median rate of 67% (see Figure 1). Participation rates were low because of the women's unstable medical condition and challenging socioeconomic conditions. For example, of the 42 women eligible to participate, only 11 did. There were several factors that contributed to the low turnout. First, it was difficult to predict when a pregnant woman would require hospitalization or when she was going to give birth. Nine percent of the participants required hospitalization and 18% actually delivered during the course of the program. Second, it was challenging for the women to attend because of conflicts over work schedules, transportation problems, and a lack of childcare.



Twenty-seven percent (3 out of 11) of the program's participants experienced the "Holiday Effect". This term was used to describe women who consistently followed the weekly guidelines yet gained an excessive amount of weight after the holidays. Nevertheless, the HWHC program was successful in preventing excessive gestational weight gain for seven out of eleven participants.

The total cost of implementing the HWHC program was \$8530; specific expenditures are itemized in Table 1. The cost of caring for one premature newborn in the NICU is \$51,600 (IOM, 2007). Theoretically the U.S. economy can save \$43,070 per premature birth by implementing programs similar to the HWHC curriculum.

Table 1

*Healthy Women Healthy Children Program Cost*

	<b>Cost</b>	<b>Number</b>	<b>Total</b>
Program Binder	\$9	30	\$270.00
Weekly Cohort Class	\$50	12 classes	\$600.00
Fitness Instructor	\$25	6 classes	\$150.00
Yoga Instructor	\$25	6 classes	\$150.00
Graduation	\$100	5 women	\$500.00
Incentives	\$50	10 women	\$500.00
Program Coordinator	\$20/hr x 15 hrs a week	1	\$3,600.00
Nutrition Instructor	\$14/hr x 15 hrs a week	1	\$2,520.00
Certified Nutritionist	\$20/hr x 1 hrs a week	1	\$240.00



## **Discussion**

This was a new setting for implementation of the HWHC program; therefore the planning group did not anticipate the many recruitment barriers they encountered. A baseline survey or focus group interviews of potential participants could have assessed some of these potential difficulties. The planning group could have also benefitted from having one of the potential participants included in the planning group. Given that some of the women gained less weight while in the program, the intervention may result in less provider time needed to spend educating pregnant patients about appropriate weight gain.

There were many challenges in implementing the HWHC program. The medical instability of this population, the long duration of the program, and the timing of the program's implementation over the holidays were unanticipated as were the numerous difficulties encountered with work, transportation, and childcare. This was an unstable population; therefore it was difficult to predict when a participant would deliver or when she would require hospitalization. The program was 12-weeks long. As a result of the population's inherent medical and socioeconomic instability, it was difficult for many participants to complete the program. The program was held over three major holidays; this could have contributed to post-holiday weight gain. Many of the medically eligible women could not attend the HWHC program because their work schedule overlapped with the programs meeting time. The pregnant women who were unable to participate stated they lacked transportation to get to the program. Another reason for the low participation was because many of the mothers had other small children and did not have babysitters to care for them.

The HWHC program had several strengths. It was adaptable to the population in that Miracle Babies hired staff to translate the material to the target audience. The program was flexible, so if a specific instructor was unavailable to teach, the focus of the class could alternate from a nutrition class to an exercise class. The subject matter was interesting to the participants; many enjoyed the nutrition topics and exercise classes. A participant who was actually hospitalized during the program, returned back to class because she found the program beneficial and stimulating.

### **Conclusion**

Advance practice registered nurses have an opportunity to translate this type of research into evidenced-based practice. Nurse practitioners and midwives are practicing in obstetric settings nationwide. These clinicians can successfully lead initiatives in the prevention of excessive gestational weight gain.

Miracle Babies conducts regular fundraisers to sustain programs like the HWHC. Miracle Babies' long-term goal is to have sufficient data to apply for a federal grant. This grant can assist in implementing the HWHC countywide.

The Healthy Women Healthy Children curriculum prevented excessive gestational weight gain. Research has shown time and time again the positive impact of lifestyle changes on maternal and fetal outcomes. The next step for this program is to conduct the Healthy Women Healthy Children program during a non-holiday season in order to increase the number of participants.

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## Reflections on Growth in Advanced Practice Nursing Role

Three years ago, I embarked on a journey that would change my career. In March of 2013, I applied to the University of San Diego's Doctor of Nursing Practice program and was accepted for the fall 2013 semester. I was selected to be among a cohort of leaders in their respective fields. The Doctor of Nursing Practice (DNP) program prepared me with a strong foundation in advanced nursing practice. Along the journey, I was involved in a few medical missions. During my graduate education, I had the opportunity to meet many educators and mentors who had a strong impact on my future praxis.

### **Graduate Education**

The DNP program from the University of San Diego (USD) prepared me in advanced nursing competencies and knowledge, with a foundation in information technology, business management, quality improvement, evidence-based practice, and health care policy. My health care policy class inspired me to become the second year DNP representative for my cohorts. The knowledge I gained from evidence-based practice, quality improvement, business management, and information technology was valuable in completing my DNP project. The experience I gained from completing 1080 clinical hours allowed me to apply what I learned from all my management classes into clinical practice.

### **Medical Missions**

One of the basic reasons I chose to pursue a graduate degree was to help people in need. During my graduate education, I had the opportunity to help others in need by volunteering at three medical missions. The first medical mission was in my mother's

hometown Agno, a small rural town in the Philippines. I assisted volunteer surgeons provide no-cost circumcisions and other minor surgical procedures to underprivileged residents. Another time, I participated in a second medical-related mission in the Philippines. I assisted medical technologists and phlebotomists collect blood for local hospitals. Lastly, I also had an opportunity to join fellow USD colleagues in providing care to underserved residents living south of the United States border in Tijuana.

### **Mentors**

During the course of my pursuit of a graduate degree, I had the privilege to work with many educators and mentors who would inspire me to emulate them in my future practice. My faculty chair will always have a long-lasting impression on me. She taught my reflection class and she assisted me in molding my future praxis. There were times I needed a little guidance and advice, and she was there to support me and encouraged me to move forward. She also was instrumental in finishing my DNP project and DNP manuscript. I definitely could not have completed this without her.

My professor who taught our quality improvement class also inspired me. She went to India to start a vaccination program and the stories she told of her process were very intriguing. She was a strict instructor, but she was very knowledgeable and kind-hearted. Whenever you had a question for her, she likely knew the answer. She made Christmas ornaments for us, and to this day, I still keep it on my desk at home to remind me of who I aspire to be like.

There were other mentors who motivated me. My health policy instructor encouraged my policy group to interact with assembly members and congressmen and to become active political leaders. One of my management instructors always taught us

inexpensive, practical methods in helping the underserved population. Another management instructor told our class that 90% of our patients will get well on their own and. My third year scholarly instructor was always there to give feedback, revise my DNP-related requirements, and keep me on track to graduation. To all these instructors and mentors and to others I missed, thank you for helping me through my graduate years.

### **Conclusion**

I am the first in my family to finish graduate school. I am thankful for a wonderful support system at home and for inspiring teachers at school. During the toughest times, I always recalled what I was doing this for and it was to help others and to be a role model for my young children. It was quite a journey, but if I were given the opportunity to decide again, even if there was a different path, I believe that I would still choose this journey in becoming an advanced practice registered nurse.





## Institutional Review Board Project Action Summary

**Action Date:** October 20, 2015 *Note: Approval expires one year after this date.*

**Type:** ☐ New Full Review ☐ New Expedited Review ☐ Continuation Review ☒ ~~Exempt~~ Review  
☐ Modification

**Action:** ☒ ~~Approved~~ ☐ Approved Pending Modification ☐ Not Approved

**Project Number:** 2015-10-028

**Researcher(s):** Eugelyn Santos DNP student SON

Dr. Susan Instone ~~Fac~~ SON

**Project Title:** Healthy Women Healthy Children Program to Improve Pregnancy Weight Gain

*Note: We send IRB correspondence regarding student research to the faculty advisor, who bears the ultimate responsibility for the conduct of the research. We request that the faculty advisor share this correspondence with the student researcher.*

### I Modifications Required or Reasons for Non-Approval

None

The next deadline for submitting project proposals to the Provost's Office for full review is N/A. You may submit a project proposal for expedited review at any time.

---

Dr. Thomas R. Herinton  
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# Miracle Babies

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**To:** Institutional Review Board, University of San Diego

**From:** Kristin Spivey, PhD

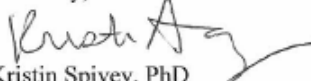
**Re:** Use of Clinical Data

During fall semester 2015, Ms. Eugelyn Santos participated in the implementation of the Healthy Women Healthy Children Program at the Vista Community Clinic as part of her coursework for the DNP Program at the University of San Diego. Ms. Santos is now requesting that she be able to use data from this program and utilize it for publications and professional presentations.

All data have been cleansed of any patient or institutional identifiers. I am supportive of Ms. Santos using these pre-collected data as a basis for publications and presentations.

If you have any questions, please do not hesitate to contact me at (858) 633-8540 or [kspivey@miraclebabies.org](mailto:kspivey@miraclebabies.org).

Sincerely,

  
Kristin Spivey, PhD  
Miracle Babies

Dear Eugelyn Opalec Santos,

Congratulations! Your abstract, "Appropriate Weight Gain during Pregnancy," has been accepted for presentation at the Western Institute of Nursing's 49th Annual Communicating Nursing Research Conference to be held April 6-9, 2016 at the Disneyland Hotel in Anaheim, CA. Your abstract has been accepted for a Poster presentation.

Your poster session is scheduled for Thursday, April 7, 2016 from 1:00 PM - 5:00 PM.

Please notify any additional authors on your paper of this good news. The conference registration form, conference program, and related information will be available on the WIN website at <http://www.winursing.org> in January.

Poster presentations are less formal, but not less rigorous or substantive, than podium presentations. Poster authors present their work interactively to groups of interested individuals with the aid of a visual display that summarizes research findings or project outcomes. Posters are displayed in a central location for four-hour blocks of time so attendees can peruse the visual displays and talk with the authors. The WIN Program Committee has set aside one hour of time during each poster session solely for attendees to view posters. We ask that presenters stand by their posters during this hour. Poster boards are 4' x 8'. Please visit the Presenter's Corner on the WIN website for valuable tips on presenting your poster.

As the Presenting Author, we ask that you log into the "Presenter Information Center" (link is below) to provide the following information by the stated deadline:

1. Give your consent to present (see the "Consent to Participate" module);
2. Complete any missing information on the CE bioform (via the disclosure form) and/or the Content Objectives Grid; and
3. IF YOU HAVE SUBMITTED A COMPLETED RESEARCH PAPER, please download and complete the Sigma Theta Tau International (STTI) Registry of Nursing Research permission document and return it to WIN: [https://win.confex.com/win/2016/STTI\\_Survey\\_2016.doc](https://win.confex.com/win/2016/STTI_Survey_2016.doc) (If you have submitted a Theoretical or Project paper, kindly disregard step 3.) WIN will automatically send abstracts to STTI after the conference.

Your place on the conference schedule will not be considered as final until all of these responses are completed and received no later than 5:00 PM Pacific Time on FRIDAY, JANUARY 8, 2016. By giving your consent to participate, the Program Committee is asking that you make a commitment to present your poster on the date and at the time assigned. As indicated in the Call for Abstracts, all presenters are required to pay the applicable registration fee and to cover their own travel expenses.

If, for any reason, you are unable to attend due to last minute matters, you are asked to send a representative to present your poster. If you do not present or have someone

present for you, and you do not notify WIN in time to have your abstract pulled from the proceedings, you will be charged \$60. In addition, an errata sheet will be circulated with the proceedings.

The link to the Presenter Information Center is:

<http://win.confex.com/win/2016/posters/extra/index.cgi?username=10295&password=481688&EntryType=Paper>

If prompted for login information:

Username: 10295

Password: 481688

EntryType: Abstract (Paper)

We look forward to an excellent conference and to your participation. If you have any questions, please contact Bo Perry by email at [perrybo@ohsu.edu](mailto:perrybo@ohsu.edu).

Sincerely,

Donna Velasquez, PhD, RN, FNP-BC, FAANP  
Chair, WIN Program Committee

## **APPROPRIATE WEIGHT GAIN DURING PREGNANCY**

Eugelyn Opalec Santos, BSN, RN  
Doctor of Nursing Practice Student  
Hahn School of Nursing and Health Science  
University of San Diego

Susan Instone, DNSc, CPNP  
Professor  
University of San Diego

Kristin A. Spivey, PhD  
Clinical Mentor  
Miracle Babies

**Purpose:** The purpose of this project was to implement the Healthy Women Healthy Children (HWHC) program to assist pregnant women gain the recommended amount of weight based on the Institute of Medicine's guidelines.

**Background:** In the United States, the 2011 prevalence of greater than ideal weight gain during pregnancy was 48%. The 2012 Maternal and Infant Health Survey (MIHA) reported that 42.5% of pregnant women in California and 48.5% of pregnant women in San Diego County gained excessive weight. Large international studies have documented that excessive weight gain during pregnancy is associated with adverse maternal and neonatal outcomes. In the United States, 1 in 10 babies are born prematurely. The annual cost of caring for babies in U.S. neonatal intensive care units (NICU) is \$26 billion. Prevention of excessive weight gain during pregnancy can decrease neonatal adverse outcomes and therefore reduce the annual cost of NICU care. Several studies document the effectiveness of diet and exercise in reducing gestational weight gain. A 2015 systematic review found that diet, exercise, or both reduced the risk of excessive gestational weight gain by 20%. Another 2012 meta-analysis found that there was a 1.42 kg reduction in gestational weight with diet, physical activity, or a mixed approach.

**Framework/EBP Model:** The Iowa Model and evidence about prenatal weight gain guided the development and implementation of the HWHC project.

**Project Plan Process:** The Healthy Women Healthy Children curriculum was a 12-week weight management intervention. Participants attended weekly classes that focused on nutrition or exercise. Participants were educated on nutritional topics such as making healthy food choices, reading food labels, using *My Plate* for healthy portions, eliminating sugar-rich drinks, meal planning, and making healthy choices when eating at restaurants. Exercise classes were led by instructors that encouraged 150-minutes of moderate intensity exercise per week. To evaluate the program's effectiveness, participants were weighed during the nutrition classes.

**Outcomes:** The Healthy Women Healthy Children program assisted pregnant women make lifestyle changes to meet the IOM's guidelines. Using the IOM Pregnancy Weight Guidelines, the average rate at which the pregnant participants met the weekly weight recommendations was 68%, with a range of 20% to 100%, and the median rate was 67%. Advanced practice registered nurses can lead initiatives in the prevention of excessive gestational weight gain to make a positive impact on maternal and fetal outcomes

# Appropriate Weight Gain During Pregnancy

Eugelyn Opalec Santos, BSN, RN  
Susan Instone, DSNc, CPNP  
Kristin Spivey, PhD



## Background

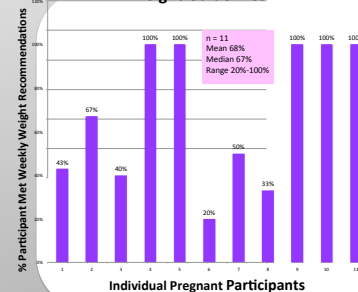
- Several studies document the effectiveness of diet and exercise in reducing gestational weight gain.
- A 2015 systematic review found that diet and exercise reduced gestational weight gain by 20%.
- A 2012 meta-analysis found a 1.42 kg reduction in gestational weight with diet and physical activity.
- Research studies linked inappropriate weight gain to adverse maternal and fetal outcomes, including prematurity.

## Evidence for the Problem

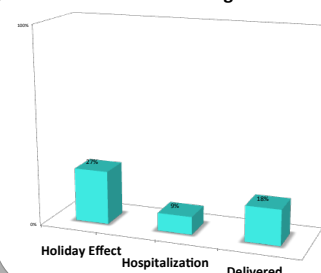
- In 2011, 48% of U.S. women gained more than the ideal weight during pregnancy.
- In 2012, the Maternal and Infant Health Survey reported that 42.5% of California women and 48.5 % of San Diego County women had excessive weight gain during pregnancy.
- At Vista Community Clinic, 2 of 3 pregnant women were obese.
- In 2014, the preterm birth rate was 9.57% or 1 in 10 babies.

## Evaluation Results

### Percentage of Meeting IOM's Weekly Weight Guidelines



### Barriers to Completing the 12-Week HWHC Program



## Purpose

To implement the Healthy Women Healthy Children (HWHC) program to assist pregnant women gain the recommended amount of weight based on the IOM's guidelines.

## Evidence-Based Intervention/Benchmark

The benchmark was to adhere to the 2009 Institute of Medicine's (IOM) Weekly Pregnancy Weight Guidelines.



## Project Plan Process

- The Healthy Women Healthy Children project was a 12-week weight management program.
- Pregnant Participants attended a weekly exercise or nutrition focused classes.
- Participants were educated on nutritional topics such as making healthy food choices, reading food labels, using *My Plate* for healthy portions, eliminating sugar-rich drinks, meal planning, and making healthy choices when eating at restaurants.
- Exercise classes were led by instructors who encouraged 150-minutes of moderate exercise per week.

## Conclusions

- According to the IOM's recommendations, the HWHC subjects' mean rate of meeting the weekly weight gain guidelines was 68%, the range was 20%-100%, and the median rate was 67%.
- The HWHC program was conducted during three major holidays which could have contributed to the post-holiday weight gain.
- The participants in the HWHC program were medically unstable, some of the participants delivered and were hospitalized during the 12-week course.
- Some of the barriers identified during implementation were: work schedule conflicts, required child care, and lacked transportation.

## Cost-Benefit Analysis

- In the United States, 1 in 10 babies are born prematurely.
- The annual cost of caring for a babies in U.S. neonatal intensive care units is \$26 billion or \$51,600 per infant.

## Framework/EBP Model

The Iowa Model of Evidence Based Practice

## Implications for Clinical Practice

- Advanced practice registered

# Appropriate Weight Gain During Pregnancy

Eugelyn Santos, BSN, RN  
DNP Student

Susan Instone, DNSc, CPNP  
DNP Chair

## Background

- Link exists between maternal weight gain during pregnancy and adverse maternal and fetal outcomes per studies



## Background

- Studies show that diet and exercise are effective in decreasing excessive weight gain during pregnancy
  - 2015 systematic review
  - 2012 meta-analysis



## Evidence for Problem

### Statistics

- United States: 48% greater than ideal
- California: 42.5% excessive weight gain
- San Diego County: 48.5% excessive weight gain
- Vista Community Clinic: 2 out of 3 pregnant women were obese
- Preterm birth rate: 9.57%





## Cost Benefit Analysis

- The annual cost of caring for preterm babies in NICUs: \$26 billion
- The total cost to implement the program: \$8,530
- Prevention of excessive weight gain during pregnancy can reduce adverse neonatal outcomes

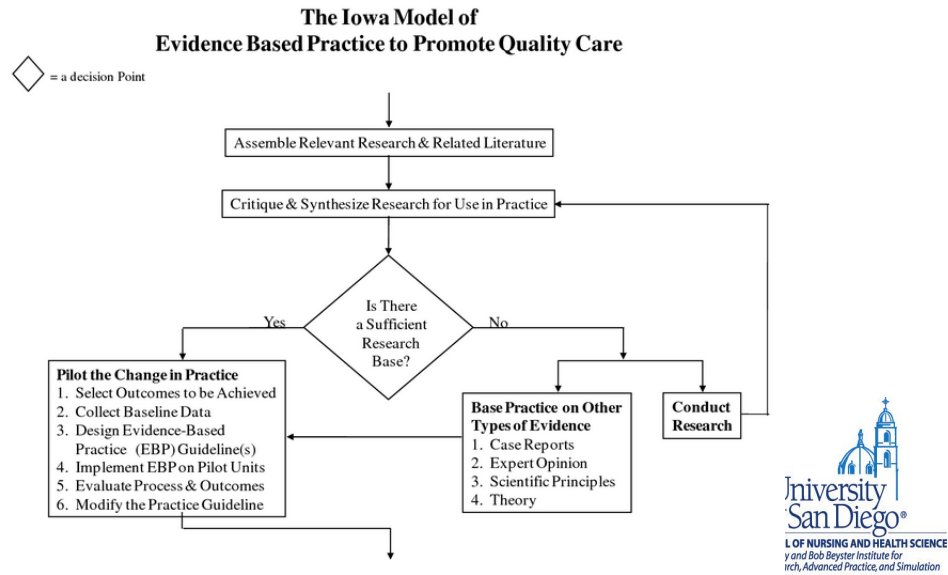


## Purpose

To use the Healthy Women Healthy Children program to help pregnant women gain the appropriate amount of weight based on the Institute of Medicine guidelines



# Framework/EBP Model



## Evidence – Based Benchmark

Adhere to the 2009 IOM Pregnancy Weight Guidelines.

Table 1. Institute of Medicine Weight Gain Recommendations for Pregnancy			
Prepregnancy Weight Category	Body Mass Index*	Recommended Range of Total Weight (lb)	Recommended Rates of Weight Gain† in the Second and Third Trimesters (lb) (Mean Range [lb/wk])
Underweight	Less than 18.5	28–40	1 (1–1.3)
Normal Weight	18.5–24.9	25–35	1 (0.8–1)
Overweight	25–29.9	15–25	0.6 (0.5–0.7)
Obese (includes all classes)	30 and greater	11–20	0.5 (0.4–0.6)

\*Body mass index is calculated as weight in kilograms divided by height in meters squared or as weight in pounds multiplied by 703 divided by height in inches.

†Calculations assume a 1.1–4.4 lb weight gain in the first trimester.

Modified from Institute of Medicine (US). Weight gain during pregnancy: reexamining the guidelines. Washington, DC: National Academies Press; 2009. ©2009 National Academy of Sciences.

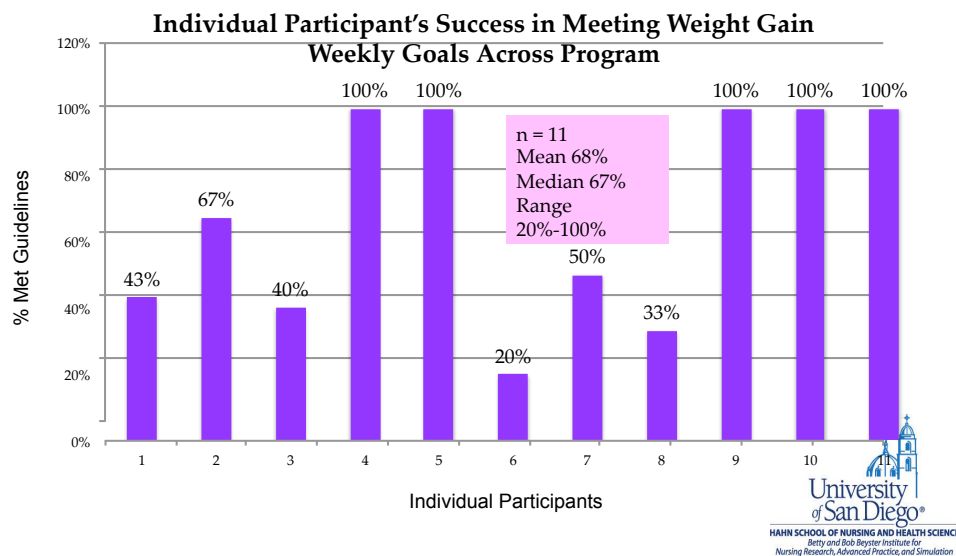
## Project Plan Process

### Healthy Women Healthy Children Program

- 12-week behavioral change intervention
- Participants attended a weekly class:
  - Instructor- led exercise classes
  - Nutrition classes

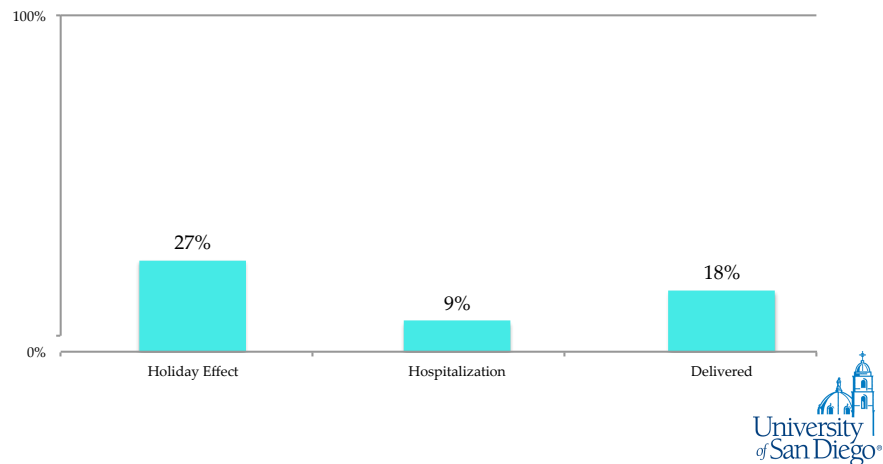


## Evaluation Results



## Evaluation Results

Barriers in the HWHC 12 Week Program



## Challenges

- Potential reasons for low participation:
  - work schedule conflict
  - child care
  - transportation
- Language barriers
- The participants were medically unstable
- Program were conducted during three major holidays



## Conclusions

- Successful program to optimize gestational weight gain
- Our average success rate in meeting the IOM's Pregnancy Weight Guideline: 68%
  - Range: 20%-100%
  - Median: 67%



## Implications

- Nurse practitioners successfully lead initiatives in the prevention of less than optimal gestational weight gain
- Future exploration needed:
  - Shorter programs
  - Replicate during non-holiday period



## References

- California Department of Public Health. (2012). *Maternal and Infant Health Assessment Survey*. Retrieved from <http://www.cdph.ca.gov/data/surveys/MIHA/Pages/AnnualReports.aspx>
- Centers for Disease Control and Prevention. (2011). 2011 *Maternal Health Indicators*. Retrieved from [http://www.cdc.gov/pednss/pnss\\_tables/tables\\_health\\_indicators.htm#Maternal%20Health](http://www.cdc.gov/pednss/pnss_tables/tables_health_indicators.htm#Maternal%20Health)
- Muktabhant, B., Lawrie, Lumbiganon, P., & Laopaiboon, M. (2015). Diet or exercise, or both, for preventing excessive weight gain in pregnancy. *The Cochrane Library*, 6.
- Phelan, S., Phipps, M.G., Abrams, B., Darroch, F., Schaffner, A., & Wing, R.R. (2011). Randomized trial of a behavioral intervention to prevent excessive gestational weight gain: the fit for delivery study. *American Journal of Clinical Nutrition*, 93, 772-779.
- Thangaratinam, S., Rogozinska, E., Jolly, K., Glinkowski, S., Roseboom, T., Tomlinson, J. W., ... Khan, K. S. (2012). Effects of interventions in pregnancy on maternal weight and obstetric outcomes: meta-analysis of randomised evidence. *BMJ*, 344(may16 4), e2088–e2088. <http://doi.org/10.1136/bmj.e2088>



## Questions?



**Hahn School of Nursing and Health Science  
DNPC 630 Scholarly Practice Clinical Log**

Name: Eugelyn Santos

Faculty Chair: Dr. Susan Instone

Total hours since last log submission: 263 hours

Hours completed in MSN APRN Program (if applicable): N/A

Date submitted: April 29, 2016

Scholarly Practice Semester: 8

***DIRECT CARE AND SYSTEM LEVEL COMPETENCIES for APRN and APRN Students***

<b>Expected Program Outcome</b>	<b>Expected Competencies</b>	<b>Student Role (e.g., EBP, Leadership, Collaboration, Management)</b>	<b>Date/ Setting/Activities/ Patient Encounters/ Hours</b>	<b>Status (date/met/IP/not met/ supporting evidence)</b>	<b>DNP Reflections (Clinical Exemplars) by Program Outcome</b>
1. Demonstrate advanced levels of clinical practice within defined ethical, legal, and regulatory parameters in designing, implementing, and evaluating evidenced-based, culturally competent therapeutic interventions for individuals or aggregates.	<p>A. Complete requirements to sit for FNP certification exam</p> <p>B. Complete requirements to sit for PNP certification exam</p>	Direct Care	<p>A. APNC 621 (58 hours) DNPC 630 (263 hours) NPTC 602 (56 hours) NPTC 604 (108 hours) NPTC 605 (108 hours) NPTC 608 (162 hours) NPTC 609 (164 hours)</p> <p>B. NPTC 549 (162 hours)</p>	<p>A. 4/21/16: Met</p> <p>B. 4/21/16: Met</p>	See Appendix A

theories and concepts to create a foundation for advanced nursing practice.	use of EBP  B. Develop a Philosophy of Reflective Practice		model in DNPC611 final paper (1 hr)  B. Fall 2013: developed paper based on reflective practice (15 hours)	B.12/2/13: Met	
3. Demonstrate leadership in collaborative efforts to develop and implement policies to improve health care delivery and outcomes at multiple levels of professional practice (institutional, local, state, regional, national, and/or international).	A. Represent DNP students in NP Student/Faculty Meetings	A. Leadership, collaboration	A. 9/10/14: Attended and participated in NP Team Meeting; mailed NP summary to 2nd year cohort (3 hr) 10/22/14: Discussed with 2nd year cohort about concerns they would like presented to NP team meeting, attended & participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr) 11/12/14: Discussed with 2nd year cohort about concerns they would like presented to NP team meeting, attended & participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr) 12/10/14: Discussed with	A. 3/11/15: Met	See Appendix A



			<p>2nd year cohort about concerns they would like presented to NP team meeting, attended &amp; participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr)</p> <p>2/11/15: Discussed with 2nd year cohort about concerns they would like presented to NP team meeting, attended &amp; participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr)</p> <p>3/11/15: Discussed with 2nd year cohort about concerns they would like presented to NP team meeting, attended &amp; participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr)</p> <p>4/22/15: Discussed with 2nd year cohort about</p>		
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	B. Educate the public about APRNs' scope of practice	B. Leadership, collaboration	<p>concerns they would like presented to NP team meeting, attended &amp; participated in meeting, and emailed summary of meeting to 2nd year cohort (2.5 hr)</p> <p>B. 9-16-13: Literature search on BRN abortion scope of practice for NPs (2 hrs)</p> <p>10-14-13: met with women's health group and DNPC 648 instructor to discuss contents of letter to the Editor of the Union Tribune (2 hrs)</p> <p>10-15-13: Developed preliminary draft of letter (0.5 hr)</p> <p>10-16-13: Letter reviewed by DNPC 648 faculty and women's health group (0.5 hrs)</p> <p>10-16-13: Letter sent to Editor-Union Tribune,</p>	B.10-16-13: Met	
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			President CANP, President of the California NMW Association Assembly Member Toni Atkins (D), Nancy Skinner (D), Senator Hannah Beth Jackson (D) (1 hr)		
4. Incorporate research into practice through critical appraisal of existing evidence, evaluating practice outcomes, and developing practice-based guidelines.	A. Implement an EBP to design an immunization plan for adults residing at residential care facilities.	A. EBP	<p>A. 9/22/14: Met with Chair to discuss possible EBP (0.5 hr)</p> <p>9/24/14: Conducted search on CDC vaccination guidelines for an adult population (0.5 hr)</p> <p>9/25/14: Reviewed charts of adult setting to assess the needs for EBP project (2 hours)</p> <p>10/1/14: Interpreted results of data entered into spreadsheet about immunization practices in adults residing at residential care facilities. (0.5 hr)</p>	<p>A. 10/1/14: Objective A Not Met. Interpretation of spreadsheet data indicates an immunization plan for this adult population is not necessary.</p>	See Appendix A
	B. Implement	B. EBP	B. 11/20/14: Emailed and	B. 3-19-15: Met	

	evidence-based interventions to design a quality improvement project for children in the Mid-City area of San Diego.		discussed with Chair possible EBP (0.5 hr) 11/26/14: Conducted research on pediatric health care issues in San Diego (1 hr) 2/3/15: Met with Mid-City Medical Director about starting a DNP project at his site (1 hr) 2/5/15: Met with DNP Chair about possible project in the Mid-City Clinic (0.5) 2/25/15: Met with DNP Chair and Mid-City Medical Director about the DNP Project details (1 hr) 3/31/15: Met with Mid-City Medical Director and Office Manager about the clinic's information system (1 hr)		
	C. Plan a DNP project that focused on improving the health of pediatric pts with	C. EBP	C. 3-19-15: Literature review and construction of a scholarly paper focused on asthma action plans and increase utilization of	5-16-15: Objective C not met due to time constraints.	

	asthma.		asthma guidelines to prevent school absences and acute care visits (8 hrs) 5-6-15: Correspondence with Medical Director at the Mid-City Clinic indicated that potential DNP project still has not advanced to next step of implementation. Due to timeline constraints, DNP project at this site will be discontinued.		
	D. Plan a DNP project that focused on improving gestational weight gain.	D. EBP	D. 7-3-15: Correspondence with USD professor to initiate DNP project in Vista. (0.5 hr) 7-29-15: Telephone conference with Healthy Women Health Babies Program Director about participating in their project (0.5 hr) 7-30-15: Telephone conference with CSUSM Psychology Professor about participating in the Vista	D: 1-13-16: Met	

			<p>Community Clinic project (0.5 hr)</p> <p>8-7-15: Meeting with all the stakeholders about the Vista Community Clinic Project focused on promoting appropriate pregnancy weight (1 hr)</p> <p>8-8-15: Literature review on weight gain during pregnancy (5 hrs)</p> <p>9-12-15: Miracle Babies Meeting (3 hrs)</p> <p>9-17-15: Meeting and correspondence with Chair about DNP project (2 hrs)</p> <p>10-1-25: Healthy Women Healthy Children (HWHC) program launch date (2 hrs)</p> <p>12-9-15: HWHC Classes (8 hrs)</p> <p>1-13-16: HWHC Classes (6 hours)</p>		
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5. Design, implement, and evaluate health care delivery systems and information systems that meet societal needs and ensure accountability for quality outcomes.	A. Construct EBP Excel Spread Sheet to identify the incidence of immunizations in an adult population.	A. EBP	A. 9/25/14: Entered Data into Spread Sheet (1 hr)	A. 9/25/14: Met	See Appendix A
	B. Constructed a Weight Assessment Protocol that included a Data Collection Log to document participants' weekly weight gain.	B. EBP	B. 10-20-15: Constructed Weight Assessment Protocol (3 hr)	B. 10-27-15: Met	
6. Employ a population health focus in the design, implementation, and evaluation of health care delivery systems that address primary, secondary, and tertiary levels of prevention.	A. Identify epidemiologic factors influencing VAP in adults.	A. EBP	A. 5-12-14: Lit review regarding epidemiology of VAP (4 hrs)	A. 4-18-14: Met	See Appendix A
	B. Determine incidence of immunization in adult population living at residential care facilities.	B. EBP	B. 9/24/14: Literature review on primary level of prevention-immunizations (See Objective #4)	B. 9/24/14: Met	

	<p>C. Identify pediatric health problems in Mid-City area of San Diego.</p> <p>D. Evaluate a DNP project that focused on improving the health of a pediatric population.</p>	<p>C. EBP</p> <p>D. EBP</p>	<p>C. 11/26/14: Research health care issues affecting the pediatric population in the mid-city area of San Diego (See Objective #4)</p> <p>D. 5-7-15: Literature review and construction of a scholarly paper focused on asthma action plans and increase utilization of asthma guidelines to prevent school absences and acute care visits (8 hrs)</p>	<p>C. 11/26/14: Met</p> <p>D. 5-7-15: Met</p>	
7. Incorporate ethical, regulatory, and legal guidelines in the delivery of health care and the selection, use, and evaluation of information systems and patient care technology.	<p>A. Complete human subjects training</p> <p>B. Obtain IRB approval to disseminate EBP project findings</p> <p>C. Obtain IRB approval to</p>	<p>A. EBP</p> <p>B. EBP</p> <p>C. EBP</p>	<p>A. 4-18-14: Completed online SDSU human subjects training course (4 hrs)</p> <p>B. 12/5/14: Finalizing EBP in pediatric setting to draft USD IRB application (See Objective #4)</p> <p>C. 10/16/15: USD IRB application submitted</p>	<p>A. 4-18-14: Met</p> <p>B. 12/5/14: not met, project changed.</p> <p>C. 10/20/15: Met</p>	See Appendix A



	disseminate EBP project findings.		for Healthy Women Healthy Children program.		
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Cumulative total hours: 1183 hours (1081 pt hours, 102 other hours)

## APPENDIX A

### OBJECTIVE #1

This objective states the DNP graduate "Demonstrated advanced levels of clinical practice within defined ethical, legal, and regulatory parameters in designing, implementing, and evaluating evidenced-based, culturally competent therapeutic interventions for individuals or aggregates." This objective was met when the Healthy Women Healthy Children project concluded on January 13, 2016. My participation in the HWHC program of educating pregnant women on diet and exercise demonstrated my ability to design, implement, and evaluate evidenced-based interventions.

### OBJECTIVE #2:

Dr. Patricia Benner's nursing theory (1984) *From Novice to Expert* describes how an expert nurse develops his or her competence. Her theory discusses five levels of nursing experience. The first level is the Novice stage in which the nurse is taught general rules to perform tasks. The second level is the Advanced Beginner phase in which the nurse has gained some experience to help formulate action. The third level is the Competent period in which through 2-3 years of experience, the nurse gains perspective and becomes more organized and efficient. The fourth level is the Proficient stage in which the nurse has a more holistic understanding of situations and draws from experience to formulate plans. The final level in Benner's theory is the Expert phase. In this level the nurse has developed intuition and performs at a highly proficient state.

During my first NPTC course, we relied heavily on protocols. My first clinical site was at the Minute Clinic and they had Standard Procedures embedded in their

computer system. Many patients came in for Urinary Tract Infections and the computer system would guide the Nurse Practitioner's (NP) decisions. It was a good start for novice nurse practitioner students.

I am now in my third NPTC course and I feel that the general rules taught to us in previous semesters have helped guide me in my current clinical settings. I was in a pediatric primary care setting this semester and had several patients with acute gastroenteritis (AGE). During the first few encounters with patients who had signs and symptoms of AGE, I would have to think about what questions to ask and then look up how I would manage the patient. A little later in that same pediatric rotation, I would discuss the appropriate AGE management with both my patients and preceptor without having the need to look into Up to Date for guidance. By graduation, I hope I can advance on Benner's Novice to Expert continuum.

#### OBJECTIVE #3:

This objective states that the DNP graduate will "Demonstrate leadership in collaborative efforts to develop and implement policies to improve health care delivery and outcomes at multiple levels of professional practice (institutional, local, state, regional, national, and/or international)." This objective was met when I presented my DNP project poster at the Western Institute of Nursing Conference on April 7, 2016. The audience of nursing professionals and students examined my poster and understood the impact of diet and exercise on maternal and neonatal health.

#### OBJECTIVE #4:

The U.S. Preventative Task Force's (USPTF, 2013) position on menopausal hormone therapy for the primary prevention of chronic conditions summary states:

The USPSTF recommends against the use of combined estrogen and progestin for the prevention of chronic conditions in postmenopausal women. (This is a **D recommendation.**)

The USPSTF recommends against the use of estrogen for the prevention of chronic conditions in postmenopausal women who have had a hysterectomy.

(This is a **D recommendation.**)

This recommendation was based on 51 full-text articles from 9 trials. One of the articles was based on the Women's Health Initiative (WHI).

The American Congress of Obstetrics and Gynecologists (ACOG, 2015) current recommendation on hormone therapy states, "In general, hormone therapy use should be limited to the treatment of menopausal symptoms at the lowest effective dose for the shortest amount of time possible."

Based on the USPTF Evidence-Based Guidelines and ACOG's current recommendation, hormone replacement therapy should not be used for prevention of chronic conditions, but can be used for menopausal symptoms for the shortest amount of time with the lowest effective dose. My preceptor has been a Women's Health professional for 30 years and does not agree with these practice guidelines. She argues that these recommendations have been based mostly on the WHI. My preceptor states that the four issues: increased risk of stroke, heart attack, blood clots, and breast cancer, documented in the study were not statistically significant. It was only an additional 1 woman out of 1000 women in the study. She also argues that the study was flawed because: it was funded by the pharmaceutical company whose drugs were being tested, only studied the hormone

drugs Premarin and Provera; when administered through the oral route, the participants were give 2-4 times more than the recommended doses, 40% of the women were obese, 40% of these women smoked or has a history of smoking, the controls were taking aspirin and Lipitor and the women who received the intervention did not, and that the women in the study were 10-15 years past menopause. My preceptor recommends bio-identical hormones that are administered transdermally and for as long as the patient desired or their entire life. She states that 95% of her patients who are on bio-identical hormones love the results and plan on staying on them for the rest of their lives.

Another practice guideline my preceptor does not agree with is the USPTF's, American Cancer Society, and American Colposcopy and Cervical Pathology recommendations of extended cervical examination to five years for women who have never had abnormal pap smears. She argues that she has caught several abnormal pap smears before the current practice guidelines of three years. During my August 6, 2015 clinical experience with her, she had to contact two of her patients who would have had adverse outcomes had she followed the current guidelines. My preceptor educates the patient on current guidelines, but gives her patients the choice of screenings earlier.

As a novice provider, how does one translate these evidence-based guidelines into practice while balancing the advice of a mentor with 30 years of gynecologic expertise? There are several approaches one can take to answering this question. One approach is to stay current with the evidence-based guidelines, while maintaining a good patient provider relationship to know when it might be all right to slightly deviate from the practice guidelines. Another approach would be to work with the mentor with 30 years of experience and have that mentor guide my first 3 years of practice. The final approach

would be to stay current with the guidelines; keep good ties with mentors who are experts in their fields and have their personal cellphone numbers readily available if needed; refer patients out who are beyond the scope of my knowledge/practice; and work in a setting where there are experts in the field who can help guide you. In an ideal world, I would like to use the final approach to guide my first years of practice, but one cannot guarantee all the variables.

#### Objective #5:

According to the American Association of College of Nursing (2006), "DNP graduates are distinguished by their abilities to use information systems/technology to support and improve patient care and healthcare systems, and provide leadership within healthcare systems and/or academic settings." This objective was met when I constructed the Weight Assessment Protocol for the Healthy Women Healthy Children program. I had to research current weight practices and what scales were accurate and reliable. In this protocol I also created two data logs. One log was the Scale Accuracy Log, which is used to document the accuracy of the scale being utilized. The other log was the Data Collection Log that was used to collect the participants' weekly weight gain. Constructing this protocol and using the logs assisted the HWHC program collect accurate data.

#### OBJECTIVE # 6

This objective states that the DNP graduate "Employed a population health focus in the design, implementation, and evaluation of health care delivery systems that address primary, secondary, and tertiary levels of prevention." This objective was met when the participants in the Healthy Women Healthy Children curriculum were educated about the

Institute of Medicine Pregnancy Weight Gain Guidelines. They were made aware that by adhering to these guidelines, they could prevent adverse maternal and fetal outcomes.

#### OBJECTIVE # 7

This objective revolves around the ethical, regulatory, and legal guidelines in health care. In research involving human subjects, University of San Diego (USD) requires the use of acceptable conduct and ethical principles. I have met this objective by completing San Diego State University's Human Subject Training Course and obtaining approval from USD's Institutional Review Board to implement and disseminate the Healthy Women Healthy Children Program.

## **Pregnancy Weight Assessment Protocol**

### **OBJECTIVE:**

The goal of this protocol is to ensure accurate weight measurements.

### **RECOMMENDED EQUIPMENT:**

The recommended scale was tested in schools across Arkansas and was shown to be accurate and reliable.

1. Tanita HD-314 Scale
2. Tanita HD-351 Scale

Moghaddam, Tabrizi, and Saraswathi (2012) conducted their study using a digital weighing scale with a sensitivity of 100g.

### **CHECKING FOR ACCURACY:**

Accuracy of the scales will be required at the beginning of each measurement day. A known standardized weight must be placed on each scale. If the recorded weight is more than half a pound higher or lower than the standard weight, the measurement should be repeated and re-recorded. If the recorded weight is more than half a pound different from the calibration weight, then you should change the batteries. If that does not correct the problem, then this scale should not be used for assessments. If a metric scale is utilized, then the weight on the scale should be no more than 0.2 kg higher or lower than the standard weight.

### **DATA COLLECTION:**

The methods for data collection will be on paper form to be entered on a computer.

### **STANDARDIZED MEASUREMENT PROCEDURE**

For the most accurate measurements, it is highly recommended that assessments be conducted on hard surface floors (i.e. gym floor, tile floors) and avoid floors that are carpeted.

#### **1. Preparation of the participant**

The participant should be asked to remove as much outerwear as possible. The participant should be asked to remove her shoes and will be measured either barefoot or wearing socks. The participant will also be asked to empty her pockets.

#### **2. Measurement**

One measurement of weight will be collected bi-weekly for 12 weeks and entered into the Data Collection Log.

The participant will be asked to step onto the scale and stand still over the center of the scale with body weight evenly distributed between both feet. The participant's arms should be hanging freely by the sides of the body, with palms facing the thighs.



Weight is recorded to the nearest 0.2 pound using the recommended scale with a digital readout. Depending on the type of scale used, record to the nearest fraction of a pound, whole pound, pounds and ounces, kilograms or grams.

## **RECORDING THE DATA**

There are two forms maintained by the assessor: (1) The Scale Accuracy Log and (2) The Data Collection Log

### **1. Scale Accuracy Log**

This form is used to verify the accuracy of the scale to be used for measurements. The scale should be placed in the exact location where measurements will take place and then verified in that location. To minimize the misreporting of a participant's weight due to faulty equipment, verification with at least one known weight is extremely important.

For each known weight used, the verification steps are as follows:

- a. Turn the scale to "zero".
- b. Place a known weight in the center of the scale.
- c. Record the scale reading in the appropriate column for the known weight used.

If the recorded weight is more than half a pound higher or lower than the standard weight, the measurement should be repeated and re-recorded. If the recorded weight is more than half a pound different from the calibration weight, then you should change the batteries. If that does not correct the problem, then this scale should not be used for assessments. If a metric scale is utilized, then the weight on the scale should be no more than 0.2 kg higher or lower than the standard weight.

### **2. Data Collection Log**

Record each participant's weight on the Data Collection Log and then enter the information into a computer.

## **References:**

Arkansas Center for Health Improvement. (2010). Height and weight measurement procedures. Retrieved from [www.achi.net](http://www.achi.net)

Moghaddam Tabrizi, F., & Saraswathi, G. (2012). Maternal anthropometric measurements and other factors: relation with birth weight of neonates. *Nutrition Research and Practice*, 6(2), 132–137. <http://doi.org/10.4162/nrp.2012.6.2.132>

### Scale Accuracy Log

Date	Known Weight	Digital Reading	Pass/ Repeat	Digital Reading	Pass/ Intervention	Note
10-28-15	2.0 lbs.	2.0 lbs.	Pass			
11-11-15	2.0 lbs.	2.0 lbs.	Pass			
11-25-15	2.0 lbs.	2.0 lbs.	Pass			
12-9-15	2.0 lbs.	2.0 lbs.	Pass			
12-23-15	2.0 lbs.	2.0 lbs.	Pass			
1-6-15	2.0 lbs.	2.0 lbs.	Pass			
1-13-15	2.0 lbs.	2.0 lbs.	Pass			

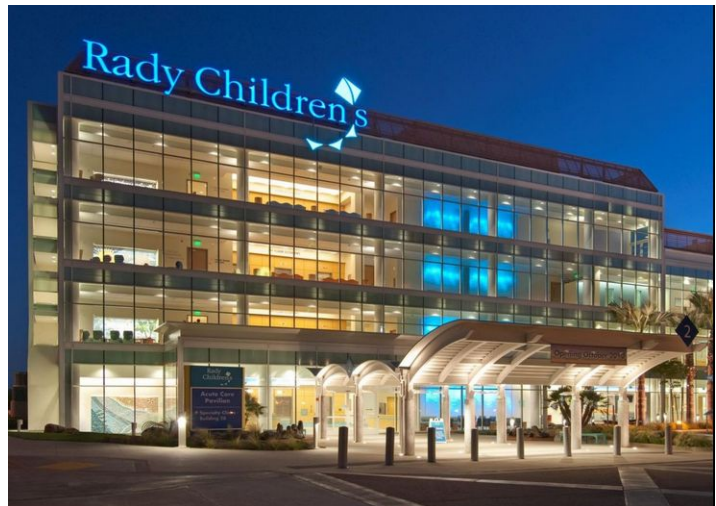
## DATA COLLECTION LOG

[illegible]

# APPROPRIATE MATERNAL WEIGHT GAIN

Lyn Santos, BSN, RN  
University of San Diego Doctoral Program

## RADY'S CHILDRENS HOSPITAL



## Preterm



## Small for Gestational Age



## Large for Gestational Age



## Consequences of LGA



## Consequences of LGA



## Congenital Defects





## Congenital Defects



## Childhood and Adolescence





## Maternal Outcomes

- Miscarriage
- Stillbirths
- Gestational Diabetes
- Gestational High Blood Pressure
- C-Sections
- Death



## IOM 2009 Guidelines



INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

## Underweight BMI

- BMI: <18.5
- Total Weight Gain Range: 28-40 lbs.
- Weight Gain in 1<sup>st</sup> Trimester: 1.1 – 4.4 lbs.
- Rates of Weight Gain during the 2<sup>nd</sup> & 3<sup>rd</sup> Trimester
  - ▣ 1 pound per week (1-1.3 lbs./wk)

## Normal Weight BMI

- BMI: 18.5 – 24.9
- Total Weight Gain Range: 25 – 35 lbs.
- Weight Gain in 1<sup>st</sup> Trimester: 1.1 – 4.4 lbs.
- Rates of Weight Gain during the 2<sup>nd</sup> & 3<sup>rd</sup> Trimester
  - ▣ 1 pound per week (0.8 – 1.0 lbs./wk)

## Overweight BMI

- BMI: 25.0 – 29.9
- Total Weight Gain Range: 15 – 25 lbs.
- Weight Gain in 1<sup>st</sup> Trimester: 1.1 – 4.4 lbs.
- Rates of Weight Gain during the 2<sup>nd</sup> & 3<sup>rd</sup> Trimester
  - ▣ 0.6 pound per week (0.5 - 0.7 lbs./wk)

## Conclusion

