Improving Utilization of the Centering Pregnancy Program at the Downtown Health Plaza in Forsyth County, North Carolina

By

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Abstract

This paper describes and discusses methods to improve utilization of the Centering Pregnancy (CP) program at the Downtown Health Plaza (DHP). CP is a model of group care that incorporates assessment, education, and support into its prenatal program. CP will improve quality outcomes such as birth weights and gestational age that will positively impact infant mortality. A team of providers, clinical and nonclinical staff, patients, and administrators worked collaboratively to expand the utilization of the CP program at DHP. Baseline data revealed that 10% of the 1,600 annual new obstetric (NOB) patients enrolled for CP after its first year, (2012) of operating at DHP, (Fitzmaurice, personal communication, May 22, 2014). The strategy design was centered on increasing the enrollment rate from 10% (120 patients) to a minimum of 20% (320 patients) between July 2012 and June 2013, (FY 13). In order to reach the 20% threshold, it was determined by the CP steering committee that the following six goals must be completed: (1) educate and inform patients of the importance of prenatal care and how CP can have a positive impact on outcomes, (2) educate DHP OB/GYN clinic staff on CP and why patients should be encouraged to utilize CP vs. traditional prenatal care, (3) determine best practices for recruiting patients into the program and share that information with staff, (4) create SMART goals to hold staff and administrators accountable for performance, (5) create a system to track and monitor performance goals in order to keep staff informed of performance and (6) determine ways to sustain and expand CP at DHP once grant funding is exhausted.

From July 2012 through the end of June 2013, total recruitment for CP increased from 10% to 36% of all new obstetric patients. The CP steering committee attributed the increase in recruitment numbers to standardizing enrollment forms, providing patient education, training staff on recruiting techniques, establishing enrollment goals and rewarding staff on achieving
recruitment goals. Through these efforts the future of sustaining the CP program at DHP been realized and improved patient care has been administered to a patient population of Forsyth County. From March 2011 to June 2013 patients at DHP who chose CP prenatal care had a 6% preterm rate (n = 405) rate versus a 13.8% rate nationally for patients who chose traditional prenatal care. The percentage of CP patients at DHP who delivered low birth weight babies was 8% compared to 10.3% for Forsyth County. Additionally, more mothers were breastfeeding their newborns compared to mothers who chose traditional prenatal care at DHP. In conclusion, the success of the grass roots efforts to establish and expand a CP program at DHP resulted in quality outcomes among participating patients. The methods used at DHP can serve as a model to develop and expand CP programs throughout the state, the nation and the world.
Background

The infant mortality rate, (IMR) is considered one of the most important indicators when determining the health of a society, besides being a determinate of maternal and child health. IMR is calculated by the number of deaths, from birth to 1 years of age, per 1,000 live births. Sixty six percent of all infant deaths occur during the neonatal (birth - 27 days) period and the remainder occur during the post neonatal (28-364 days) period. Preterm birth, (birth before 37 weeks), low birth weight (birth weight less than 5 ½ lbs), birth defects, maternal health, labor and delivery difficulties and lack of care are factors which can result in death during the neonatal period. Sudden infant death syndrome (SIDS), injury, infection and babies who were born preterm but survived are factors that contribute to deaths during the post neonatal period. Therefore, the key to preventing infant deaths is best achieved through prevention efforts during the preconception period to improve the health of women of child bearing age. (CDC, 2013).

Infant Mortality Rates Globally, Nationally & within North Carolina

Globally, the US ranks 32nd out of 34 countries in infant mortality by the Organization for Economic Cooperation and Development. The IMR in the US remains high compared to European countries due to high rates of preterm births, approximately 12% of all births within the US are preterm. With a national average of 6.71 deaths per thousand live births, North Carolina was ranked 44th in the nation with an overall infant mortality rate of 7.4 deaths in 2013. Additionally, the majority of states with the worst IMR persist within the southeastern states of the US, (CDC, 2013). Within NC, low gestational age and low birth weights of new born babies accounted for 23.8% for the total mortality rates in 2012. The remaining deaths were attributed to birth defects, 20.6%, other conditions originating in the perinatal period, 19.9% and sudden infant death syndrome, 3.2%, (FCIMRC, 2013).
Infant Mortality Rates in Forsyth County, North Carolina

In Forsyth County, NC the health disparity between whites and African Americans is exposed by the high rates of infant mortality among African Americans. The total infant mortality rate in Forsyth County was 10.2 deaths per 1,000 live births in 2012. However, the infant mortality rate was 14.8 among African American women compared to 8.0 for whites and 7.9 for Hispanics. Among the five urban counties in NC, Forsyth County had the highest infant mortality rates in 2012, (Hunter, 2013).

Factors Associated with Infant Mortality

Reducing preterm births and low birth weights is the best option to reducing the IMR. Therefore, designing interventions to combat risk factors will be necessary to prevent infant deaths. Risk factors that lead to premature labor include prenatal smoking, stress, infections (such as urinary tract infections and sexually transmitted diseases) and consuming alcohol during pregnancy. Additional risk factors that may result in poor birth outcomes include birth defects, lack of prenatal care, domestic violence and poverty, (FCIMRC, 2013).

National Efforts to Reduce Infant Mortality

For twenty five years the Center for Disease Control, (CDC) has operated the Pregnancy Risk Assessment Monitoring System, (PRAMS) to gather infant mortality data from states across the nation. Annually the CDC receives over 77,000 surveys from new mothers about breastfeeding, prenatal care, smoking and infant sleeping positioning which are captured within PRAMS. Through statistical analysis of the data in PRAMS, officials have been able to identify infant mortality risks among certain demographic groups throughout the country. For example, white women under the age of 19 are more likely to smoke during pregnancy. Women in West
Virginia are 30% more likely than women in New York City to smoke during their last three months of pregnancy. Whereas African American women in Michigan were 20% less likely to place their infants on their back while sleeping. Additionally, American Indians were more likely to have a child die of SIDS. Risk factors for SIDS include improper sleep positioning, bed sharing, soft bedding, exposure to smoke, prenatal drug or alcohol abuse, (CDC, 2013).

The findings from PRAMS have allowed health officials across the nation to develop interventions to combat these risk factors. For example, the Tobacco Free Pregnancy Initiative was launched in West Virginia in 2009 resulting in an increase in calls to tobacco quit lines by pregnant women. In Michigan the Infant Sleep Safe Campaign was launched and policies were adopted to require child care centers to follow safe sleep practices in order to receive state licensure. Additionally, the American Academy of Pediatrics, (AAP) rolled out a national campaign to promote safe sleep habits as well as encouraging regular prenatal care, breastfeeding and smoking reduction as a way to combat SIDS and infant mortality, (CDC, 2013).

**Goals to Reduce Infant Mortality, Nationally & at DHP**

In order to reach the Healthy People 2020 target to reduce the IMR to 6.0 per 1,000 live births, the Department of Health and Human Services has developed several strategies to assist state and local agencies to prevent infant deaths. Those strategies are: (1), improve women’s health before pregnancy (2), promote quality prenatal care (3), invest in prevention and health promotion (4), promote coordination among health services and (5), strengthen surveillance and research and (6), promote public and private community collaboration, (CDC, 2013).

Health Resources and Services Administration, CDC, the Centers for Medicare & Medicaid Services, the Association of Maternal and Child Health Programs, the Association of State and
Territorial Health Officials, the March of Dimes, and other agencies formed the Collaborative Improvement and Innovation Network, (CoIN) in 2012, predominately in southeastern states to develop and share plans to reduce infant mortality. The goal of CoIN is to improve access to preconceptional care, periconceptional care, and prenatal health among all socioeconomic classes in order to provide outstanding care to mothers and infants, (CDC, 2013). The March of Dimes awards community grants to assist with funding CP programs across the nation. This is just one example of how a CoIN member is working towards meeting the before mentioned goal. The March of Dimes awarded DHP in Forsyth County, NC in March of 2011 a $49,998 grant to begin a CP program (Faria, 2011). This paper will discuss methods to improve utilization of the CP program at DHP which will improve quality outcomes such as birth weights and gestational age that will positively impact infant mortality. Specific examples of increases in utilization from July 2012 to June 2013 will be presented along with a description of the steps that led to those increases.

Demographics & Health Rankings of Forsyth County

According to 2010 US Census data there are 360,589 residents within Forsyth County, NC. Currently there 97,000 African-Americans living on Forsyth County, of which 24,710 are of childbearing age, (OSBM, 2014). Though the high school graduation rate was 79%, the unemployment rate in Forsyth County remains 9% compared to 4.4% nationally in 2014. Additionally, 32% of children in Forsyth County under 18 years of age are living in poverty compared to 13% nationally, with 39% of children living in single parent households, 20% nationally. Furthermore, 18% of the Forsyth County population have been identified as having an inadequate social support system. Astonishingly, the violent crime rate in Forsyth County was 564 per 100,000 residents compared to 372 per 100,000 in NC and 49 per 100,000 nationally.
Compared to other counties within NC, Forsyth County ranks 26th for Health Outcomes, 29th in Health Factors, 28th in Length of Life and 32nd in Quality of Life. Not surprisingly Forsyth County ranks 36th in Social & Economic Factors and 64th in Physical Environment. In 2014, Forsyth County ranked worse in Health Outcomes and Rankings compared to the other urban Counties within NC, Guilford, Mecklenburg, Durham and Wake, (Catlin, Jovaag, Van Dijk, & Remington, 2014).

**Centering Pregnancy at the Downtown Health Plaza**

DHP is located in Forsyth County, NC and serves over 80,000 patients annually in the Adult, Pediatrics, Specialty and OB/GYN clinics, most of which are on Medicare, Medicaid or are uninsured and not native English speaking. Besides offering onsite pharmacy, radiology and laboratory services, DHP offers Imprints counseling, financial counselors, women infant and children, (WIC), CareNet Counseling, legal aid, interpreters and a community garden to the patients and community. Nearly one third of the 4,000 annual births in Forsyth County receive prenatal care at DHP, (FCIMRC, 2013).

DHP has attempted to combat infant mortality by offering CP within its OB/GYN clinic. CP is a model of group care that incorporates assessment, education and support into its prenatal program. Improved health outcomes including higher gestational age, and an increase in birth weights are typical among participants who complete the CP program versus those who choose traditional prenatal care, (Centering, 2014). The preterm birth rates for patients who completed CP at DHP was 6% versus 13.8% nationally and the low birth weights for CP patients at DHP were 8% versus 10.3% for Forsyth County in 2013, (Fitzmaurice, personal communication, May 22, 2014; Ickovics et al, 2007). Though the primary audience for this intervention is African American women in Forsyth County, CP at DHP is open to all ethnicities.
CP places women of the same gestational age in groups of eight to twelve to meet together, learn about pregnancy, postpartum, and newborn care, participate in facilitated discussion and develop a support network. Each group meets for ten sessions, two hours each session throughout their pregnancy and early postpartum with the same mid-level provider, (Certified Nurse Midwife or Physician Assistant) who has been trained in CP methodology. The mid-level provider completes the standard physical health assessment during the group visit, while the women complete self-monitoring of their own vitals- height, weight, and blood pressure, (Centering, 2013).

During CP women are empowered to select health promoting behaviors that have been shown to improve health outcomes for mother and baby. Additionally, patients and providers have reported high rates of satisfaction from CP due to the dynamic atmosphere for learning and sharing that cannot be duplicated in a one on one encounter during traditional prenatal care visits. Currently 404 patients have completed the CP at DHP since its inception in March of 2011. Women are able to gain social support by bonding with other women when they are able to share the same concerns with the group, while providers have found a renewed since of satisfaction to providing outstanding quality patient care. During a CP visit, issues such as nutrition, mental health, smoking cessation, insurance, labor preparation, parenting preparation, breastfeeding, oral health, common pregnancy problems, sexuality, contraception, stress reduction, exercise and relaxation topics are covered in addition to typical vital checks, weight, height and blood pressure (Centering, 2013).

CP has thirteen essential elements that define its model of care: (Centering Healthcare Institute, 2014).

1. Health assessment occurs within the group space.
2. Participants are involved in self-care activities.

3. A facilitative leadership style is used.

4. The group is conducted in a circle.

5. Each session has an overall plan.

6. Attention is given to the core content, although emphasis may vary.

7. There is stability of group leadership.

8. Group conduct honors the contribution of each member.

9. The composition of the group is stable, not rigid.

10. Group size is optimal to promote the process.

11. Involvement of support people is optional.

12. Opportunity for socializing with the group is provided.

13. There is ongoing evaluation of outcomes.

DHP began utilizing CP in March of 2011 after receiving a $49,998 grant from the March of Dimes, (Faria, 2011). Patients choose or opt-into CP at DHP during their initial new obstetric, (NOB) visit or choose traditional prenatal care. Historically, a nurse assigned to meet with all NOB patients would briefly mention the CP program and ask the patient if she wished to participate. Considering the amount of paperwork that needed to be completed and medical history that was obtained during the 45 minute visit, simply didn’t allow for adequate time to sell the CP to patients. Patients that chose CP, were then screened, (Table A) by the CP coordinator to determine eligibility. During CP patients receive nutritious snacks, (i.e. fruit & vegetable tray,
water, juice) and typical CP visits last around two hours compared to fifteen minutes during a traditional prenatal visit. However, even with the addition of CP at DHP and the proven success of improved quality outcomes, the number of patients enrolling into the program during the first year was low. This determination was made by the CP steering committee members considering DHP typically has over 1,600 OB patients annually and 160 patients or 10% were enrolled into CP by the end of the first year of the program, (Fitzmaurice, personal communication, May 22, 2014).

In order to increase the utilization of CP, patients must overcome multiple barriers preventing them from enrolling into the program. DHP clinicians and administrators have determined low enrollment numbers could be attributed to; (1) poor understanding of the value of prenatal care, (2) missed appointments, (3) misunderstanding of the fundamental of CP, (4) lack of transportation and (5) general belief that CP is a lower standard of care. Once these factors were outlined, officials at DHP looked to other CP programs nationwide to model best practices and undertake a campaign to educate patients, staff and the community in order to increase utilization of the CP program.

Administrators at Providence Hospital Center for Life, (PHCL) in Washington, DC were contacted to help identify best practices, (methods, management, setup, enrollment, etc.) in providing CP. PHCL has an established CP program and was recommended by CHI officials as a site for DHP to learn from. Allotting a large enough space to allow spouses and / or family and friends to attend meetings was important to expectant mothers. Additionally, CP programs that utilized an opt-out model of care typically had greater utilization compared to opt-in CP programs. Participants that received gifts (i.e. gift cards, blankets, car seats, etc.) for completion of the program were more likely to maintain their commitment. Furthermore, nurses were
offered incentives to enroll newly expectant mothers. Ensuring groups were facilitated by providers formally trained in CP and guaranteeing consistent leadership within each assigned group yielded higher patient satisfaction results. Additional factors that promoted CP success included promoting the social networks formed by the group interactions, assisting with transportation problems, providing encouragement and promoting positive word of mouth, (Fitzmaurice, personal communication, May 22, 2014).

**Research and Evaluation of CP**

The Centering Healthcare Institute, (CHI) continually evaluates this model of care throughout the country through formal site reviews. Additionally, CHI welcomes research and evaluation of the CP program and often provides guidance to individuals, academic and professional organizations. Encouraging transparency of the program, CHI maintains a list of published research and evaluation studies on its website [http://centeringhealthcare.org/pages/research/research-evaluation.php](http://centeringhealthcare.org/pages/research/research-evaluation.php). A review of published works of CP did not result in any studies or evaluations of recruitment, retention or expansion efforts. However, the review did expose that African American women are twice as likely to receive late or no prenatal care, thus resulting in a greater likelihood of delivering preterm and lower birth weights, (Office of Women’s Health, May 2010). Numerous publications compared CP to traditional prenatal care and reported positive outcomes including increased birth weights and gestational ages as well as higher rates of patient satisfaction and less visits to the emergency room in the third trimester, (Baldwin, 2006). One particular study even mentioned greater birth weights of babies, even when delivered pre-term, when mothers completed CP versus traditional prenatal care. In a randomized control trial of 1,047 patients, (80% were African American) there was a notable benefit in preterm births that was attributed to CP. Patients who completed CP had
a preterm birth rate of 9.8% compared to 13.8% of women who completed traditional prenatal care. The preterm birth rates were 10.0%, (CP) versus 15.9%, (traditional) when compared among African Americans only, a 33% difference, (Ickovics et al, 2007; Grady. 2004). Additionally, various studies indicated barriers that prevented patients from receiving prenatal care. Factors such as race, education, marital status, cultural, socioeconomic, planned or unplanned pregnancies, depression, under or uninsured and access to care all effected a woman’s ability to obtain prenatal care, (Scupholme, Robertson, & Kamons, 1991). Women have also expressed their concerns with the amount of time, or lack thereof, with their provider during traditional prenatal care. The Journal of Midwifery and Women’s Health published a study that women desire a rapport with their provider, wish for their family to be involved and for adequate time for their concerns to be heard. Additionally, higher rates of patient satisfaction are obtained when expectant mothers see fewer providers during prenatal care, for longer amounts of time and feel involved in their care, (Kennedy et al, 2009).

Additionally CHI suggest research or evaluation of behavior change such as: smoking, dietary shifts, exercise, methods of stress management including Mindfulness Based Stress Reduction, biologic/physiologic stress markers, labor and delivery experience, birth outcomes for mother and baby, mother/baby attachment, breastfeeding, pregnancy spacing including contraceptive use, postpartum maternal achievement of weight goals, family dynamics, provider satisfaction and role change. Furthermore, prevention issues such as diabetes, influence of cultural beliefs and values on behavior and outcomes and system issues including staff roles, satisfaction, triage calls, unscheduled or missed visits, use of the emergency department, (ED) and cost benefit effectiveness should be explored further, (CHI, 2014).

Expansion of the CP Program at DHP during 2013
A team of providers, clinical and nonclinical staff, patients and administrators worked collaboratively to expand the utilization of the CP program at DHP. Baseline data revealed a 10% enrollment rate, (n=160/1,600) for CP after its first year, (2012) of operating at DHP. The strategy design was centered on increasing the enrollment rate from 10% to at least 20% between July 2012 to June 2013, (FY 13). In order to reach the 20% threshold it was determined by the CP steering committee that the following six goals must be completed: (1), educate and inform patients of the importance of prenatal care and how CP can have a positive impact on outcomes (2), educate DHP OB/GYN clinic staff on CP why patients should be encouraged to utilize CP versus traditional prenatal care (3), determine best practices for recruiting patients into the program and share that information with staff (4), create SMART goals to hold staff and administrators accountable for performance (5), create a system to track and monitor performance goals in order to keep staff informed of performance and (6), determine ways to sustain and expand CP at DHP once grant funding was utilized. In order to meet these objectives, a CP retreat was held November 5, 2012 with all DHP OB/GYN clinic staff, members from the Forsyth County Public Health Department and DHP administrators.

The findings from the CP retreat enabled the project team to meet most of the objectives outlined above. The nursing staff that was responsible for educating patients on CP, thus recruiting them into the program had not been formally educated on CP, understood the dire infant mortality rates among Forsyth County African American women or was trained on recruitment strategies. Staff was educated on infant mortality, created new patient education materials outlining why the benefit of CP versus traditional prenatal care that could be mailed to new obstetrical patients (NOB) before arriving for their appointments and role played NOB appointments so staff could practice recruitment techniques.
Recruitment goals were created and tied to annual evaluations of DHP OB/GYN clinical staff and DHP administrators in order to hold them accountable for performance. Each OB/GYN nurse was projected to meet the following goals for the patients they performed NOB visits with:

- Increase Centering Pregnancy enrollment from July 1, 2012 to June 30, 2013 (FY 13), Threshold - 20 % of NOB patients enrolled in CP,
- Target - 25 % of NOB patients enrolled in CP,
- Optimal - 30 % of NOB patients enrolled in CP.

The OB/GYN clinic manager and DHP administrators were expected to meet the same goals but for all NOB patients seen in the clinic. The idea of associating recruitment goals with performance evaluations were weighed heavily by the project team. Some felt it was not fair to hold staff accountable for which type of prenatal care a patient chose. Others felt, considering the patient population there was a fiduciary duty to promote CP and to be held accountable for how well patients were recruited into the program. It was also believed that staff would only promote patients into CP just to meet the performance goals, thereby rendering their actions unethical.

Therefore, all CP applications were reviewed by providers to determine eligibility, (table A). Patients that were high risk or too far along with their pregnancies were moved to traditional prenatal care. Patients were also allowed to drop from the CP program at any time during their pregnancy and continue with traditional prenatal care.

**Performance of the CP Program at DHP**

In order to track performance by each nurse performing NOB visits, new recruitment forms were created that outlined CP vs. traditional prenatal care in English and Spanish. Additionally, recruitment forms had to be signed by the patient and by the recruiting nurse. Once
the forms were evaluated by a provider and eligibility determined, enrollment numbers were tracked by a nurse for the entire clinic each Friday and input into an excel spreadsheet. Recruitment numbers were reviewed with each nurse individually and clinic performance was discussed with providers, administrators and members of the Forsyth County Infant Mortality Reduction Coalition monthly. From July 2012 through the end of June 2013, total recruitment for CP had risen from 10% to 36% of all NOB patients. The CP steering committee contributed the increase in recruitment numbers to; standardizing enrollment forms, providing patient education, training staff on recruiting techniques, establishing enrollment goals and rewarding staff on achieving recruitment goals.

**Maintaining the CP Program at DHP**

Initially, it was necessary to supplement the cost of the CP program from a grant provided by the March of Dimes. However in order to sustain the CP program at DHP it was necessary to ensure its financial stability without relying on grant funding. Therefore the best option in making the CP program economically viable is to ensure the average group size remained between 8 – 12 patients per visit. Maintaining this threshold ensured that the cost of the mid-level providers time was covered while hosting a CP group. A mid-level provider in the OB/GYN clinic averaged 8 patients in 2 hours while providing traditional prenatal care. Consequently a provider hosting CP groups with less than 8 patients would not be economically sustainable in the long run. By increasing the number of patients recruited into the CP program also increased the average number of patients in each group. Combined with the quality improvements in patient care ensured the medical center would continue to support the CP program once all grant funding was diminished.

**CP Outcomes at DHP**
Through these efforts the future of sustaining the CP program at DHP been realized and quality patient care has been administered to a patient population of Forsyth County. From March 2011 to June 2013 patients at DHP who chose CP prenatal care had a 6% preterm rate (n = 405) rate versus a 13.8% rate nationally for patients who chose traditional prenatal care. CP patients at DHP who delivered low birth weight babies was 8% compared to 10.3% for Forsyth County. Additionally, more mothers were breastfeeding their newborns compared to mothers who chose traditional prenatal care at DHP, (Fitzmaurice, personal communication May 22, 2014), (Ickovics et al, 2007).

Promoting the CP Program at DHP

To promote the use of the CP program among the patient population of Forsyth County, staff and to acknowledge the dedication of the CP coordinator it was important to advertise its success locally and nationally. Besides numerous media releases distributed by Wake Forest Baptist Health there has also been publications in the Winston Salem Journal and The Chronicle as well as segments aired on WXII – 12. Additionally, the CP Coordinator presented outcomes at the NC/SC Perinatal Partnership Conference in the fall of 2013 as well as presented a poster at the Centering Healthcare Institute Conference in Washington DC in October of 2013 concerning the work that was completed to increase recruitment numbers.

Improving Access to OB/GYN Care and CP at DHP

DHP has long been the prenatal provider of choice for the underserved population of Forsyth County. A team of twenty residents and three mid-level providers provide prenatal care within the OB/GYN clinic at DHP. Providers round at Forsyth Medical Center and deliver babies to the patients who received prenatal care at DHP. The majority of babies delivered by the DHP
OB/GYN residents then become patients of the forty residents within the pediatric clinic at DHP. In a continuous cycle, many of the pediatric patients at DHP become patients within the OB/GYN clinic as early as twelve and thirteen years of age.

Since many area OB/GYN practices will not see uninsured patients and limit the amount of Medicaid patients, the OB/GYN clinic at DHP accommodates over 20,000 patient visits annually. Though NOB patients typically can be seen within two – three weeks of learning of their pregnancies, new GYN patients may have a 70 – 90 day wait for a new patient appointment. Additionally, because of this increased demand, one third of all patients in the OB/GYN clinic are overbooked, thus creating typical wait times of two hours or more to be seen. This demand for obstetric and gynecological services at DHP is also obstructed by the number of exam rooms (13), residents (20) and mid-level providers (3). Additionally, the entire CP program at DHP is only facilitated by the three mid-level providers since groups must be led by a consistent group facilitator, whereas inconsistent resident schedules prevent them from participating in CP. Though it would be ideal for the mid-level providers to concentrate solely on the CP program, the demand of GYN services requires them to dedicate the majority of their schedule with GYN patients, thus limiting the expansion of the CP program at DHP.

The delay of getting patients into the OB/GYN clinic at DHP has a negative financial impact on the medical center as well. An analysis of patients assigned to the clinic at DHP, revealed over a two year period July 1, 2010 – June 30, 2012 (FY 11 & 12), that 1,322 DHP patients were being seen in the ED at Wake Forest Baptist Health, (WFBH) for non-emergent GYN reasons, (non-emergent was determined by billing code and GYN reasons were identified by ICD-9 codes). Patient accounts for these patients were reviewed and was revealed that over $673,429 in uninsured care was written off as bad debt to the medical center. On average each
DHP uninsured patient seen in the ED for a non-emergent reason cost the medical center $1,200, compared to $335 had they been seen at DHP, (Table B & C).

In 2013, administrators of DHP presented the before mentioned information within a business plan to the executive staff of WFBH in an attempt to gain another midlevel provider who could be utilized to expand the availability of CP. Upon approval a bi-lingual Physician Assistant from Wake Forest University was hired in the summer of 2013. A fourth mid-level provider at DHP allowed for additional patient access which resulted in a decrease in wait times for appointments, a reduction in clinic delays, an increase in patient access, staff and provider satisfaction and an additional facilitator for the CP program.

National Health Service Corps, (NHSC)

Recruiting talented providers to administer care in underserved areas, such as DHP, has long been a goal of the National Health Service Corps, (NHSC). This designation allows providers with outstanding student loans who work NHSC approved sites to apply for the loan repayment program. Primary care providers working full-time at an NHSC approved site can receive up to $60,000 in loan repayment for committing to serve at that site for at least two years. For a site to become NHSC eligible, it must be located in a Health Professional Shortage Area, provide primary care, provide services regardless of a patient’s ability to pay, offer discounted fees, and accept patients covered by Medicare, Medicaid and Children’s Health Insurance, (NHSC, 2014).

In the fall of 2012 DHP received its NHSC site certification after an extensive application process and site visit. The designation allows DHP to attract and retain qualified primary care providers needed to deliver patients access to care and sustain the CP program. Having NHSC
site designation was instrumental in maintaining the CP coordinator at DHP. Without having the ability to retain the CP coordinator would have been detrimental the future of the CP program at DHP. Additionally, NHSC site designation gives sites the ability to post open vacancies on the NHSC website. With this option DHP was able to attract an additional midlevel provider for the OB/GYN department who will also be formally trained in CP methodology.

**Family Nurse Partnership Program, (FNP)**

In November of 2012 the Forsyth County Public Health Department, (FCPHD) received a two and half million dollar grant from the Kate B Reynolds Charitable Trust to establish a FNP program in Forsyth County to improve maternal health, promote healthy child development and assist mothers to continue with school or find employment. The grant enabled FCPHD to hire a nurse supervisor, four registered nurses and an administrative assistant to support the program. Each registered nurse will provide home visits to 25 mothers during pregnancy and until the child reaches his or her second birthday. FNP is a maternal and early childhood health program that provides first time moms with the building blocks to be successful parents. Randomized control studies over the last 30 years have demonstrated how FNP programs across the country have improved the quality of care of first time low-income mothers and their children. Trials have demonstrated that FNP programs have reduced child abuse and neglect by 48%, preterm deliveries by 79% of women who smoke and language delays of children aged 21 months by 50%, (Burkhart, 2012).

Since the FNP program is designed for Medicaid eligible women of Forsyth County, the obvious place to recruit patients for the program was DHP. Administrators from DHP and officials from the FCPHD met before the program began to determine how patients could be referred to the FNP program. Patients who were screened during their NOB visits for CP, were
also introduced to the FNP program and patients could opt in to either CP and/ or the FNP program at the same time. Given that CP and FNP programs both impact preterm births, it was advantageous for DHP and the health department to work together in order to maximize the care of patients served at DHP.

**The Future of CP at DHP**

Since the inception of the CP program at DHP in 2011, much has been discovered about its value to Forsyth County as documented within this paper. The documented outcomes, (increases in birth weights and decreases in pre-term deliveries) of CP patients at DHP coincide with other CP programs throughout the country. DHP now is challenged with building upon its success by increasing CP utilization to a higher percentage of patients. In order to do so it will be necessary to increase the OBGYN staff and space designated for meeting space.

Currently the CP program at DHP is operated with an opt-in model, allowing patients to choose CP or traditional prenatal care. Ideally, to maximize the amount of patients that complete the CP program annually would require the utilization of an opt-out model at DHP. An opt-out model of care would require CP to be the standard style of prenatal care that is offered at DHP and patients would then have to select traditional care. Another option would be to only offer CP at DHP, thus forcing the entire patient population that utilizes DHP to utilize CP. However, considering DHP is a resident based clinic, the probability of doing away with traditional prenatal care all together is doubtful.

In order to accommodate the influx of patients utilizing CP it will be necessary to increase the space designated for group care. The current meeting space only allows for 12 patients and the two co-facilitators, but is not large enough to allow for family members to attend
during a CP visit. Failure to accommodate family members during prenatal care has resulted in some patients to choose traditional prenatal care over CP. Therefore, it is imperative to remodel existing space at DHP to accommodate a larger meeting space for CP or find space in a nearby location to host CP. Currently plans have been developed to move the OB/GYN clinic to a location 2 ½ miles from DHP. DHP administrators, clinical staff and the CP coordinator was consulted in the design of a new OB/GYN clinic. The new clinic would have 30 exam rooms compared to 20 at DHP and the CP meeting space would exceed 600 square feet, compared to the 200 square foot room currently utilized at DHP. However, the two million dollar cost to renovate this new facility and the current reduction of the capital improvement budget for WFBH has prevented these plans from being realized. Perhaps, demonstrating the quality improvement results CP can have on the community and the cost savings of preventing preterm births will motivate area nonprofits to funding this endeavor. However, no matter what level of growth transpires at DHP, more efforts have to be implemented on documented evaluation of the program. Furthermore, the addition of a continuous quality improvement initiative of the CP program at DHP may lead to higher levels of birth outcomes, thus helping the community and supporting the need for capital investment of the program expansion.

Summary

One of the most important indicators in identifying the health of a society is the IMR. It is also an indicator of health disparities that may be present. In 2013 Forsyth County had the highest IMR among all urban counties within NC. The IMR for Forsyth County was 10.2 deaths per 1,000 live births in 2012, however it was 14.8 for African Americans compared to 8.0 for whites and 7.9 for Hispanics, (FCIMRC, 2013).
Reducing preterm births and low birth weights is the best option to reducing the IMR. Therefore, designing interventions to combat risk factors are necessary to prevent infant deaths. To reduce IMR it is important to address risk factors that lead to premature labor; these include prenatal smoking, stress, infections (such as urinary tract infections and sexually transmitted diseases) and consuming alcohol during pregnancy, (FCIMRC, 2013). In order to reach the Healthy People 2020 target to reduce the IMR to 6.0 per 1,000 live births, the US Department of Health and Human Services has developed several strategies to assist state and local agencies to prevent infant deaths. Those strategies are: (1), improve women’s health before pregnancy (2), promote quality prenatal care (3), invest in prevention and health promotion (4), promote coordination among health services and (5), strengthen surveillance and research and (6), promote public and private community collaboration, (CDC, 2013). CP programs are an important way to address these goals.

The March of Dimes awards community grants across the nation to fund CP programs designed to combat risk factors, thus improve preterm and birth weight rates, which will result in a lower IMR. The March of Dimes awarded a $49,998 grant to begin a CP program at DHP in Forsyth County, NC in March of 2011, (Faria, 2011). CP places women of the same gestational age in groups of eight to twelve to meet together, learn about pregnancy, postpartum, and newborn care, participate in facilitated discussion and develop a support network. However, even with the addition of CP at DHP and the proven success of improved quality outcomes, the number of patients enrolling into the program during the first year was low. This determination was made by the CP steering committee members considering DHP typically has over 1,600 OB patients annually and 160 patients or 10% were enrolled into CP by the end of the first year of the program, (Fitzmaurice, personal communication, May 22, 2014).
A team of providers, clinical and nonclinical staff, patients and administrators worked collaboratively to expand the utilization of the CP program at DHP. The strategy design was centered on increasing the enrollment rate from 10% to at least 20% between July 2012 and June 2013, (FY 13). In order to reach the 20% threshold it was determined by the CP steering committee that the following six goals must be completed: (1), educate and inform patients of the importance of prenatal care and how CP can have a positive impact on outcomes (2), educate DHP OB/GYN clinic staff on CP why patients should be encouraged to utilize CP versus traditional prenatal care (3), determine best practices for recruiting patients into the program and share that information with staff (4), create SMART goals to hold staff and administrators accountable for performance (5), create a system to track and monitor performance goals in order to keep staff informed of performance and (6), determine ways to sustain and expand CP at DHP once grant funding was utilized. In order to meet these objectives, a CP retreat was held November 5, 2012 with all DHP OB/GYN clinic staff, members from the Forsyth County Public Health Department and DHP administrators.

From July 2012 through the end of June 2013, total recruitment for CP increased from 10% to 36% of all NOB patients. The CP steering committee attributed the increase in recruitment numbers to; standardizing enrollment forms, providing patient education, training staff on recruiting techniques, establishing enrollment goals and rewarding staff on achieving recruitment goals. The preterm birth rates for patients who completed CP at DHP was 6% versus 13.8% nationally and the low birth weights for CP patients at DHP were 8% versus 10.3% for Forsyth County in 2013, (Fitzmaurice, personal communication, May 22, 2014; Ickovics et al, 2007).
To promote the use of the CP program among the patient population of Forsyth County, staff and to acknowledge the dedication of the CP coordinator it was important to advertise its success locally and nationally. Besides numerous media releases distributed by Wake Forest Baptist Health there has also been publications in the Winston Salem Journal and The Chronicle as well as segments aired on WXII – 12. Additionally, the CP Coordinator presented outcomes at the NC/SC Perinatal Partnership Conference in the fall of 2013 as well as presented a poster at the Centering Healthcare Institute Conference in Washington DC in October of 2013 concerning the work that was completed to increase recruitment numbers.

Since the inception of the CP program at DHP in 2011, much has been discovered about its value to Forsyth County. The documented outcomes, (increases in birth weights and decreases in pre-term deliveries) of CP patients at DHP coincide with other CP programs throughout the country. DHP now is challenged with building upon its success by increasing CP utilization to a higher percentage of patients. In order to do so it will be necessary to increase the OB/GYN staff and space designated for meeting space. Administrators at DHP have already demonstrated their commitment to the CP program by hiring an additional mid-level provider to assist with CP facilitation, requesting capital improvement funds for a new OB/GYN department with increased space designated for CP and partnering with the local health departments FNP program. Additionally, besides the commitment to CP, administrators at DHP have begun a new partnership with local churches to develop a Congregational Health Network, (CHN). CHN utilizes the social network of area congregations to ensure patients have the necessary resources (i.e. food, housing, transportation to outpatient appointments, medications and social support) in place to support holistic care, (Appendix 1). Furthermore, the addition of a continuous quality improvement initiative as part of the CP program at DHP may lead to greater efficiency and
better understanding of the impact of specific factors that will lead to higher levels of improved birth outcomes, thus helping the community and supporting the need for capital investment for program expansion.

In conclusion, the success of the grass roots efforts to establish and expand a CP program at DHP has resulted in quality outcomes among participating patients. The methods used at DHP can serve as a model to develop and expand CP programs throughout the state, the nation and the world.
Table A

ELIGIBILITY TO PARTICIPATE IN CENTERING

ABSOLUTE NO

- Uterine anomalies: bicornuate, septate uterus, etc
- Cervical insufficiency, i.e. h/o cerclage
- Diabetes- type 1
- CHTN (on meds)
- Anticoagulation- treatment
- Significant mental illness

POTENTIALLY OK FOR GROUP/ CHECK WITH PROVIDER

- Multiple gestation- twins (will consider if di/di only)
- A2DM, Diabetes- type 2 (well/poorly controlled)
- Seizure disorder
- CHTN- remote hx, no meds
- Anticoagulation- prophylaxis
- Isoimmunization

NO CONTRAINDICATION TO GROUP

- Thyroid disease
- GDM (A1)
- AMA
- Increased BMI
- Fetal anomalies
- Hearing impairment (if sign interpreter is needed may be an issue)
- History of preterm birth (i.e. 17P candidates)
- History preeclampsia
- Prior C/section

DATING: < 24 weeks= ok  24-29 wks = will consider  > 30= wks too late
# Table B

## Financials - DHP OB/GYN Patients FY 11 & 12

**Fiscal Year (July 1 - June 30)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Agency</th>
<th>Commercial</th>
<th>Medicaid</th>
<th>Medicare</th>
<th>Managed</th>
<th>Personal</th>
<th>Total</th>
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## Per Discharge

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<th>Medicare</th>
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<td>$78</td>
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<td>$16</td>
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<td>($86)</td>
<td>($71)</td>
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<td>($150)</td>
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<tr>
<td>CTM (Using Only Direct Cost)</td>
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<td>$7</td>
<td>$19</td>
<td>$42</td>
<td>$18</td>
<td>$40</td>
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</table>

**Note:** Averages & percentages may not accurately reflect financial performance due to outstanding balances.

**Note:** Patients seen in cost center 567 in FY 11 & 12.

**Note:** 40,454 account #s + 7,163 unique medical record #s.

Source: WUPMB Data Repository (Business Objects)
Table C

Financials - DHP OB/GYN Patients Treated in ED for OB/GYN Non-Emergent Reasons
Fiscal Year 11 & 12 (July 1 - June 30)

<table>
<thead>
<tr>
<th>Category</th>
<th>Agency</th>
<th>Commercial</th>
<th>Medicaid</th>
<th>Medicare</th>
<th>Managed</th>
<th>Personal</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td><strong>Totals</strong></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Discharges</td>
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<td>51</td>
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<td>$214,060</td>
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**Per Discharge**

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<th>Category</th>
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<th>Medicare</th>
<th>Managed</th>
<th>Personal</th>
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<td>$275</td>
<td>$59</td>
<td>$70</td>
<td>$94</td>
<td>$97</td>
<td>$697</td>
</tr>
<tr>
<td>Indirect Cost (-)</td>
<td>$150</td>
<td>$1,154</td>
<td>$122</td>
<td>$144</td>
<td>$781</td>
<td>$747</td>
<td>$3,208</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$335</td>
<td>$1,134</td>
<td>$275</td>
<td>$320</td>
<td>$401</td>
<td>$328</td>
<td>$5,388</td>
</tr>
<tr>
<td>CTM (Using Total Cost)</td>
<td>$(38)</td>
<td>$629</td>
<td>$25</td>
<td>$(37)</td>
<td>$76</td>
<td>$(279)</td>
<td>$(593)</td>
</tr>
<tr>
<td>CTM (Using Only Direct Cost)</td>
<td>$121</td>
<td>$1,094</td>
<td>$147</td>
<td>$107</td>
<td>$257</td>
<td>$(132)</td>
<td>$1,294</td>
</tr>
</tbody>
</table>

**NOTE:** Averages & percentages may not accurately reflect financial performance due to outstanding balances

**NOTE:** Patients seen at DHP in the OB/GYN department & in the ED in FY 11 & 12

**NOTE:** Non-Emergent ED visits identified by charge code 495000026, 495000036, 495000721, 495000739, 49500044, 495000747

**NOTE:** OB/GYN patients in the ED filtered & identified by Principal ICD-9 codes

Source: WFUBMC Data Repository (Business Objects)
Downtown Health Plaza O'Thompson 9/5/2012
References


Appendix 1

Congregational Health Network (CHN)

Besides expanding the use of the CP program at DHP, collaborating with the Family Nurse Partnership Program and increasing access to care there is still more that can be done to impact infant mortality in Forsyth County. Tapping into area congregational networks is an ideal next step to engage users throughout the community. Working collaboratively with church leaders to inform local congregations of the infant mortality dilemma in Forsyth County and building upon already established religious and social networks could prove to be the next step in lowering infant mortality rates.

A similar approach was established in Memphis, Tennessee between Methodist Le Bonheur Healthcare and nearly 400 area churches by establishing the Congregational Health Network. CHN was developed to foster a seamless transition from hospital admission to home among the African American community which had higher readmission rates compared to the rest of the population. Similar to the African American patient population at DHP, patients at Methodist Le Bonheur Healthcare were of a lower socioeconomic class, resulting in a myriad of problems preventing them from following discharge instructions. Poverty, lack of transportation, high crime rates and distrust in local government and healthcare officials hindered adherence to discharge instructions. However, there was a highly established level of social support provided by area congregations that proved to be a powerful organization within the community, (Baker, 2014).

Methodist Le Bonheur Healthcare employees nine full time CHN employees and maintains over 500 volunteers to provide education and assist as liaisons to any enrolled
congregation member who seeks care within the medical center. Once admitted, a hospital
navigator meets with the CHN congregation member to determine what barriers that may have in
following discharge instructions once they are back at home. The navigator then partners with a
CHN volunteer liaison to arrange post-discharge needs, i.e., housing, transportation, medications,
nutritional support, ensuring follow up outpatient appointments are made and social support is
maintained, (Baker, 2014).

Currently there are more than 12,000 congregates enrolled on the CHN program from
more than 400 churches in and around Memphis. An analysis of 473 CHN congregates were
compared to non CHN participates of similar socioeconomic and demographic characteristics
and CHN participants had a mortality rate 50% lower than non CHN participates. Additionally,
CHN congregates had lower health care charges, lower hospital utilization and reported higher
levels of patient satisfaction than non CHN participates within Methodist HealthCare, (Baker,
2014).

**CHN of Forsyth County, NC**

Building upon the success of the CHN at Memphis, a similar program is being developed
with area congregations among one of the two medical centers in Forsyth County, WFBH.
However, the congregation network that is being developed at WFBH is currently focused on
readmission rates as well. Since the FNP program is limited on the number of patients it can
accept and only assists with first time mothers, the CHN in Forsyth County should be made to
incorporate liaisons to assist with expecting mothers to combat with infant mortality.
Additionally, it could be created collaboratively with Forsyth Medical Center, (FMC) since it
currently is the only hospital in Forsyth County that provides delivery services.
The CHN of Forsyth County could be structured that once a NOB mother is identified at DHP that doesn’t qualify for the FNP program, will then be encouraged to meet with an onsite CHN navigator who will assess the expecting mother’s needs and partner them with a CHN liaison. That liaison will ensure needed services are established, i.e. housing, nourishment, prenatal appointments are kept and social support is available not only through pregnancy but for the first year after delivery. Maintaining the social support after delivery is crucial to ensuring babies are kept healthy, meeting developmental milestones, safe environments are maintained and continual improvement and analysis of the program is established.