LSU School of Medicine
Department of Obstetrics & Gynecology

Resident Research Day
Friday May 12, 2023

Human Development Center
411 S. Prieur St, 1st Floor Auditorium
New Orleans, LA

Keynote Speaker:

Erin Teeter Carey, MD, MSCR
Associate Professor
Division Director, Minimally Invasive Gynecologic Surgery
Fellowship Program Director, Minimally Invasive Gynecologic Surgery
University of North Carolina, Department of Obstetrics and Gynecology

Erin T. Carey, MD, MSCR

Erin T. Carey, MD MSCR is an Associate Professor of Obstetrics and Gynecology and Division and Fellowship Director of Minimally Invasive Gynecologic Surgery (MIGS) at the University of North Carolina (UNC) School of Medicine. She completed her OBGYN residency at the Mayo Clinic and then a MIGS fellowship at UNC. While in fellowship she also earned a Masters of Science in Clinical Research (MSCR) at the Gillings School of Public Health and completed an additional year of training in female pelvic pain disorders with pain medicine.

Common themes in her research and clinical practice include (1) understanding peripheral and central pain mechanisms and 2) phenotyping subgroups of patients with pain syndromes based on different pathophysiological mechanisms, with the goal of identifying novel treatment strategies for these different phenotypes based on the underlying pathophysiology. The long-term goal of her research program is to incorporate new discoveries into clinical practices that improve the ability to diagnose and treat women experiencing chronic conditions.

Resident Research Day
Friday, May 12, 2023

9-9:05am **Welcome & Introduction of Guest Speaker**
Lisa Peacock, MD, FACOG
Chairperson, Department of Obstetrics and Gynecology

9:05-9:50am **Keynote Address**
Finding Relief: Effective Treatment Strategies for Myofascial Pelvic Pain
Erin T. Carey, MD, MSCR
Associate Professor and Program Director, MIGS
UNC School of Medicine Department of Obstetrics & Gynecology

9:50-10:00am **Break**

SESSION 1- Obstetrics
Moderators: Sarah Buzhardt, MD & Tabitha Quebedeaux, MD, PhD

10:00-10:15am ***The Efficacy of 17-OH Progesterone Amongst the New Orleans Population***
Resident: Remi Omotayo, MD, PGY 4- New Orleans
Advisor: Jay Davis, MD

10:15-10:30am ***Nulliparous Term Singleton Vertex Cesarean Delivery Rates In Adolescents: Adverse Pregnancy Outcomes***
Resident: Marissa Chinn, MD, PGY-3 Baton Rouge
Advisor: Neelima Sukhavasi, MD

10:30-10:45am ***Chorioamnionitis: How We Are Diagnosing and the Potential for Adverse Outcomes***
Resident: Joshua Wells, MD, PGY-4 New Orleans
Advisor: Stacey Holman, MD

10:45-11:00am **Break**

SESSION 2- Office Practice
Moderators: Stacey Scheib, MD & La'Nasha Tanner, MD

11:00-11:15am ***Co-Occurrence of Depression, Anxiety and Perinatal Posttraumatic Stress in Postpartum Persons***
Residents: Shelby Howard, MD & Caitlin Witt, MD, PGY-2s Baton Rouge
Advisor: Sarah Buzhardt, MD

11:15-11:30am ***Trust in Physicians Among Black and White Pregnant Patients***
Resident: Jacklyn Locklear, MD, PGY-3, Baton Rouge
Advisor: Neelima Sukhavasi, MD

Continued on next page

11:30-11:45am ***Implementation of a 12 Week Program to Optimize Fertility Through Weight Loss Education***
Resident: Emily Stephenson, MD, PGY-3, Baton Rouge
Advisor: Edward Schwartzenburg, MD

11:45-12:00pm **Break**

SESSION 3- Gynecology
Moderators: Tara Castellano, MD & Neelima Sukhavasi, MD

12:00-12:15pm ***Bleeding in Silence: The Untold Experiences of Women***
Resident: Antonia Traina, MD, PGY-4, New Orleans
Advisor: Holly Provost, MD

12:15-12:30pm ***Expanding the Use of Telemedicine After Gynecologic Surgery: An Analysis of Patient Safety and Satisfaction-A Randomized Controlled Trial***
Resident: Vanessa Norris, MD, PGY-4, New Orleans
Advisor: Holly Provost, MD

12:30-1:30pm **Lunch**

1:30-1:45pm **Group Picture**

1:45pm **Awards Presentation and Final Remarks**

Judges
Erin Carey, MD, MSCR – UNC School of Medicine, Department of OB/GYN
Emily Harville, PhD – Tulane University School of Public Health and Tropical Medicine
Jay Mussel, PhD - LSU School of Medicine, Department of Cell Biology and Anatomy
Lisa Peacock, MD, FACOG – LSU School of Medicine, Department of OB/GYN
Jenny Sones, DVM, PhD - LSU School of Veterinary Medicine
Xi Xiong, MD, DrPH - Tulane University School of Public Health and Tropical Medicine

The Efficacy of 17-OH Progesterone (17-OHP) Amongst the New Orleans Population

Remi Omotayo, MD MS, Kayla Schwartzenburg ,BS, Claire Mersereau, BS, Saskya Etienne, MD, Asha Heard, MD, Jay Davis, MD

Objective: In 2021, the rate of preterm birth (PTB) in the United States rose to 10.5%, the highest incidence rate over the past 10 years. Even more alarming was that black infants born between the years of 2018 and 2020 had the highest rates of preterm birth at 14.2%, when compared to other racial/ethnic groups. Although recent updated literature has shown no benefit of 17-OHP in reducing the risk of recurrent preterm birth in the overall general population, this inefficacious finding may not specifically apply to the high-risk primarily black patient population of New Orleans. The objective of this study was to assess if 17-OHP reduces the rate of recurrent spontaneous preterm birth specifically amongst the high-risk New Orleans population as well as other demographic groups.

Methods: We performed a retrospective cohort study looking at women 18 years and older who had a history of spontaneous preterm birth and compared the rates of recurrent preterm birth in those who received treatment with 17-OHP vs. those who did not. We performed a chart review of LSUHSC New Orleans deliveries from 2009 to 2019 to obtain patients' demographics and pregnancy outcomes. We excluded pregnancies with medically-indicated preterm deliveries, fetal anomalies, and multifetal gestations. A multivariable logistic regression, Fischer exact test, and Wilcoxon Rank-Sum test were performed to analyze this data, and a p-value of <0.05 was used to determine statistical significance.

Results: Of the 422 patients included in our study, results showed that treatment with 17-OHP did not reduce the rates of recurrent preterm birth, with 37.9% PTBs in 17 OH-P group vs. 34.2% PTBs in the control group ($p=0.553$). In addition, a significant increase in the rates of recurrent PTBs less than 32 weeks was observed in those patients with 17-OHP (77% vs. 32%, $P<0.001$), however 60 patients in the sample had missing data information for this variable. Notably, in patients with cervical insufficiency, 17-OHP was found to prolong the gestational age at the time of birth compared to those in the control group (33.2 wga vs. 27.7 wga, $p= 0.046$).

Conclusions: Although we did not find evidence to suggest 17-OHP reduces the rates of recurrent PTB, it may be effective in reducing the severity of preterm birth in patients with cervical insufficiency. Continued ongoing research may be beneficial in evaluating if 17-OHP can be used to reduce the occurrence of extremely preterm (<28wga) and very preterm (<32wga) births in patients with cervical insufficiency, with and without a cerclage in the antepartum period. Consequently, these findings could have a significant impact given the potential complications that can arise with extreme prematurity in newborn infants.

Nulliparous Term Singleton Vertex Cesarean Delivery Rates in Adolescents: Adverse Pregnancy Outcomes

Marissa Chinn, MD, Neelima Sukhavasi, MD, Andrew Chapple, PhD, Elizabeth F. Sutton, PhD

Objective: Birth rates for adolescents, although declining, has remained higher in the United States compared to other developed countries. It was previously thought that adolescent pregnancy is associated with increased risk of cesarean delivery, possibly from immature pelvic structure but more recent studies have found adolescent age to be associated with a lower risk of cesarean delivery. Now most recent data shows the cesarean delivery rate nationally to be worsening, in 2021 it is 26.3% with a new target rate of 23.6%. In addition, previous studies which at times conflict, have shown an association between adolescent pregnancy and adverse maternal and neonatal outcomes. Currently, there is very little data analyzing adolescent birth outcomes in Louisiana. Our study aims to determine the prevalence of adverse pregnancy outcomes in adolescents compared to all adults, with a primary focus on cesarean delivery rate in a patient population who are nulliparous, term, singleton, vertex (NTSV) at Woman's Hospital.

Methods: This is a retrospective cohort study at Woman's Hospital in Baton Rouge, Louisiana who are NTSV and delivered between October 1, 2015, to September 30, 2021, aged 34 and below. Multivariable logistic regression performed to adjust for potential confounding variables to determine the effect of age <=19 on cesarean section risk. Forwards stepwise regression was performed to determine the adjusted polynomial relationship between continuous age and risk of cesarean section.

Results: The cohort of 15,615 NTSV women, composed of 1,553 adolescents and 14,062 adults, had a cesarean section rate of 26.7. There is a significantly higher cesarean section risk in those above the age of 19 compared to those 19 and below (27.5% vs. 19.1%, p<.001). Patients who were 19 years old or less had a significantly decreased risk of cesarean section compared to all others (adjusted OR=.71, 95% CI=.62-.82, p<.001).

Conclusions: Adolescent age was significantly associated with a decreased risk of cesarean section. This pattern persists when comparing adolescents to adults of the same race.

Chorioamnionitis: How We Are Diagnosing and the Potential for Adverse Outcomes

Joshua Wells, MD, B. Kate Neuhoff, MD, Anne Tufton, MD, Maya Heath, MD, Staci Olister, MD, Stacey Holman, MD

Objective: Chorioamnionitis is an intraamniotic infection and inflammation that is associated with significant maternal and neonatal morbidity. However, diagnostic criteria can vary greatly among providers, leading to unnecessary antibiotic administration and interventions in the mother and neonate. This study aims to examine adherence to ACOG-supported diagnostic criteria of chorioamnionitis prior to and following an educational intervention, and assess if there are any changes in morbidity rates to both the mother and/or neonate.

Methods: In this retrospective cohort study, which was carried out at Touro Hospital from 4/1/2018-9/30/2021, we investigated compliance with recommended diagnosis and management of chorioamnionitis before and after a given intervention. In November 2019, the following interventions were implemented: 1) Dissemination of data regarding over-diagnosis and treatment 2) Multiple department-wide educational sessions 3) Publication of diagnostic guidelines at work stations and hospital shared drive**.** A pre- and post-intervention study was then carried out to assess the interventions' impact on how providers were diagnosing chorioamnionitis, including adherence to ACOG-supported diagnostic criteria, and also evaluate if there were any significant changes in morbidity rates for patient and/or neonates. We looked at any patient with a documented ICD-9/10 code of peri-partum infection to assess for specific findings that were used to garner diagnoses. Relevant morbidity rates for patients and neonates with an ICD-9/10 code related to peri-partum infections were also analyzed. Statistical analyses utilized included Fisher Exact Test and Logistic Regression. A p-value of <0.05 was considered statistically significant.

Results: During the time frame studied, a total of 246 women were diagnosed with chorioamnionitis out of the 9600 deliveries. Pre-intervention diagnosis of chorioamnionitis during the study period was 145/4515, or 3.21% of deliveries. Patients receiving the diagnosis of chorioamnionitis post-intervention was significantly less (101/5085, or 1.99% of deliveries, $P<0.0002$). The incidence of diagnoses that did not meet ACOG criteria significantly decreased after the intervention (from 81/145, or 55.86% to 29/101, or 28.71% incorrect diagnoses, $p<0.0001$). The difference in maternal endometritis was not statistically significant in the pre (49) or post (36) intervention groups ($p<0.0501$). The difference in maternal sepsis was not statistically significant in the pre (29) or post (29) intervention groups ($p<0.1548$). The difference in neonatal sepsis was not statistically significant in the pre (7) or post (2) intervention groups ($p<0.0933$).

Conclusions: This study showed that movement towards a more guideline-based approach to diagnosing chorioamnionitis did not come with an increased rate of maternal or neonatal morbidity. Continued educational initiatives on the diagnosis and management of chorioamnionitis on labor and delivery can lead to less antibiotic use and fewer maternal and neonatal interventions without increasing morbidity.

Co-Occurrence of Depression, Anxiety, and Perinatal Posttraumatic Stress in Postpartum Persons

Shelby Howard, MD, Caitlin Witt, MD, Karla Martin, BS, Ateshi Bhatt, BS, Emily Venable, BS, Sarah Buzhardt, MD, Andrew Chapple, PhD, Elizabeth F. Sutton, PhD

Objective: The study aim was to describe the incidence of depression, anxiety, perinatal-post-traumatic stress disorder (PTSD), and their co-occurrences in the early postpartum period in a low-resource OB/GYN clinic serving majority Medicaid-eligible persons. We hypothesized that postpartum persons screening positive for depression will have an increased risk of a positive screen for anxiety and perinatal PTSD.

Methods: A retrospective study of postpartum persons receiving care in Baton Rouge, Louisiana was conducted using responses abstracted from the electronic medical record (EMR) of the Patient Health Questionnaire-9 (PHQ9), Generalized Anxiety Disorder-7 (GAD7), and Perinatal Post Traumatic Stress Disorder Questionnaire-II (PPQII). Categorical distributions were compared using Fisher exact tests, while t-tests were used to compare continuous covariates. Multivariable logistic regression was used to predict anxiety (GAD7) and perinatal PTSD (PPQII) scores while adjusting for potential confounders, as well as to predict continuous PPQII and GAD7 based on continuous PHQ9 scores.

Results: There were 613 birthing persons 4-12 weeks postpartum that completed mental health screening (PHQ9, GAD7, and PPQII) between November 2020 and June 2022 as part of routine postpartum care in the clinic. The incidence of screening positive for symptoms of depression (PHQ9>4) was 25.4% (n=156), while the incidence of positive screening for symptoms of anxiety (GAD7>4) and perinatal PTSD (PPQII≥19) were 23.0% (n=141) and 5.1% (n=31) respectively. Postpartum patients with mild anxiety or more (i.e. GAD7 >4) had 26 times higher odds of screening positive for symptoms of depression (PHQ9>4) (adjusted odds ratio [aOR] 26.3; 95% confidence interval [CI] 15.29-46.92; p<0.001). Postpartum persons with a PPQII score indicating symptoms of perinatal PTSD (PPQII≥ 19) had 44 times higher odds of screening positive for symptoms of depression (PHQ>4) (aOR 44.14; 95%CI 5.07-5856.17; p<0.001).

Conclusions: Depression, anxiety, and perinatal PTSD are each independent risk factors for each other. To comply with the American College of Obstetricians and Gynecologists (ACOG) recommendations, providers should universally screen postpartum persons with validated screening tools for mood disturbances. However, if a complete full mood assessment is not feasible, this study provides evidence to support screening patients for depression, and if the patient screens positive, prompt additional screening for anxiety and perinatal PTSD.

Trust in Physicians Among Black and White Pregnant Patients

Jacklyn Locklear, MD, Madison Lanza, BS, Ateshi Bhatt, BS BA, Briasha Jones, BS MPH, Emily Venable, BS, Annie Talbot, BS, Kaitlyn Taylor, MD, Shelby Howard, MD, Andrew Chapple, PhD, Neelima Sukhavasi, MD, Elizabeth F Sutton, PhD

Objective: Significant racial disparities exist in obstetrical care. Our goal is evaluate trust as a contributing factor to racial disparities in obstetrics by evaluating trust levels and to evaluate if trust, adverse perinatal outcomes, and race are related.

Methods: 10-item Wake Forest Physician Trust Scale was administered to obstetric patients from 7/2021- 2/2023 in an OB/GYN practice in Baton Rouge, Louisiana. Categorical covariates (including composite outcome) were summarized using means and percentages and compared using Fisher exact tests. Continuous covariates were summarized using means and standard deviations and distributions compared using Wilcoxon rank sum tests. Quasi-Poisson regression was used to adjust for confounding effects. A medical record abstraction was performed to collect perinatal outcome data.

Results: Of the 255 participants, 63% were of Black, 74% made <$25,000/year, 15% reported less than high school education. The average trust score was 40.2±4.6. There was no difference in trust scores between Black patients compared to other races (p=0.17), which held after confounding adjustment for income, age, and education. Patients with a Black provider had higher trust compared to White providers (p=0.02).16% of the participants with the outcome were Black compared to 13% for other races (P=0.68). After adjustment, increased trust score was associated with decreased composite outcome (aOR = 0.91, 95% CI = 0.83-0.99, p=0.04).

Conclusions: This study showed high levels of trust in physicians across all racial groups. Higher trust was found after patient interactions with Black providers. When adjusting for age, income, education, and race of patient/provider, an increased trust score decreased odds of the composite outcome.

Implementation of a 12 Week Program to Optimize Fertility Through Weight Loss Education

Emily Stephenson MD, Holly Hodges, Neil Chappell MD, MSCI

Objective: Obesity is a widespread problem in the United States that has been correlated with multiple increased risks including infertility. Studies have shown that improvement in weight loss and overall health improve fertility. We designed a low cost, high impact program to try to optimize diet and lifestyle through education and accountability. The present study aims to describe the prospective implementation of the program and retrospectively survey participants' experiences and attitudes after referral to this program by a Reproductive Endocrinologist and Infertility (REI) provider.

Methods: We conducted a retrospective telephone survey of all patients from a single site private practice fertility clinic that were referred to the Fertility Fitness Program (FFP) between July of 2020 through 2022 (n equals 102). The FFP consisted of a nutrition consult, 6 weeks of exercise coaching followed by 6 weeks of open gym, and weekly phone calls with a lifestyle coach. The responses from participants identifying barriers were analyzed using means/standard deviations and counts/frequencies to summarize population characteristics among survey respondents for continuous and categorical variables respectively. Counts/reasons for not enrolling in the Fertility Fitness Program were calculated among non-enrollees.

Results: This is a group of 102 patients from a single site private practice fertility clinic who were offered enrollment in the FFP. Overall, despite attempts at decreasing barriers for patients, participation rates in the actual program remained low. Of the 102 patients who were contacted after being offered the program, 26 participated in our survey. Survey results for barrier to participation were as follows: 19 percent cost, 50 percent time commitment, 38 percent convenience, 8 percent transportation, 4 percent changed physicians, 23 percent program burden, 27 percent readiness for change, 11 percent support, 4 percent childcare.

Conclusions: Our findings affirm prior studies showing that participation in weight loss programs is extremely challenging, despite appropriate accommodations. In our study, time commitment was the most frequently experienced barrier to participation in a fitness program. The FFP was conducted during the COVID 19 pandemic which may have been further impacted our results and warrants further exploration.

Bleeding in Silence: The Untold Experiences of Women

Antonia Traina, MS, MD, Chloe Smith, MD, Heather Duplessis, BS,
Holly Provost, MD

Objective: Abnormal uterine bleeding (AUB) is a common gynecological disorder affecting 10-35% of reproductive aged women. Its association with endometrial cancer, the leading gynecological cancer in the United States, is recognized by health care providers who seek to provide early diagnosis and treatment of abnormal uterine bleeding. Despite the high prevalence of AUB and postmenopausal bleeding (PMB), many women lack fundamental understanding of the clinical presentations of these disorders necessitating medical evaluation, and the potential severity of the disease. This can lead to delays in seeking care, subsequent treatment, and possible prevention of endometrial cancer. The aim of this survey is to evaluate the socioeconomic disparities in women's healthcare as it pertains to abnormal perimenopausal and postmenopausal bleeding in women 40 years and older. We also strive to understand the impacts of limited health literacy on seeking care for AUB and to identify factors that could improve interventions for early diagnosis and treatment.

Methods: A survey was provided to women 40 years and older both with AUB and PMB regarding their experiences seeking gynecological care. Patients were identified by age and diagnosis of AUB and/or PMB. A retrospective chart review was completed to obtain demographic data. Categorical variables were described by reporting counts and percentages. Associations between variables were analyzed with Fisher Exact tests. Statistical analyses were performed using R statistical software version 4.2.1. Statistical significance was recognized if $p < 0.05$.

Results: Ninety-two percent of women with a yearly income of less than $30,000, and 74% of women with high school education or less, did not associate perimenopause with bleeding abnormalities ($p=0.012$ and 0.021, respectively). We discovered that those women who openly discussed perimenopause, only 61% reported vaginal bleeding after menopause as abnormal ($p=0.034$). We also determined that women discussed irregular bleeding with friends and family more often than with physicians ($p=0.035$). Lastly, our study found that patients with limited health literacy did not feel as though there was a delay in their AUB workup despite 48.9% seeking medical care only after more than 3 years of significant symptoms.

Conclusions: Openly discussing what to expect after menopause can lead to better understanding of the dangers of abnormal perimenopausal and postmenopausal bleeding.

Expanding the Use of Telemedicine After Gynecologic Surgery: An Analysis of Patient Safety and Satisfaction – A Randomized Controlled Trial

Vanessa Norris, MD, Sydni Barras, BS, Allison Willard, BS, Holly C. Provost, M.D
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Objective: During the COVID epidemic, gynecologists found many aspects of patient care can be delivered remotely while maintaining patient safety and satisfaction. The use of telemedicine for postoperative care has been shown to be an appropriate, and even preferable tool after minimally invasive surgery. However, few studies have examined this in gynecologic surgery. The primary outcome of this randomized controlled trial was to determine if the delivery of virtual postoperative care after minimally invasive gynecologic procedures when compared to in-person postoperative care would increase patient satisfaction in a rural, safety net hospital in Louisiana. Our secondary outcome was to determine whether the virtual postoperative visit increases the incidence of postoperative complications, emergency room visits, and patient readmissions within the six-week postoperative period.

Methods: Patients were randomized to receive intervention (telemedicine visit at two weeks) or standard care (in-person visit at two weeks). Eligible participants included female patients ages 18 and older who have undergone elective, minimally invasive gynecologic surgery performed at a rural teaching hospital in Louisiana. Patients were excluded if they had undergone emergent surgery, did not have access to phone or video conference capabilities, or were non-English speaking. The Patient Satisfaction Questionnaire Short Form PSQ-18 was administered to all participants at least 6 weeks after surgery. Chart review was performed to assess frequency of postoperative adverse events.

Results: Of 51 participants enrolled, 29 (56.9%) were randomized to standard visits, and 22 (43.1%) were randomized to the intervention. In response to the PSQ-18 addendum questions, 100% of respondents in both groups answered strongly agree to "I was able to ask questions about my surgery", and over 90% in each group stated that their postop concerns were adequately addressed (93.8% vs. 91.3%). In response to the PSQ-18 survey item “I have easy access to the medical specialists I need”, more participants in the telemedicine arm disagreed compared to the in-person arm (37.5% vs 4.3% respectively, p=0.013). This was the only statistically significant difference between the telemedicine and in-person arms. There was no statistical difference in the overall satisfaction with the postoperative care received between the telemedicine and the in-person groups (93.8% agree or strongly agree vs. 95.7%, p=1). There was no increase in postoperative complications in the telemedicine arm of the study, with an overall complication rate of 12.5% in all cases; the most frequent complication being urinary tract infection.

Conclusions: There were few significant differences in the responses to the patient satisfaction survey between the standard and intervention groups. However, some clinical differences may be significant in the telemedicine group. For example, telemedicine patients may feel that access to their providers is more challenging. While the use of the telemedicine did not increase patient satisfaction as compared to the standard care arm, the high level of satisfaction with the postoperative experience was similar between each arm. We offer that it is reasonable to use telemedicine as an alternate option for postoperative care with the appropriate patient. As there was no increase in postoperative complications noted with telemedicine follow-up, we also showed that follow up by virtual visit is a safe option for patients who may not be able to travel to the office. Future study is needed to confirm statistical significance.