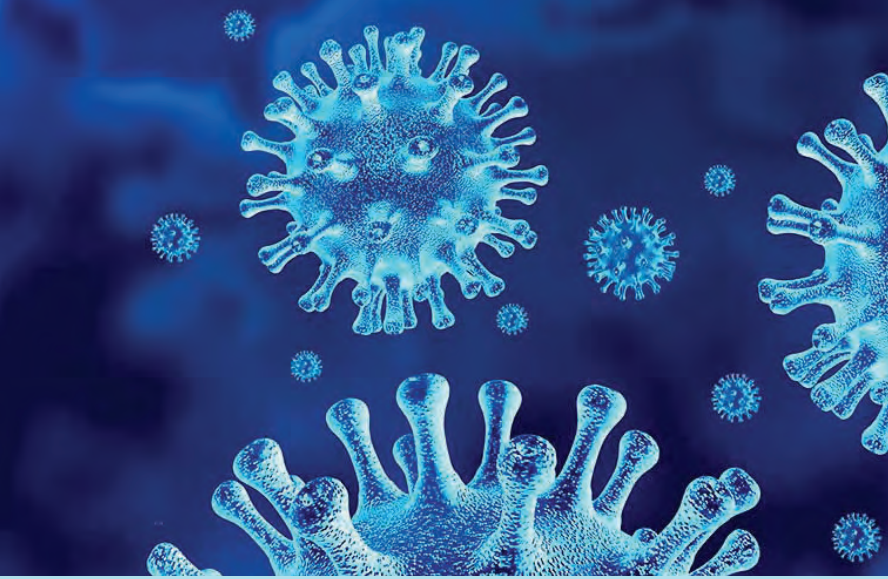
Program of The Central Association of Obstetricians and Gynecologists

87th Annual Meeting

November 7, 2020
Virtual Meeting

CAOG
FOUNDED 1929

CORONAVIRUS



Jointly Provided by the University of North Dakota School of Medicine and Health Sciences

CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS
(FOUNDED 1929)

2020 ANNUAL MEETING

NOVEMBER 7, 2020

HISTORIC VIRTUAL MEETING

Since 1929, the Central Association of Obstetricians & Gynecologists (CAOG) has been promoting the optimal health care of women. Optimal healthcare assumes equitable opportunities at every encounter, every day.

As a women's health organization, we are cognizant of the many racial disparities in the delivery of quality health care, both in the United States and abroad. This is a time to reach out, to listen, and to strive to make changes as advocates for all women.

CAOG wishes to join other healthcare organizations to effect social changes that affects everyone, every day.

2020 CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

OFFICERS

President
Suneet P. Chauhan, M.D., Hon. D.Sc.
McGovern Medical School-UTHealth
Houston, Texas

President Elect I
J. Coffy Pieternelle, M.D.
Southeast Texas Ob-Gyn Associates, PA
Beaumont, Texas

President Elect II
James W. Van Hook, M.D.
Univ. of Toledo Medical Center
Toledo, Ohio

Vice President
Elliot M. Levine, M.D.
Advocate Illinois Masonic Med. Center
Chicago, Illinois

Secretary-Treasurer
Andrew F. Wagner, M.D.
Northwestern Univ.
Chicago, Illinois

Immediate Past President
Vanessa M. Barnabei, M.D., Ph.D.
Jacobs School of Medicine
Univ. at Buffalo-The State Univ. of NY
Buffalo, New York

TRUSTEES

Emily A. DeFranco, D.O., M.S. (2017 – 2020)
Univ. of Cinncinnati College of Medicine
Cincinnati, Ohio

Craig V. Towers, M.D. (2017 – 2020)
Univ. of Tennessee Medical Center
Knoxville, Tennessee

Dana M. Benden, M.D. (2018 – 2021)
Gundersen Health System
La Crosse, Wisconsin

Peter B. Greenspan, D.O. (2018 – 2021)
Truman Med. Ctr. – UMKC School of Medicine
Kansas City, Missouri

Jean R. Goodman, M.D. (2019 – 2022)
Loyola Univ. Medical Center
Maywood, Illinois

Kinion E. Whittington, D.O. (2019 – 2022)
Kinion Care
Durant, Oklahoma

CAOG Management/Headquarters

Dennis J. Lutz, M.D., Managing Director
P.O. Box 190
Minot, ND 58702-0190
701-852-1555 (office)
701-852-8733 (fax)
dlutz@caog.org

Rochelle Hickel, Executive Director
P.O. Box 3010
Minot, ND 58702-3010
701-838-8323 (office)
701-852-8733 (fax)
rhickel@caog.org

PROGRAM COMMITTEE* - 2020

Andrew F. Wagner, M.D., Chair
Northwestern Univ.
Chicago, Illinois

Robert A. Wild, M.D., MPH, Ph.D., Vice Chair
Oklahoma Univ. Health Science Center
Oklahoma City, Oklahoma

Brent W. Bost, M.D.
Baylor University Medical Center
Dallas, Texas

Angelina K. Gangestad, M.D.
Univ. Hospitals Case Medical Center
Cleveland, Ohio

James B. Hill, M.D.
Baylor College of Medicine
San Antonio, Texas

Emmet Hirsch, M.D.
NorthShore Univ. HealthSystem
Evanston, Illinois

Curtis L. Lowery, Jr., M.D.
Univ. of Arkansas for Medical Sciences
Little Rock, Arkansas

Tacoma A. McKnight, M.D.
Northwestern Univ.
Chicago, Illinois

Joseph M. Miller, Jr., M.D.
Louisiana State Univ. Health Sciences Center
New Orleans, Louisiana

PROGRAM COMMITTEE* - 2020 (CONT)

Susan M. Mou, M.D.
Truman Medical Center
Kansas City, Missouri

Roger P. Smith, M.D.
Florida Atlantic Univ.
Boca Raton, Florida

EXHIBITS/INDUSTRY COMMITTEE* - 2020

J. Coffy Pieternelle, M.D., Chair
Southeast Texas Ob-Gyn Associates, PA
Beaumont, Texas

James W. Van Hook, M.D., Vice Chair
Univ. of Toledo Medical Center
Toledo, Ohio

Andrew F. Wagner, M.D.
Northwestern Univ.
Chicago, Illinois

* Ex officio members not listed

BYLAWS COMMITTEE* - 2020

Robert J. Carpenter, Jr., M.D., J.D., Chair
Baylor College of Medicine
Houston, Texas

Thomas F. Arnold, M.D., Vice Chair
CHI St. Alexius Health
Dickinson, ND 58601

James F. Kirby, M.D.
Southeast Texas Ob-Gyn Associates, PA
Beaumont, Texas

Fran Popper, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

Suneet P. Chauhan, M.D., Hon. D.Sc.*
McGovern Medical School-UTHealth
Houston, Texas

Elliot M. Levine, M.D.*
Advocate Illinois Masonic Med. Center
Chicago, Illinois

J. Coffy Pieternelle, M.D.*
Southeast Texas Ob-Gyn Associates, PA
Beaumont, Texas

James W. Van Hook, M.D.*
Univ. of Toledo Medical Center
Toledo, Ohio

Andrew F. Wagner, M.D.*
Northwestern Univ.
Chicago, Illinois

Vanessa M. Barnabei, M.D., Ph.D.*
Jacobs School of Medicine
Univ. at Buffalo-The State Univ. of NY
Buffalo, New York

* Ex officio board members

MEMBERSHIP COMMITTEE* - 2020

Catherine L. Van Hook, M.D., Chair
Univ. of Toledo Medical Center
Toledo, Ohio

William M. Lowe, II, M.D., Vice Chair
St. Alexius Women's Clinic
Dickinson, North Dakota

Deborah A. Boyle, M.D.
Univ. of Chicago Medical Center
Chicago, Illinois

Joanie Y. Hare, M.D.
Houston Perinatal Associates
Houston, Texas

Margaret E. Long, M.D.
Mayo Clinic
Rochester, Minnesota

Hector Mendez-Figueroa, M.D.
Univ. of Texas Health Science Center
Houston, Texas

* Ex officio board members not listed

NOMINATING COMMITTEE - 2020*

Chair
President
Suneet P. Chauhan, M.D., Hon. D.Sc.
McGovern Medical School-UTHealth
Houston, Texas

Vice Chair
President Elect I
J. Coffy Pieternelle, M.D.
Southeast Texas Ob-Gyn Associates, PA
Beaumont, Texas

Immediate Past President
Vanessa M. Barnabei, M.D., Ph.D.
Jacobs School of Medicine
Univ. at Buffalo-The State Univ. of NY
Buffalo, New York

Second Past President
Lee P. Shulman, M.D.
Northwestern Univ.
Chicago, Illinois

*Due to the COVID-19 pandemic the Board of Directors as a group will serve in this capacity since they ultimately approve all committee recommendations.

PLANNING COMMITTEE - 2020

Vanessa M. Barnabei, M.D., Ph.D.

Dana M. Benden, M.D.

Brent W. Bost, M.D.

Suneet P. Chauhan, M.D., Hon. D.Sc.

Emily A. DeFranco, D.O., M.S.

Angelina K. Gangestad, M.D.

Jean R. Goodman, M.D.

Peter B. Greenspan, D.O.

Rochelle Hickel, CAOG Exec. Director

James B. Hill, M.D.

Emmet Hirsch, M.D.

Mary L. Johnson, CME Program Admin.

Elliot M. Levine, M.D.

Curtis L. Lowery, M.D.

Dennis J. Lutz, M.D.

Tacoma A. McKnight, M.D.

Joseph M. Miller, Jr., M.D.

Susan M. Mou, M.D.

J. Coffy Pieternelle, M.D.

Roger P. Smith, M.D.

Craig V. Towers, M.D.

James W. Van Hook, M.D.

Andrew F. Wagner, M.D.

Kinion E. Whittington, D.O.

Robert A. Wild, M.D., MPH, Ph.D.

MEETING OBJECTIVES

The Central Association of Obstetricians and Gynecologists is one of the oldest and most prestigious specialty organizations in the United States. Since its founding in 1929, the CAOG has actively encouraged and promoted the study of obstetrics and gynecology and women's health care. In support of its mission, the national program this year is designed to address important advances in clinical care and practice management, as well as fundamental research. The program is integrated to promote open discussion between attendees, who are leaders in obstetrics, gynecology, genetics, reproductive endocrinology, gynecologic oncology and women's health care. The program format of hot topics, a keynote speaker and scientific research presentations will promote a better understanding of each subject by filling gaps in knowledge.

Specific learning objectives for each presentation are listed on the speaker evaluation forms.

DISCLOSURE OF FACULTY AND INDUSTRY RELATIONSHIPS

In accordance with ACCME policy, all faculty members have signed a conflict of interest statement in which they have disclosed any relevant financial interests or other relationships with industry relative to topics they will discuss at this program. At the beginning of the program, faculty members are expected to disclose any such information to participants. Such disclosure allows you to evaluate better the objectivity of the information presented in lectures. Please report on your evaluation form any undisclosed conflict of interest you perceive.

MEETING EVALUATION FORMS

Speaker evaluation forms for each lecture will be distributed to all attendees. Please complete these promptly. A signed, completed evaluation is required by our CME provider in order to receive credit. This also assists with CAOG's future needs assessment.

ACCME Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of North Dakota School of Medicine and Health Sciences and the Central Association of Obstetricians and Gynecologists. The University of North Dakota School of Medicine and Health Sciences is accredited by the ACCME to provide continuing medical education for physicians.

AMA/PRA Credit Designation Statement for Category 1

The University of North Dakota School of Medicine and Health Sciences designates this Live activity for a maximum of *2.0 AMA PRA Category 1 Credit(s)*^{TM}. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Category 1 Credit Certificates

Award Certificates will be mailed to each attendee after the meeting and will include only those credits for presentations which you have attended and for which a completed and signed evaluation form has been returned.

ACOG Cognates

The American College of Obstetricians and Gynecologists has assigned up to 2 cognate credits to this program.

Hot Topic Lectures

Two general “hot topic” lectures will be presented. These emphasize the most up-to-date information on: (1) digital health and (2) health literacy.

ANNUAL BUSINESS MEETING

The CAOG Annual Business Meeting will be held starting at 11:30 a.m. on Saturday, November 7, 2020. The names of the new members elected in 2019 will be read at this time but no membership certificates will be presented until they can personally attend their first meeting.

SCIENTIFIC POSTER DISPLAYS

The Scientific Poster session will be available online only. Guidelines for electronic poster judging will be forthcoming once details are confirmed.

PROGRAM SCHEDULE
87th Annual Meeting Central Association of Obstetricians and Gynecologists
Virtual Meeting
November 7, 2020

SATURDAY, November 7, 2020

9:30 – 10:30 a.m. **Hot Topic**
"Digital Health"
Curtis L. Lowery, Jr., M.D.
Univ. of Arkansas for Medical Sciences
Little Rock, Arkansas

Learning Objectives:
- Describe several reasons for the recent boom in digital health and telemedicine.
- Devise a patient friendly strategy for navigating the legal issues inherent with telemedicine.

10:30 – 11:30 a.m. **Hot Topic**
"Health Literacy"
Lynn M. Yee, M.D., M.P.H.
Northwestern Univ.
Chicago, Illinois

Learning Objectives:
- Outline how the Center for Disease Control explains why there is a lack of health literacy.
- Describe how patient decision aids can contribute to improving patient health literacy.

11:30 a.m. - **Annual Business Meeting CAOG**

ADJOURN

Qualtrics links will be sent out for the pre test, evaluation, and post test. Please complete in order to trace attendance and receive educational credits.

Paper #1 Central Prize Award
Adverse Outcomes Associated with Pregnancy Conception Methods Among Low-Risk Pregnancies

Morgen S Doty, DO, Han-Yang Chen, PhD, Stephen M Wagner, MD, Suneet P Chauhan, MD, Hon DSc

McGovern Medical School-UTHealth, Houston, TX

Purpose: Conflicting evidence exists regarding maternal and neonatal adverse outcomes among pregnancies with different conception methods: spontaneous conception (SC) versus assisted reproductive technology (ART) methods including (1) infertility medications and intrauterine insemination [IFM/IUI] and (2) in vitro fertilization [IVF]. Most prior studies use data from small European cohorts, and include two study groups - either SC versus ART, or SC versus IVF, with IFM/IUI pregnancies either being placed in one group or the other, or not being used at all. There is a paucity of publications on the composite adverse outcomes for singleton low-risk pregnancies when comparing the three groups: SC, IFM/IUI, and IVF pregnancies.

The primary objective was to compare the composite neonatal adverse outcome (CNAO) among low-risk term pregnancies among the three groups. The secondary objective was to compare the composite maternal adverse outcome (CMAO) and individual neonatal and maternal adverse outcomes among the three groups.

Methods: This was a population-based retrospective cohort study using the U.S. vital statistics period linked birth-infant death datasets from 2013 to 2017. Our study sample included live births from low-risk pregnancies (without hypertensive disorders, pre-gestational or gestational diabetes, or history of preterm birth) of women $\geq$ 20 years of age with non-anomalous singletons, who labored (vaginal birth or cesarean after trial of labor) with cephalic presentation, delivered at term (37 to 41 weeks), and had data on pregnancy conception with use of the 2003 revised birth certificate.

The main exposure variable was pregnancy conception method, as documented by the birth certificate, categorized as SC (reference), IFM/IUI, and IVF. The primary outcome, CNAO, included any of the following: Apgar score < 5 at 5 minutes, assisted ventilation > 6 hours, neonatal seizure, or neonatal mortality (death within 27 days of birth). The secondary outcomes were CMAO (including any of the following: admission to intensive care unit (ICU), blood transfusion, uterine rupture, or unplanned hysterectomy) and individual neonatal and maternal adverse outcomes. Multivariable Poisson regression models with robust error

variance were used with adjusted relative risk (aRR) and 95% confidence intervals (CI) reported. We adjusted for maternal age, race and ethnicity, maternal education, marital status, insurance type, nulliparity, prenatal care, smoking during pregnancy, pre-pregnancy body mass index, prior cesarean section, chorioamnionitis, gestational age at delivery, delivery route, and year of delivery.

We conducted two sensitivity analyses to determine: (1) whether associations persisted if the CMAO excluded maternal blood transfusion, and (2) whether associations with composite adverse outcomes persisted if pregnancies were stratified by maternal age.

Results: Of the 19.8 million deliveries during the study period, 54% (N = 10,676,184) met the inclusion criteria; among them, 99.0% (N = 10,573,741) were SC, 0.4% (N = 47,227) were IFM/IUI, and 0.5% (N = 55,216) were IVF pregnancies. All maternal characteristics were significantly different among the 3 groups ($P < 0.001$), with the exception of infant sex.

The overall rate of CNAO was 6.68 per 1,000 live births. Compared to SC pregnancies, the risk of CNAO was significantly higher among IFM/IUI (aRR 1.29, 95% CI 1.18-1.41) and IVF (aRR 1.29, 95% CI 1.18-1.39). The risk of assisted ventilation > 6 hours was significantly higher among IFM/IUI (aRR 1.65, 95% CI 1.47-1.85) and IVF (aRR 1.65, 95% CI 1.49-1.83). Compared to SC, the risk of neonatal seizure was significantly higher among IVF pregnancies (aRR 1.82, 95% CI 1.30-2.55).

The overall rate of CMAO was 2.50 per 1,000 live births. Compared to SC pregnancies, the risk of CMAO was significant increased among IFM/IUI (aRR 1.72, 95% CI 1.50-1.97) and IVF (aRR 2.40, 95% CI 2.17-2.65). Compared to SC, the risk of individual maternal adverse outcomes was significantly higher in ART pregnancies: admission to ICU in IVF (aRR 1.85, 95% CI 1.51-2.27); blood transfusion in IFM/IUI (aRR 1.91, 95% CI 1.66-2.21) and IVF (aRR 2.77, 95% CI 2.49-3.08); and unplanned hysterectomy in IFM/IUI (aRR 1.82, 95% CI 1.17-2.84) and IVF (aRR 1.92, 95% CI 1.38-2.66).

The first sensitivity analysis indicates that the risk of CMAO without blood transfusion remained significantly increased among IFM/IUI (aRR 1.37, 95% CI 1.06-1.76) and IVF (aRR 1.75, 95% CI 1.46-2.10) compared to SC pregnancies. In the second sensitivity analysis among pregnancies with advanced maternal age (AMA; ≥ 35 years old), the risk of CNAO remained significantly increased among IVF versus SC (aRR 1.23, 95% CI 1.07-1.42); and the risk of CMAO remained significantly higher among IFM/IUI (aRR 1.66, 95% CI 1.09-2.54) and IVF (aRR 1.80, 95% CI

1.38-2.36) versus SC pregnancies, even when blood transfusion was excluded.

Conclusions: Among low-risk term pregnancies, ART methods of IFM/IUI and IVF have modestly higher rates of adverse outcomes to maternal-neonatal dyad compared to SC. Our study provides one of the largest cohorts examining contemporary obstetric practice, incorporates a 3-tier division of conception methods, and may be used for shared decision making and possible intervention trials to mitigate risk.

Paper #2 President's Certificate of Merit Award
Enhanced Recovery After Scheduled Cesarean Delivery

Lisette D Tanner, MD, MPH, Han-Yang Chen, PhD, Suneet P Chauhan, MD, Hon DSc, Baha M Sibai, MD, Semhar J Ghebremichael, MD

McGovern Medical School-UTHealth, Houston, TX

Purpose: In 2018, guidelines for enhanced recovery after surgery (ERAS) in cesarean delivery were published. While the guidelines are based on the available evidence, more than 50% of the recommendations are based on very low or low level of evidence. Given the paucity of evidence regarding ERAS after cesarean delivery, we designed this pre- and post-intervention study to assess whether an ERAS pathway after scheduled cesarean delivery was associated with a reduction in postoperative length of stay. Our hypothesis was the rate of postoperative length of stay of 3 or more days would be significantly less among women who underwent an ERAS pathway.

Methods: This was a pre- and post-intervention study conducted at a single urban academic center from March-August 2019. Pre-implementation data was collected from March to April 2019. Consecutive women meeting the inclusion and exclusion criteria were identified and included. The ERAS pathway was officially rolled out on April 30, 2019. After which, 60 days were allotted as a washout period. Postimplementation data was collected from July- August 2019. For both the pre and post implementation cohorts, data was prospectively collected within 72 hours of patient discharge.

Women were considered eligible for the study if they were between 18- and 45- years of age, had a term, singleton, non-anomalous fetus and were undergoing a scheduled cesarean delivery as part of the academic practice. Women were excluded if they had more than 2 prior cesarean deliveries; evidence of renal impairment; evidence of hepatic disease; known allergy or contraindication to any of the medications employed in the ERAS pathway; chronic narcotic use; chronic pain syndromes; body mass index greater than 40 kg/m2; abnormal placentation; history of cervical spinal fusion; or cared for by physicians not a part of the academic practice.

The ERAS pathway consisted of 23 components. Preoperatively, the ERAS pathway consisted of decreased preoperative fasting, consumption of a 20 ounce carbohydrate beverage prior to surgery, and administration of preoperative acetaminophen. Intra-operatively, the ERAS pathway consisted of maintenance of euvolemia, utilization of regional

anesthesia with long acting narcotics, and administration of multi-modal anti-emetics and analgesia. Post-operatively, the pathway consisted of immediate resumption of a regular diet, early mobilization, and administration of multi-modal analgesia and bowel regimens.

The primary outcome of the study was the rate of postoperative length of stay of 3 or more days. Secondary outcomes included total postoperative narcotic use, postoperative complications rates, 30-day hospital readmission rates, and quality of recovery questionnaire scores. The quality of recovery questionnaire (QoR-15) is a patient reported measure of the early postoperative health status based on 5 domains: pain, physical comfort, physical independence, psychological support and emotional state. The questionnaire has been previously validated for use in obstetric populations after cesarean delivery.

The sample size calculation was based on institutional data of postoperative length of stay after scheduled cesarean delivery. For the purposes of powering our analysis, we assumed that 30% reduction in the number of patients with postoperative length of stay of 3 or more days would be clinically significant. A minimum sample size of 116 patients was calculated using a two-tailed t-test, an alpha error of 0.05 and a power of 80%. Of note, the sample size of 116 also provided sufficient power to detect a 50% reduction in narcotics used postoperatively. For statistical analysis, categorical variables were compared by X2 or Fisher's exact test, while continuous variables were compared using student t or Wilcoxon rank sum test.

Results: There were no significant differences in maternal characteristics between the pre- and post- intervention groups. The duration of surgery was longer in the post-implementation cohort with a mean difference of over 19 minutes (78.25 ± 27.81 vs 59.05 ± 19.16 min, $P < 0.001$). Estimated blood loss was significantly higher in the postimplementation cohort (910.3 ± 405.1 vs 729.1 ± 202.0 mL, P= 0.003). Compliance was above 80% for 19 of the 23 ERAS components.

An ERAS pathway was not associated in a significant reduction in postoperative length of stay of 3 or more days (70.7% vs 75.9%, P= 0.529). It was also not associated with a difference in postoperative narcotic use (54.43 ± 46.81 vs 63.53 ± 56.24 MME, P= 0.319). An ERAS pathway was not associated with a difference in transfusion (5.2% vs 1.7%, P = 0.349), postoperative complications (1.7% vs 1.7%, P= 1.000) or 30-day hospital readmission rates (6.9% vs 3.5%, P= 0.402). All 116 women completed the QoR-15. Women who underwent the ERAS pathway had significantly higher QoR-15 scores (122.91 ± 1.34 vs 119.53 ± 2.73, P= 0.002).

Conclusion: An ERAS pathway after scheduled cesarean delivery was not associated with a reduction in postoperative length of stay or narcotic use. Given the lack of evidence that ERAS after scheduled cesarean delivery is beneficial, caution regarding implementing an ERAS pathway after scheduled cesarean delivery is warranted.

Paper #3 Young Investigator Award

Labor Induction with Prostaglandin E1 versus E2: A Comparison of Outcomes

Hector Mendez-Figueroa, MD, Matthew J Bicocca, MD, Megha Gupta, MD, Stephen M Wagner, MD, Suneet P Chauhan, MD, Hon DSc

McGovern Medical School-UTHealth, Houston, TX

Objective: In 2017, over 990,000 women were induced in the US. One of the most commonly used induction agents in the United States is prostaglandins (PG). Currently, the two clinically available forms include the prostaglandin PGE1 (generic name - Misoprostol™) and the prostaglandin PGE2 (generic name - dinoprostone™). The American College of Obstetricians and Gynecologists ACOG, in a practice bulletin entitled Induction of Labor, has level A recommendation: "Prostaglandin analogues are effective for cervical ripening and inducing labor." A corollary of the recommendation is that when induction is done with PGE1 and PGE2, they have similar outcomes. We, however, hypothesized that the likelihood of maternal and neonatal complications is significantly higher among deliveries that underwent induction using prostaglandin PGE1 because of its association with increased risk of tachysystole and changes in fetal heart rate patterns.

The primary objective of this study was to compare the composite adverse neonatal outcomes among pregnancies undergoing induction of labor via prostaglandin PGE1 versus prostaglandin PGE2; the secondary objective was to compare the composite maternal morbidity among these two groups.

Methods: The Consortium of Safe Labor database was utilized. Women with non-anomalous singletons greater than 24 weeks of gestation undergoing induction with prostaglandin agents were included. Women who received both PGE1 and PGE2 were excluded. The primary endpoint was a composite adverse maternal outcome which included any of the following: thromboembolism, uterine rupture, postpartum hemorrhage (PPH), unplanned hysterectomy, eclampsia, admission to intensive care unit, or maternal death. Our secondary outcome was a composite adverse neonatal outcome, which included any of the following: need for mechanical ventilation or CPAP, respiratory distress syndrome (RDH), intraventricular hemorrhage, neonatal sepsis, or perinatal death. A multivariable logistic regression model was applied to examine the association between induction method and adverse outcomes, reported as adjusted odds ratio (aOR) with 95% confidence interval (CI). The

analysis was corrected for possible confounders including maternal age, pre-pregnancy BMI maternal race and ethnicity, nulliparous, marital status, education level, study site, insurance status, and gestational age at delivery (<37 weeks, ≥ 37 weeks)

Two sensitivity analysis were done: 1) adverse outcomes among low-risk pregnancies (i.e. at term without hypertension or diabetes) and; 2) induction done without concomitant use of mechanical agents.

Results: Of the 228,438 births within the database, 8,229 (10.8%) met inclusion criteria for this analysis. Among the eligible cohorts, 4,703 (55.7%) received PGE1 and 3,741 (44.3%), PGE2.

Elective inductions were twice more likely among women induced with prostaglandin E2. Women induced with prostaglandin E1 had a longer labor and delivery course as evidenced by a longer triage to delivery interval, admission to delivery interval, induction to delivery interval and full dilation to delivery interval (P<0.01 for all comparisons).

The rate of intraamniotic infection was significantly higher among women induced with E1 than E2, (4.2% vs. 1.5%; aRR 1.67; 95% CI 1.05 - 2.65).The rate of vaginal delivery following induction was similar between both agents, 65.8% vs. 74.3% (aOR 1.11; 95% CI 0.96 -1.29). The indications for cesarean delivery-failed induction, arrest disorder, or non-reassuring fetal heart rate tracing-were similar for the two groups.

The primary outcome, composite adverse neonatal outcome rates was more likely among women undergoing induction with prostaglandin E1 versus E2: 4.6% vs. 1.4% (aOR 1.69; 95% CI 1.14 - 2.50). The two component of neonatal morbidity that differed significantly were RDS (aOR 1.79, 95% CI 1.03 - 3.13) and mechanical ventilation (aOR 2.37, 95% CI 1.20 - 4.68)

The composite adverse maternal outcome, was also more likely among the prostaglandin E1 than E2: 7.2% vs. 1.5% (aOR 4.20; 95% CI 3.02 - 5.85). The component of the maternal composite which was most different was PPH (9.7% for E1 and 1.7 for E2; aOR4.62, 95% CI 3.27 - 6.54). The rate of blood transfusion was also significantly higher with PGE1 (8.0%) than PGE2 (5.6%; aOR 1.31, 95% CI 1.01 - 1.71).

Among low-risk pregnancies the composite maternal outcome was higher with E1 versus E2 (aOR 5.47; 95% CI 3.87 - 7.72) but the rate of adverse neonatal outcomes was similar. When cases of induction utilizing mechanical induction agents were removed, the rates of both composite adverse maternal and neonatal outcomes were more likely among women induced with PGE1.

Conclusion: In spite of the similar rate of vaginal delivery, utilization of prostaglandin E1 (Misoprostol) as an induction agent, compared to E2 (dinoprostone) was associated with a significantly higher likelihood of adverse maternal and neonatal outcomes. Our findings demonstrated a substantial nuance not present in ACOG's recommendations on the topic. Considering the possibilities of bias and residual confounders, our results are insufficient to change practices or policies but are sufficient to necessitate a multicenter randomized trial.

Paper #4 **Dr. George W. Morley Memorial Paper Award**

AHCC Supplementation to Support the Immune System in the Elimination of Persistent Human Papillomavirus Infections in Women

Judith A Smith, PharmD[1], Anjali Gaikwad, MS[1], Barbara Rech, RN[1], Christopher D. Barr, PhD[2], Jonathan P Faro, MD[3], Teresa T Byrd, MD[4]

Department of Obstetrics, Gynecology and Reproductive Sciences, McGovern Medical School-UTHealth, Houston, TX[1], Rice University, Houston, TX[2], Specialists in Obstetrics & Gynecology, Houston, TX[3], WellStar Kennestone Regional Medical Center, Marietta, GA[4]

Background: The human papilloma virus (HPV) is classified as a non-enveloped, double stranded DNA virus that generally infects the epithelial layer of cells including cutaneous and mucosal surfaces and associated with benign warts, carcinoma in situ and malignant lesions. There are over 100 HPV strains identified in humans, 40 low-risk HPV (LR-HPV) strains associated with genital warts/lesions, and fifteen high-risk HPV (HR-HPV) strains associated with cancer. To date, there are no effective treatment options for eradicating systemic HPV infections. Recently two pilot studies concluded that confirmed the previous preclinical findings that AHCC supplementation has a potential to be effective to support the host immune system to clear persistent HR-HPV infections and supported the rationale to continue forward with a formal phase II double-blind, placebo-controlled evaluation to confirm these preliminary findings.

Objectives: The objective of this study was to determine the efficacy, safety, and durability of use of AHCC® supplementation for six months to support the host immune system to clear high risk HPV infections.

Methods: This was a phase II randomized, double-blind, placebo-controlled study with post-study unblinded AHCC supplementation that was reviewed and approved by University of Texas Health Sciences Center Institutional Review Board MS14-0866/NCT02405533. A total of 50 women over 30 years of age with confirmed persistent high-risk HPV infections were randomized to placebo once daily for 12 months (N=25) or AHCC® 3g by mouth once daily on empty stomach for six months followed by six months of placebo (N=25). Every 3 months patients were evaluated for HPV infection with HPV-DNA and HPV-RNA test as well as a panel of immune markers including: interferon-alpha (IFN-

α), interferon-beta(IFN-β), interferon-gamma (IFN-γ), IgG1, T-lymphocytes, and natural killer (NK) cell levels. Patient demographic information was collected including: number of lifetime sexual partners, contraception methods, and periodic pregnancy testing throughout the study. AHCC® was generously provided by Amino Up, Ltd. (Sapporo, Japan). The primary outcome of this trial was achieving durable clearance of HR-HPV infection determined by HPV-DNA negative test results achieved while receiving AHCC supplementation and maintained for 3, 6, and 12 months post completion of the AHCC supplementation compared to receiving placebo. In this patient population, women with persistent HPV infections, the expected eradication or clearance of HPV infection on its own is zero to 10%. It was hypothesized the target treatment success rate is 50 % at six months post end of supplementation and 12 months post end of supplementation. Based on these proportions, 10% eradication in the absence of treatment and 50% eradication with treatment, a power analysis was conducted using data simulation in Mplus 7.2 through a multi-step process. At a 0.05 confidence level, a sample of a maximum of 50 patients (N=25 per group) was needed to detect the hypothesized effect size with 94.5% power.

Results: Fifty women with high-risk HPV were enrolled and 41 completed the study. Fourteen (63.6%) of the 22 patients in AHCC supplementation Group 1 study arm and six of twelve (50%) of the unblinded AHCC participants were HPVRNA/HPVDNA negative after six months giving an overall response rate of 58.8%. On placebo arm, two (10.5%) of 19 patients were HPV negative at 12 months. All patients had IFN-β levels above 40 pg/μL at baseline and suppression of IFN-β to less than 25 pg/μL correlated with durable response evidenced by clearance of the HR-HPV infection confirmed with both HPVRNA and HPVDNA results. Suppression of IFN-β from baseline level was associated with negative HPVRNA/HPVDNA results while receiving AHCC supplementation but increased after supple-mentation was stopped which was deemed a partial response in this study. The non-responder patients in Group 1 and patients in the placebo group had no change in IFN-β throughout the 12 months of study. No serious adverse effects were observed for all fifty patients enrolled in the study.

Conclusion: This was the first double-blind, placebo-controlled clinical study to demonstrate that the nutritional supplement, AHCC® 3 grams once daily on an empty stomach was effective to support the host immune system to eliminate persistent, HR-HPV infections with a durable response in those patients that also achieved an IFN-β level

below 25 pg/μL. This is also the first attempt that confirmed the correlation between suppressed IFN-β levels to less than 25 pg/μL with increase in T-lymphocytes and IFN-γ which ultimately resulted in clearance of HPV infections in women that received AHCC supplementation. In fact, the data from this study identified the potential opportunity to employ monitoring IFN-β level in patients with HPV infections. Overall, AHCC was well tolerated and had no comparable adverse effects compared to placebo. The duration of AHCC supplementation required beyond first negative result needs more evaluation to optimize durable outcomes.

Paper #5 **Dr. Jack A. Pritchard Memorial Paper Award**

Marijuana Use in Pregnancy and the Risk of Preterm Birth

Rachel Gilbert, DO[1], Andrew G. Chapple, PhD[2], Karli Boggs, MD[1], Elizabeth F. Sutton, PhD[3]

Department of Obstetrics and Gynecology, Louisiana State University Health Sciences Center, Baton Rouge, LA[1], Biostatistics Program, School of Public Health, Louisiana State University Health Sciences Center, New Orleans, LA[2], Woman's Hospital, Baton Rouge, LA[3]

Introduction: The use of marijuana among reproductive age women is rising in the United States as more states legalize marijuana. In young, socioeconomically disadvantaged women, studies report up to 15% of patients' self-report marijuana use in pregnancy. Recent studies have linked marijuana use in pregnancy to risk for preterm birth and small for gestational age infants. However, these reports are limited by self-reported marijuana use and lack of accounting for additional preterm birth risk factors, such as concurrent tobacco use or other illicit drug use. Our objective is to evaluate whether marijuana use in pregnancy increases the risk of preterm births in patients in South-Central Louisiana.

Methods: We conducted a retrospective cohort study of deliveries at Woman's Hospital, Baton Rouge, Louisiana, USA from October 2015 through October 2017 (n=15,604). Patients were excluded (n=1240) for a previous history of preterm birth, incompetent cervix, cerclage placement, or multiple gestations. The primary exposure of interest was marijuana use in the third trimester of pregnancy assessed by urine drug screens during prenatal care or at hospital admission for delivery. The primary outcome was preterm birth as defined as delivery before 37 weeks gestation. Odds for preterm birth with marijuana use were calculated, and logistic regression was preformed to assess the association of preterm birth with marijuana only versus those who did not test positive for marijuana in the third trimester. Ordinal logistic regression was used to predict six preterm categories: Extremely, Very, Moderate, Late, Early Term, and Term.

Results: Patients who used marijuana in the third trimester were more likely to be African American, tobacco smokers, and less likely to be college graduates or have diabetes (all $p<0.001$). Patients who used marijuana were younger than those who did not (25.9 vs 28.0, $p<.001$). Patients who used marijuana during their third trimester of pregnancy had a

significantly higher odds of preterm delivery (Odds Ratio [OR] 2.56, 95% Confidence Interval [CI]: 1.74, 3.66) compared to patients who did not. After adjusting for covariates including other illicit drug use, using both THC in combination with other drugs, tobacco use, hypertension, diabetes, maternal age, race/ethnicity, BMI, insurance used, and education level, the adjusted odds ratio of preterm delivery for women that tested positive for marijuana in the third trimester was 1.84 (95% CI 1.17, 2.89). The ordinal regression showed a lower estimated proportional odds of being in later term category (OR 0.66 [95% CI 0.47, 0.91]) for patients who used THC versus those who did not.

Conclusion: Marijuana use in late pregnancy significantly increases the odds of preterm birth by 84% compared to those not using marijuana in late pregnancy with an adjusted odds ratio of 1.84 (95% CI 1.17, 2.89) after controlling for potential confounders. In general, marijuana users had higher odds of a more severe preterm category.

Paper #6

The Association Between Umbilical Arterial and Venous Gases in Infants with Different Patterns of HIE

Fatima N Zaheer, MD[1], Amy Wozniak, MS[1], Erin McCune, MS2[1], Thierry Daboval, MD[2], Francesca De Vries[2], Jonathan Muraskas, MD[1]

Loyola University Medical Center, Maywood, IL[1,] Children's Hospital of Eastern Ontario, Ottawa, ON[2]

Purpose: To investigate the relationship between the umbilical arterial cord gas (AC) and umbilical venous cord gas (VC) in the context of the 3 major patterns of hypoxic ischemic encephalopathy (HIE), and subsequently to be able to predict the AC when only a VC is available within each type of HIE. This would allow a prediction of fetal acidemia within the different types of HIE-which are Acute Profound (AP), Partial Prolonged (PP), and Both (B)-when only the VC values are available.

Methods: A retrospective chart review of 268 cases of HIE in term infants, which included N=31 from a single tertiary neonatal intensive care unit (NICU) over 9 years (2011-2019) and N=237 cases with poor outcome and subsequent allegations of malpractice over a period of 30 years (1987-2017) through our neonatal causation expert JM. A total of 178 cases were excluded due to lack of paired cord gas data and/or magnetic-resonance imaging (MRI), leaving a total of 90 cases for the analysis. Within the subgroups we had N=33 with AP HIE, N=27 with PP HIE, and N=30 with B HIE.

For each infant birth weight, gestational age, Apgar scores, arterial and venous cord gas data, and MRI results were collected. HIE is categorized by perinatal etiology in 3 major patterns-AP (i.e. placental abruption, cord prolapse, ruptured uterus), PP (i.e. cord compression, placental insufficiency) or B (i.e. pre-existing injury, limited fetal reserves, terminal collapse), and was determined by MRI findings. On MRI, deep gray matter pattern of injury defined AP HIE while watershed pattern of injury affecting the subcortical white matter and overlying cortical gray matter defined PP HIE. In the B type of HIE the MRI demonstrated a combination of patterns found in AP and PP.

Linear regression was used to evaluate the association between VC and AC gas values. Using linear regression analysis, for each HIE type, a slope and intercept model was made. Statistical significance and R2 values were calculated for each line. R2 values quantified variation or 'goodness of fit', with 1 indicating all variation explained, and 0 indicating no variation explained.

Results: We found no significant difference in gestational age or birth weight between the 3 types of HIE. Infants with PP HIE tended to have higher Apgar scores compared with AP or B type HIE.

The R2 values for pH, pCO2, HCO3, and base deficit (BD) ranged from 0.598 to 0.680, indicating a strong 'goodness of fit' of the model. Overall pO2 models did not have a strong 'goodness of fit' with R2 values only at 0.142

There were statistically significant positive relationships for the slope between VC gases and AC gases for pH, pCO2, HCO3 and BD for all types of HIE, with p values ranging from <0.05 to <0.001. Statistical significance was achieved for the intercepts in this model for the pH in the PP type ($p < 0.05$), the pCO2 in all HIE types ($p < 0.05$), and the BD in the PP ($p < 0.01$), and B type ($p < 0.001$). There was only a slight positive slope between VC and AC pO2 in the AP group and no significant associations between VC and AC pO2 for PP or B.

The results of this linear regression can be used for example, if an infant is born with oligohydramnios and cord compression, and has a venous cord gas pH 7.14. Using the linear regression model for PP type HIE, one can input the pH into the slope intercept model. Using a slope of 0.62 multiplied by the venous cord pH of 7.14 and adding the intercept of 2.61 results in an estimate of arterial cord pH of 7.04.

Conclusions: Accurate, timely diagnosis of HIE is a diagnostic and medicolegal challenge for obstetricians and neonatologists. Umbilical cord gases are essential to manage HIE. The AC gas determines fetal acid base status at birth, while the VC gas reflects placental status. This is the first study to investigate the relationship of paired cord blood gases within different patterns of encephalopathy. This is relevant as the AC gas is technically more challenging to obtain than the VC gas and in approximately 20% of deliveries AC gases are not or cannot be obtained. In this study, the pH, pCO2, HCO3, and BD AC values can be estimated in the 3 different types of HIE using only VC values. PO2 cannot be estimated reliably using just the VC value. This model validates the use of VC pH, pCO2, HCO3, and BD to reasonably assess fetal acid base status when AC values are unavailable, thus better guiding clinicians in initiating hypothermia treatment. These findings add to increasing literature that VC values can predict fetal acidemia and can reduce speculation in medicolegal allegations of intrapartum asphyxia.

Paper #7
The Association of Betamethasone Pharmacokinetics with Neonatal Respiratory Outcomes in Preterm Birth

David M Haas, MD, Larissa Lachi Silva, BA, Hayley K Trussell, RN, Cynthia Evrard, RN, Andrea R Masters, BA, Sara K Quinney, PhD

Indiana University School of Medicine, Indianapolis, IN

Objectives: Antenatal corticosteroids, when given to women at risk of preterm birth, are known to reduce neonatal mortality and morbidity. This includes key outcomes such as respiratory distress syndrome (RDS) and bronchopulmonary dysplasia (BPD). However, the neonatal outcomes after betamethasone (BMZ) administration have been shown to be influenced by maternal and infant genetics. The objective of this study is to determine if neonatal outcomes are associated with pharmacokinetic (PK) characteristics of BMZ. association between the PK disposition of maternal BMZ and neonatal outcomes.

Methods: Pregnant women with singleton 23-34 weeks gestational age (EGA) and anticipated preterm birth receiving BMZ were enrolled following informed consent. Two doses of BMZ were administered intramuscularly as 6 mg BMZ sodium phosphate and 6 mg BMZ acetate 24 hours apart. Blood was drawn prior to dosing and at typical PK intervals up to 72 h after administration of BMZ. Plasma samples were analyzed by a validated LC-MS/MS method. A population PK model of BMZ was developed with NONMEM 7.4.3. First-order conditional estimation method with interaction (FOCE-I) was used to estimate structural and variance parameters. PsN and Xpose were employed for model evaluation. Neonatal outcomes were obtained by chart abstraction using standard definitions by trained research nurses. The analysis was limited to women who delivered within 2 weeks of receiving BMZ. Initially, analysis of PK parameters for neonates with and without the outcomes of interest was performed in a case-control fashion. Association of PK parameters were then analyzed using multivariate regression models for neonatal outcomes controlling for EGA at dosing, time from dosing to delivery, and maternal BMI. Analyses were performed using R 4.0.

Results: Of the 211 women recruited into the overall study, 95 (45%) delivered within 2 weeks of receiving BMZ and had PK samples available. For these women, the mean EGA at dosing was 30 ± 4 weeks and the mean EGA at delivery was

31 ± 6 weeks. Maternal BMI mean was 32.7 ± 7.3 kg/m2. There were 3 neonatal deaths. A total of 72 babies developed RDS (75.8%), 20 required ventilator support (21.1%), and 7 developed BPD (7.4%). A total of 931 plasma samples yielded the following PK characteristics for BMZ: mean clearance (CL/F): 31.4 ± 8.37 L/h; half-life: 8.38 ± 2.82 h-1; area under the curve (AUC) from first dose to delivery: 691.88 ± 335.14 h*µg/L . Clearance/F and AUC parameters were not different for women who had infants who developed RDS (p=0.85, p = 0.94), RDS needing ventilator support (p=0.51, p=0.45), or BPD (p=0.27, p=0.45). In multivariate regression models controlling for maternal BMI and EGA at receiving BMZ, there were no significant differences noted between CL/F and AUC of BMZ and rates of RDS, ventilator support, or BPD.

Conclusions: Pharmacokinetic parameters of BMZ were characterized, but after adjusting for maternal BMI and EGA, they are not predictive of which neonates will develop RDS or BPD. Future work will focus on other potential biomarkers of response to antenatal corticosteroids and BMZ concentrations in the umbilical cord blood compared to maternal blood.

Paper #8

Pre-viable Pre-term Pre-labor Rupture of Membranes: Association of Amniotic Fluid Index with Latency Duration

Corrine K Nelson, DO, Alyssa Crawford, MD, Neelam Verma, MD

University of Illinois College of Medicine Peoria, Peoria, IL

Purpose: To determine if there is an association between amniotic fluid index and latency duration at time of previable pre-term pre-labor rupture of membranes

Background: Pre-term pre-labor rupture of membranes (PPROM) occurs when the amniotic membrane ruptures prior to onset of labor at less than 37-weeks gestation. PPROM complicates about 3% of pregnancies in the United States and accounts for approximately 40% of preterm births. A subset of PPROM occurs before viability, defined as rupture of membranes at less than 24 weeks gestation. While previable pre-term pre-labor rupture of membranes (pPPROM) only occurs in approximately 1% of pregnancies, it presents dilemmas for both the provider and the patient when discussing medical options versus expectant management. There is currently limited objective data regarding predictive factors to guide intervention in these cases.

Methods: We conducted a retrospective cohort analysis of patients admitted to OSF St. Francis Hospital from May 2010 to April 2019 with the diagnosis of pPPROM. Diagnosis was based on patient report of vaginal leakage of fluid as well as one or more the following: positive pooling on sterile speculum exam, positive fern testing, positive nitrazine test, or positive ROM plus test. Inclusion criteria were as follows: singleton pregnancy, gestational age less than 24 weeks, rupture of membranes before the onset of labor, ultrasound performed within 24 hours of ROM, and decision to proceed with expectant management. Latency duration was measured in minutes from time of reported leakage to delivery and amniotic fluid index (AFI) in centimeters as designated in chart review per bedside ultrasound on admission or formal Maternal Fetal Medicine ultrasound. We further subdivided groups based upon gestational age with <20 weeks gestation as the cut off as well as oligohydramnios, defined as less than 5 cm of total amniotic fluid index.

Results: There were 111 eligible cases of pPPROM. After excluding for multifetal pregnancy, inadequate diagnostic criteria, preterm labor, abruption, and cerclage placement, 55

cases were analyzed. There were a total 37 cases >20 weeks gestation and 18 cases <20 weeks gestation. Using multivariable regression analysis, there was positive correlation of AFI and latency period (r=0.35, p=0.008) between all cases of pPPROM after controlling for gestational age, maternal age, and latency antibiotics. There was a positive correlation between AFI and latency duration (r=0.35, p=0.029) with gestational age between 20 weeks and 24 weeks however no correlation when gestational age was < 20 weeks. Dichotomizing between oligohydramnios and non-oligohydramnios, there was significant increase in latency duration when AFI was >5 cm at time of pPPROM (p-value 0.048).

Conclusion: Our study found an association between amniotic fluid index and latency duration at time of diagnosis of pPPROM. These results were significant when pPPROM was diagnosed after 20 weeks gestation. Additionally, patients who had an AFI >5 cm at time of pPPROM, had significantly longer latency periods. While these results point to possible objective data that can be used to counsel patients it is also important to weigh that against the risks of prolonging pregnancy. Maternal complications associated with pPPROM include intraamniotic infection, abruptio placenta, retained placenta, and in rare cases sepsis. Additionally, there are fetal as well as neonatal morbidity and mortality sequala due to pRPOM including pulmonary hypoplasia and fetal malformations. Currently, ACOG recommends considering latency antibiotics as early as 20-week gestation for patients with pPPROM however antenatal steroids, tocolytics, and group b streptococcus prophylaxis are not recommended prior to viability of 24 weeks gestation. Prolonging gestational age is associated with lower fetal mortality but does come with increasing maternal morbidities. While fetal complications and neonatal death decrease with longer latency periods and increasing gestational age this must be weighed against maternal risk. There have been previous studies that confirmed oligohydramnios at the time of diagnosis is associated with shorter latency periods as well as poor obstetric prognosis. Other studies have shown AFI and cervical length are independent predictors of delivery within 7 days of pPPROM. This study not only affirms previous studies but provides further objective data that can be used to counsel patients.

Paper #9 **Community Hospital Award**

Group B Streptococcus Rectovaginal Colonization and Resistance Patterns in HIV Positive Compared to HIV Negative Pregnant Patients

Nicholas A Callais, BS, John A Morgan, MD, Charles Albritton, MD, Miriam Hankins, MD, John A Vanchiere, MD, David F Lewis, MD

LSU-Health Shreveport, Shreveport, LA

Objective: Prior studies have evaluated the relationship between HIV infection in pregnant females and incidence of groups B streptococcus rectovaginal colonization. Few have investigated group B streptococcus incidence and the resultant antibiotic resistance patterns and the association, if any, with HIV viral loads in the 3rd trimester. The primary objective of our study was to determine if HIV positive pregnant patients have a higher rate of GBS rectovaginal colonization compared to HIV negative pregnant patients. Secondary outcomes investigated culture sensitivities and the relationship between HIV viral load and GBS rectovaginal colonization.

Methods: Our study is a dual-site retrospective case-controlled study performed at Ochsner LSU-Health Shreveport and Monroe campuses including pregnant patients delivered from December 2011 to June 2019. Patients were included in the HIV positive group if they were HIV positive on screening with HIV positive confirmatory testing and had a GBS culture in the third trimester. Following completion of our case group, controls were matched by age and race using a random number generator in a 2:1 fashion. Demographic data was collected and compared between the two groups including, age, BMI, nulliparity, race, gestational age at delivery, mode of delivery, medical comorbidities, and UTI at first visit. The primary outcome was to investigate if HIV positive pregnant patients have a higher rate of GBS rectovaginal colonization compared to HIV negative pregnant patients. Secondary outcomes included GBS culture sensitivities, presence of GBS UTI, GBS positive rectovaginal culture based on HIV viral load greater than or less than 1000 in HIV positive patients, GBS positive rectovaginal culture based on detectable versus undetectable HIV viral load, and GBS positive rectovaginal culture based on new versus established diagnosis of HIV in the pregnancy. Continuous data was analysed using an unpaired T-test and categorical data was analysed using Chi square test. A probability level was <0.05 was set as statistically significant.

Results: A total of 225 women were included in the final analysis, 75 HIV positive and 150 HIV negative age/race matched controls. Demographic differences noted between the two groups are as follows. The HIV positive patients were more likely to deliver preterm (n=13, 17.3% versus n=10, 6.6%, p=0.018), had a lower mean gestational age at delivery (38w0d, 37w3d-38w6d versus 38w5d, 37w6d-39w3d, p=0.001), and were more likely to deliver via cesarean section (n=46, 61.3% versus n=52, 34.6%, p=0.0002). These differences are easily explained by the current recommendations for delivery of HIV positive pregnant patients. HIV positive patients were also more likely to have a UTI at their first visit, more likely to be diagnosed with preeclampsia/gestational hypertension, and less likely to have of chronic hypertension. Our primary outcome showed no significant differences in incidence of Group B streptococcus colonization in HIV positive patients compared with control group (n=31, 41.3% versus n=46, 30.6%, p=0.136). Antibiotic resistance patterns showed no significant difference between the two groups. HIV positive patients were further analysed using two viral load cut-offs based on two clinically significant 3rd trimester viral load totals. The first was a viral load greater than or less than 1000. This was chosen due to evidence that cesarean delivery for a viral load greater than 1000 may reduce transmission of HIV to fetus. The second cut-off was detectable versus undetectable viral load. There were no significant differences between the two groups with regards to either of these viral load cut-offs. Finally, there was no significant difference in positive GBS rectovaginal culture between patients with a new diagnosis of HIV during the pregnancy versus an established diagnosis.

Conclusion: Our study findings coincide with current available literature and show no difference in the incidence of group B streptococcus colonization in HIV positive patients compared to HIV negative controls. Our study adds to the breadth of available literature by investigating GBS culture sensitivities. No differences were seen between GBS culture sensitivities between HIV positive versus HIV negative women, so based on our study findings it is appropriate to continue using the same antibiotic guidelines for all patients regardless of HIV status. Furthermore, our study found no differences between group B streptococcus colonization among HIV positive patients based on clinically significant cut-offs of viral load in the third trimester. Our study concludes that HIV positivity does not alter Group B streptococcus carrier status and no changes to the current guidelines need to be made specifically for HIV positive patients.

Paper #10
Vaping In Pregnancy: Provider Insight and Knowledge

Madeleine J. Craig, MD, MBA, Anita Tamirisa, DO, Rashmi Madhavan, Ellen Jochum, Dani G Zoorob, MD

University of Toledo, Toledo, OH

Introduction: The use of electronic nicotine delivery systems (ENDS), more popularly known as "vaping," is often considered a safer alternative to cigarette smoking and therefore are often used among those trying to quit cigarette use-including pregnant women1-3. Despite the public perception, e-cigarettes are considered a teratogen and have numerous health consequences to both the mother and the fetus2,3. While the use of e-cigarettes has become increasingly popular, communication between physicians and patients regarding potential harms remains limited1.

Objectives: The primary objective of this study was to assess the knowledge base of healthcare providers regarding the safety and usage of ENDS. The secondary objective was to identify the practices that providers utilize to increase patient education and awareness of the effects of ENDS use on pregnant women and the developing fetus.

Methods: A 40-question electronic survey was sent to OBGYN physicians, residents, and midwives nationally to assess the familiarity with ENDS usage, understanding of provider practices, as well as knowledge regarding potential harms during pregnancy.

Results: One hundred respondents completed the survey (96% response rate), with 88% being physicians, and 12 % being midwives and residents. Around 60% had been in practice for less than ten years with a near equal community distribution between urban and suburban practices. Although 96% reported a stigma against smoking in pregnancy, only 66% reported one for vaping. 8% of providers especially recommended vaping to help with cessation of smoking in pregnancy. 55% of providers reported an insufficient understanding of vaping, less than 7% had formal training on vaping, and up to 64% acquired related information through word-of-mouth, news media, or self-sought research. 86% requested formalized education regarding this topic, with 96% requesting additional instruction on harms to the mother and fetus. While up to 99% of providers queried patients about the use of alcohol and tobacco regularly, only 44% asked about ENDS use. Although 87% of providers have had patients who reported ENDS use, 50% of those who inquired did so

specifically only if the patient had a history of cigarette smoking.

Conclusions: These findings suggest that our ability to properly counsel tobacco vs. vaping products is not consistent with the increasing use of ENDS in the United States. Providers report feeling under-educated, and the majority are unsure how to interview and counsel patients effectively. This indicates the need for educating providers of risks of ENDS, develop a methodology for quantifying usage to stratify patient risk, as well as ensuring that ENDS is consistently part of the standardized social history intake.

References:

1. England, Lucinda J., et al. "Screening practices and attitudes of obstetricians-gynecologists toward new and emerging tobacco products." American Journal of Obstetrics and Gynecology 211.6 (2014): 695-e1.
2. England, Lucinda J., et al. "Nicotine and the developing human: a neglected element in the electronic cigarette debate." American Journal of Preventive Medicine 49.2 (2015): 286-293.
3. Kahr, Maike K., et al. "A qualitative assessment of the perceived risks of electronic cigarette and hookah use in pregnancy." BMC Public Health 15.1 (2015): 1273.

Paper #11
Blood Pressure Control in Women with a Hypertensive Disorder and Rates of Readmission Postpartum

Amanda M Morgan, MD, Cynthia A Abam, MD, Jeff C Reinhardt, MD, Caroline E Rouse, MD, David M Haas,, MD

Indiana University, Indianapolis, IN

Objective: The objective of this study was to compare blood pressure control within 24 hours prior to discharge for women with a hypertensive disorder of pregnancy (HDP) during their delivery admission who later experienced a hypertension-related readmission with those who were not readmitted.

Methods: This is a retrospective case-control study of women with HDP who were readmitted for a hypertension-related indication from July 2016 through June 2019 at IU Methodist Hospital. Cases were identified by ICD-10 codes. Controls were identified as the next 3 patients who delivered that also had a HDP diagnosis, matched for route of delivery. The primary exposure of interest was the highest recorded postpartum blood pressure within 24 hours prior to discharge. Secondary exposures were reported neurologic symptoms (including headache not relieved by a single agent, vision changes, and seizures), and postpartum day of discharge (as a marker for observation for 24 vs. 48 vs. 72 hours postpartum). The exclusion criteria were controls with addresses outside of Indianapolis, IN and any patient who did not meet the inclusion criteria.

Results: A total of 198 charts were reviewed (50 readmitted patients + 148 controls). The baseline characteristics between patients with a HDP who were readmitted and those that were not were similar, with two exceptions. Maternal age >30 (P=0.02) and gestational age <37 weeks (P=0.03) were found to be risk factors for readmission in patients with HDP. A history of diabetes appeared to be more common in patients who were readmitted (readmitted 32% vs controls 19.1%; P=0.06), and use of calcium channel blockers at the time of discharge appeared more common in controls (readmitted 8% vs controls 15.6%; P=0.08); neither of these trends reached statistical significance. There was no difference in postpartum blood pressure control prior to discharge between those patients who were readmitted (mean maximum SBP 147.4 [SD 13.5]) and the control patients (mean max SBP 145.3 [SD 13.2]) with P=0.33. There was no difference in reported neurological symptoms (P=0.45) or postpartum day of discharge (P=0.94). A logistic regression was used, and there was no difference in outcomes when controlling for oral

medications at discharge or route of delivery. A descriptive analysis of the diagnoses on admission and readmission was performed. 66% of patients had a worsening in their disease state at the time of readmission, the most common progression being from gestational hypertension to preeclampsia with severe features (n=14, 28%).

Conclusion: In women with a known HDP, the maximum blood pressure within 24 hours of discharge does not appear to increase the risk of readmission for a hypertensive indication. Older maternal age and preterm delivery were found to be risk factors for readmission in women with HDP. More research is needed to better assess what comprises optimal blood pressure control following delivery for women with hypertensive disorders.

Paper #12

Correlation of Preterm Newborn Endocan-1 levels with Maternal Chorioamnionitis

Michaela J O'Neill, MS2[2], Phillip DeChrisopher, MD/PhD[5], Walter Jeske, PhD[3], Makio Iwashima, PhD[4], Loretto Glynn, MD[6], Jonathan Muraskas, MD[1]

Loyola University Medical Center Department of Pediatrics-Neonatology, Maywood, Illinois[1], Loyola University Chicago Stritch School of Medicine, Maywood, Illinois[2], Loyola University Medical Center Department of Thoracic and Cardiovascular Surgery, Maywood, Illinois[3], Loyola University Medical Center Department of Microbiology and Immunology, Maywood, Illinois[4], Loyola University Medical Center Department of Pathology, Maywood, Illinois[5], Cardinal Glennon Children's Hospital, St. Louis, MO[6]

Objective: Determine if any correlations exist between serum Endocan-1 levels in preterm newborns with and without fetal exposure to placental chorioamnionitis (CA).

Methods: This study was performed in the 50-bed neonatal intensive care unit (NICU) of Loyola University Medical Center between July 2015 and March 2020. This study was approved by the University IRB and informed consent was obtained from parents of preterm newborns at 32 weeks gestational age or less. Preterm newborns with major congenital anomalies, chromo-somal abnormalities or significant congenital heart disease were excluded. Blood samples (0.5 cc) were drawn from IV access sites when routine blood for hematology and chemistries were also obtained. If a heel stick was necessary, a study sample was drawn only if required labs were ordered.

Placental pathology is routinely performed on all preterm births by the department of pathology. Placental pathology was performed prior to the running of Endocan-1 levels. All reports stated clearly if no CA was present, CA was present without umbilical cord involvement, or CA with extension to the cord was detected under microscopic examination. We defined funisitis/fetal inflammatory response as any detection of neutrophil invasion in any of the 3 vessels in the umbilical cord.

Preterm newborns <32 weeks gestational age (N=164) were prospectively enrolled measuring newborn Endocan-1 levels at birth within 48 hours of life and weekly up to 6 weeks of life via ELISA (Abcam, Cambridge, MA). 135 neonates had Endocan-1 levels shortly after birth and at one week of life with placental pathology eligible for analysis. We felt Endocan-1 levels at birth and at 1 week of life would best

reflect possible effects of CA on newborn endothelial function.

We compared Endocan-1 levels between the groups for time points admission and 1 week of life by 2-tailed t-test. The two groups with CA, those with and those without funisitis were combined, and then compared to the group without CA. We defined statistical significance as $p< 0.05$.

Results: From the 135 preterm newborns enrolled, 88/135 (65%) had no CA on placental pathology while 47/135 (35%) had CA or CA with funisitis. The mean gestational age for the no CA and CA/funisitis groups were 29.3 weeks and 26.7 weeks respectively. Shortly after birth and at 1 week of life, the preterm newborns exposed to CA were found to have significantly elevated Endocan-1 levels compared to the unexposed newborns. The first draw within 48 hours of life revealed serum Endocan-1 levels with an average of 307 pg/ml (SD=221) in the 88 patients without CA and 399 pg/ml (SD=287) in the 47 patients with CA/funisitis with a p value=0.0044. At approximately 1 week of life, serum Endocan-1 levels averaged 280 pg/ml (SD=217) in the patients without CA and 395 pg/ml (SD=254) in the patients with CA/funisitis with a p value=0.009.

We also performed paired analysis among those who had endocan levels within 48 hours(Time 0) of birth and 1 week of life(Time 1).With no CA, Endocan levels at Time 0 and Time 1 were 327.5(+- 226.7) and 266.3(+- 213.7) respectively p= 0.0079. In the CA group, Endocan-1 levels at Time 0 and Time 1 were 409.1(294.0)) and 409.9(+- 250.5) respectively p = 0.985.

Conclusion: CA is a perinatal condition characterized by inflammation of the fetal membranes. The prevalence of CA among preterm newborns <33 weeks is approximately 40%. The incidence of early onset sepsis in preterm newborns exposed to CA exceeds 20%. Maternal antibiotic use, neonatal antibiotics initiated prior to blood cultures, low bacterial concentration, and taking 1cc of newborn blood for cultures can result in negative newborn cultures in up to 50% of septic newborns. CA has been associated with increased incidence of bronchopulmonary dysplasia, hypotension, periventricular white matter damage, perinatal asphyxia, necrotizing enterocolitis, and retinopathy of prematurity.

Endocan-1 is expressed in endothelium of multiple tissues and has an important role in the pathogenesis of sepsis, facilitating migration of circulating leukocytes into tissues via cytokine production. We hypothesized Endocan-1 levels would be elevated in preterm newborns exposed to maternal infection with potential as a novel biomarker to augment traditional acute phase markers of sepsis (CRP and IL-6).

We demonstrated that preterm newborns exposed to CA have significant endothelial dysfunction shortly after birth with elevated Endocan-1. In CA exposed newborns Endocan-1 also remained elevated at 1 week of life, while newborns with no CA had lower levels by 1 week. Future studies will determine if Endocan-1 along with conventional sepsis markers will be helpful in diagnosis, management, and follow up. Further investigation is warranted to determine if sustained elevation of Endocan-1 beyond the first week correlate with preterm neonatal conditions as bronchopulmonary dysplasia, hypotension, periventricular white matter damage, perinatal asphyxia, necrotizing enterocolitis, and retinopathy of prematurity. Newborn Endocan-1 levels could potentially provide valuable information to obstetricians in the immediate postpartum management of mothers with suspected CA, pending placental pathology.

Paper #13

First Trimester Pregnancy-Associated Plasma Protein-A (PAPP-A) in the Prediction of Adverse Perinatal Outcomes

Aikaterina L Assimacopoulos, MD[1], Caleb Wenz, BS[2], Laura Stokely, RN[3], Jason L Picconi, MD/PhD[2], Suneet P Chauhan, MD, Hon DSc[4], Oscar A Viteri, MD[2]

Advocate Lutheran General Hospital, Park Ridge, IL[1], University of South Dakota Sanford School of Medicine, Sioux Falls, SD[2], Avera Health, Sioux Falls, SD[3], McGovern Medical School-UTHealth, Houston, TX[4]

Purpose: Pregnancy-associated plasma protein-A (PAPP-A), a glycoprotein produced by the placenta, is thought to mediate trophoblast invasion and vascularization. First trimester PAPP-A levels ≤ 5th percentile have been associated with adverse outcomes related to placental insufficiency (e.g. preeclampsia, pregnancy loss, preterm birth and fetal/neonatal growth restriction), prompting recommendations for increased antenatal surveillance (Krantz et.al. 2004, Dugoff et.al. 2010, RCOG Green Top Guideline No. 31, 2014). Therefore, we sought to determine the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and accuracy of low first trimester PAPP-A levels for a composite of perinatal morbidity (CPM) in a large, contemporary cohort.

Methods: We conducted a retrospective cohort study of all women undergoing the first trimester aneuploidy screen between January 2011 and September 2018 at a single tertiary care center. Excluded were all multifetal gestations and those whose data was incomplete or whose outcome was unknown. Maternal blood sample for the first trimester screen was obtained between 9 weeks 0 days and 13 weeks 6 days gestation. Low PAPP-A level was defined as < 0.415 multiples of the median (MoM) for gestational age (equivalent to ≤ 5th percentile, Dugoff et.al. 2004). All samples were analyzed, and results were collated and reported by Eurofins NTD Labs, LLC.

Our primary outcome was a CPM that included any of the following: preeclampsia, intrauterine fetal demise (IUFD), spontaneous or indicated preterm birth (PTB) prior to 37 weeks and small for gestational age (SGA) defined as birthweight < 10th percentile for gestational age at the time of delivery. The sensitivity, specificity, PPV and NPV for the primary as well as each individual outcome were calculated. Categorical variables were compared by X2 or Fisher's exact test and continuous variables were compared by Student's t-test or nonparametric Wilcoxon rank sum test as appropriate.

P-values were two-sided and $P < 0.05$ was considered significant. Odds ratio (OR) and 95% confidence intervals (CI) were calculated for outcomes of interest. Receiver operating characteristic (ROC) curves were created to assess the predicate of PAPP-A MoM levels on CPM, and the area under the curve (AUC) was calculated to estimate the accuracy of the test for each prespecified outcome. A priori, the diagnostic test was considered clinically useful if the AUC was at least 0.80. All analyses were performed on IBM SPSS Statistics, v. 26.0, Armonk, NY.

Results: Of the 766 women who underwent first trimester aneuploidy screen during the study period, 647 (84.50%) were eligible for analysis. Of these, 188 had low PAPP-A (29.10%) Baseline maternal characteristics including maternal age, pre-pregnancy body mass index, ethnicity, nulliparity, smoking status, illicit drug use and prenatal care were similar between those with normal vs. low PAPP-A levels. The rate of cesarean delivery among women with low PAPP-A was similar to those with normal PAPP-A levels (29.3 vs 27.1%, $P = 0.61$).

In the overall cohort, the rate of preeclampsia was 5.30%, IUFD 1.00%, PTB 11.30% and of SGA 9.40%. The rate of CPM was 21.60%. Those with low PAPP-A levels had similar rates of preeclampsia (5.39 vs 5.32%, OR 1.01, 95% CI 0.33-3.05), IUFD (1.20 vs 0.88%, OR 1.78, 95% CI 0.19-17.06), PTB (12.67 vs 10.86%, OR 0.89, 95 CI 0.30-2.58), SGA (12.65 vs 8.20%, OR 0.60, 95% CI 0.20-1.83) or CPM (22.87 vs 21.13%, OR 1.01, 95% CI 0.31-3.34), when compared to those with normal PAPP-A levels.

Sensitivity and specificity of serum PAPP-A levels regarding each of our outcomes were calculated and plotted in ROC curves as follows: preeclampsia (27.27%, 73.00%), IUFD (33.33%, 73.08%), PTB (30.00%, 73.36%), SGA (36.21%, 74.06%), and CPM (30.71%, 71.40%). Calculated AUC revealed poor predictive accuracy of low PAPP-A measurements for all outcomes of interest: preeclampsia 0.52, 95% CI (0.42-0.63), IUFD 0.56, 95% CI 0.32-0.81, PTB 0.54, 95% CI 0.46-0.61, SGA 0.60, 95% CI 0.53-0.68), and CPM 0.54, 95% CI (0.49-0.60). Finally, the PPV and NPV values of each outcome were calculated as follows: preeclampsia (7.57%, 95.70%), IUFD (1.52%, 99.28%), PTB, (14.70%, 90.21%), SGA (11.17%, 91.41%) and CPM (25.57%, 80.28%).

Conclusions: In this cohort of women undergoing the first trimester aneuploidy screen, low serum PAPP-A level was a poor predictor of adverse perinatal outcomes. Our findings may be used by clinicians to provide reassurance during

patient counseling and to avoid unnecessary additional antepartum interventions.

Paper #14 **Dr. Kermit E. Krantz Memorial Paper Award**

Integration of Evidence from Randomized Controlled Trials into Clinical Guidelines by the American College of Obstetricians and Gynecologists

Rigoberto Gutierrez, MS3, Matthew Bicocca, MD, Gregory Opara, MD, Megha Gupta, MD, Suneet P Chauhan, MD, Hon DSc, Stephen M. Wagner, MD

Memorial Hermann Southwest Hospital, Houston, TX

Objective: Results from randomized clinical trials (RCTs) minimize biases compared to observational studies and are considered a more reliable method for testing novel therapies and protocols. A previous review of ACOG practice bulletins (PBs) reported that fewer than 20% of the references cited were RCTs. Thus, there is a need to understand the factors associated with incorporation of RCTs in ACOG clinical guidelines.

The objective of this review was to determine the citation rate of RCTs with obstetric or gynecologic focus in ACOG's clinical guidelines of PBs and committee opinions (COs).

Methods: Publications between 2009-2014 from four journals with high-impact factors (New England Journal of Medicine, Journal of the American Medical Association, American Journal of Obstetrics and Gynecology, Obstetrics and Gynecology) were queried. RCTs with an obstetric or gynecologic focus were selected for analysis.

To permit a gap of at least five years from the last publication of an RCT (December 2014), in January 2020, the ACOG website was queried for all PBs and COs. All previously identified RCTs were compared to the PBs and COs to identify if the trial was pertinent to the practice guideline publications. If the trial was on a pertinent topic, the respective PBs and COs were inspected for citation of the randomized controlled trial.

Multivariate logistic regression was used to estimate the association of trial characteristics with citation in an ACOG practice guideline while controlling for variables that were significantly different in univariate analysis. Results are expressed as adjusted odds ratios with 95% confidence intervals (aOR, 95% CI). A P-value of <0.05 was considered statistically significant.

Results: Between 2009-2014, there were 5,178 articles published in the New England Journal of Medicine, Journal of the American Medical Association, American Journal of Obstetrics and Gynecology, and Obstetrics and Gynecology.

Of these, 306 (5.9%) were RCTs in obstetrics or gynecology. There were 5 studies that pertained to education, simulation, or depression within the collective field of OBGYN which were excluded. Of the remaining 301 RCTs, 46 (15.0%) were excluded from the analysis as the focus of the trial was not covered in a practice bulletin or committee opinion or the relevant guidelines had not been updated since publication of the RCT. Of the remaining 250 RCTs that were eligible for incorporation into ACOG guidelines, N=108(43.2%) were on obstetric topics and the remaining N=142(56.8%) on gynecologic.

Overall, 79 (31.6%) eligible RCTs were incorporated into ACOG's clinical guidelines. 45 were cited in PBs, 26 in COs, and 8 in both (p=0.11). There was no difference in rates of citation between obstetrics and gynecology (33.8% vs 28.7%; p=0.39). On univariate analysis, studies that were multicenter (OR 1.81, 95% CI 1.06-3.11), received federal funding (OR 2.14, 95% CI 1.14-3.99), enrolled 500-999 participants (OR 2.37, 95% CI 1.01-5.55), or were published in the New England Journal of Medicine (OR 3.77, 95% CI 1.61-8.84) were significantly more likely to be cited by ACOG. After adjusting for potential confounders, only publication in the New England Journal of Medicine remained significant (aOR 4.32, 95% CI 1.43-13.2) for being referenced in ACOG PB or CO. A sample size of 100-199 participants decreased the chances of incorporation into a practice guideline, and the decrease was significant with and without correction for possible confounders (aOR 0.39, 95% CI 0.18-0.87). There were no significant differences in rates of citation among studies performed in the U.S. versus other countries (aOR 1.07, 95% CI 0.58-1.97), those receiving industry funding versus those without (aOR 0.62, 95% CI 0.28-1.38), or those that rejected the null hypothesis versus studies that failed to reject the null (aOR 0.98, 95% CI 0.55-1.74).

Conclusion: Less than one-third of RCTs published in high-impact journals are incorporated into ACOG PBs and COs. This review provides compelling evidence that an improved incorporation of RCT results into ACOG practice guidelines is warranted.

Paper #15

Mid Forceps Did Not Cause "Compromised Babies" - "Compromise" Caused Forceps: An Approach to Safely Lower the Cesarean Delivery Rate

Mark I Evans, MD[1,2], David W Britt, PhD[1], Shara M Evans, MSc, MPH[3,1]

Fetal Medicine Foundation of America, New York, NY[1], Dept. of Obstetrics & Gynecology, Icahn School of Medicine at Mt. Sinai, New York, NY[2], Dept. Materal Child Health, Gillings School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC[3]

Introduction: Over the last 50 years Cesarean Delivery rates (CDR) have risen from 3-5% to >30%. Concomitantly, vaginal operative deliveries [VODs] (low forceps (LF), mid forceps (MF), and vacuum deliveries) have dropped from >20% to 3%. Utilization of all forceps is now <1% of deliveries resulting in a concomitant diminution in expertise. However, poor fetal outcomes such as HIE and cerebral palsy have not improved; maternal mortality rates and downstream complications have risen.

Potentiating the virtual abandonment of forceps, particularly MF, were allegations about their role in poor neonatal outcomes. To shed light on this conundrum, we evaluated earlier data, when experience with forceps was more widespread than today, to evaluate the impact of VODs on neonatal status when controlled for prior fetal risk.

Methods: We studied a 45-year-old database of 475 patients at USC/LA County. They had multiple fetal scalp samples (FSS) for pH and base excess (BE), cord blood gases (CB), and umbilical artery bloods over the 1st hour of life. Continuous EFMs were recorded prenatally through 1 hr. postnatally. We have published on some aspects from the first 250 cases. Here, we divided patients by delivery method (NSVD) and "interventional" including LF, MF (both using modern definitions at 20 minutes before birth), and CD (Vacuums were excluded- small numbers and Malmstrom device). We used ANOVA to compare delivery methods with respect to six outcomes (Apgar scores, CB pH and BE, time spent $\leq$ -12 mMol/L BE (threshold of risk) in the first eight minutes after birth and time required for neonatal heart rate to recover to 160bpm. We then controlled for prior risk (FRI and BE measured at one hour before birth) using two-stage multiple regression.

Results: 288 had NSVDs, 120 patients had LF, 30 MFs, and

32 CDs. MF and LF differed only slightly on outcome measures for 5 of 6 parameters ($p > .23$), so all forceps were combined for statistical analysis. ANOVA revealed significant differences among delivery types on all six outcome measures. NSVDs always had the best outcome scores and was significantly higher for CB pH and BE. NSVD and forceps-delivered births began to diverge in risk an hour before birth and became more significant through birth and the next several minutes postpartum. Controlling for prior risk levels using BE and FRI revealed two patterns: 1. the presumed deleterious effects of interventional deliveries mostly disappeared, and 2. Prior risk predicted delivery mode and outcomes: higher risk produced decreased NSVDs and more interventions.

In 1970, USA CDR was 5% and VOD 20%. Virtually all (25%) today would be CDs as CDR now is 32% and VOD 3% (35%). (10% difference = 400,000 deliveries). Our data suggest that a more contextualized understanding of risk before birth using the FRI reduces the relative chances of requiring intervention and may permit some substitution of modern interventional approaches which could safely lower the CDR. We have previously reported with FRI use emergency CDRs decreased 65%. Initially because of the lack of trained providers and forceps phobia, these most likely would virtually all be vacuums.

The potential financial impact of such could be enormous. We assumed total interventions might remain at 35%. There is already great variability among services. Conservatively, if our approach lowered CDR by only 20% towards the 1970's interventional rate (25%), i.e. a 2% total decrease, 80,000 CDs might be avoided nationwide. Documented average total payment differences approximated $7,000 per case (in 2010 dollars) potentiating a national savings of $560 Million ($760 Million in current dollars), or today $380 Million saved for every 1% reduction in CDR.

Discussion: Safely lowering the CDR has become the "holy grail" of modern obstetrics. How to do it is the problem. The long-held belief that MF deliveries were causative for lower IQs of babies than NSVDs seems mostly backwards. Even LFs had significantly worse pre-delivery status than NSVDs. Our conclusion is that often, fetal status/compromise lead to interventional deliveries and was by far the greater contributor to outcomes.

The abandonment of VODs was based upon faulty data and analysis. Rectifying that (principally through appreciating risk earlier and, when appropriate, properly performing LFs and vacuums) could reduce the CDR and decrease both maternal morbidity and mortality. Over time, NSVD's and expertly managed VODs would increase. Misapplications can do

damage. These are commonly associated with identifiable findings such as subdural hematomas. Diminishing CDR with even modestly increased VOD utilization could also safely reduce expenses significantly. Our findings can inform the major public health/ public policy issue of how to safely reduce the CDR. In the post pandemic world, safely apportioning medical expenses will be even more critical than previously. We believe that for both patient outcomes and financial reasons, we need to rethink our approach on labor and delivery.

Paper #16

Do Late Preterm Corticosteroids Have a Negative Impact in Pregnancies Complicated by Gestational Diabetes?

Amneet K Sran, MD[1], Aaron Sherwood, MS[2], Hannah Kopinsky, MS[2], Gregory L Goyert, MD[1], Majid E Shaman, MD[1], Robyn Garcia, MD[1]

Henry Ford Hospital Health System, Detroit, MI[1], Wayne State University School of Medicine, Detroit, MI

Introduction: The effect of late preterm steroids on maternal and neonatal morbidity in gestational diabetic (GDM) mothers is not well defined. We reviewed late preterm antenatal steroid use in pregnancies complicated by GDM to assess the impact on maternal and neonatal outcomes.

Methods: Women with pregnancies complicated by GDM that received betamethasone from 34 0/7 to 36 6/7 weeks were included in this retrospective cohort study. Patients were included from March 2016 to August 2019 at the Henry Ford Health System. The primary outcome was rate of neonatal hypoglycemia (blood glucose <40mg/dl) in pregnancies complicated by GDM versus women without GDM (non-GDM).

Results: 269 women received late preterm antenatal steroids (GDM, N=116 compared to non-GDM, N=153). Hypoglycemia was more common among neonates of pregnancies complicated by GDM versus non-GDM (36.1% vs 22.6%, P=0.03). Mothers who controlled their GDM with medication, oral antiglycemic medications compared to insulin, were more likely to have hypoglycemic neonates (65% versus 45%, P=0.010). GDM mothers with a hemoglobin A1c >6.4 were more likely to have neonatal hypoglycemia (66.7% versus 33.3%) compared with A1c <5.7 (P= 0.004). The number of betamethasone doses (1 versus 2) did not have an impact on hypoglycemia.

Conclusion: In this study, the neonates of GDM mothers were more likely to have hypoglycemia. It appears that oral antiglycemics and hemoglobin A1c >6.4 increase this risk, which is not unexpected. This study suggests that risks and benefits of late preterm steroids given to GDM mothers should be carefully weighed.

Further research is needed to compare neonatal hypoglycemia in GDM mothers who received late preterm steroids to GDM mothers who did not. This would clarify outcomes attributed to baseline risk of neonatal hypoglycemia

secondary to GDM versus due to late preterm steroid administration.

Paper #17
The Mother of Invention: Pregnancy Management and Outcomes During the COVID-19 Crisis

Marci G Adams, MPH[1], Colin McCulloch, MD[1], Emmet Hirsch, MD[1,2]

NorthShore University HealthSystem, Evanston, IL[1], University of Chicago Pritzker School of Medicine, Chicago, IL[2]

Purpose: To describe management and outcomes of pregnancy at a single hospital during the COVID-19 crisis in comparison with other periods.

Methods: All patients presenting to the Labor and Delivery unit at Evanston Hospital (a suburban teaching hospital in the northern suburbs of Chicago) were studied over three epochs: 1) The period during which concerns over spread of COVID-19 in northern Illinois led to dramatic changes in behavior patterns and delivery of medical care ("COVID crisis" epoch, 2/1/20 to 5/13/20); 2) the 6 months preceding the COVID crisis epoch ("Baseline" epoch, 8/1/20 to 1/31/20); and 3) the period paralleling the COVID crisis epoch in the prior year (2019) ("Seasonal comparison" epoch, 2/1/19 to 5/13/19). During the COVID Crisis epoch significant societal and behavioral changes were enacted, first by individuals and later by state government, including: social distancing, near universal mask-wearing, and ultimately a state-wide disaster declaration (3/9/2020) and "Stay at Home" order (3/21/2020). For delivery of women's health care, there was near-universal adoption of modified office visit schedules, with telehealth replacing many in-person visits, cancellation of non-emergent procedures, limitation of visitors to one support person for pregnant women in the hospital, universal screening of all visitors and staff (using screening questions and temperature measurement), and other measures. Beginning 3/30/20, our hospital adopted a "platoon" coverage system for Labor & Delivery, antepartum/postpartum, and emergency gynecology care, with hospital teams assigned in shifts and strict restrictions on the presence of non-assigned caregivers in the clinical units. The "COVID crisis" epoch was therefore divided into two segments: a) "Crisis-standard", and b) "Crisis-platoon". These restrictions began to loosen and the platoons were dismantled on 5/14/2020, as concerns about SARS-CoV-2 infection rates and associated morbidity began to ease. We assessed patient demographics and outcomes using the data warehouse linked to our inpatient electronic medical record (Epic Systems, Verona WI). Statistical analysis was performed using Excel (Microsoft Corporation,

Redmond WA). Chi-square test was used for comparison of rates and t-test for averages, with $p<0.05$ considered statistically significant.

Results: During the COVID-19 crisis period ("Crisis-standard" n=534; "Crisis-platoon" n=438) 9 mothers delivered with active (n=4) or prior (n=5) infection (0.9% of all deliveries). During the same period, 31 pregnant patients tested positive for SARS-CoV-2 in our laboratory, and there had been nearly 800 COVID-19-related admissions throughout our hospital system. No neonate tested positive for SARS-CoV-2 by RT-PCR, and none had clinical COVID-19-related illness. Demographic variables, including mean gestational age at delivery (GA), cesarean section (C/S) rates and induction of labor (IOL) rates were similar over the 3 epochs under study: "Seasonal comparison" epoch: n=889, GA 38.5 weeks, C/S rate 24.5%, IOL rate 39.8%; "Baseline" epoch: n=1702, GA 38.5 weeks, C/S rate 26.1%, IOL rate 42.4%; "Crisis" epoch: n=972, GA 38.5 weeks, C/S rate 23.4%, IOL rate 41.8%). Post-delivery length of stay was significantly shorter during the "Crisis" epoch after both C/S and vaginal delivery. Discharge by post-operative day #2 after C/S occurred in 15.6%, 16.2% and 36.1% of patients in the three epochs, respectively, $p<0.001$). Discharge by post-partum day #1 after vaginal delivery occurred in 13.7%, 14.7% and 25.6% of patients, respectively, $p<0.001$). Within the "Crisis" epoch there were further significant differences in length of stay between the "standard" and "platoon" management phases: discharge by post-operative day #2 after C/S in 26.2% and 47.6% of patients, respectively, $p<0.001$; discharge by postpartum day #1 after vaginal delivery in 19.9% and 32.7% of patients, p<001.

Conclusions: Among pregnant patients in our population during the period under study, infection with SARS-CoV-2 was uncommon. Behavioral changes related to the response to the COVID-19 crisis were associated with significantly shorter post-delivery hospital stays. Long-term outcomes associated with these changes are under study.

Paper #18

Prevalence of Mixed Growth and Vaginal Flora Contamination in Standard Midstream Clean Catch Urine Collected at First New OB Visit for the Screening of Asymptomatic Bacteriuria

Elizabeth A Southworth, MD[1], Recia Frenn, MD[2], Karen Deighan, MD[2], Jean Goodman, MD[2], Elizabeth R Mueller, MD[2], Thythy Pham, MD[2]

Loyola University Chicago Stritch School of Medicine, Maywood, IL[1], Loyola University Health Center Department of Obstetrics and Gynecology, Maywood, IL[2]

Purpose: Asymptomatic bacteriuria (ASB) screening with midstream urine is common practice in the first trimester with the goal of treating women who screen positive to prevent pregnancy complications. Previous authors have demonstrated that midstream urine cultures reflect the microbiome of the peri-urethral and vagina. As a result, midstream urine collections could consist primarily of vaginal flora, thus complicating result interpretation and possibly leading to a missed diagnosis of ASB. This study was designed to (1) determine the prevalence of screening midstream urine cultures in pregnant women that showed mixed growth or vaginal flora contribution and (2) compare pregnancy complications amongst women whose urine showed either no growth, ASB, or some degree of vaginal flora contribution or contamination.

Methods: We performed a retrospective chart review of the most recent 100 patients who were initiating prenatal care and underwent a clean-catch midstream urine culture to screen for ASB at our tertiary care outpatient OBGYN clinic between January 2018 and November 2019. Data extracted included patient demographics and pregnancy outcomes. Urine culture results were tabulated and categorized into three categories by two authors: 1) "no growth", 2) "ASB", or 3) "vaginal flora contribution". The "vaginal flora contribution" group is further subcategorized into: 1) "minor vaginal contribution" which included urine culture results of "bacteria present <10,000 colonies/mL representative of genital/skin flora", "Other/Lactobacillus", "Other/Gardnerella vaginale", and "Other/commensal organisms" or 2) "major vaginal contribution or contamination", which included culture results of "Mixture of >3 gram-positive and gram-negative organisms present", "Contamination of specimen with commensal flora" and "No gram-negative organisms, >3 gram-positive organisms present in equal numbers indicating contamination of specimen with commensal microflora". Descriptive

statistics and chi-square tests were performed on categorical variables. A multinomial logistic regression was performed to assess the relationship between BMI and the likelihood of having a urine culture result that showed "ASB" or "vaginal flora contribution".

Results: 100 women, with an average age of 29.4 (range 19 - 42) and median BMI of 29.3 (IQR 25.8 - 33.8), presented for their first prenatal visit at a median gestational age of 9 weeks (IQR 7.7-11.3). The majority self-identified as "non-Hispanic" (53%) and were either primigravida (27%) or gravida 2 (35%). Of multigravida women, 18% had a prior spontaneous abortion, 8% prior preterm delivery, 8% preeclampsia, and none had documented prior ASB. Past medical history including DM and tobacco use, surgical history, and obstetric history were not different between the groups. Midstream urine culture results for ASB screening were: 9% ASB, 33% "no growth", and 58% "vaginal flora contribution". The "vaginal flora contribution" group was then subcategorized as above into 40% "minor vaginal contribution" and 18% "major contribution/contamination". Of the "vaginal flora contribution" group, the majority (95%) did not have a repeat culture to re-screen for ASB, and one patient in the "major contribution/contamination" subgroup had a repeat urine culture. Overall, 66% had uncomplicated pregnancies, 10% experienced spontaneous abortion, 6% preterm labor, 5% preeclampsia, 4% PPROM, and 4% chorioamnionitis. Six women were treated for cystitis: two women subsequently experienced a second episode of cystitis and a third woman progressed to pyelonephritis. 19% of women were found to be GBS positive. Pregnancy complications were similar when compared between all 3 three groups ($p = 0.570$): "no growth" (9/24; 27%), "ASB" (4/9; 44%), and "vaginal flora contribution" (20/27; 35%). Over half of the women (51%) in the cohort underwent a vaginal delivery, 6% operative vaginal delivery, and 32% cesarean delivery. There were more cesarean deliveries in the "vaginal flora contribution" group than the "no growth" or "ASB" groups ($p=0.12$). Multinomial logistic regression identified a positive relationship between BMI and urine results categories: For each unit increase in the patient's BMI, there is a 16% increased likelihood that their urine cultures will result in the "ASB" group ($p=.036$) and a 17% increased odds that urine culture result will be in the "vaginal flora contribution" group over the "no growth" group ($p=.002$).

Conclusion: Untreated asymptomatic bacteriuria (ASB) has been associated with perinatal complications and adverse events, therefore accurate screening and diagnosis are critical. Our study found that 57% of the clean-catch midstream urine

cultures collected at a single site to screen for ASB resulted in some degrees of vaginal flora contribution or contamination, which may complicate the diagnosis of ASB. Furthermore, a patient's BMI may contribute to a higher likelihood of having a "dirty" midstream urine sample. Along with the lack of standardization of midstream urine collections, our findings support the need for further research to identify better urine collection techniques to reduce vaginal contribution and stratification of pregnant women who may be at higher risk of an inadequate sample collection based on BMI.

Paper #19

The Association of *Mycoplasma genitalium* with Human Immunodeficiency Virus Type-1 in Women Attending Clinic and Hospital Visits in a Large Tertiary Care Center in Houston, Texas

Elizabeth S Kravitz, MS4, BSA[1], Soumya Gogia, BA[1], Kelsey Hummel, DO[1], Erik Munson, PhD[2], Kenneth Muldrew, MD[1], Irene A Stafford, MD[3]

Baylor College of Medicine, Houston, TX[1], College of Health Science Marquette University, Milwaukee, WI[2], McGovern Medical School-UTHealth, Houston, TX[3]

Purpose: Mycoplasma genitalium (M. genitalium) has been identified as an emerging sexually transmitted infection (STI) causing cervicitis, pelvic inflammatory disease, and other gynecologic pathology. The prevalence of M. genitalium among reproductive women in the United States is approximately 4%. M. genitalium co-infection has been associated with Human Immunodeficiency Virus Type -1 (HIV-1) positive status, with prevalence ranging from 7.7-21.4% in HIV- 1 positive women. Coinfection is of increased significance as it's been suggested that M. genitalium increases the risk of HIV-1 transmission. However, this association has been studied almost exclusively outside of the United States or within the setting of STI clinics. The purpose of this study is to examine the prevalence of M. genitalium infection in HIV-1 positive women in a clinical setting at a single site hospital in Houston, TX.

Methods: Remnant endocervical samples of reproductive age women were collected from patients attending clinics or presenting for triage visits at the Baylor College of Medicine, Houston, TX between September 2019 and March 2020. Samples were screened for M. genitalium by transcription-mediated amplification (Hologic, Inc. Marlborough, MA). Demographic data, HIV-1 status and HIV-1associated factors such as viral load (VL), absolute CD4 count, and antiviral medication use were collected if available within 60 days of sample collection date. Fisher's exact test was used for statistical analysis to compare prevalence of M. genitalium infection in HIV-1 positive versus HIV-1 negative women. A two-tailed t-test was used to compare the absolute CD4 count values between HIV-1 positive women with and without co-infection with M. genitalium.

Results: A total of 1274 samples were collected and tested for M. genitalium, 4 were removed due to insufficient sample quantity. Of these samples, 70 were collected from HIV-1

positive women and 1200 were collected from women who were negative for HIV-1 infection. The prevalence of M. genitalium in the HIV-1 positive women was significantly higher compared to women without HIV infection (10/70, 15%) versus 73/1200 (6%) respectively, (p=0.02). Of the HIV-1 positive women, 7/70 (10%) did not have data on VL and absolute CD4 count and therefore this data was not included in the analysis of these factors for those women. Notably, 34/63 (54%) of HIV-1 positive patients had undetectable viral loads. In co-infected patients, 5 had undetectable VL, and 3 had an average VL of 7112. The average absolute CD4 count was 663 in the overall HIV-1 positive group. The difference between absolute CD4 values in the women co-infected with M. genitalium (469) compared to HIV-1 positive women without co-infection (691) was not significant (p=.10). In reference to antiviral medication usage, we found that 63/70 (90%) of all patients were on HAART therapy.

Conclusions: Our data demonstrates that M. genitalium co-infection is significantly associated with HIV-1 infection among reproductive age women in the routine clinical care setting in Houston, TX. Although CD4 counts were higher among HIV-1 positive women without M. genitalium co-infection, the relationship between infection related variables in this high-risk cohort remains to be determined. Our study indicates a need for future prospective studies with a larger sample size to further elucidate this relationship and to explore the importance of screening for M. genitalium in HIV-1 positive women.

Paper #20
Foxp3+ Tregs in Peripheral Blood of Healthy Term and Sick Preterm Newborns

Michaela J O'Neill, MS2[2], Aleksandra Vuchkovska, BS[3], Yi Wei Lim, BS[3], Makio Iwashima, PhD[3], Phillip DeChristopher, MD/PhD[4], Jonathan Muraskas, MD[1]

Loyola University Medical Center Department of Pediatrics-Neonatology, Maywood, IL[1], Loyola University Chicago Stritch School of Medicine, Maywood, IL[2], Loyola University Medical Center Department of Microbiology and Immunology, Maywood, IL[3], Loyola University Medical Center Department of Pathology, Maywood, IL[4]

Objective: This study's goal is to investigate the phenotype and function of term and pre-term newborn T-cells at the epigenetic and genetic levels. Chorioamnionitis (CA) is a perinatal condition affecting up to 5% of pregnancies and a causative factor in greater than 50% of preterm births. There is a paucity of data examining newborn T-cell function in the presence of maternal CA which has been associated with multiorgan dysfunction of the preterm newborn.

Methods: This study was performed in the 50-bed neonatal intensive care unit (NICU) of Loyola University Medical Center between January 2019. This study was approved by the University IRB and informed consent was obtained from parents of term and preterm newborns at 32 weeks gestational age or less. Term and preterm newborns with major congenital anomalies, chromosomal abnormalities or significant congenital heart disease were excluded. In 20 healthy term newborns 0.5 cc of cord blood was immediately obtained in the delivery room. In 19 preterm newborns, blood sampling was performed within 48 hours of birth and 1 week later. Blood samples were drawn from IV access sites when routine blood for hematology and chemistries were also obtained. If a heel stick was necessary, a study sample was drawn only if required labs were ordered.

Placental pathology is routinely performed on all preterm births by the department of pathology. Placental pathology was performed prior to the measurement of T-cell expression. All reports stated clearly if no CA was present, CA was present without umbilical cord involvement, or CA with extension to the cord was detected under microscopic examination.

To determine the effect of pre-term birth on the fetal immune system, we isolated nucleated cells from patients' peripheral blood in 20 healthy full-term donor umbilical cord blood and 19 sick preterm newborns with mean gestational

age of 28 weeks. Pre-term blood sampling was performed within 48 hours of birth and 1 week later. After purification of nucleated cells by Ficoll gradient centrifugation, we performed surface phenotype analysis by flow cytometry to assess the expression levels of surface antigens for T-cell subset markers (CD4, CD8) and a regulatory T-cell marker (Foxp3). With the nature of T-cell testing, no samples were stored. Samples were obtained and immediately analyzed.

We compared levels between the groups for time points 0-admission and 1 week of life by 2-tailed t-test. The two groups with CA, those with and those without funisitis, were combined and then compared to the group without CA. We defined statistical significance as $p< 0.05$.

Results: In 20 healthy full-term newborns, 0/20 (0%) demonstrated highly elevated levels of Foxp3 expression. In 19 preterm newborns with gestational age <32 weeks, 11/19 (57%) expressed high levels of Foxp3 expressing T-cells. ($p<0.01$)

In the 20 healthy term newborns there was no clinical evidence of fever, abdominal tenderness, foul smelling amniotic fluid, or prolong rupture of membrane.

We then assessed if there is any correlation with maternal intra-amniotic infection in the 19 preterm newborns. This analysis found that 7/11 (64%) of the preterm newborns with elevated Fopx3 expression were exposed to CA, while 2/8 (25%) of preterm newborns with normal Foxp3 levels had exposure to maternal CA. We included both CA and CA with funisitis.

Conclusion: The newborn immune system is functionally unique where it is highly tolerogenic. This tolerant nature is a double-edged sword. While it allows them to tolerate benign antigens such as food, maternal antigens, and commensal bacteria, newborns are highly susceptible to life-threatening infections because immature immunologic fitness contributes to reduced pathogen clearance and response to vaccines. One of the factors impacting this tolerant nature is the elevated propensity of newborn T-cells to differentiate into Foxp3+ regulatory T-cells (Tregs) upon activation. Tregs are specialized T-cell subsets that promote immune suppression by preventing aberrant inflammation and keeping immune responses in check. However, excessive Treg-mediated immunosuppression can potentially cause tolerance against infecting microbes and increase the risk of preterm conditions such as late onset sepsis, bronchopulmonary dysplasia, retinopathy of prematurity, and necrotizing enterocolitis. Such tolerance can cause developmental damage as pathogens can destroy newly generated tissue in various organs.

CA is a polymicrobial infection of fetal amniotic membranes during pregnancy. The incidence of CA is more frequent in preterm births (40-50%) than full-term births (<1%) and is associated with an increased incidence of neonatal sepsis. Currently, studies of immunologic outcomes in preterm newborns following exposure to CA are limited. Investigation of T-cell phenotype and function can enhance treatment protocol for newborn patients of CA to reduce morbidity and mortality of neonatal sepsis.

The data suggest that the fetal immunological environment and CA could induce differentiation of T-cells into Foxp3+ Tregs. Testing Foxp3 expression by pre-term infant T-cells may be an important tool to monitor the immature preterm newborn immune system in their neonatal course.

Paper #21
Improving Post-operative Pain and Recovery in Gynecologic Surgery

Michaela E Beynon, MD, Sareena Singh, MD, Michael A. Krew, MD

Aultman Hospital, Canton, OH

Objective: To demonstrate that rectal acetaminophen is not inferior to intravenous acetaminophen in decreasing subjective acute postoperative pain and opioid use in woman undergoing a minimally-invasive hysterectomy

Methods: A single-center, single-blinded randomized control trial was conducted. Patients were randomly assigned to receive 2 650-mg acetaminophen rectal suppositories (group 1), or 1000 mg/100mL of intravenous acetaminophen (group 2). Both groups received the acetaminophen at the end of surgery, prior to patient awakening. Patients were followed from postanesthesia care unit (PACU) admission up to 24 hours postoperatively, or until discharge, whichever came first. The primary outcome was patient-reported subjective pain scores. The secondary outcome was opioid use, measured in morphine milligram equivalents.

Results: From December 2019 to the current date, a total of 19 women were recruited. Ten patients were randomized to receive rectal suppositories, and 9 patients were randomized to receive intravenous acetaminophen. There was no significant difference in patient-reported subjective pain scores. Postoperative opioid use in morphine milligram equivalents (MMEs) was equivalent in the rectal suppositories and intravenous groups at 6 hours postoperatively, 12 hours postoperatively and at the end of the study period.

Conclusion: In woman undergoing a minimally-invasive hysterectomy, rectal acetaminophen and intravenous acetaminophen given at the end of surgery was equivalent in controlling pain in the immediate postoperative period.

Qualtrics links will be sent out for the pre test, evaluation, and post test. Please complete in order to trace attendance and receive educational credits.

THANK YOU FOR ATTENDING

SCIENTIFIC POSTERS

Poster Judging

Online

November 2, 2020
thru
November 6, 2020

Poster #1
Women Who Enrolled versus Declined Enrollment in ARRIVE Trial

Megha Gupta, M.D.
McGovern Medical School-UTHealth
Houston, Texas

Poster #2
Uterine Rupture with and without Prior Cesarean Delivery: Associations with Adverse Outcomes

Beth L. Pineles, M.D., Ph.D.
McGovern Medical School-UTHealth
Houston, Texas

Poster #3
Small-for-Gestational Age at Term: Neonatal Outcomes Among Suspected versus Unsuspected

Beth L. Pineles, M.D./PhD
McGovern Medical School-UTHealth
Houston, Texas

Poster #4
Lost in Translation: Evaluation from Bench to Bedside of Omega-3 Dosing to Support Neurodevelopment During Pregnancy

Sarah Syed, BSA, BA
McGovern Medical School-UTHealth
Houston, Texas

Poster #5
Time of Delivery and Composite Adverse Outcomes Among Diabetics

Adriana L. Ocon, M.D.
McGovern Medical School-UTHealth
Houston, Texas

Poster #6
Predictors of Neonatal Brachial Plexus Palsy with Shoulder Dystocia

Suneet P. Chauhan, M.D., Hon. D.Sc.
McGovern Medical School-UTHealth
Houston, Texas

Poster #7

A Teenager's Search for Reproductive Health Information: Veracity and Utility Assessed by Four Obstetrician-Gynecologists

Emilia J. Pitchford
Ursuline Academy of Dallas
Dallas, Texas

Poster #8

Maternal Sepsis: A Review of National and International Guidelines

Angela J. Stephens, M.D.
McGovern Medical School-UTHealth
Houston, Texas

Poster #9

Successful Detection of Unrecognized Rickettsia typhi in Pregnancy Using Cell Free Next-Generation Sequencing

Irene A. Stafford, M.D.
McGovern Medical School-UTHealth
Houston, Texas

Poster #10

Mindfulness for Mothers of Preterm Infants: A Randomized Control Trial of Meditation While Pumping Breastmilk

Katherine M. Massa, M.D.
Saint Louis University
St. Louis, Missouri

Poster #11

Improving the Initiation of Birth Control in the Immediate Postpartum Period

Marissa G. Levine, D.O.
Aultman Hospital
Canton, Ohio

Poster #12

Optimizing Fourth Trimester Care in a Resident Clinic

Justin I. Wexler, M.D.
Aultman Hospital
Canton, Ohio

Poster #13
Improving Postpartum Follow-Up Adherence for Gestational Diabetes in the Outpatient Setting

Franziska V. Haydanek, D.O.
Aultman Hospital
Canton, Ohio

Poster #14
Does Food Environment Contribute to Inappropriate Gestational Weight Gain?

Kara B. Ruder, M.D.
University of Louisville
Louisville, Kentucky

Poster #15
Accuracy in Predicting Birth Weight in Obese Pregnant Patients: Comparing Timing of Growth Ultrasounds for Estimating Birth Weight

Mishaela S. Morrato, D.O.
Ascension St. Vincent Hospital
Indianapolis, Indiana

Poster #16
Association Between Maternal Obesity Class, Adherence to Labor Guidelines and Perinatal Outcomes

Ahmed S.Z. Moustafa, M.D.
Hurley Medical Center/Michigan State University
Grand Blanc, Michigan

Poster #17
Obstetric Anal Sphincter Injury (OASIs): A Retrospective Observational Analysis of the Duration of Parturition

Elliot M. Levine, M.D.
Advocate Aurora Illinois Masonic Medical Center
Chicago, Illinois

Poster #18
Vaginal Twin Deliveries: Delivery Time Interval (DTI) Analysis

Elliot M. Levine, M.D.
Advocate Aurora Illinois Masonic Medical Center
Chicago, Illinois

Poster #19
Placenta Increta After Uterine Septum Repair: Assessing Risk Factors and Ultrasound Findings, A Case Report

Leah N. Delfinado, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

Poster #20
Utility of Away Rotations for Obstetrics and Gynecology Residency Applicants: A Cross-Sectional Study

Paige K. Bradley, M.D., MPHTM
Tulane University
New Orleans, Louisiana

Poster #21
Comparison of *Mycoplasma genitalium* Prevalence and Characteristics in a Pregnant Population versus an STI Clinic Population

Soumya Gogia, B.A.
Baylor College of Medicine
Houston, Texas

Poster #22
Enhanced Recovery After Surgery for Cesarean Delivery in Obstetrics Hospitals

Diana B. Baxter, M.D.
Indiana University
Indianapolis, Indiana

Poster #23
Addressing Inequities in Healthcare Research

Nimasha Kumar, MS4
Indiana University School of Medicine
Indianapolis, Indiana

Poster #24
US-PCG Consumer Involvement and Outreach Efforts

Nimasha Kumar, MS4
Indiana University School of Medicine,
Indianapolis, Indiana

Poster #25
Optimizing Postpartum Care in the Greater New Orleans Area

Lucey A. Gavlinski, M.S., M.D.
LSU Health New Orleans
New Orleans, Louisiana

Poster #26
Assessment of Gynecologic Needs for Women Who Access Harm Reduction Services Through Mobile Van Outreach in Chicago

Rebecca Commito, M.D.
University of Illinois at Chicago
Chicago, Illinois

Poster #27
A Case of HELLP Syndrome Associated Pancreatitis

Arielle B. Grand, M.D.
University of Illinois at Chicago
Chicago, Illinois

Poster #28
A Case of Delayed-Interval Delivery of a Dichorionic Diamniotic Twin Gestation

Arielle B. Grand, M.D.
University of Illinois at Chicago
Chicago, Illinois

Poster #29
The Road to Residency: Stressors on the Interview Trail

Kara Richardson, M.D.
Unversity of Toledo
Toledo, Ohio

Poster #30
A Novel Approach to Suture Placement in Robotic-Assisted Transabdominal Cerclage

Cassie M. Henninger, D.O.
Cleveland Clinic Akron General
Akron, Ohio

Poster #31
Vitamin D Deficiency and Its Implications on Intrauterine Growth Restriction

Laura J. Swale, M.D.
Southern Illinois University School of Medicine
Springfield, Illinois

Poster #32
Dr. [Insert Name Here]: Maintaining Professional Titling During Ob/Gyn Grand Rounds Introductions

Melissa F. Meyer, M.D.
University of Wisconsin - Madison
Madison, Wisconsin

Poster #33
A Rose by Any Other Name May Not Be As Sweet: Use of Descriptors in Ob/Gyn Grand Rounds Introductions

Emily M. Buttigieg, M.D.
University of Wisconsin
Madison, Wisconsin

Poster #34
Reloadable Stapler Use During Peripartum Hysterectomy for Placenta Accreta Spectrum: A Novel Surgical Technique and Case Series

Christopher G. Smith, M.D.
University of Kentucky
Lexington, Kentucky

Poster #35
Social Media Analysis of Journals in Obstetrics and Gynecology

Amareen Dhaliwal, MS4
Boston University School of Medicine
Boston, Massachusetts

Poster #36
A Novel Approach to Treating Cervical Ectopic Pregnancy with IV Methotrexate

Fatima Ali, D.O.
Hackensack Meridian Jersey Shore University Medical Center
Neptune, New Jersey

Poster #37
COVID-19 Associated Coagulopathy in the Peripartum Setting

Ashley V. Allen, D.O.
John Peter Smith Hospital
Fort Worth, Texas

Poster #38
A Case of Familial Duodenal Atresia with 17q12 Microduplication

Jessica A. Young, M.D.
St. Vincent Women's Hospital
Indianapolis, Indiana

Poster #39
Managing May-Thurner Syndrome and Associated Complications Throughout Pregnancy and Postpartum

Jessica A. Young, M.D.
St. Vincent Hospital and Health Care Center
Indianapolis, Indiana

Poster #40
Aortic Dissection in Pregnancy: A Case Report and Literature Review

Yanshu Cheng, M.D.
Methodist Dallas Medical Center
Dallas, Texas

Poster #41
Double Vision After Vaginal Delivery

Maya E. Reuven, D.O.
Jersey Shore University Medical Center
Neptune, New Jersey

Poster #42
Prenatal Diagnosis of Cranium Bifidum due to Potocki-Shaffer Syndrome in Monochorionic-Diamniotic Twin Gestation

Benjamin T. Bonebrake, B.S., B.A.
University of Nebraska Medical Center
Omaha, Nebraska

Poster #43

Diagnosis of a Longitudinal Vaginal Septum and Possible Uterus Didelphys Secondary to Coital Injury with an Artificial Phallus

Lauren G. Sword, D.O.
Brandon Regional Hospital
Brandon, Florida

Poster #44

Amniotic Fluid Embolism and the Possible Protective Effects of Heterozygous Factor V Leiden: A Case Report

Sanela Andelija, D.O.
Hosp. Corp. America /Univ. South Florida Morsani College of Medicine Graduate Medical Education Consortium
Brandon, Florida

Poster #45

The Unexpected Finding of Uterine Torsion at Time of Term Cesarean Section; A Case Report

Martin J. Caliendo, M.D.
Kaleida Health-Oishei Children's Hospital
Buffalo, New York

Poster #46

Uterine Sandwich Method: A Case of Posterior Placenta Previa in an In Vitro Fertilization Pregnancy Complicated by Velamentous Cord Insertion

Joseph N. Farshchian, MS4
Florida Atlantic University, College of Medicine
Boca Raton, Florida

Poster #1
Women Who Enrolled versus Declined Enrollment in ARRIVE Trial

Megha Gupta, MD[1], Sarah Tounsi, MD[1], Stephen M Wagner, MD[2], Hector Mendez-Figueroa, MD[3], Sean C Blackwell, MD[1], Suneet P Chauhan, MD, Hon DSc[1]

McGovern Medical School-UTHealth, Houston, TX[1], Memorial Hermann Southwest Hospital, Houston, TX[2], Lyndon Baines Johnson Hospital, Houston, TX[3]

Purpose: The ARRIVE trial (A Randomized Trial of Induction Versus Expectant Management; Grobman WA et al NEJM 2018) reported multiple benefits for low-risk nulliparous women who were induced at 39 weeks compared to expectantly managed. However, since 73% of the eligible women declined participation, there are concerns for participation bias impugning the trial's generalizability.

We sought to compare the peripartum outcomes among those women who were enrolled vs. those who declined at our center. We hypothesized that, compared to the women who declined enrollment, those who enrolled in the ARRIVE trial will have a lower rate of hypertensive disorder of pregnancy (HDP) and of cesarean delivery (CD).

Methods: Our center, which participated in the ARRIVE trial (March 2014 to August 2017), recruited women at three different clinical sites. The eligibility criteria to approach women were nulliparity, optimally dated according to ACOG criteria, low-risk at 34.0-38.6 weeks of gestation, and had no contraindications to vaginal delivery. Women were considered to be low-risk if they did not have any maternal or fetal indication for delivery before 40.5 weeks (e.g. major maternal medical illnesses, fetal growth or amniotic fluid abnormalities diagnosed before randomization).

The ARRIVE screening log, which was updated daily and contained the list of all eligible women who were approached for participation, was used to determine who enrolled vs. declined participation in the trial. For this analysis, the research staff culled data from maternal-neonatal charts. Due to the sample size, our co-primary outcomes were rates of HDP and CD. We also compared the composite of perinatal death and severe neonatal complications, which included any of the following: perinatal death, respiratory support, Apgar score < 3 at 5 min, hypoxic ischemic encephalopathy, seizure, infection, meconium aspiration syndrome, birth trauma, intracranial or subgaleal hemorrhage, or hypotension requiring vasopressor support. A multivariable logistic regression model was utilized to examine the association

between patient participation status and adverse outcomes after adjusting for maternal age, race/ethnicity and body mass index, marital status, insurance status, gestational age at delivery and site of delivery, reported as an adjusted odds ratio (aOR) with 95% confidence interval (CI).

Results: At the three clinical sites, 857 eligible women were approached for participation in the ARRIVE trial, of whom 405 (47.3%) enrolled with remaining 452 (52.7%) declining enrollment. Enrollment by each site was as follows: Site 1: of 552 women approached, 43% randomized; Site 2: of 94 women approached, 28% randomized, and; Site 3: of 211 women approached, 67% randomized. We had data for all women who enrolled in the parent trial and 422 (93.4%) women who declined. Outcomes of 30 women (6.6%) who declined participation and delivered outside our system were not included in the analysis.

The maternal demographics differed among the two groups. Compared to women who enrolled in the ARRIVE trial, women who declined participation were ($p < 0.01$ for all comparisons) more likely to be: 1) Advanced maternal age (4.2% vs. 9.9%); 2) White or Asian, 3) have body mass index at delivery of < 30 kg/m2 (47.5% vs. 59.1%); 4) married or living with a partner (49.1% vs. 63.5%), and; 5) have private insurance (24.0% vs. 52.6%).

Elective induction was more common among those who enrolled vs. those who declined (36.8% vs. 20.8%; $p < 0.01$). Whether the labor was spontaneous or augmented/induced also differed significantly (51.6% vs. 42.2%; $p < 0.01$). The gestational age at delivery (39.6 + 0.9 for declined vs. 39.4 + 0.7 for enrolled) differed significantly ($p< 0.01$).

Among those who enrolled versus declined, there was no significant difference in the rate of hypertensive disease of pregnancy (15.3% vs. 12.6%; aOR 0.87, 95% CI 0.55-1.39), and the likelihood of cesarean delivery (20.5% vs. 22.1%; aOR 1.01, 95% CI 0. 69 - 1.51). We analyzed rates of HDP and CD by participation status (enrolled-elective induction of labor, enrolled-expectant management, declined participation) at each clinical site and there were no significant differences between the groups ($P > 0.05$ for all comparisons).

The rate of composite perinatal adverse outcomes was similar among those who were enrolled versus declined the trial (4.2% vs. 2.6%; aOR; 1.72, 95% CI 0.72-4.10).

Conclusion: At our center, there was a large variation in patient enrollment in the ARRIVE trial by clinical sites. We noted significant differences in the baseline characteristics of women who enrolled versus declined enrollment. After adjustment for key factors, there were no significant

differences in the frequency of neonatal or maternal adverse outcomes between the groups.

Poster #2

Uterine Rupture with and without Prior Cesarean Delivery: Associations with Adverse Outcomes

Beth L Pineles, MD/PhD, Han-Yang Chen, PhD, Suneet P Chauhan, MD, Hon DSc, Baha M Sibai, MD

McGovern Medical School-UTHealth, Houston, TX

Objective: While uterine rupture among women with prior cesarean delivery (CD) is acknowledged (Landon MB et al NEJM 2004), there is a paucity of information on rupture without CD. Considering the rate of trial of labor after cesarean is decreasing (Sargent J and Caughey AB OGCNA 2017), there is a need to compare the rate and associated morbidity when uterine rupture occurs with and without prior CD

The objective of this study was to compare the composite maternal and neonatal adverse outcomes after uterine rupture among pregnancies with and without prior CD.

Methods: This was a retrospective cohort study using the U.S. period linked birth-infant death datasets from 2013-2017. Our study sample was restricted to singleton, term (37 weeks 0 days to 41 weeks 6 days), non-anomalous live births from parous women who had uterine rupture. We excluded pregnancies if there were no data on prior CD.

The primary exposure variable was no prior CD, with women who had a prior CD serving as the reference group. The primary outcome was the composite maternal adverse outcome, which included any of the following: unplanned hysterectomy, blood transfusion, or admission to the intensive care unit. The secondary outcomes were the composite neonatal adverse outcome (including Apgar score <5 at 5 minutes, assisted ventilation for >6 hours, seizure, or neonatal death) and individual components of the composite maternal and neonatal adverse outcomes.

Differences in maternal characteristics stratified by prior CD were examined using chi-square tests for categorical variables. Bivariate and multivariable Poisson regression models were used to examine the association between prior CD and the adverse outcomes. Models were adjusted for maternal age, race and ethnicity, education, infant sex, hypertensive disorder, gestational age, and year of delivery. We conducted a sensitivity analysis to determine whether the association of composite maternal adverse outcome with prior CD persisted if the composite excluded maternal blood transfusion. STATA 15 was used for analysis and results were reported as risk ratio (RR), 95% confidence interval (CI) and adjusted risk ratio (aRR), 95% CI.

Results: From 2013 to 2017, there were 11,331,330 singleton, non-anomalous live births delivered by parous women at 37 to 41 weeks. Among them, 2,485,217 (21.9%) women had prior CD and 3,057 (0.3%) women had uterine rupture. Among women with prior CD and without prior CD, the rate of uterine rupture was 7.6 and 1.3 per 10,000 live births, respectively. Trend analysis noted a significant increase in incidence of uterine rupture over the study period in women with prior CD (p for trend<0.0001), but not among those with no prior CD (p for trend=0.25). In the final study sample of 3,057 women with uterine rupture, 62.0% (1,985) had prior CD and 38.0% (1,162) had no prior CD.

The composite maternal adverse outcome occurred in 611 (20%) women. The risk of maternal morbidity was higher in women with no prior CD, compared to those with prior CD (26% versus 16%, RR 1.65, 95% CI 1.43 - 1.90). The risk of maternal admission to ICU (15% versus 7%, aRR 1.88, 95% CI 1.52 - 2.33), maternal transfusion (20% versus 13%, aRR 1.55, 95% CI 1.31 - 1.83), or unplanned hysterectomy (13% versus 6%, aRR 2.07 (95% CI 1.64 - 2.60) was higher in women with no prior CD, compared to those with prior CD. The risk of composite maternal adverse outcome after excluding blood transfusion was also higher in women with no prior CD than those with prior CD (aRR 1.86 (95% CI 1.55 - 2.23).

Compared to newborns delivered by women with no prior CD, there was no significant difference in the risk of the composite neonatal adverse outcome in those delivered by women with prior CD (17% versus 16%, aRR 1.07, 95% CI 0.91 - 1.26). Similarly, result of non-significant association was also found in neonatal death (3% versus 2%, aRR 1.66, 95% CI 1.00-2.76).

Conclusions: While the risk of uterine rupture and associated morbidity is uncommon in contemporary practice, composite maternal adverse outcome is substantially higher in women with no prior CD compared to those with prior CD. There was no significant difference in the risk of composite neonatal adverse outcome.

Poster #3
Small-for-Gestational Age at Term: Neonatal Outcomes Among Suspected versus Unsuspected

Beth L Pineles, MD/PhD, Hector Mendez-Figueroa, MD, Suneet P Chauhan, MD, Hon DSc

McGovern Medical School-UTHealth, Houston, TX

Background: Newborns that are small-for-gestational age (SGA; birthweight < 10th percentile for gestational age) are significantly more likely to have multiple adverse outcomes than those that are appropriate-for-gestational age birthweight (AGA; birthweight at 10-90th percentile). While it is acknowledged that majority SGA newborns are unidentified during pregnancy (i.e. not diagnosed as fetal growth restriction [FGR]), the sequela of being undetected in uncertain. The putative benefit of identifying FGR are implementation of antepartum surveillance and if necessary, indicated delivery; the potential disadvantages of improved detection are unnecessary interventions, including iatrogenic prematurity or early term delivery.

Objective: The primary objective of the study was to compare the composite neonatal adverse outcomes (CNAO) among singleton pregnancies that are at least 37 weeks, and deliver SGA newborns which are either suspected of being FGR during pregnancy or not.

Methods: This was a secondary analysis of a retrospective cohort, the Consortium for Safe Labor (CSL). Singleton births at 37.0 to 41.6 weeks of gestation without congenital anomalies or large for gestational age (birthweight above 90th percentile) were included in the analysis.

The primary outcome was CNAO, defined as any of the following: Apgar score <5 at 5 minutes, cardiopulmonary resuscitation at birth, respiratory distress syndrome, continuous positive airway pressure, mechanical ventilation, neonatal seizures, hypoxic-ischemic encephalopathy or diagnosis of asphyxia, intraventricular hemorrhage, necrotizing enterocolitis, neonatal sepsis, fetal or neonatal death. The secondary outcome was composite maternal outcome (CMAO) which included any of the following- postpartum hemorrhage, peripartum infection, thrombo-embolism, hysterectomy, uterine rupture, eclampsia, intensive care unit admission, or maternal death.

FGR was based on clinician assessment, which could include ultrasound or clinical estimated fetal weight. AGA without FGR (Group I) was used as the referent group and was compared to i) AGA with FGR (Group II or over-

diagnosed FGR); ii) SGA without prenatal diagnosis of FGR (Group III or undetected SGA), and; iii) SGA with prenatal diagnosis of FGR (Group IV or detected SGA).

SAS 9.04 was used to compare frequencies of the composite and secondary outcomes, and to build multivariate logistic regression models adjusted for maternal age, race/ethnicity, marital status, BMI, nulliparity, history of cesarean delivery, insurance, education, hypertension, drug use, alcohol use and infant sex. P<0.05 was considered statistically significant. Gestational age-specific risks of CNAO and perinatal death were computed for each week of gestation among ongoing pregnancies.

Results: Of the 228, 438 deliveries in the CSL, 154,530 (67.6%) met the inclusion criteria and among them there were 18,607 (12.0%) SGA. While 135,358 (87.6%) were in Group I, 565 (0.4%) were in Group II, 17,689 (11.4%) were in Group III, and 918 (0.6%) were in Group IV.

Among Groups I-IV, the maternal characteristics-age, race/ethnicity, nulliparity, prior cesarean delivery [CD], body mass index above 30 kg/m2, history of hypertensive disease or of diabetes-varied significantly (P<0.0001 for all comparisons). Significant differences in intrapartum outcomes were found, including gestational age at delivery, induction, epidural usage, rate of primary CD and chorioamnionitis (P<0.0001 for all comparisons).

The overall rate of CNAO was 2.1%; the overall rate of CMAO was 6.3%.

Compared to Group I (1.7%), CNAO was significantly increased in both Group III (3.0%; adjusted odds ratio [aOR] 1.38, 95% CI 1.23-1.54) and Group IV (3.9%; aOR 1.87, 95% CI 1.26-2.79), but not in Group II (1.8%; aOR 1.32, 95% CI 0.70-2.48). Compared to Group I, Group III had increased risks of both fetal death (odds ratio [OR] 1.62, 95% CI 1.25-2.22) and neonatal death (OR 6.97, 95% CI 3.62-13.41).

Compared to Group I (6.3%), CMAO was significantly lower Group III (6.2%; aOR 0.83, 95% CI 0.77-0.90) and with Group IV (5.1%; aOR 0.69, 95% CI 0.49-0.96) and similar to Group II (6.6%, aOR 1.22, 95% CI 0.85-1.76).

Conclusion: The vast majority of SGA neonates (95%) are not suspected antepartum. However, antenatal suspicion of FGR was associated with a significantly higher composite adverse neonatal outcomes and a lower rate of composite maternal adverse outcomes.

Poster #4

Lost in Translation: Evaluation from Bench to Bedside of Omega-3 Dosing to Support Neurodevelopment During Pregnancy

Sarah Syed, BSA, BA[1], Neomary Soriano-Calderon, MS4[1], Parnaz Daghighi, BA[1], Pamela D Berens, MD[1], Judith A Smith, PharmD[1,2]

McGovern Medical School-UTHealth, Houston, TX[1], Memorial Herman Hospital Cancer Center-TMC, Houston, TX[2]

Background: Omega-3 supplementation during pregnancy has been strongly correlated with multiple outcomes in infants and children. Adequate omega-3 supplementation has been shown to improve neurodevelopmental outcomes, decrease the risk of preterm birth, infant allergies, and lengthen gestational size. The effects of omega-3 supplementation extend beyond pregnancy itself studies have found correlations between developing child and an inadequate omega-3 intake during pregnancy. Over the past decade, the benefit of the use of omega-3 supplementation during pregnancy has been debated in clinical practice.

Objective: The objective of this study was to assess the adequacy of omega-3 supplementation dosing during pregnancy to support fetal/newborn neurodevelopment evaluated in randomized, controlled, clinical studies in comparison with human equivalent dosages employed in animal studies conducted to evaluate the benefits of omega-3 supplementation in fetal/newborn neurodevelopment.

Additionally, to evaluate the translation of the dosing of omega-3 supplementation in current OTC and prescription pre-natal supplements compared to omega-3 dosages used in animal and clinical studies that demonstrated beneficial neurodevelopment outcomes.

Methods: Peer review literature was reviewed in PubMed database to identify clinical trials using the following search terms: "omega-3 and pregnancy" and a pre-designated search terms including: neurodevelopment, cognition, intelligence, IQ, memory, visual acuity, and attention. Animal studies were selected if they were referenced as part of the rationale for conducting a clinical trial. Clinical trials were excluded if study had sample size was fewer than 20 subjects, it was not a randomized control trial or a follow-up to a randomized control trial, articles could not be found in English; articles was inaccessible through PubMed; trial not pertinent to our question (i.e., omega-3 supplementation that occurred only

postpartum or did not occur during pregnancy at all, or unable to determine omega-3 dosing. Data was compared between clinical trials and animal studies to determine: a) the number of studies that found a beneficial outcome, no benefit or harmful outcome in clinical trials versus animal studies; and b) the human-equivalent omega-3 doses used in animal studies versus clinical trials. For the secondary objective, using major retailers' websites and GoodRx, over-the counter (OTC) and prescription prenatal supplements were identified and evaluated for omega-3 supplementation dosage. The omega-3 content of each product was evaluated alongside the American College of Gynecology (ACOG) omega-3 dosage, specifically docosahexaenoic acid (DHA), recommendation for pregnant women which is currently 200 mg/day. Finally, the cost for a 30-day supply of a supplement was recorded and assessed in terms of relative omega-3 content.

Results: A total 26 of clinical trials were identified in the literature search. Two studies were excluded because did not meet study inclusion criteria leaving a total of 24 clinical trials to be included for analysis with a total of 16 referenced animal studies identified. There were 26 independent neurodevelopment outcomes identified in the clinical trials with only 30.7% being beneficial the remainder showing no benefit, but none reported any harmful outcomes. In the animal studies all 18 independent neurodevelopment outcomes demonstrated benefit. The mean dose used in neurodevelopment-focused clinical trials was 887 mg ±896mg which was 8.1 % of the mean human equivalent dose used in animal studies of 10,996 mg ±1164 mg. There were 133 OTC prenatal vitamins identified and 86 prescription prenatal supplement products for which omega-3/DHA content was available, 31% of OTC products and 59% of prescription products met or exceeded the 200 mg of DHA daily ACOG recommendation. No OTC or prescription prenatal supplement had doses equivalent to dosing used in clinical trials that have demonstrated neurodevelopment benefits.

Conclusion: This study demonstrated there has been a disconnect between the omega-3 dosage used in animal studies to provide a rationale for clinical studies and again a disconnect between the omega-3 dosing used in clinical trials to support use in clinical practice. First clinical trials have exhibited limited benefits compared to animal studies due to significantly lower doses of omega-3 when compared to equivalent human doses that were used in the animal studies. In addition, the lack of benefits may also be due to the duration of supplementation, which often did not last throughout all of lactation and neurodevelopment continues throughout the first year of life. Animal studies have had

limited utility because of dosing used equates to human equivalent doses that would require multiple pills per dose that would need to be taken and high cost attached to taking this amount of omega-3 supplementation. Lastly, while most of the OTC and prescription products do meet the ACOG recommendations of omega-3/DHA per day which is still much lower in comparison to the doses used in clinical trials as well as human equivalent dosing in animal studies that have demonstrated neurodevelopment benefits. In conclusion, better collaboration between researchers and clinicians is needed in the design of animal studies and clinical studies to refine the dosing of omega-3 supplementation during pregnancy/lactation to optimize fetal/baby neurodevelopment.

Poster #5
Time of Delivery and Composite Adverse Outcomes Among Diabetics

Adriana L Ocon, MD[1], Han-Yang Chen, PhD, Stephen M Wagner, MD, Megha Gupta, MD, Suneet P Chauhan, MD, Hon DSc

McGovern Medical School-UTHealth, Houston, TX

Objectives: In 2017, upwards of 270,000 diabetic women delivered in the US. Women with diabetes in pregnancy are at an increased risk of cesarean delivery and adverse outcomes. Neonates of mothers with diabetes are at increased risk of accelerated growth (birth weight of > 90% for gestational age), birth trauma and neonatal intensive care unit admission. While several factors associated with adverse outcomes among diabetics are known (e.g. inadequate blood sugar control, accelerated growth), whether time of delivery influences the rate of adverse outcomes is unknown. A recent publication (Wagner SM et al Obstet Gynecol 2020) reported that among low-risk pregnancies the composite neonatal adverse outcomes (CNAO), but not the composite maternal adverse outcomes (CMAO), varied significantly based on the time of delivery.

The primary objective of this study was to compare the CNAO among term pregnancies, complicated by diabetes, delivered at 7:00 to 15:00 with those delivered at 15:00 to 23:00 or at 23:00 to 7:00. The secondary objective was to compare the CMAO among women who delivered at these three time periods. We hypothesized that, among diabetics, with singleton pregnancies that labored and delivered between 37-41 weeks, the CNAO, but not CMAO, would vary significantly based on the three shifts.

Methods: This was a population-based retrospective cohort study using the U.S. Vital Statistics dataset on Period Linked Birth-Infant Death Data from 2013-2017. The study population was restricted to non-anomalous singleton live births from women with pregestational or gestational diabetes, who labored and delivered at 37 0/7 to 41 6/7 weeks of gestation. Women with hypertensive disorders were excluded.

Time of delivery was categorized as the first shift (7:00-15:00), the second shift (15:00-23:00), and the third shift (23:00-7:00). The primary outcome was composite neonatal adverse outcomes, which included any of the following: APGAR score less than 5 at 5 minutes, assisted ventilation for more than 6 hours, neonatal seizure or neonatal death. The secondary outcome was composite maternal adverse outcome, and included any of the following: admission to intensive care

unit, maternal transfusion, uterine rupture or unplanned hysterectomy.

Multivariable Poisson regression models were used to estimate the association between the time of delivery and adverse outcomes (using adjusted relative risk [aRR] and 95% CI). Relative risk was adjusted for maternal age, race and ethnicity, education, marital status, nulliparity, pre-pregnancy body mass index, prenatal care, smoking in pregnancy, day of week, gestational age, route of delivery, infant sex, and year.

We also conducted two sensitivity analyses: 1) to investigate whether the relationship of composite neonatal adverse outcome compared with time shift held, stratified by day of the week (weekday vs weekend), and 2) to ascertain whether the association of maternal adverse outcome with time of delivery persisted if the composite excluded blood transfusion.

Results: Of 19.8 million live-births during the study period, 3.3% (643,610) met study inclusion criteria. Most of the maternal characteristics differ significantly among the three time delivery groups; however, there was no significant difference in the type of diabetes.

The overall rate of CNAO was 9.6 per 1000 live births. Multivariable adjusted regression analysis showed that, compared to newborns delivered at the first shift, the risk of composite neonatal adverse outcome was modestly but significantly higher (aRR 1.19, 95% CI 1.12-1.27) in the third shift (23:00-7:00), but not significantly different than the second shift. In the sensitivity analysis stratified by the day of the week (weekday vs weekend), the results were similar to the primary analyses.

The overall rate of composite maternal adverse outcome was 3.6 per 1000 live births. There was no statistically significant difference in the risk of composite outcome between the time delivery groups after adjustment. In the sensitivity analysis with composite maternal adverse outcome excluding maternal transfusion, the result was consistent with the original analysis.

Conclusion: Among term pregnancies complicated by diabetes, compared with delivery at 7:00-15:00, the risk of composite neonatal adverse outcome is marginally but significantly higher if delivery occurs at the third shift (23:00-7:00). However, the risk of composite maternal adverse outcome does not differ significantly among the three shifts.

Poster #6

Predictors of Neonatal Brachial Plexus Palsy with Shoulder Dystocia

Leena M Narendran, DNM[1], Hector Mendez-Figueroa, MD[1], Kendra L Folh, MSN[2], William A Grobman, MD[3], Sean C Blackwell, MD[1], Suneet P Chauhan, MD, Hon DSc[1]

McGovern Medical School-UTHealth, Houston,, Texas[1], Children's Memorial Herman, Houston, Texas[2], Northwestern University, Chicago, Illinois[3]

Objective: The majority of newborns delivered after shoulder dystocia will not develop neonatal brachial plexus palsy (NBPP). Identification of factors-irrespective of whether modifiable or not-associated with NBPP among neonates born subsequent to shoulder dystocia could provide insight into brachial plexus palsy.

The objective of our study was to ascertain factors among deliveries complicated by shoulder dystocia that are associated with NBPP.

Methods: After IRB approval, women with shoulder dystocia, who delivered in 11 hospitals in a healthcare system, were identified by utilizing All Patients Refined Diagnosis Related Groups (APR-DRG) and ICD-10 codes from a commercial clinical database for inpatient admissions (January 1, 2016 through December 31, 2019). The presence of a BPP diagnosed prior to discharge was identified by ICD-10 codes. The inclusion criteria were non-anomalous, singleton deliveries at 34 to 42 weeks, complicated by shoulder dystocia. Data from all maternal-neonatal charts were culled by trained research staff.

Bivariable analysis and multivariable logistic regression were used to identify factors associated with NBPP. Adjusted odds ratios (aOR) with 95% confidence intervals (CI) were calculated. Receiver operating characteristic (ROC) curves were created to evaluate the predictive value of the models for adverse outcomes. A priori, an area under the curve (AUC) of 0.80 was considered to be necessary for the model to be considered to have good classification ability.

Results: During the study period, there were 99,305 women with deliveries, of whom 62,939 (63.4%) delivered vaginally. Of these, there were 1,184 (1.2%) ICD codes for shoulder dystocia, of whom 1,134 (96.0%) met the inclusion criteria. Among the analytic cohort, 74 (6.5%) had NBPP and 1,063 (93.5%) did not have NBPP.

There were no significant differences between the two groups in maternal age, race/ethnicity, nulliparity, or body

mass index > 30.0 kg/m2. The history of macrosomia and of shoulder dystocia also did not differ among the parous women in these two groups. The frequency of diabetes-gestational or pre-gestational-was significantly higher among the mothers of neonates with BPP (35.1%) than among those without BPP (9.0%; P < 0.01). The mean gestational age at delivery was statistically lower among those with NBPP (38.8 + 1.2 weeks) than among those without NBPP (39.1 + 1.0; P < 0.01), although the absolute difference was quite small.

The following intrapartum variables did not differ significantly between the two groups: estimated fetal weight, documentation of adequacy of pelvis, induction, and duration of second stage of labor. Operative vaginal delivery was significantly more common among those with NBPP (17.5%) than without NBPP (9.6%; P < 0.01).

Regarding shoulder dystocia and its management, the delivery among newborns with NBPP, as compared to without, was characterized by a significantly higher (P < 0.01 for all comparison) likelihood of "Call for Help" (73.0 % vs. 32.5%), use of 3 or more maneuvers (48.6% vs. 28.6%) and duration from delivery of the head to the body (106.0 + 16.7 vs. 47.9 + 1.1 sec).

Among those with NBPP vs. those without, birthweight (BW) differed significantly, as did the likelihood of being macrosomic (44.6% vs. 23.7%; P < 0.01), or have an Apgar score < 5 at 5 min (8.1% vs. 0.4%; P < 0.01).

In the multivariate analysis, the four factors that remained independently associated with NBPP were: 1) diabetes (aOR 3.87; 95% CI 2.13, 7.01); 2) BW (aOR 1.83; 95% CI 1.05-3.20); 3) Call for Help (aOR 4.09, 95% CI 2.29-7.30), and; 4) Duration of shoulder duration > 120 sec (aOR 2.47, 95% CI 1.30-4.69).

The AUC under the ROC curve was 0.79, which indicates that the above risk factors when identified immediately after delivery were not able to differentiate well between those newborns who will develop BPP and those who will not.

Conclusion: Following the resolution of shoulder dystocia, BPP occurred in approximately 5% of the newborns. After shoulder dystocia, several factors may be identified that are associated with NBPP; nevertheless, these factors cannot reliably predict which neonates will experience this complication.

Poster #7

A Teenager's Search for Reproductive Health Information: Veracity and Utility Assessed by Four Obstetrician-Gynecologists

Emilia J Pitchford[1], Rachel Wiley, MD[2], Steve M Wagner, MD[2], Pamela Promecene, MD[2], Hector Mendez-Figueroa, MD[2], Suneet P Chauhan, MD, Hon DSc[2]

Ursuline Academy of Dallas, Dallas, Texas[1], McGovern Medical School-UTHealth, Houston, Texas[2]

Objective: In 2018, 10,472,771 female teenagers (aged 15-19 years) lived in the United States. Reproductive health is a prominent aspect of these teenagers' lives, and they often have many questions regarding this topic. However, given the decline in comprehensive school based sexual health education, teenagers often rely on online media for answers. There is, however, a lack of assessment of the veracity of the reproductive health information available online on various teen websites and magazines.

The primary purpose of this study was to assess the perception of the statement's basis in evidence of reproductive health information a teenager encountered online; the secondary purpose was to assess the utility of information in clinicians' practice.

Method: To accumulate commonly encountered reproductive health information, a current high school teenager culled reproductive health statements that she encountered during daily activities. The statements, published from January 2019 to December 2019, were gathered from eight different sources that target teenage female audiences. The high school teenager accessed the online sources with Google and once on the source's website, searched for relevant articles by using keywords such as, "pregnancy," "STD," or "birth control." Once the statements were identified, the sources were categorized as "non-health focus" (e.g. Cosmopolitan, Seventeen) and "health-focus" (e.g. Women's Health, Health Magazine).

Four OB-GYNS were sent 100 statements to rate the perception of the statement's basis in evidence on a Likert scale of 0-5. A rating of 0 would deem the statement as not evidence based, whereas a rating of 5 concludes the statement is evidence-based. To assess the clinical utility of the information in their practice, the four OB-GYNS were asked to answer the following yes and no questions: 1) Have you used this information in your practice?; 2) Do you see yourself using this information during a clinic visit with a teenager?; 3) Are most teenagers you have seen aware of this

information?; and 4) Has a teenager asked or requested this information during a clinic visit?

The four clinicians varied in their experience—a third year resident in obstetrics-gynecology, a junior faculty, a senior faculty and a maternal-fetal medicine sub-specialist. All four clinicians were instructed not to research the statements before inputting their assessment, they were blinded to other's responses and they were not involved in data analysis.

Inter-rater agreement was assessed using Kappa score: agreement was classified as being poor if the score is < 0.20, fair if 0.20 to 0.40, moderate if 0.40 to 0.59, good if 0.60 to 0.80, and very good if 0.80 to 1.00. A priori a sample of 100 reproductive health statements encountered on online was considered sufficient to assess the veracity of the statements.

Results: During the study period, 100 statements were identified, with 64 statements being obtained from non-health focused source and 36 from health-focused sources. For all 100 statements, the kappa score for the Likert scale evaluating the perception of basis in the evidence was calculated, and was found to be 0.10 (poor agreement). For the 64 statements from non-health focused sources, the kappa score was 0.08 (poor agreement) and for the remaining 36 statements from health-focused sources, the kappa score was 0.12 (poor agreement).

Regarding the clinical utility of all 100 statements gathered, the four clinicians' response to "Have you used this information in your practice?" ranged from 4 to 56%, with the kappa score being 0.26 (fair agreement).

The response to the question "Do you see yourself using this information during a clinic visit with a teenager?" varied from 29 to 68%, with the kappa score being 0.20 (fair agreement). For the question "Are most teenagers you have seen aware of this information?" the "Yes" response ranged from 12 to 82%, and the kappa score was -0.06 (poor agreement). For the last question "Has a teenager asked requested this information during a clinic visit?", the affirmative response ranged from 58-79%, with the kappa score being 0.04 (poor agreement).

Among the 64 statements obtained from non-health sources, the kappa score for two questions was fair and poor for the two questions. Among the 36 statements obtained from health-focused sources, the kappa was poor agreement for all 4 questions.

Conclusion: The online reproductive health information a teenager encountered lacked agreement among four clinicians in that the inter-observer agreement for being evidence-based was fair overall, and poor when obtained from a health-focused source. Additionally, the utility of the information

garnered by the teenager was not consistent with the clinician's experience of what information teenagers request of healthcare providers. Though limited in scope, our analysis suggests that online sources should be used with caution as there is poor agreement over their basis in evidence. Teenagers should be cautious of what information they gleam on a routine basis, and clinicians should be more active participant in educating teenagers on sexual health.

Poster #8
Maternal Sepsis: A Review of National and International Guidelines

Angela J Stephens, MD, Suneet P Chauhan, MD, Hon DSc, Baha M Sibai, MD

Department of Obstetrics, Gynecology, and Reproductive Sciences, McGovern Medical School-UTHealth, Houston, TX

Purpose: In 2016, the International Consensus for Sepsis and Septic Shock (Sepsis-3) published new guidelines regarding definition, criteria and tools for identification, and management of sepsis and septic shock. The purpose of this review is to compare national and international guidelines for maternal sepsis to determine agreement with Sepsis-3.

Methods: In light of recent guidelines for sepsis and septic shock, we used Cochrane Database of Systematic Reviews, PubMed, Google Scholar, and organization websites to identify national and international guidelines for maternal sepsis and septic shock in the English language. Guidelines were accessed in November 2019 to April 2020.

Guidelines were reviewed for the following organizations: The American College of Obstetrics and Gynecology (ACOG) and Society of Maternal-Fetal Medicine (SMFM), The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) and the Society of Obstetric Medicine of Australia and New Zealand (SOMANZ), The Royal College of Obstetricians and Gynaecologists (RCOG), The Royal College of Physicians of Ireland's (RCPI) Institute of Obstetricians and Gynecologists and The World Health Organization (WHO). For the purposes of our review, we combined ACOG/SMFM and RANZCOG/SOMANZ guidelines as these represent recommendations from the same country.

The following aspects of each guideline were reviewed: definitions of maternal sepsis and/or septic shock, clinical variables included within criteria, tools (if any) utilized for diagnosis, statement (if any) on organ dysfunction, reference (if any) to an obstetric-specific warning system, and approach to evaluation and management of maternal sepsis. Guidelines were assessed based on the quality of evidence for each definition, criteria, and tool(s) used. This study was exempt from Institutional Board Review approval due to the descriptive nature of the study and analysis.

Results: Maternal sepsis guidelines were found for 7 organizations, representing 4 countries and 1 international organization. Despite consistency among definitions utilized

for maternal sepsis and septic shock, through emphasis on systemic manifestations of infection and organ dysfunction, the specific clinical criteria and tools utilized for identification of sepsis were varied and inconsistently reflected Sepsis-3. However, all definitions utilized one version of the International Consensus for Sepsis and Septic Shock (i.e. Sepsis-1, Sepsis-2, or Sepsis-2), which were released in 1992, 2001, and 2016, respectively.

ACOG, SMFM, and SOMANZ define sepsis as life-threatening organ dysfunction caused by a dysregulated host response to infection, consistent with Sepsis-3. RANZCOG and RCOG define sepsis as infection plus systemic manifestations of infection, consistent with Sepsis-1 and Sepsis-2. RCPI proposes two alternate definitions of sepsis both reflecting Sepsis-3: infection and organ dysfunction and the WHO's description of life-threatening organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or postpartum period.

Consistent with Sepsis-3, SMFM, ACOG, RCPI, and SOMANZ define shock as need for vasopressor support to maintain a mean arterial pressure ≥ 65 mmHg with a serum lactate level > 2 mmol/L after adequate fluid resuscitation. RANZCOG/RCOG define shock as hypoperfusion despite adequate fluid resuscitation, more consistent with Sepsis-1 and Sepsis-2. The WHO does not directly address septic shock.

There was variation in the specific clinical variables and tools utilized to diagnosis sepsis. ACOG/SMFM utilize 2 Sepsis-3 tools, the Sequential Organ Failure Assessment Score (SOFA) and quick SOFA (qSOFA), for diagnosis. SOMANZ also utilizes 2 tools, an obstetrically modified Sepsis-3 SOFA and qSOFA. RCOG and RANZCOG utilize Sepsis-2 criteria for diagnosis of maternal sepsis, which is contingent upon specific clinical variables and no specific tool, while the RCPI utilizes a modified Sepsis-1 tool, Systemic Inflammatory Response Syndrome (SIRS) criteria. The WHO's definition of sepsis is based on Sepsis-3, but criteria are nonspecific and more reflective of Sepsis-1.

The evaluation and management of maternal sepsis was similar among guidelines with use of Surviving Sepsis Campaign algorithms. All guidelines recommend blood culture and lactic acid level within 1-6 hours of suspicion, early fluid resuscitation (20 -30 ml/kg), and broad-spectrum antibiotics within 1 hour of sepsis suspicion. All recommendations also suggest antibiotics be tailored to likely etiology. Other aspects of management variably addressed by guidelines include: transfer to intensive care unit settings, use of consultants, nutrition, venous thromboembolic prophylaxis, access and anesthesia considerations, steroid administration, anti-pyretics, maternal and neonatal morbidity and mortality,

fetal monitoring, and delivery mode and indications. Obstetric warning systems promoted or addressed by guidelines were varied.

Conclusion: Despite the general consistency of maternal sepsis and septic shock definitions and management, there were dissimilarities in the clinical criteria and tools used for identification of maternal sepsis. These criteria and tools were varied and often incongruent with Sepis-3.

Poster #9

Successful Detection of Unrecognized Rickettsia typhi in Pregnancy Using Cell Free Next-Generation Sequencing

Irene A Stafford, MD[1], Fernando Hernandez Centero, BA[2], James Dunn, MD[2,3], Mayar Al Mohajer, MD[2], Laila Woc-Colburn, MD[2], Kenneth Muldrew, MD[2]

McGovern Medical School-UTHealth, Houston, TX[1], Baylor College of Medicine, Houston, TX[2], Texas Children's Hospital, Houston, TX[3]

Background: Flea-borne (murine) typhus, caused by Rickettsia typhi is endemic to certain parts of the southwestern region of United States, including California and Texas. Infection in pregnant women can lead to adverse perinatal outcomes such as miscarriage and preterm birth when diagnosis and initiation of treatment is delayed.

Methods: Novel technology using next-generation sequencing (NGS) was used to rapidly diagnose murine typhus in two pregnant women in a large tertiary center in Houston, TX when all initial microbiological testing and clinical data was non-diagnostic. The Karius Test (Karius, Inc.), performed in their CLIA-certified/CAP-accredited laboratory, is an NGS plasma test that detects circulating microbial cell-free DNA (mcfDNA) in plasma. After mcfDNA is extracted and NGS performed, human sequences are removed, and remaining sequences are aligned to a curated pathogen database of > 1400 organisms. Organisms present above a statistical threshold are reported and quantified in molecules per microliter (MPM).

Results: For both cases, initial blood, urine and stool cultures were negative for pathogens. In addition, molecular and serologic testing for bacterial, viral and fungal pathogens was also negative for except for positive EBV serology in one case. Next-generation sequencing using the Karius test demonstrated infection with R. typhi 7 days prior to serologic confirmation of infection when drawn at the same time in one case and 24 days in the other when serology was drawn at discharge (Table). Despite broad spectrum antimicrobial therapy, both patients demonstrated rapid clinical and laboratory improvement after targeted therapy was initiated with doxycycline.

Conclusions: Next-generation sequencing for the detection and identification of pathogens is a novel and rapidly growing testing modality using microbial cell-free DNA detected in human plasma. If murine typhus infection presents during

pregnancy, therapy with doxycycline should be considered for the gravid patient at risk for decompensation.

Poster #10

Mindfulness for Mothers of Preterm Infants: A Randomized Control Trial of Meditation While Pumping Breastmilk

Katherine M Massa, MD[1], Soumya Ramireddy, MD[1], Sara Ficenec, MD[1], Carolyn Mank, MD[1], Justin Josephsen, MD[1], Shilpa Babbar, MD[2]

Saint Louis University, St. Louis, MO[1], Children's Mercy Hospital, Kansas City, MO[2]

Purpose: Mothers of preterm infants face unique challenges in establishing milk supply. Mindfulness-based meditation has been shown to improve mood symptoms and stress and promote positive behavior change. We hypothesized that engaging in meditation, particularly when intimately tied to the process of expressing breastmilk, would increase milk supply.

Methods: This was a randomized control trial that examined the effect of meditation on the breastmilk supply of women who delivered preterm infants between the gestational ages of 24 weeks 0 days and 32 weeks 6 days. Women were randomized in a 1:1 fashion to a meditation group or a routine care group. For the first 7 days after enrollment which occurred within the first 24-48 hours after delivery, meditation group engaged in daily use of Expectful, a mindfulness-focused meditation app for pregnancy and motherhood, and were provided with routine lactation support by a board-certified lactation consultant. The routine care group was provided routine lactation support only.

The primary outcome was mean total volume of expressed milk in 24 hours on the infant's 9th day of life. Secondary outcomes included the continuation of providing breastmilk to 28 days of life and the use of lactation-promoting behaviors: skin-to-skin contact, frequency of pumping and hand expression with pumping. Other secondary outcomes were measures of maternal mental health, including depression by the Edinburgh Postnatal Depression Scale, anxiety by the State-Trait Anxiety Inventory, parental stress related to having an infant in the NICU by the Parental Stress Scale: NICU, and breastfeeding self-efficacy by the Breastfeeding Self-Efficacy Scale: Short Form with Additional Questions for Critically Ill Infants. Adjusting for relevant confounding factors, we performed a post hoc "per protocol" analysis comparing women who used the Expectful app at least seven times during the study period to those in the routine care group. Sample size calculations indicated 28 women per group would be sufficient to detect a 44% difference in breast

milk production between groups (alpha = 0.05, power = 80%). Data were analyzed using Chi-square, Fisher's exact test, independent sample t-test and Wilcoxon rank sum test.. A $P < 0.05$ was considered significant.

Results: Seventy women were randomized, of which outcomes were available for 60 participants. Baseline demographic characteristics including parity, medical history, prior breastfeeding experience and social support for breastfeeding were similar between study groups. Delivery and postpartum factors, infant morbidity and interventions and pump type and availability were similar between study groups. Early return to work or school was more common in the meditation group (meditation 29.2%, control 4.2%; P = 0.049).

Mean total milk volume was 647.1 ± 467.8 mL in the meditation group and 514.9 ± 393.5 mL in the routine care group (P = 0.27). Median number of pumping sessions in 24 hours was 7 (IQR 5-8) in the meditation group, compared to 6 (IQR 4-7) in the routine care group (P = 0.11). Skin-to-skin contact was similar between groups (96.2% in the meditation group, 75.0% in control group; P = 0.052). Use of hand expression, rates of breastfeeding continuation at the infant's 28th day of life and scores for all mental health questionnaires were similar.

Thirteen women participated in at least seven meditation sessions and were included in the per protocol meditation group. These women were less likely to be enrolled in the WIC program (meditation 15.4%, control 51.6%; P = 0.043) and more likely to have an early return to work or school (meditation 33.3%, control 4.2%; P = 0.034). Adjusting for these differences and for prior breastfeeding experience we found an increase in breastmilk production of 223.2 mL (95% CI 98.8 - 347.5, P = 0.001) and an increase in the number of pumping episodes of 0.93 (95% CI 0.16 - 1.70, P = 0.020) associated with "per protocol" meditation. Skin-to-skin contact was also increased to 100% (P = 0.006).

When we adjusted for a history of mood and anxiety disorders, we found similar estimates of anxiety and parental stress measures between the per protocol meditation group and the routine care group, however, odds of a clinically significant Edinburgh Postnatal Depression Scale score of > 9 with an odds ratio of < 0.0001 (95% CI 0- 0.28, P = 0.005) was decreased with "per protocol" meditation. Adjusting for prior breastfeeding experience as well as a history of mood and anxiety disorders, we found similar estimates of breastfeeding efficacy between the study groups.

Conclusions: Breastmilk production in mothers of preterm infants were similar in those who engaged in 7 days of daily

meditation when compared to those receiving routine lactation support alone. For women with regular practice of meditation, there may be an effect in establishing breastmilk supply and reduction of depression symptoms. Further research is needed to determine whether a more intensive course of mindfulness-based meditation would provide additional benefit to women of preterm infants.

Poster #11
Improving the Initiation of Birth Control in the Immediate Postpartum Period

Marissa G Levine, DO, Melissa S Vassas, DO, Michael A Krew, MD

Aultman Hospital, Canton, OH

Purpose: The purpose of this study is to standardize education on the importance of postpartum contraception during the antepartum period, with the intent of improving initiation of contraception prior to discharge from the hospital postpartum.

Background: It is well known that the initiation of contraception in women of childbearing age can reduce the rate of unintentional pregnancies, including women who have recently delivered. For women in the postpartum period, 40-57% have reported that they have had unprotected intercourse before attending their routine 6-week postpartum visit. However, in the postpartum period, ovulation can occur as early as 25 days, and typically occurs at a mean of 39 days in non-lactating women. This puts women in the postpartum period at an exceptionally high risk of unintended and short-interval pregnancy. In order to decrease the chances of a short interval pregnancy, it is important to counsel patients on the risks of pregnancies conceived within 18 months of a previous birth and to ensure that all women are started on contraception in the post-partum period.

Methods: All patients evaluated in this study were from a single, midwestern FQHC residency clinic office. The first arm of the study evaluated retrospective data from December 2018 to February 2019. The data collected included the date of delivery, if patients were discharged home with contraception postpartum, and the type of contraception initiated. If a patient was not discharged home with contraception, the reason for why they did not initiate contraception was recorded. Patients who were not discharged home on contraception were then evaluated to see if they had been started on contraception at their 6-week postpartum visit. In-office procedural changes then began in September 2019. Patients received standardized education and counseling on the initiation of postpartum contraception at their 28-week gestation visit. Patients received a contraception counseling chart and standardized counseling by the resident seeing the patient at their 28-week office visit. The patient's desired postpartum contraception form was then documented in the chart. Following delivery, the OB GYN resident would then

refer to the chart and initiate the patient on their desired contraception form, with the consent of the of patient, prior to discharge from the hospital. Prospective data was then collected from January to March of 2020 to evaluate the number of patients discharged home on contraception postpartum. Data collected included the date of delivery, which patients were discharged home with contraception postpartum, and the type of contraception initiated. It was also recorded as to why patients were not discharged home with contraception postpartum if none had been initiated.

Results: After initiating standardized education during the antepartum period, there was seen to be an increase in the initiation of contraception postpartum prior to hospital discharge, however, this was not statistically significant. Prior to initiating standardized education, 65 patients were initiated on contraception prior to discharge from the hospital. In comparison, 75 patients were discharged home on contraception after initiating standardized education in the resident clinic. Despite this lack of significant increase, there was found to be an increase in the number of patients requesting contraception at discharge. 58.3% of patients evaluated before the in-office procedural changes were put into effect were either declining contraception or were undecided about their desired form of contraception prior to discharge. After standardized education was put into place, only 24.1% of patients were declining or undecided about their desired form of contraception at discharge. Specifically, it was found that more patients were requesting LARC contraceptives at discharge following standardized education, with 5.6% and 10.4% of patients requesting the Nexplanon and IUD respectively following standardized education. This is compared to 3% and 8% requesting the Nexplanon and IUD respectively prior to in-office procedural changes. It was also noted upon review of the data, that prescriber error was a large contributor for reasons patients were not discharged home with contraception. 26% of patients did not receive contraception prior to discharge secondary to prescriber error following the initiation of standardized education in the office.

Conclusion: While this study did not find a significant increase in the number of patients being discharged home from the hospital with contraception in the postpartum period, it did find that fewer patients were undecided or declining contraception in the postpartum period. Furthermore, a larger portion of patients were requesting LARC contraceptives following standardized education. This indicates that standardized education was effective at increasing patient awareness of the need for contraception in the immediate

postpartum period. This shows the necessity of having a standardized education system in place regarding the importance of postpartum contraception during the antepartum period. Finally, there was a large percentage of patients who did not receiving contraception due to prescriber error, which indicates that education regarding initiation of postpartum contraception prior to hospital discharge should also be focused on providers, in addition to their patients.

Poster #12
Optimizing Fourth Trimester Care in a Resident Clinic

Justin I Wexler, MD, Melissa S Vassas, DO, Michael A Krew, MD

Aultman Hospital, Canton, OH

Purpose: The purpose of this study was to initiate a change of practice by contacting patients at two to three weeks postpartum, with the intent of increasing postpartum appointment attendance.

Background: In May 2018, ACOG released a Committee Opinion entitled "Optimizing Postpartum Care." In this article, the authors recommend that "all women should ideally have contact with a maternal care provider within the first three weeks postpartum." The statement says that this should be followed by a postpartum visit no later than 12 weeks after delivery. This thinking is that postpartum care should be viewed as an ongoing process, rather than a single office visit. According to ACOG, about 40% of patients do not attend their postpartum visit. This impedes access to management of chronic health problems and effective contraception, thereby resulting in increased risk for short-interval pregnancy and preterm birth.

Methods: The study was conducted at My Community Health Center, a resident clinic located in Canton, Ohio. 100 patients were involved in the study, each arm with 50 participants. The first arm of the study evaluated retrospective data from October 2019 to November 2019. The data collected included gravidity and parity, mode of delivery, and any major pregnancy or postpartum complications. Chart review was then performed to evaluate whether the patient presented to their postpartum appointment. In the second arm of the study, prospective data was collected from December 2019 through February 2020. Patients were contacted at 2 to 3 weeks postpartum via telephone. During the phone call, the patient was asked a series of standard postpartum questions in order to ensure that they were recovering and coping well. At the end of the call, patients were reminded of their postpartum appointment date and time, and the importance of follow up was reiterated. Attempts were made to contact each patient three times, if no answer, a voicemail was left reminding the patient of their appointment time and to call the office with questions. Of the 50 patients in the intervention group, 35 (70%) were contacted directly and 15 were left voicemails. Charts were then later reviewed to determine if the patient presented to their 6-week postpartum visit.

Results: After initiating the intervention, there was no statistical significance seen in postpartum attendance, p <0.832. In the control group, 33 of 50 patients attended their postpartum visit. In the intervention arm, 34 of 50 patients attended the postpartum appointment. Secondary analysis compared mode of delivery to evaluate if this impacted postpartum attendance. Of the patients in the study, 59 patients had a vaginal delivery, while 41 patients underwent cesarean section. Of the patients who had a vaginal delivery 66% attended the postpartum visit, while 68% of cesarean section patients followed up postpartum. The difference was not statistically significant, p <0.773. Finally, parity was evaluated to determine its effect on postpartum attendance. Of the 100 patients in the study, 41 were primiparous, delivering their first child. The remaining 59 patients were multiparous. When the two groups were compared, 80% of primiparous patients and 57% of multiparous patients presented to their postpartum appointment. This difference was statistically significant, with p <0.017. However, no statistical significance was seen when the primiparous patients in the control and intervention groups were compared.

Conclusion: The study showed that there was no statistically significant increase in the number of patients attending their postpartum visit when they were contacted via phone call at 2 to 3 weeks postpartum. It also showed that there was no overall difference in attendance rates according to delivery mode. The study did show a statistical significance in the attendance rates of primiparous patients compared to multiparous patients. Although this was not affected by the intervention in the study, this is a clinically important finding. These patients are experiencing the postpartum period for the first time, and typically need the most guidance as well as medical and emotional assistance. This is an interesting finding that Obstetricians should pay attention to when caring for their patients during the antepartum period.

Poster #13

Improving Postpartum Follow-Up Adherence for Gestational Diabetes in the Outpatient Setting

Franziska V Haydanek, DO[1], Melissa Vassas, DO[2], Michael Krew, MD[1]

Aultman Hospital, Canton, OH[1], My Community Health Center, Canton, OH[2]

Body of Abstract: The object of this quality improvement study was to increase the adherence to the ACOG recommendations for gestational diabetic women to undergo a fasting glucose tolerance test in the postpartum period to identify women with Type II diabetes. At our ambulatory clinic previously, all postpartum patients were seen in the afternoon, and all gestational diabetic mothers were given a lab script to complete their fasting 2 hour glucose tolerance test at the outpatient lab. In 2019, our clinic started employing in house phlebotomists. Starting in September of 2019, we started scheduling all gestational diabetic women for their postpartum visits in the morning so their glucose tolerance tests could be completed during their appointment times, and in the morning so they would not have to fast all day. On chart review, between September 2018 and April 2019, 7 of 19 women completed their postpartum glucose tolerance tests as an outpatient. Between September 2019 and April 2020, 5 of the 25 gestational diabetic women were scheduled appropriately for a morning postpartum visit, came to their visit and were fasting, and completed their blood work. Compared to the 37% who completed their glucose tests as an outpatient, only 20% completed their glucose tests when they were scheduled during their postpartum visits. This project is currently still on going, and is planned through August of 2020. I believe that there were initially issues with scheduling patients appropriately, and with time, the percentage of women who complete their glucose tolerance tests will increase.

Poster #14
Does Food Environment Contribute to Inappropriate Gestational Weight Gain?

Kara B Ruder, MD, Rebecca C Pierson, MD, Jeremy T Gaskins, MD, Carol K Brees, MD

University of Louisville, Louisville, KY

With food insecurity becoming a growing problem in America, this study aimed to examine a local obstetric population in Louisville, Kentucky to determine if living in an area classified as a food swamp is associated with inappropriate gestational weight gain and pregnancy comorbidities. Patients identified as being at increased risk for abnormal gestational weight gain could be offered anticipatory guidance and intervention early in prenatal care.

This study is a retrospective chart review of patients who delivered at the University of Louisville Hospital from January 1 2018 to December 31 2019. Of the 716 charts reviewed, 593 met inclusion/exclusion criteria and were included in the final analyses. Exclusion criteria included patients attending two or fewer prenatal care visits, patients entering prenatal care after 36 completed weeks of gestation, patients with incomplete records, subsequent pregnancies in the date range, patients with a multiple gestation, and patients who were incarcerated or in temporary housing. Each patient's weight gain in pregnancy was determined by recorded weight at first prenatal care appointment subtracted from recorded weight at delivery or last prenatal care appointment. Expected weight gain was calculated as a range based on Institute of Medicine recommendations and corrected for number of weeks of prenatal care in each trimester. Actual weight gain was determined to be inadequate, normal, or excess according to the body mass index (BMI) at entry to care. Patients' addresses were used to assess their levels of access to healthy food. We utilized the modified retail food environment index (mrFEI) score to characterize healthy food access. An mrFEI score of 0 represents a food desert (no retail food options), a low score represents mostly unhealthy food options (e.g. convenience stores) and a high score indicates access to healthy food buying options (e.g. large grocery stores). We categorized mrFEI by identifying a food desert group (mrFEI=0) and dividing the remaining patients into three roughly equal groups (food swamp: mrFEI 3-8; normal food access: 9-14; best food access: 15-50). Demographics and descriptive statistics were examined using ANOVA and chi-square tests. To determine the impact of mrFEI as a continuous variable on the main outcome while controlling

for other confounders, logistic regression was used. An alpha level of 0.05 was considered significant for all analyses.

Median mrFEI score was 9, with a range of 0-50 and an interquartile range of 6-14. There was no correlation between mrFEI group and inappropriate weight gain, ethnicity, spontaneous abortion (delivery <20 weeks), rate of intra-uterine fetal demise, delivery route, fetal weight at delivery, education level, use of state or community assistant programs, or insurance payor. Residing in food deserts (mrFEI of 0) and best access to healthy food (mrFEI >14) were significantly correlated with higher rate of preterm delivery compared to other mrFEI groups (food desert, 11%; food swamp, 5%, normal food access, 3%; best food access, 10%; p=0.015). Excess gestational weight gain was significantly correlated with greater fetal weights at delivery (inadequate weight gain, mean 3074g; normal weight gain, 3150g, excess weight gain, 3364g, p<0.001). Using a multivariate logistic regression to account for confounders of race, age, and gravidity, there was no difference in mrFEI between excess vs. normal/inadequate weight gain (OR 1.06, CI 1.00-1.13, p=0.051).

It was expected that patients living in food deserts and swamps would have either inadequate or excess weight gain and poorer pregnancy outcomes compared to patients with a higher percentage of healthy food options. However, there was no difference in gestational weight gain based on where patients live and the healthy food options available in their neighborhoods. There are likely other factors influencing gestational weight gain such as access to care, exercise habits, transportation access, eating habits, or food insecurity that need to be examined. Additionally, the difference in rate of preterm delivery in women living either in a food desert or with best access to healthy food options should be explored. This study did not identify a significant correlation between mrFEI and abnormal weight gain in pregnancy, but further study should be undertaken to examine other factors that influence abnormal gestational weight gain and allow identification of at-risk patients early in prenatal care.

Poster #15

Accuracy in Predicting Birth Weight in Obese Pregnant Patients: Comparing Timing of Growth Ultrasounds for Estimating Birth Weight

Mishaela S Morrato, DO[1], Sarah E Morgan, MD[1], Todd Foster, PhD[1], Jessica M Roberts, MS3[2]

Ascension St. Vincent Hospital, Indianapolis[1], Marian University College of Osteopathic Medicine, Indianapolis, IN[2]

Objective: To determine the optimal timing of growth ultrasound in the third trimester to accurately predict infant birth weight in otherwise healthy obese pregnant patients.

Methods: We conducted a retrospective chart review of ultrasounds and deliveries performed at a single community residency program between March 1st, 2017 and December 31st, 2019. Estimated birth weights were calculated via the gestation-adjusted projection (GAP) method from third trimester ultrasound data and compared to actual birth weights to determine the accuracy within 5%, 10%, and 15%.

Results: Of the 485 pregnancies reviewed for this study, 193 were eligible for inclusion. 214 ultrasounds were reviewed; 38 (17.8%) were performed between 32 0/7 and 33 6/7 weeks, 54 (25.2%) were performed between 34 0/7 and 35 6/7 weeks, and 122 (57%) were performed between 36 0/7 and 37 6/7 weeks. In all obesity categories, the third group (36 0/7 to 37 6/7 weeks) had the highest number of predictions within 5%, 10%, and 15% of the actual birth weight. It did appear that accuracy decreased somewhat for infants at the extremes of weight, especially growth restriction.

Conclusions: In all studied obesity categories, growth ultrasounds performed between 36 0/7 and 37 6/7 weeks were the most accurate at predicting birth weight for otherwise healthy, obese, pregnant patients. As seen in other studies, ultrasound accuracy decreased for fetuses at the extremes of weight.

Poster #16

Association Between Maternal Obesity Class, Adherence to Labor Guidelines and Perinatal Outcomes

Ahmed S.Z. Moustafa, MD[3], Irene A. Stafford, MD[2], Lauren Spoo, MD[1], Alexandra Berra, MD[1], Angela Burgess, MD[1], Mark Turrentine, MD[1]

Baylor College of Medicine, Houston, TX[1], University of Texas Health Science Center, Houston, TX[2], Hurley Medical Center/Michigan State University, Flint, MI[3]

Background: Although there is evidence that women with a body mass index (BMI) ≥ 40 kg/m2 experience increased rates of perinatal complications, there is limited data concerning rates of these complications compared to women with other BMI classes when guidelines for the safe prevention of the primary cesarean delivery are applied.

Objective: To evaluate labor guideline adherence by BMI class and to compare perinatal outcomes across BMI classes with guideline adherent management.

Study Design: This retrospective study included low risk women with a singleton, term pregnancy admitted in active labor or undergoing induction between May 2014 and April 2017 after the prevention of the primary cesarean delivery guidelines were implemented for labor management. Patients were identified using an institutional review board approved database. All demographic and perinatal outcomes were recorded. BMI closest to delivery was used for analysis. Women with antenatal complications, prior hysterotomy and cesarean for non-reassuring fetal status were excluded.

Results: 13,029 women met inclusion criteria. Guideline adherence decreased with increasing BMI, with 93% adherence among women of normal weight (BMI >18.5-25 kg/m2) compared to 81% for class III obese women ($p < .0001$) adjusted for race, parity, neonatal weight and age. When guidelines were followed, there were higher rates of cesarean delivery among women with class III obesity, however there was no difference in rates of infectious morbidity ($p = .98$), hemorrhage ($p = .93$) or a maternal composite of morbidity ($p = .09$). Although newborns of women with class III obesity had higher rates of meconium at birth ($p < .001$), a composite of neonatal outcomes was not different with increasing maternal BMI ($p=.65$).

Conclusion: With the exception of increased cesarean delivery rates, there were no differences in adverse maternal

and neonatal outcomes with increasing BMI. These results demonstrate potential bias when managing this vulnerable population.

Poster #17

Obstetric Anal Sphincter Injuries (OASIs): A Retrospective Observational Analysis of the Duration of Parturition

Elliot M Levine, MD, Leah N Delfinado, MD, Maddie Durand, MD, David Rojas, MD, Stephen Locher, MD

Advocate Aurora Illinois Masonic Medical Center, Chicago, IL

Introduction: Obstetric Anal Sphincter Injuries (OASIs) can sometimes be associated with vaginal deliveries, with various identified risk factors, such as episiotomy, birth weight, operative vaginal delivery, obesity, nulliparity and operator experience. An additional risk factor for OASI may need to be considered, specifically, the time element of the parturition process. It is well-known that muscle stretching can sometimes avoid ligament and muscle tearing, as is often practiced by athletes (both professional and amateur). Since OASI may occur at parturition, attempts at muscle stretching (e.g. manual stretching of the vaginal outlet prior to delivery) and application of warm compresses to the perineum, are examples of actions which have been used to minimize the likelihood of such injury. Operative vaginal delivery is known to increase the incidence of OASI, but the size of the instrumentation (i.e. the suction cup used for vacuum assistance) does not add to the diameter of the emerging fetal head from the vaginal outlet. The pace of the parturition process, therefore, may possibly be the factor which may be contributing to the OASI problem.

A retrospective observational analysis of vaginal deliveries was conducted to see if the time element of parturition could be a factor as to whether OASI occurs at vaginal delivery.

Methods: The authors used the Structured Query Language (SQL) perinatal database utilized in its department, to view the episiotomies performed at vaginal delivery and the associated consequences for a 16-month period. Specifically, the database was queried for vaginal deliveries, date of delivery, whether episiotomy was performed, the type of episiotomy that was performed, whether operative vaginal delivery was performed, birth weight, the type of delivery attendant (resident, Certified Nurse-Midwife [CNM], or attending physician), and the degree of perineal laceration that was found and repaired, if one occurred. Any other measures applied to the perineum prior to birth were also noted (e.g. application of perineal compresses, manual perineal stretching and perineal support provided at delivery).

Results: At this institution, there were 1,183 vaginal deliveries from March 1, 2017 through July 31, 2019, during which time 73 episiotomies were performed (6.2%), and 52 OASI occurred (4.4%). There were 79 deliveries which were vacuum assisted, with 17 (22%) resulting in OASI, and 1,104 deliveries which were spontaneous, with 35 (3%) resulting in OASI. The beginning of the parturition process, as was defined for this investigation, was the subjective identification of crowning, or the bulging of the perineum and spontaneous (non-manual) separation of the labia. The duration of parturition for each birth was the time from crowning to the time of delivery. If crowning was not identified at birth, the duration was defined as 0 minutes, meaning that crowning had not occurred, as what may be seen with a vacuum assisted or precipitous vaginal delivery. When comparing the incidence of OASI with the duration of parturition, the average duration of parturition of the 52 cases of OASI was 1 minute and 2 seconds, while the average duration of parturition for those 1,126 deliveries in which no OASI occurred was 1 minute and 37 seconds. This was a statistically significant negative correlation (i.e. the longer the parturition, the less the likelihood of OASI). The relative value of other perineal measures was also described in a logistic regression analysis.

Conclusion: This contemporary investigation challenges the notion that episiotomies or operative vaginal delivery are necessarily the direct cause of OASIs. Instead, it appears that the duration of the delivery process may be most relevant, in that this observational study being presented, showed that the incidence of OASI was negatively correlated with its associated duration. For operative vaginal deliveries especially, we may need to recognize the importance of the time element of the parturition process, slowing the pace of the delivery (if fetal status allows), enabling adequate perineal stretching to occur, so as to minimize the occurrence of OASI.

Poster #18
Vaginal Twin Deliveries: Delivery Time Interval (DTI) Analysis

Elliot M Levine, MD, Norman A Ginsberg, MD, Leah N Delfinado, MD, Mora Ghobrial, MD

Advocate Aurora Illinois Masonic Medical Center, Chicago, IL

Introduction: The status of the second twin may be of concern during a vaginal delivery, and the twin delivery time interval (DTI) may be pertinent to this. There may be a relatively worse perinatal outcome of the second twin at vaginal delivery, possibly correlating to the DTI of those vaginally-delivered liveborn twins. Though at cesarean delivery, this interval is negligible, for a vaginal delivery, there can be a considerable delay of delivery of Baby B (the second twin). Though there can be multiple ways of measuring perinatal outcome, since the assessment of cord pH has not been uniformly performed at our institution over the years, the most consistent and clinically meaningful measure for the purpose of this investigation is the 5-minute Apgar score, as the perinatal outcome measurement tool. The data set of vaginal deliveries over the past couple of decades offers an ability to review its experience, possibly identifying guidelines as to the optimal inter-twin delay that should be best tolerated. This has been explored within the medical literature, but with no definitive conclusion. So, the authors sought to explore the dataset of this institution, contained in its Structured Query Language (SQL) perinatal database (PG Works), in order to possibly identify an answer to this question.

Methods: A Structured Query Language (SQL) perinatal database was used to extract and analyze the perinatal data regarding all term and near term (≥ 34 weeks of gestation) liveborn vaginal twin deliveries, from January 1, 1992 through December 31, 2019. The data relating to the parity, birthweight, delivery time, Apgar scores, operative vaginal delivery procedures, Neonatal Care Unit Admissions (NICU), and need for a second cesarean delivery for the second twin were reviewed. Group A includes the twins for whom the DTI was ≤ 30 minutes, and Group B includes the twins for whom the DTI > 30 minutes. Analysis of the 5-Minute Apgar scores of these groups were calculated. A t-test statistical analysis was performed on the parametric data.

Results: In our institution, 320 term and near term (≥34 weeks of gestation) vaginal liveborn twin births occurred

from January 1, 1992 through December 31, 2019. In this same population, 240 babies delivered ≤ 30 minutes (DTI) as the second twin, while 80 delivered with a DTI > 30 minutes. Sixteen twins delivered by Cesarean (as the discordant 2nd twin). The average 5-minute Apgar of those second twins in Group A was 8.6, while the average 5-minute Apgar score of the 2nd twin in Group B was 8.6. In contrast, the average 5-Minute Apgar score of all near term/term twin vaginally delivered 1st twin babies in this same time period was 8.8. The number of nulliparous moms in this population was 119 (37%), with no significant difference in the nulliparous parturients between the A and B groups.

Considering the Group B second twins (those with a DTI of > 30 minutes), the average birthweight was 2631 grams, whereas for Group A, the average birthweight was 2494 grams. This 137-gram average birthweight twin discordancy was 5% of the A Group average birthweight. Of the 80 Group B second twins, 16 (20%) required a cesarean delivery.

Conclusion: As a DTI of > 30 minutes may theoretically pose a risk for a vaginal twin birth, when compared with those with a DTI ≤ 30 minutes, the results of this observational study resulted differently than expected. Of course, the use of umbilical cord pH may be the most optimal means of measuring perinatal outcome in this setting, the authors only had the Apgar score available for this purpose. Although the cord pH might have provided a greater difference between groups, the Apgar scores showed that it would not have been clinically significant for vaginal twin deliveries.

As twin weight discrepancies are often difficult to discern via clinical or sonographic assessment, such may contribute to a lengthy delay at vaginal birth. Obstetricians may need to be conscious of the DTI, since if it is lengthy, it can portend the need for an operative delivery of the second twin. Thirty minutes represents a standard that is often followed, regarding the time from the alert of possible fetal compromise until a satisfactory delivery is accomplished. The DTI can therefore be considered as an analogous standard for vaginal twin deliveries that can be considered. Future studies may offer additional information, as this may be hopefully further explored.

Poster #19

Placenta Increta After Uterine Septum Repair: Assessing Risk Factors and Ultrasound Findings, A Case Report

Leah N Delfinado, MD, Gordon Skeoch, MD, Carlos M Fernandez, MD, Jude Duval, MD, Elliott M Levine, MD, Carey August, MD

Advocate Illinois Masonic Medical Center, Chicago, IL

Background: One-half to two-thirds of cases of placenta accreta syndrome (PAS) remain undiagnosed at the time of delivery and are frequently responsible for severe obstetrical and surgical complications (6). Specifically, they are the most common cause for cesarean hysterectomy in developed countries (8). Prenatal diagnosis of placenta accreta has been shown to decrease morbidity and mortality associated with PAS as it allows for closer antepartum surveillance, more detailed patient counseling, and more extensive preoperative preparation.

Risk factors for PAS are well-established and include placenta previa, previous cesarean delivery, advanced maternal age, previous uterine surgery, and use of assisted reproductive technology, hypertension, and female fetal sex (1).

Recent studies have looked at first-trimester ultrasound (US) prediction of PAS and surgical outcomes (3). However, no prospective trials assess non-expert mid-trimester assessment for PAS (6). A risk-scoring system with MRI findings was also recently published (5). However, MRI has varied widely in the specificity and sensitivity of diagnosing PAS (6). US findings include abnormal placental lacunae, loss of clear zone, bladder wall interruption, myometrial thinning, placental bulging, exophytic mass, utero-vesical hypervascularity, subplacental hypervascularity, existence of bridging vessels, and/or lacunar flow (2). One verified screening tool, the Placenta Accreta Index (PAI), accounts for both clinical findings and ultrasound findings to assign a PAI score. This score corresponds to the probability of placental invasion, with a PAI score 4 or higher conferring a >50% probability of placental invasion. This scoring system allows for advanced patient counseling and preoperative planning (7). However, the PAI was developed in the setting of previous Cesarean section without taking prior uterine surgery into account.

Abstract: Could a combination of risk factor assessment and radiological assessment provide a more thorough antepartum assessment for the risks of PAS and subsequent surgical outcomes such as postpartum hemorrhage and unplanned

cesarean hysterectomy? Does the current scoring system need to be modified to include clinical factors (i.e. history of uterine surgery other than Cesarean section)?

Case Report: A 38 year-old G6P1222 with a history of longitudinal uterine, cervical, and vaginal septum, delivered at 39 weeks with vacuum assistance. Her obstetric history was significant for one first-trimester pregnancy loss, two second-trimester losses, two D&Cs, and two vaginal deliveries. Most recently, the patient had an excision of her known vaginal septum and complete cervical/uterine septum. Her postpartum course was complicated by a postpartum hemorrhage, with a total estimated blood loss of 3700mL. Exam under anesthesia and US assessment revealed retained products of conception. Following D&C and Bakri balloon placement, ongoing bleeding necessitated massive transfusion protocol and peripartum hysterectomy with additional blood loss of 400mL. Examination of the uterine specimen revealed placenta accreta with myometrial invasion (placenta increta). The patient recovered after transfusion of 8 units of pRBCs, 8 units FFP, 2 units platelets, 1 unit cryoprecipitate, and 500mL albumin. Her remaining postoperative course was uncomplicated.

Discussion/Conclusion: In our patient, her history of a Müllerian anomaly is considered a lesser known risk factor for PAS (3). Her surgical history-two D&Cs and a hysteroscopic resection of the uterine septum-includes multiple risk factors for PAS. Some studies have suggested that the mere number of uterine procedures is directly associated with an increased risk of abnormally invasive placentation in a subsequent pregnancy (1).

At a first-trimester transvaginal US, our patient was diagnosed with a small subchorionic hemorrhage. A 17-week US for cervical assessment was normal, with anterior placenta and no evidence of previa or low-lying placenta. No abnormal placental findings were noted on four subsequent ultrasounds. Should the numerous risk factors for our patient trigger an evaluation which follows specific criteria for the assessment of the placental implantation site? Should the criteria for PAS placental assessment with US be modified to include patients with a significant history of intrauterine surgery?

After review of this case and the literature, the authors would propose that, in concordance with FIGO guidelines, all women should be asked if they have had a previous Cesarean delivery at the time of presentation for US examination for fetal anomaly at 20 weeks gestation. Additionally, the authors propose that all women be asked if they have a history of any other uterine surgery, including D&C, myomectomy, polypectomy, uterine septum resection, and/or endometrial

ablation procedure. If the patient responds affirmatively to these questions, a prudent evaluation of the patient's clinical and historical risk factors for PAS is prompted, and it should instigate assessment of the placental implantation site, especially if the placenta is anterior, low-lying, or previa (6). Finally, US findings for PAS must be further standardized to effectively evaluate such patients, as well as to adequately prepare for delivery and possible hemorrhage and surgery.

Poster #20
Utility of Away Rotations for Obstetrics and Gynecology Residency Applicants: A Cross-Sectional Study

Paige K Bradley, MD, MPHTM[1], Chad Becnel, MS[1], Emma Siewert, BA[1], Angela Mihalic, MD[2], Cecilia Gambala, MD[3]

Tulane University, School of Medicine, New Orleans, LA[1] University of Texas Southwestern, Dallas, TX[2], Tulane University, School of Medicine, Department of Obstetrics and Gynecology, New Orleans, LA[3]

Purpose: Elucidate the current unknown utility of away rotations in the obstetrics and gynecology (OB/GYN) residency application process.

Methods: The Texas Seeking Transparency in Application to Residency (STAR) survey is an anonymous survey sent to fourth-year medical students following the conclusion of the residency application cycle. The STAR survey collected information from U.S. allopathic medical students including USMLE scores, geographic location of medical school, and match status. Demographics such as gender, race, and ethnicity was not collected to maintain anonymity of respondents. A cross-sectional, retrospective analysis of the Texas STAR survey results between 2017 - 2019 was performed. The primary out-come was the association of receiving an interview invitation whether an applicant completed an away rotation. Secondary outcomes included probability of matching after an away rotation was completed and how the "match status" of students who completed an away rotation may have been influenced by geographic ties to the area. "Geographic ties" to a program's location were defined by the respondent without any standardized guidance. For example, one respondent may consider their home state as a geographic tie to a program while another may believe it's an entire region where extended family live. Fischer two-tailed t test and chi-square analyses were applied as appropriate with a P-value significant at 0.05 with 95% confidence intervals. Approval from an institutional review board was not required for this study.

Results: For the 2017 - 2019 school years, 827 students reported to the Texas STAR survey they had applied to an OB/GYN residency. Given the anonymity, institutional licensure, and fluctuating class sizes, response rate was not calculated. Of those who responded and applied to OB/GYN, 385 students completed 663 away rotations. The average number of away rotations was 1.72 (mode = 1). The average length of a discrete away rotation in weeks was not reported

in the survey. Data for OB/GYN residency applicants who did not match and did not complete an away rotation was not reported by the survey. Of 663 away rotations, 569 (85.2%) resulted in an interview offer from the program where they completed an away rotation. There were 101 applicants (26.2%) who matched at their away rotation. The average USMLE Step 1 score for away rotators who went unmatched was 11 points lower than away rotators who matched (221 vs. 232, p-value <0.005). Of matched applicants who did away rotations, there was no proportional difference for matching with or without geographic ties to the away rotation site $2(1, N = 101) = 0.015$, $p=0.9$. Overall match rates were the same for applicants who completed away rotations compared to those who did not (86.2%).

Conclusions: Students who completed an away rotation were likely to receive an invitation to interview at their away rotation program. Utility of away rotations for students with a below average USMLE Step 1 score to improve chances of matching is not supported by the STAR data. While the definition of geographic ties was not standardized by the survey, the use of an away rotation to improve chances of matching to a program based on geographic ties remains unclear. However, approximately 1 out of 4 students who completed at least one away rotation matched at the sponsoring institution. With the USMLE Step 1 becoming pass fail in 2022 and the recent COVID-19 outbreak, residency program directors and applicants face numerous challenges to finding the right fit. More transparency is needed and the presented study will aid students and their advisors in planning the fourth-year of medical school.

Poster #21

Comparison of *Mycoplasma genitalium* Prevalence and Characteristics in a Pregnant Population versus an STI Clinic Population

Soumya Gogia, BA[1], Elizabeth Kravitz, BA[1], Kelsey Hummel, DO[1], Erik Munson, PhD[2], Kenneth Muldrew, MD[1], Irene A Stafford, MD[3]

Baylor College of Medicine, Houston, TX, Marquette University, Milwaukee, WI, McGovern Medical School-UT Health, Houston, TX

Purpose: *Mycoplasma genitalium* is an emerging sexually transmitted infection (STI) agent linked to cervicitis, pelvic inflammatory disease, and tubal infertility. However, studies in routine obstetric practice are limited, with most studies evaluating prevalence rates of *M. genitalium* from public health clinic attendees seeking STI screening. Additionally, very few studies to date concern incidence, symptomatology, and co-infection with other STIs in pregnant women. The purpose of this study is to compare these characteristics in a large cohort of pregnant women in Houston, TX to a non-pregnant population of women attending an STI clinic in Milwaukee, WI.

Methods: Remnant urogenital samples were obtained from all pregnant women at Baylor College of Medicine Obstetrics and Gynecology clinics and non-pregnant women at a Marquette University STI clinic between October 2017 and March 2020. Samples were tested for *M. genitalium* RNA by the Aptima Mycoplasma genitalium assay. Incidence of *M. genitalium* and characteristics such as age, race, symptomatology, and co-infection with other STIs were compared between the two groups using Chi-squared and two-tailed t-test analysis.

Results: The incidence of *M. genitalium* in pregnant patients (6.31%) was similar to STI clinic patients (6.58%; p=0.85). Infected patients were younger than those without infection in the pregnant population (p=.0003), but no age difference was noted in our population of non-pregnant patients consisting of primarily university-age students. Black race was associated with *M. genitalium* in both populations (p<.0001). Co-infection rates of *M. genitalium* with *Neisseria gonorrhoeae* and *Chlamydia trachomatis* were similar between the two populations (p=.97, p=.39 respectively). Though significantly more non-pregnant women with *M. genitalium* versus without exhibited co-infection with *N. gonorrheae* and *C. trachomatis*, the same trend was not observed in our pregnant

population ($p \leq .002$, $p \geq 0.14$ respectively). Additionally, significantly more infected pregnant patients than non-pregnant patients were asymptomatic (83.5% vs 51.2%, $p = .000013$).

Conclusion: *M. genitalium* infection is as prevalent in the obstetrical population as in non-pregnant women attending STI clinics. Known risk factors for STI including co-infection with other STIs, young age, and black race are shared between both populations. Future studies investigating the role of *M. genitalium* as a potential pathogen leading to adverse pregnancy outcomes and other reproductive health outcomes are needed to assess potential benefits of screening for *M. genitalium* in pregnant women.

Poster #22
Enhanced Recovery After Surgery for Cesarean Delivery in Obstetrics Hospitals

Diana B. Baxter, MD, Jennifer Grasch, MD, David M Haas, MD

Indiana University, Indianapolis, IN

Purpose: To determine the frequency of Enhanced Recovery After Surgery (ERAS) protocols for cesarean delivery (CD) in a representative study of obstetrics hospitals.

Methods: A redcap survey was sent to the Central Association of Obstetrics and Gynecology member listserve (n=233). Respondents were asked about the presence of ERAS protocols for gynecologic surgery or CDs, components of CD ERAS protocols, protocol implementation details, and hospital demographics. The survey included an extensive checklist of pre, intra, and postoperative components of each hospital's ERAS protocol. Finally, respondents were asked if they would be willing to work on a consortium of providers to help evaluate and standardize these protocols.

Results: There were a total of 32 survey respondents. 20 (62.5%) reported having an ERAS protocol currently in place for women undergoing CD and 4 (12.5%) were in the process of developing one at their hospital. Twenty-three (72%) endorsed having an ERAS protocol for gynecologic procedures. 7 respondents knew the details of their protocol and provided further information. ERAS protocols had preoperative (88%), intraoperative (88%), and postoperative (94%) components. The three most common components of preoperative ERAS protocols were formal instructional materials (70.5%), preoperative carbohydrate drink (70.5%), and preoperative anesthesia visit/testing/labs (64.7%). Other components were preoperative incentive spirometer instructions (35.3%) and preoperative medications (58.9%). These medications included acetaminophen (29.4%), gabapentin (29.4%), toradol (0%), ibuprofen (5.19%), acid blocking medication (47.0%), anti-nausea medication (41.2%), ephedrine/vasoconstrictive agent (11.8%), fluid bolus based on weight (41.2%), and fluid bolus standard volume (17.6%). The reported intraoperative measures were patient warming/Bair Hugger (76.5%), vaginal preparation (58.9%), intravenous fluid warming (41.2%), local analgesia at the "fascia, skin, etc." (41.2%), TAP (transversus abdominis) blocks (29.4%), and routine negative pressure dressings (17.6%). Postoperative protocols most frequently include the option to eat within 2 hours of surgery (88.2%),

early ambulation (88.2%), couplet care (82.3%), and specific regimens of scheduled postoperative medication (82.3%), including acetaminophen (64.7%), ibuprofen (64.7%), gabapentin (29.4%), and limiting opioids (76.5%). Other components include foley catheter removal in OR or PACU or not placed at all (52.9%), discussion of postpartum contraception (52.9%), and in-hospital depression screening (76.5%). Seven (41.2%) reported that the ERAS protocol was only for scheduled CDs. Only 8 (47.0%) were tracking outcomes as part of their program. A similar number of respondents primarily worked in academic medical centers as in community hospitals (46.9%, 50%, respectively). There was no significant difference in the use of ERAS protocols between academic and community hospitals.

Conclusions: The majority of respondents report having an ERAS protocol for women undergoing CD. The majority of respondents with ERAS protocols use multi modal interventions in the pre, intra, and postoperative states. There was a large amount of heterogeneity in the components of ERAS implemented across hospitals. There was no significant difference in the use of ERAS protocols between academic and community hospitals. More study is needed to assess the use and components of ERAS protocols nationwide.

Poster #23
Addressing Inequities in Healthcare Research

Nimisha Kumar, MS4[1], Diluma Kariyawasam, BS[2], Matthew Hill, BS[2], Shayesteh Jahanfar, PhD[2], David M Haas, MD[1]

Indiana University School of Medicine, Indianapolis, IN[1], Central Michigan University School of Health Sciences, Mount Pleasant, MI[2]

Research Support: This publication was made possible with partial support from Grant #UL1TR002529 (A. Shekhar, PI) from the National Institutes of Health, National Center for Advancing Translational Sciences, Clinical and Translational Sciences Award.

Background: It has been well established that interventions may have variation in safety and efficacy depending on the population it is utilized in. Response can differ based on various factors, including age, sex, gender, and race. Genetic differences in expression of metabolizing enzymes or therapy targets drive some of these altered effects. However, research does not adequately explore these potential differences and resulting guidelines are unclear about how to proceed in instances where there is a speculated difference.

An example: A study analyzing labor outcomes by race and ethnicity after using vaginal prostaglandins for induction noted that blacks were more likely than any other group to undergo cesarean sections and have these performed due to non-reassuring fetal heart rate tracing (Stephenson 2015). Hispanics in this study were more likely to have postpartum hemorrhage than other groups. Another retrospective cohort study analyzed labor outcomes after induction by race and also found many similar subgroup differences in labor outcomes.

Overall, they noted that non-white race was independently associated with increased odds of delivering by cesarean, hemorrhage, transfusion, and peripartum infection (Singh 2018). Considering these populations have much higher rates of maternal mortality than white mothers, it may be ideal to use particular induction methods over others to minimize these risks. Unfortunately, limited data exists to establish efficacy on a racial basis.

Driving factors: Some of the inequities rise from a fear of perceived exploitation of minorities, given a history of unethical research practices. Minority researchers are more likely to focus on disparities, but they are less likely to get federal funding. One review of disparities in research noted findings that there was no clear reason why black investigators were half as likely to receive NIH grants as

white investigators after controlling for education, training, and experience. Furthermore, only 10.9% of NIH grant reviewers, who are chosen from the already diluted pool of successful grant winners, are underrepresented minorities (Konkel 2015).

Conclusions: While healthcare equity is driven by many other factors such as implicit bias, systemic barriers, and mistrust, it is essential that we start analyzing interventions in a multifactorial manner to explore the intersection of demographical differences in both effect as well as magnitude of response. This requires a push for trial authors to publish or have data available on outcomes by key demographics. When planning a systematic review, authors should consider if the intervention has potentially different responses amongst different populations and if so, include relevant analyses and discussions. These should then be disseminated in a culturally competent evidence package so consumers and physicians are able to weigh the risks and benefits of each intervention on a more individualized basis.

Poster #24
US-PCG Consumer Involvement and Outreach Efforts

Nimisha Kumar, MS4[1], Diluma Kariyawasam, BS[2], Matthew Hill, BS[2], Shayesteh Jahanfar, PhD[2], David M Haas, MD[1]

Indiana University School of Medicine, Indianapolis, IN[1], Central Michigan University School of Health Sciences, Mount Pleasant, MI[2]

Background: The US Satellite of the Cochrane Pregnancy and Childbirth Group (US-PCG) was launched in March 2019. One of the main goals of the US-PCG was to have a greater consumer involvement with satellite activities.

Consumer Workshop: Four consumers attended our first half-day workshop and expressed valuable advice and interest in consumer engagement. In particular, we now have a standing relationship with Indianapolis Healthy Start, a Health Department initiative offering education and support services to pregnant women to eliminate disparities and improve infant survival rates. In 2020, we plan to be present at their events to garner more consumer involvement in an expanding area. Moreover, we submitted an NIH R13 grant to hold this workshop annually for consumers and engage them in knowledge translation efforts.

Prioritization: The US-PCG underwent a priority-setting Delphi process that engaged with both clinicians and consumers. At the end of the process, four out of the top 5 most prioritized review titles were shared between both groups, and thus we were able to consense on six titles in total. Three have been updated or are in the Editorial process. Two will have US-PCG members assisting one of the original authors and the last one was relinquished to us. Of note, we have consumers present on reviews, which helps diversify the author team and emphasize patient-centred outcomes.

Other Efforts: We also have established a relationship with the Indiana University National Center of Excellence in Women's Health, which holds dinners, lectures, and an annual Women of Influence event that draws over 300 women to talk about current healthcare topics. Furthermore, we have attended or plan to participate in local conferences held by the State and County Health Departments to keep our consumer base growing (e.g., Labor of Love Infant Mortality Summit, Breastfeeding Conference). We also have created two consumer-facing fact sheets on breastfeeding and opioid use during pregnancy for distribution among community settings.

Conclusion: As a newly formed satellite, impact and sustainability are central to the US-PCG's goals and initiatives. Indiana has one of the highest infant and maternal mortality rates in the United States, and we are in a prime position in Indianapolis at the School of Medicine to help improve outcomes and deliver informational material to consumers by reaching out to stakeholder organizations. In addition, we have built new relationships with the American College of Obstetricians and Gynecologists to engage their networks of providers and stakeholder organizations to improve consumer involvement in processes.

Consumer Involvement: By building these partnerships that are already dedicated to improving maternal and child healthcare, the US-PCG hopes to establish ourselves as an essential resource for evidence-based healthcare decision-making as well as provide dissemination materials to be publicized from a variety of sources.

Poster #25
Optimizing Postpartum Care in the Greater New Orleans Area

Lucey A Gavlinski, MS, MD, Andrew Chapple, PhD, Stacey Scheib, MD, Shannon Beermann, MD, Joseph Miller, MD, Stacey Holman, MD

LSU Health, New Orleans, LA

Introduction: In May 2018, the American College of Obstetricians and Gynecologists (ACOG) released its Committee Opinion on Optimizing Postpartum Care, which outlined recommendations with the aim of reducing severe maternal morbidity & mortality rates in the United States. ACOG cited research findings demonstrating that the postpartum period is filled with considerable challenges for women, which often remain unaddressed in the current care model. This project aims to discover if obstetricians in the greater New Orleans area are applying the new recommendations, with the secondary aim of identifying barriers to implementation.

Methods: A paper survey was distributed in-person to obstetricians, both attendings and residents (PGY-2 through PGY-4), who practice at five hospitals in New Orleans. The hospital was designated as "academic" if it trains Ob-Gyn residents and "private" if no Ob-Gyn residents are trained in the hospital. PGY-1 residents were excluded due to survey timing early in the academic year.

The survey included seven questions with a five-point Likert scale regarding the implementation of the ACOG recommendations and a space for describing barriers to carrying out each.

Surveying took place took place over four months (June 2019 through September 2019). Surveys were distributed to those who fit the criteria for the study and who volunteered to participate.

During quantitative data analysis, the responses were grouped into low implementation- "never, rarely, or sometimes" and high implementation- "usually or always". To compare distribution of answers among groups, Fisher exact tests were used with high implementation vs. low implementation to test differences in training level, private/public facilities, amount of effort put into implementation, and those who did/did not read the opinion. Independence between question answers was tested using a Fisher exact test. P-values less than .05 were considered statistically significant. Researchers coded qualitative

responses based on common themes using a general inductive approach that occurred after all results had been collected.

Results: A total of 72 surveys were collected from 36 (50%) attending physicians and 36 (50%) resident physicians. Of the 72 respondents, 41 (56.9%) had read the Committee Opinion, while 31 (43.1%) had not. Facilities categorized as "academic" accounted for n= 60 (83.3%) of respondents and those categorized as "private" accounted for n=12 (16.6%) of respondents.

When comparing the survey responses of residents to attending physicians, there was statistical significance between the groups on two questions. Summary for question 1: Residents were less likely to complete a comprehensive postpartum visit than attending physicians (69% vs. 92%). Summary for question 2: Residents were less likely to provide anticipatory guidance for postpartum care planning than attending physicians (53% vs. 78%).

Regarding the qualitative aspect of the study, barriers to carrying out ACOG recommendations that physicians identified most had to do with inability to attend an in-person appointment within the three week timeframe: problems with transportation, childcare, no-showing at the appointment. Physicians also indicated that booked schedules are a major barrier. A perceived barrier specific to residents in training was that recommendations were not common practice and that they had limited time with each patient in their clinics.

Discussion: This research demonstrates that contact with a maternal care provider by three weeks postpartum is the least implemented ACOG recommendation in the New Orleans area. Nearly two thirds of providers 'rarely' or 'sometimes' had contact with their patients within three weeks postpartum. Yet, this stands in contrast to four out of five providers responding that their patients 'usually' or 'always' receive a "comprehensive" postpartum visit no later than 12 weeks after birth.

A strength of this survey is that physicians were able to provide insight into barriers that make carrying out the ACOG recommendations a challenge. By identifying barriers, potential solutions can be developed to increase the number of new mothers who receive recommended maternal care during the fourth trimester. Potential solutions may include development of a system in which mothers are contacted by phone or virtual visit during the three week time frame and utilization of a mid-level provider or nurse to assist with visit scheduling. Another opportunity for improvement would be to provide education to residents about the comprehensive ACOG recommendations (44% of residents had not read the

ACOG Committee Opinion) and to provide system-wide support for implementation of this visit during their training.

Poster #26

Assessment of Gynecologic Needs for Women Who Access Harm Reduction Services Through Mobile Van Outreach in Chicago

Molly MacInnes, MD[2], Stephanie Turcios, MD[2], Brittney Kotek, BA[2], Alexis Braverman, MD[1], Rebecca Commito, MD[1]

University of Illinois at Chicago, Department of Obstetrics and Gynecology, Chicago, IL[1], University of Illinois at Chicago, College of Medicine, Chicago, IL[2]

Objectives: Women who engage in sex work and use intravenous drugs are at higher risk for acquiring sexually transmitted infections (STIs), experiencing barriers to contraception and stigma within the health care system. This study describes demographics, preferences and gaps in gynecologic care of women who access harm reduction services through a mobile van community outreach (MVCO) network in Chicago, Illinois.

Methods: Written surveys were administered to 45 women over the age of 18 presenting at an MVCO in Chicago, Illinois. Data were analyzed using descriptive statistics and a thematic analysis was completed using NVivo.

Results: Survey data from 40 women were analyzed, 51.1% identified as Black, 26.7% as White and the majority were between the ages of 25-29 (28.9%) or 40-49 (26.7%). 84.4% have exchanged sex for money or housing, 80.0% use drugs recreationally, and 46.7% have used injection drugs. Accessing routine gynecologic care was "hard or sometimes hard" for 37.8% of women. Barriers to accessing care were cited as transportation (35.6%) and cost (28.9%). The majority requested pap smears (87.0%) and STI testing (62.0%), and many were interested in receiving contraceptive services (27.0%). Characteristics of providers caring for women who engage in sex work and/or use intravenous drug include "female sex," being "non-judgmental" and encompassing "a level of understanding." Unique needs of this population include "STI testing," "access to condoms" and "increasing access to care."

Conclusions: Women who access harm reduction services through an MVCO often engage in sex work and/or use intravenous drugs. Their access to gynecologic care is limited by transportation and cost. Unmet gynecologic needs include pap smears, STI testing and contraception by non-judgmental,

female providers. Interventions to improve access should be designed to address these unique needs.

Poster #27
A Case of HELLP Syndrome Associated Pancreatitis

Arielle B Grand, MD[1], Catherine E Ford, MD[1], Alka Kale, MD[2], Abigail Litwiller, MD[1]

University of Illinois at Chicago, Chicago, IL[1], Advocate Christ Medical Center, Oak Lawn, IL[2]

Purpose: To explore management of a case of the syndrome of hemolysis, elevated liver enzymes and low platelets (HELLP syndrome) associated pancreatitis that developed in the third trimester, highlighting medical management of an uncommon clinical scenario.

Method: Individual case study of a patient who developed HELLP syndrome associated pancreatitis in the third trimester. Data was collected from observation and chart review of the case.

Results: A 35yo G1P0 presented at 29 weeks 3 days with nausea, vomiting, and poor PO tolerance. She had left upper quadrant pain that started four days prior to presentation. Physical exam was unremarkable, without reproducible abdominal pain, and vital signs were within normal limits. Labs were significant for slightly elevated ALT of 67, which was attributed to vomiting. She was discharged home, but presented again four days later at 30 weeks 0 days, now with right upper quadrant and epigastric pain, shortness of breath, and vomiting. Vitals were notable for tachycardia, tachypnea and mild range blood pressures. Labs were notable for platelet count 32, calcium 7.9, creatinine 1.05, AST 282, ALT 188, total bilirubin 1.9, lipase 8373. Abdominal ultrasound showed signs suggestive of pancreatitis and questionable cholelithiasis. During initial evaluation, recurrent late decelerations were noted on fetal heart rate tracing. She was given betamethasone to promote fetal lung maturity and started on magnesium for neuroprotection due to concern for imminent delivery. Additional resuscitative measures were attempted, but fetal heart rate tracing did not improve and urgent cesarean delivery was performed under general endotracheal anesthesia. She was admitted to the ICU after surgery was completed for close monitoring. Hematology was consulted and recommended evaluating for microangio-pathic hemolytic anemia, thrombotic thrombocytopenic purpura, sepsis, and pancreatitis, in addition to the leading differential diagnosis of HELLP. During her postoperative course she was hypertensive requiring IV antihypertensive therapy. Although she did not meet complete Tennessee Criteria for HELLP, most labs were suggestive of this pathology, with the only

criteria missing being the peripheral smear for schistocytes. Her level of care was de-escalated on post-operative day one and she was managed on the postpartum floor. She received supportive care during her eight day hospitalization with IV hydration, and pain control as needed. Her nutrition status was monitored closely but she was able to tolerate orals on post-operative day one and her diet was advanced as usual. Over the course of her hospital stay, her labs and blood pressures improved and she was discharged home in stable condition, with the diagnosis of HELLP associated pancreatitis.

Discussion: Preeclampsia is a microvascular disease that typically affects organs such as the brain, kidneys, liver and placenta. HELLP syndrome is a morbid condition in the preeclampsia disease spectrum that occurs mostly in the third trimester, but can also affect the postpartum period in up to 30% of patients. It has been postulated that the pancreas is another organ that can be affected. In fact, Haukland, et. al. found that preeclampsia was associated with increased amylase levels. Traditionally, HELLP syndrome primarily affects hepatic and hematologic systems as is demonstrated by the diagnostic lab criteria such as the Tennessee criteria. There have been scarce reports of preeclampsia associated pancreatitis, as pancreatitis rarely presents in pregnancy, complicating 1 in 1,000 to 3,000 pregnancies. When pancreatitis does present, it is usually preceded by cholelithiasis or cholecystitis. Rarely, pancreatitis can occur without such a history and in the context of hypertensive diseases of pregnancy such as HELLP syndrome. Typical management of pancreatitis is supportive care with aggressive IV hydration, pain control, and close nutritional management. As this patient was presenting with pancreatitis associated with HELLP syndrome, the medical management differed by doing less aggressive IV hydration due to her significant hypertension. This case of HELLP syndrome associated pancreatitis at 30 weeks gestation demonstrates the complexities of such a rare pathology, how to evaluate for and successful management of this disease.

Poster #28
A Case of Delayed-Interval Delivery of a Dichorionic Diamniotic Twin Gestation

Arielle B Grand, MD, Catherine E Ford, MD, Abigail R Litwiller, MD

University of Illinois at Chicago, Chicago, IL

Purpose: To explore a case of delayed interval delivery (DID) of a dichorionic, diamniotic twin pregnancy (TIUP) after previable delivery of twin A, highlighting length of interval, viability of surviving twin and clinical presentation of Triple I.

Method: Individual case study of a dichorionic diamniotic TIUP complicated by DID after inevitable, previable delivery of twin A. Data was collected from observation and chart review of case.

Results: A 33 year old G1P0 at 23 weeks 4 days gestational age by IVF dating with dichorionic, diamniotic TIUP presented as a transfer of care from an outside hospital due to a preterm delivery of twin A at her home. One week prior to transfer, the patient was found to be 1 cm dilated and was given betamethasone and treated for a yeast infection at an outside hospital. Two days later she felt increasing cramping and subsequently delivered twin A at home, with inevitable neonatal demise. She was taken by ambulance to an outside hospital where the umbilical cord for twin A was clamped, and the placenta left in situ. She was then transferred to our hospital for escalation of care. Upon presentation she was afebrile, acontractile, and had no abdominal pain. On speculum exam, there was no active bleeding and the cervix was visually closed. After careful review of risks and benefits, the patient strongly desired and consented to all intervention and resuscitative measures for twin B. She was given magnesium for twenty four hours for fetal neuroprotection, and treated with our routine antibiotic regimen for preterm premature rupture of membranes (PPROM), despite membranes of twin B being intact. She successfully completed a seven day course of latency antibiotics. At 25 weeks 3 days gestation, membranes of twin B ruptured and she passed a 6cm length of umbilical cord of twin A without delivery of the placenta. She was given a rescue course of betamethasone. Magnesium was restarted for fetal neuroprotection and continued for 24 hours. At 25 weeks 5 days gestation, the patient reported feeling a sensation of "something" in her vagina. Sterile speculum exam demonstrated prolapse of the umbilical cord of twin B. She

underwent emergent primary mid-transverse cesarean delivery under general anesthesia. Neonatal weight was 725g, APGARS were 5 and 7, and arterial cord gas pH of 7.30 with base excess of 0. The pathology report showed a severely preterm placenta with accelerated villous maturation. The membranes exhibited severe acute chorioamnionitis and associated fetal vascular response including phlebitis of fetal vessels on the placental surface and umbilical cord phlebitis. Throughout the patient's antepartum course the only symptom of chorioamnionitis was maternal tachycardia. She was discharged on post operative day three in stable condition. The surviving infant stayed in the NICU and was eventually discharged in stable condition.

Conclusion: This case represents a DID of fourteen days of a dichorionic diamniotic TIUP. The current literature recommends close monitoring for signs of return of contractions, chorioamnionitis, and non-reassuring fetal status when attempting a DID. Although maternal tachycardia was present in our case, this was the only clinical sign of Triple I, and thus expectant management was deemed appropriate. One retrospec-tive study found that delivery intervals greater than four weeks had an increased risk of twin B being a small-for-gestational-age neonate, despite gestational age of delivery of twin A. In our case, the interval between deliveries was fourteen days, and the weight of twin B was appropriate for gestational age. This case adds value to the literature regarding management of DID, which has been a highly individualized process depending on gestational age, chorionicity, and maternal-fetal status.

Poster #29
The Road to Residency: Stressors on the Interview Trail

Kara Richardson, MD, Korina Gaishauser, MD, James W Van Hook, MD, Dani G Zoorob, MD

University of Toledo, Toledo, OH

Introduction: Burnout has been well-documented as a significant problem impacting physicians, residents, and medical students throughout their careers. While burnout, in general, has recently been addressed by organizations such as the American Medical Association (AMA) and in research studies as an essential problem facing medicine today, there has not been significant research completed regarding burnout and stressors specifically during the application cycle of the National Resident Matching Program (NRMP).

Objectives: The primary objective of this study was to determine the impact the stress of interviews imposes on the applicant using a validated burnout survey. The secondary objective of the study was to identify stressors as identified by applicants.

Methods: An anonymous questionnaire was distributed to OBGYN NRMP applicants (n = 74) during interview days at ProMedica Toledo Hospital for the 2019-2020 applicant cycle. Demographic information was collected, and participants also completed the validated Mayo Clinic MedEd Web Solutions (MEWS) Well-Being Index for Medical Students as well as novel questions formulated to assess perceived causes of burnout during the application cycle and potential solutions.

Results: Eighty percent of our 74 respondents were 25 to 27-year-old, 86.5% were females, 86.5% from the Midwest region. Analysis of the MEWS Well-Being Index for Medical Students showed that a quarter (28.4%) of interviewees had greater than average medical student stress at the time of the survey. This translates to a 9-fold increase in the risk of burnout and a 4-fold increase in a more inferior quality of life. Up to 68% of applicants reported being able to identify if they had any burnout symptoms, and 73% referred to their family as their primary support. Factors reported to lead to the highest amount of stress and burnout were the cost of travel, choosing places to apply, preparing for interviews, scheduling interviews, waiting for interviews, and the cost of applications. Waiting for interviews to occur was the most selected stressor. Although 85.1% of applicants indicated that they thought their home institution could assist in decreasing

stress during the interview season, 32.4% reported that their home institutions did not check in on them at all, and 63.5% reported being checked on only 1-2 times throughout the whole process. Interviewees indicated that their home institutions could help decrease stress and burnout further by assisting with directing them to places to apply to, obtaining letters of recommendation, and helping to prepare for interviews. Of the respondents, 64.9% applied to 50 or more residency programs, and 50% of applicants planned on going on 11 trips or more during the interview season.

Conclusion: Modalities for addressing burnout on the interview path need to be developed as more than a quarter of applicants are at significant risk. Multiple stressors contribute to potential burnout during the application cycle, with various opportunities for home institutions and the NRMP to offer support during the interview process.

Poster #30

A Novel Approach to Suture Placement in Robotic-Assisted Transabdominal Cerclage

Cassie M Henninger, DO[1], David Biats, DO[1], Stephen Bacak, DO[2], Estee George, PhD[1], Cassandra Heiselman, DO[3]

Cleveland Clinic Akron General, Akron, OH[1], Cleveland Clinic, Cleveland, OH[2], Renaissance School of Medicine at Stony Brook University, Stony Brook, NY[3]

Purpose: Robotic-assisted transabdominal cerclage (RATC) is a relatively new approach to abdominal cerclage with a paucity of data describing maternal and perinatal outcomes. The objective of this case series is to describe a needleless technique-which places a polyester fiber tape through the broad ligament at the level of the uterocervical junction superior, instead of medial, to the uterine arteries-and associated maternal, fetal, and safety outcomes.

Methods: This is a single-center, single-surgeon case series involving 17 women who underwent RATC at a regional obstetric care center between January 1, 2012 and July 31, 2019. The procedure was performed in both pregnant and non-pregnant women. Patient demographics collected included age, race, and body mass index. Variables and outcomes extracted included indication for transabdominal cerclage, obstetric history, surgical history, past and future pregnancy outcomes, time to subsequent pregnancy, operative time, surgical complications, estimated blood loss, maternal length of stay, and neonatal survival rate.

Results: This case series includes 17 patients for whom RATC was performed, 5 of whom were pregnant and 12 of whom were not. The majority of patients were Caucasian (94%), with an average body mass index of 32.0 kg/m2. The mean age at time of surgery was 30.6 years old. The majority of patients were multiparous (71%); of these, 4 (33%) had a history of 2 or more fetal losses prior to 20 weeks gestation, and 5 (29%) had a history of 2 or more preterm deliveries. Nine (53%) patients had no living children. The most common indication for surgery was history of incompetent cervix (n=14, 82%). Three (18%) patients had a history of incompetent cervix and 1 prior vaginal cerclage, 5 (29%) had a history of incompetent cervix and 2 prior vaginal cerclages, and 1 (6%) had a history of incompetent cervix and required the transabdominal approach for anatomic reasons. Three (18%) patients had a history of incompetent cervix but declined a transvaginal cerclage, and 5 patients (29%) had other indications. One (6%) patient received a transabdominal

cerclage based on clinical exam findings. The mean operative time for non-pregnant and pregnant patients was 61.9 minutes (SD=10.6) and 82.6 minutes (SD=8.8), respectively. Estimated blood loss for all cases was less than 100 cc, with 7 (41%) patients having minimal blood loss (< 10 cc). Uterine perforation occurred in 3 non-pregnant women. No other complications occurred at the time of surgery. Average maternal length of stay was 10.6 hours (SD=3.6) for non-pregnant patients and 10.5 hours (SD=8.4) for pregnant patients. There were no complications post-operatively or during the antenatal period. In the non-pregnant group, the average time to subsequent pregnancy ranged from 21 to 302 days, with a mean of 152.1 days. There were 5 (29%) patients who were pregnant at the time of surgery, with gestational ages ranging from 8 to 12.5 weeks. There was 1 spontaneous abortion in this group that occurred 48 hours after surgery. The remaining 4 pregnant patients underwent planned delivery at term. The patients in the non-pregnant group all delivered for routine obstetric indications.

The preterm delivery rate was 18.8%, with an average gestational age of 37.4 weeks at the time of delivery. Of the patients who delivered preterm (n=3), one was due to preterm contractions at 36 weeks, one was due to pre-eclampsia with severe features, and the other was due to a planned preterm delivery for triplets. Two (12.5%) patients had unplanned deliveries at term for spontaneous labor. All other patients underwent planned deliveries at term. The neonatal survival rate was 100%.

Conclusion: We report on 17 patients for whom a safe and effective needleless RATC was performed with favorable maternal and fetal outcomes. Our technique enabled short operative times in both pregnant and non-pregnant patients without any instances of complications at the time of cerclage placement, conversion to laparotomy, or complications post-operatively. All patients delivered for routine obstetric indications in the third trimester, and all neonates survived. While data on this technique are limited, this case series contributes to the evidence that suggests RATC is safe and effective.

Poster #31
Vitamin D Deficiency and Its Implications on Intrauterine Growth Restriction

Laura J Swale, MD, Pamela Bremer, MD, Teresa Wilson, BA, Paula Diaz-Sylvester, PhD, Elizabeth Ramsey Unal, MD, Casey Younkin, MD, Erica E Nelson, MD

Southern Illinois University School of Medicine, Springfield, IL

Introduction: Vitamin D (Vit-D) is of vital importance for development and maintenance of a healthy pregnancy. Maternal deficiency can interfere with skeletal development and result in rickets or even newborn skeletal fractures. Given its vital importance to fetal bone development, we aimed to determine if there is an association between Vit-D deficiency and intrauterine growth restriction (IUGR).

Methods: An observational, prospective case-control study was performed (IRB#17-080). Patients meeting IUGR criteria (estimated fetal weight <10th percentile for gestational age; GA) were enrolled between 32w0d-36w6d GA. Control subjects (appropriate estimated fetal weight) were matched by GA, maternal body mass index (±5) and "phototype" score determined by the "Fitzpatrick Skin Type" survey (to minimize the effect of skin pigmentation on Vitamin D production). At delivery, 25-hydroxy Vit-D (25(OH)D) was analyzed from maternal blood and umbilical cord blood. Ultrasound (U/S) parameters and demographics were also compared. Categorical variables were summarized as percentages and continuous variables were described with measures of central tendency (mean) and dispersion (range, SD). Chi-square tests were used to analyze categorical variables and T-tests were used to analyze continuous variables. Spearman's rho non-parametric test was utilized to analyze the correlation between the concentration of 25(OH) vitamin D in maternal blood and cord blood.

Results: To date, 13 IUGR and 13 control subjects (uncomplicated gestation) have been enrolled. Overall, our maternal population is Vit-D deficient (IUGR mean=18.8ng/mL; control=18.9ng/mL). Preliminary data indicates no significant difference in Vit-D levels in either maternal or cord blood when comparing pregnancies affected by IUGR vs. controls (p-value=0.98 and 0.44, respectively; n=13; GA, BMI and phototype-matched pairs). Maternal serum 25(OH)D levels revealed a significant positive correlation with fetal cord serum 25(OH)D in both IUGR patients and control subjects (r=0.815, p=0.001 and r=0.556,

p=0.048, respectively). However, IUGR patients who reported smoking nicotine cigarettes had significantly higher Vit-D levels in their cord blood than IUGR patients who did not smoke (39.0ng/mL vs. 16.3ng/mL, p=0.031, respectively). No significant correlation was noted between maternal/cord 25(OH)D levels and individual biometric parameters (femur length, biparietal diameter, abdominal circumference, head circumference) in IUGR patients.

Conclusions/Implications: Little research has been conducted on the effects of Vit-D levels in relation to IUGR. In our study population, no significant association between Vit-D levels and IUGR, either overall or in individual biometric parameters, was noted. However, enrollment continues to obtain more robust data and improve our understanding of how pregnancy is affected by Vit-D levels and, in particular, if IUGR may be exacerbated by Vit-D deficiency.

Poster #32
Dr. [Insert Name Here]: Maintaining Professional Titling During Ob/Gyn Grand Rounds Introductions

Melissa F Meyer, MD, Emily M Buttigieg, MD, Renee T Sullender, MD, Zachary R Dunton, Amy Godecker, PhD, Narjust Duma, MD, Christine A Heisler, MD

University of Wisconsin School of Medicine and Public Health, Madison, WI

Purpose: This study sought to address consistent use of professional titling during grand rounds introductions in a women-majority field, Obstetrics and Gynecology (Ob/Gyn).

Methods: This study was an IRB-exempt retrospective cohort study of Ob/Gyn grand rounds introductions at a large academic institution. Grand rounds presentations from December 2016 to February 2020 were included if both the audio and video components were present, and if the presenter was introduced by a separate introducer. Introductions of more than one presenter were included if an introduction for each presenter was available. Only introductions where both the presenter and introducer held a doctorate degree (i.e. PhD, MD) were included. Each introduction was separately reviewed by both a male and female reviewer, and discrepancies were resolved by majority consensus. The professional titling was categorized as "doctor" if addressed as "Dr. First Name/Last Name" or "Dr. Last Name." Academic information for both the presenter and the introducer was collected. Number of publications at the time of the grand rounds presentation was collected for the presenter. Other characteristics were collected for both the presenter and introducer, including attire and demonstration of familiarity with the introducer through physical interaction. The primary outcome was consistent use of professional titling of "doctor" throughout the entire grand rounds introduction. Statistical analysis included the chi-square test for significant associations between categorical variables, such as characteristics of the introducer or presenter and the outcomes. We additionally performed a test for the equality of proportions for use of titles for introducer/presenter gender dyads. Statistical significance was set at $p<0.05$.

Results: A total of 62 grand rounds introductions were available for review, with 57 meeting inclusion criteria. Women were more commonly both introducers for grand rounds (n=50, 88%) and presenters (n=38, 67%). Consistent use of "doctor" was more often observed for women introducers (50%) than for men introducers (29%), though

this difference was not statistically significant (p=0.299). Formal address as "doctor" was significantly associated with the academic rank of the introducer, with assistant professors more likely to maintain professional titling throughout the introduction compared to associate or full professors (86% vs. 0% vs. 10%; p<0.001). An introducer was also significantly more likely to use "doctor" at some point during the introduction when the presenter was faculty rather than a trainee (81% vs. 42%, p=0.036). Consistent use of "doctor" was not associated with other presenter characteristics, attire, number of publications, research focus, mentorship/teaching, or familiarity with the introducer (p>0.05). Dyads comprising of women introducers and women presenters were significantly more likely to utilize "doctor" titling at some point during the introduction compared with dyads of men introducers and men presenters (80% vs. 25%; p=0.017). Additionally, dyads of men introducers and women presenters were significantly more likely than dyads of men introducers and men presenters to use "doctor" titling at any point during the introduction (67% vs 25%; p=0.047). Patterns of exclusive use of "doctor" titling were similar for these two dyads, but did not reach statistical significance.

Conclusions: While gender bias was not specifically observed in grand rounds introductions for a women-majority field, women comprise the majority of trainees and assistant professors in academic medicine. Maintenance of professional titling by an Ob/Gyn grand rounds introducer was not associated with the gender of either the introducer or presenter. However, there was a significant association between the academic rank of an introducer and presenter and the use of professional titles. Faculty presenting grand rounds are more likely to be professionally addressed than are trainees. This may reflect the academic hierarchy in medicine of junior colleagues being compelled to address more senior colleagues professionally, while more senior colleagues may maintain less formality. Within a majority women field of Ob/Gyn, bias in professional titling was stronger for rank than for gender, supporting the importance of a critical mass of women in achieving gender equity in medicine.

Poster #33
A Rose by Any Other Name May Not Be As Sweet: Use of Descriptors in Ob/Gyn Grand Rounds Introductions

Emily M Buttigieg, MD[1], Melissa F Meyer, MD[1], Renee T Sullender, MD[1], Zachary Dunton, BA[1], Amy Godecker, PhD[1], Sarah M Temkin, MD[2], Christine A Heisler, MD[1]

University of Wisconsin, Madison, WI[1], Anne Arundel Medical Center, Annapolis, MD[2]

Purpose: This study aimed to assess gender dynamics in the women-majority field of Obstetrics and Gynecology (Ob/Gyn) and to further characterize the descriptors used during grand rounds introductions.

Methods: This study was a planned secondary analysis of an IRB-exempt retrospective cohort study evaluating maintenance of professional titling during grand rounds introductions. Ob/Gyn grand rounds introductions at a single academic center were reviewed from December 2016 to February 2020. Introductions were included if the audio and video of the presenter by a separate introducer was present. Introductions of more than one presenter were included if an introduction for each presenter was available. A male and female reviewer evaluated each introduction. Pooled groupings of descriptors were initially separated into professional or personal categories, then further separated into gendered or gender-neutral attributes. Female-gendered attributes were those that conveyed warmth, modesty and nurturance; in contrast, male-gendered attributes aligned with agentic characteristics, such as strength and independence. Professional descriptors were further characterized as relating to mentorship/teaching, leadership, education, research, career, productivity or beneficence. Categorical discrepancies were resolved by majority consensus. Academic information for both the presenter and the introducer were collected, including associated subspecialty, academic rank and institutional affiliation. Other characteristics collected for both the speaker and the introducer included gender, race and attire. The primary outcome was gender bias in the use of descriptors by grand rounds introducers. Statistical analysis included chi-square for associations between categorical variables and t-test for comparison of means for continuous variables. Statistical significance was set at $p<0.05$.

Results: A total of 62 grand rounds introductions were available with audio and video for review. Women comprised the majority of both introducers (n=53, 86%) and presenters (n=42, 68%). While men presenters had a higher mean

number of descriptors used during the introduction than women, this difference was not statistically significant (2.6 vs 1.9, p=0.065). However, introducers were more likely to use a descriptor with men presenters than women presenters (60% vs. 33%, p=0.047). The professional descriptor of "productivity" was more commonly used by men introducers than women introducers (56% vs. 15%, p=0.006); other categories of professional descriptors did not reach statistical significance. The vast majority of descriptors were non-gendered, but men were significantly more likely to be described by both the male-associated and female-associated descriptors that were used. Male-gendered descriptors were used with 2 men presenters and no women (p=0.037) and included terms such as "all around great guy" and "heavy lifting". Female-gendered descriptors were also more commonly used for men presenters than women (5 vs. 1, p=0.005) and involved terms such as "patient", "beloved" and "generous".

Conclusion: While there was not a statistically significant association between the mean number of descriptors used based on the gender of the presenter in Ob/Gyn grand rounds introductions, men presenters were significantly more likely to be introduced with personal descriptors than women presenters. Additionally, while there was no statistically significant association between the gender of the presenter and use of professional descriptors overall in the introduction, men presenters were more likely to be introduced using both male- and female-gendered descriptions than women presenters. These differences in descriptions of grand rounds presenters may contribute to a perception of gender-bias when men presenters are introduced with emphasis on likeability and accomplishments more than for women presenters.

Poster #34

Reloadable Stapler Use During Peripartum Hysterectomy for Placenta Accreta Spectrum: A Novel Surgical Technique and Case Series

Christopher G Smith, MD, Hope M Cottrill, MD, John R Barton, MD

Central Baptist Hospital, Lexington, KY

Objective: To describe a novel surgical technique for the management of antenatally suspected placenta accreta spectrum (PAS).

Study Design: A retrospective, case-series of patients undergoing peripartum hysterectomy for suspected PAS with a reloadable articulating stapler at a tertiary care center.

Results: Twenty consecutive patients with suspected PAS were identified, and 18 underwent peripartum hysterectomy with the aid of a reloadable stapler. Mean gestational age at delivery was 344/7 ± 11/7 weeks. Mean total operative time (skin-to-skin) was 117.3 ± 39.3 minutes, and 79.8 ± 19.8 minutes for the hysterectomy. Mean blood loss for the entire case was 1809.4 ± 867.9 mL. Mean blood loss for the hysterectomy was 431.3 ± 421.1 mL. Mean units of intraoperative red blood cells transfused was 3 ± 1 units. Mean units of postoperative red blood cells transfused was 1 ± 0.5 units. Five cases were complicated by urological injury (2 intentional cystotomies). Four patients were admitted to the intensive care unit for a mean of ≤ 24 hours. Mean postoperative LOS was 4.11 ± 1.45 days. Three patients had final pathology that did not demonstrate PAS while four were consistent with accreta, six increta, and five percreta.

Conclusions: Use of a reloadable articulating stapler device as part of the surgical management of antenatally suspected PAS results in a shorter operative time (117.3 ± 39.3 minutes vs 140-254 minutes previously reported), lower average blood loss (1809.4 ± 867.9 mL vs 2500-5000 mL previously reported) and shorter LOS (4.11 ± 1.45 days vs 9.8 ± 13.5 days previously reported) compared to traditional cesarean hysterectomy. The reloadable stapling device offers an advantage of more rapidly achieving hemostasis in the surgical management of PAS.

Poster #35
Social Media Analysis of Journals in Obstetrics and Gynecology

Amareen Dhaliwal, MS4

Boston University School of Medicine, Boston MA

Body of Abstract: Social media is used by medical journals to expand the reach of new information. Understanding the current usage of Facebook, Instagram, and twitter by Obstetrics and Gynecology (Ob/Gyn) journals provides insight on the usage of these accounts. All Ob/Gyn journals from the 2018 Journal Citation Reports list were extracted with impact factor and citations. Facebook, Instagram, and Twitter accounts information was searched for all journals through journal sites, society pages, topics, and hashtags. Facebook followers and Instagram followers with posts were documents. Twitter engagement was analyzed using https://foller.me for tweets, post types, follower ratio (followers/following), hashtag frequency, and topic frequency. Journal social media accounts were excluded on the basis of non-English language, multiple publishers, or single-editor accounts. Society social media pages were included for the primary and/or highest impact-factor journal represented. All data was analyzed through SPSS. Of the 83 JCI listed Ob/Gyn journals, 49% (41/83) were on twitter, 41% (35/83) were on Facebook, and 18% (15/83) were on Instagram. On review of 100 (or all) assorted tweets from each account, 70% had links, 34% had hashtags, 33% had mentions, and 23% had retweets. The most commonly used hashtags by twitter accounts were pregnancy (9), preterm (7), endometriosis (7), obgyn (5), isuog (5), preeclampsia (4), hpv (4), diabetes (4), and abortion (4). Frequent theme-grouped words used in tweets were patient care (31%), research (19%), management (14%), and society(11%). The average of dates of twitter accounts opened was 8/4/2014. Impact factor was significantly correlated to number of social media accounts, but not to number of Facebook followers, Instagram followers, or Twitter followers.

Poster #36

A Novel Approach to Treating Cervical Ectopic Pregnancy with IV Methotrexate

Fatima Ali, DO, Sheveta Jain, MD, Sommer Brenna, DO, Fred D Fumia, MD

Hackensack Meridian Jersey Shore University Medical Center, Neptune, NJ

Purpose: Discuss a novel treatment of cervical ectopic pregnancy with IV methotrexate

Methods: A 30 year old G1 at @ 5 weeks 6 days gestation by last menstrual period presented to her initial prenatal visit c/o vaginal spotting. Physical exam showed normal 6wk size uterus. However ultrasound noted no FHR and gestational sac outside of the uterine cavity. The patient was then referred to maternal fetal medicine at which point she was diagnosed with a cervical ectopic pregnancy. Diagnosis was made by transvaginal ultrasound which showed a gestation without fetal heartrate, positive blood flow and positive hourglass sign. At this point treatment options were discussed with patient. Patient had high desire of effective medical treatment and fertility preservation.

Methotrexate is known first line therapy of treating ectopic pregnancy. However, there is no consensus on treatment of cervical ectopic pregnancy secondary to the rarity of this presentation. The option of IM methotrexate was considered, however secondary to decreased vascularity of the cervix as compared to other ectopic pregnancies the decision was made to use intravenous administration. Additionally, secondary to this patient's Initial beta HCg was noted to be 3269 therefore, a multidose approach was taken.

The patient received weight based dosing of 1mg/kg doses of IV methotrexate on days 1, 3, 5 and, 7. 2. Folic acid (.1mg/kg) was administered on days 2, 4, 6, and 8. Ultrasound was performed 1-2 times a week.

By day 12 no vascularity of noted to the ectopic pregnancy and by day 14 no change was noted in the gestation and the patient stopped treatment methotrexate dosing and underwent expectant management. Her beta HCG was trended to Day 63 at which point it was 12.

Results: Multidose IV methotrexate therapy was used to successfully treat cervical ectopic pregnancy. The only complaint of patient was "light pink spotting". By using this novel approach we were able to successfully treat this rare condition while limiting morbidity and mortality associated with hemorrhage.

Conclusion: Cervical ectopic pregnancy is a rare condition that is associated with high morbidity and mortality secondary to substantial risk of hemorrhage, and subsequent need emergent D and C, uterine artery embolization, and possible hysterectomy. Secondary to these risks, medical management is preferred by patients and providers in patients what would like to preserve their fertility. Methotrexate is commonly used to treat ectopic pregnancy. However, unlike other ectopic pregnancies, cervical ectopic pregnancies are more difficult to treat secondary to the decreased vascularity of the cervix. We took a novel approach of using intravenous administration to increase penetrance of the drug. Multidose protocol was used secondary to high initial beta hcg. Treatment showed success by day 14 after initiation of therapy and total resolution of beta hcg by day 63.

This case report shows that multidose IV methotrexate may be a efficacious and low risk method to treat cervical ectopic pregnancy in patients with reliable follow up and high beta HCG on initial presentation.

Poster #37
COVID-19 Associated Coagulopathy in the Peripartum Setting

Ashley V Allen, DO, Christine Hoang, MD, Jocelyn Zee, DO, Roopina Sangha, MD

John Peter Smith Hospital, Fort Worth, TX

Background: The Sepsis Induced Coagulopathy (SIC) scoring system is a validated tool developed by the International Society of Thrombosis and Hemostasis (ISTH) to facilitate early recognition of disseminated intravascular coagulopathy (DIC). The SIC scoring has also been used to identify coagulopathy in patients with COVID-19. In COVID-19 patients that met SIC criteria or had a markedly elevated D-Dimer (>3.0 μg/mL), a 20% decrease in mortality was demonstrated in patients receiving prophylactic low molecular weight heparin (LMWH) or unfractionated heparin. The SIC scoring tool has not been validated in the peripartum setting but may still be valuable in recognizing COVID-19 associated coagulopathy as demonstrated in our case.

Case: A 30 year-old inmate G6P5 at 34 weeks gestation presented to the emergency room on 3/31/20 with a cough worsening over two weeks. Associated symptoms included fatigue and nausea. She was afebrile but did have tachypnea at 22 respirations per minute and oxygen saturation at 94% on room air. Chest X-ray showed a questionable infiltrate in the periphery of the right lower lobe. Initial lab work was significant for absolute lymphopenia at 7700 $10^{3/\mu L}$, CRP 8.0 mg/dL, ferritin 72 ng/mL, and procalcitonin 0.11 ng/mL. Initial blood cultures were negative. A nasopharyngeal swab for SARS-CoV-2 by PCR was obtained. She was started on azithromycin and ceftriaxone. Her pregnancy was complicated by a history of five prior cesarean sections. She had been recently transferred to Fort Worth, Texas from a federal facility in South Dakota two weeks preceding her admission.

On 4/1/20 while being monitored on the labor and delivery unit, her tachypnea worsened and she developed profound dyspnea with ambulation. She required 4L by nasal cannula to maintain oxygen saturation above 95%. She also spiked a fever to 38.3 degrees Celsius. A course of hydroxychloroquine was initiated in conjunction with continued azithromycin. Her respiratory status continued to worsen so the decision was made to intubate and mechanically ventilate. There was subsequent concern for fetal distress and decision was made to proceed with delivery. The SARS-CoV-2 PCR result was still pending at this time,

but given the high suspicion for the disease, antenatal steroids for neonatal benefit were deferred for concern of potential maternal harm. She had an uncomplicated c-section with a quantitative blood loss of 450cc. Tranexamic acid was given intraoperatively. The infant was intubated for respiratory distress and sent to the NICU. Cord blood gas analysis showed a mild respiratory acidosis, arterial pH 7.13, pO2 24, and pCO2 79 with a base deficit of 4.7mmol/L. The infant tested negative for SARS-CoV-2 PCR. The infant was extubated the next day and was stable on room air by the 4th day of life. The infant discharged home with a family member on the 18th day of life.

On postoperative day 3, a positive SARS-CoV-2 PCR resulted. Application for remdesivir was approved on postoperative day 5 and initiated as 200mg once followed by 100mg daily for 10 days, and she completed the antiviral course.

Ventilator settings were consistent with ARDSnet protocol guidelines. Ventilation was initially done using AC/VC and transitioned to APRV. Several attempts were made to wean paralytics however consistently resulted in prolonged episodes of hypoxia. She remained in prone position and was intermittently supinated as tolerated. She had a superficial wound separation 1 week postoperatively and a vacuum-assisted closure device was placed which was changed every 3-4 days depending on positioning. She was intermittently febrile, reaching a maximum temperature of 39.9 degrees Celsius with a CRP reaching 33 on postoperative day 8.

A bronchoscopy was done on postoperative day 12 due to refractory hypoxia and findings were concerning for diffuse alveolar hemorrhage (DAH). DAH workup including DNA DS antibodies, ANCA vasculitis panel, and glomerular basement membrane antibodies were negative. Tocilizumab was given the same day. The following day a blood clot developed in her radial artery catheter. A D-Dimer resulted as 58 μg/mL. She had a platelet count of 413 X 10^9/L, INR of 1.29, a SOFA score of 4 equating to a SIC score of 3. Decision was made to transition to full anticoagulation using a heparin drip with a goal titration PTT 50-80s. Cardiolipin antibodies were negative.

Upon availability, she received convalescent plasma on postoperative day 20. She developed gram-positive cocci bacteremia and deceased after 28 days of mechanical ventilation.

Conclusion: Procoagulation factors are increased in pregnancy, suggesting that critically ill patients may be more susceptible to the thromboinflammatory effects of COVID-19. We suggest considering use of the SIC score or a markedly elevated D-Dimer for early recognition of COVID-

19 associated coagulopathy in the peripartum setting. Patients with an elevated SIC score or markedly elevated D-Dimer should receive therapeutic anticoagulation as in our case. Further studies are needed to validate the SIC scoring and utility of D-Dimer to identify COVID-19 associated coagulopathy in the peripartum setting.

Poster #38

A Case of Familial Duodenal Atresia with 17q12 Microduplication

Jessica A Young, MD[1,2], Nicole L Plenty, MD[3], Tiffany R Tonismae, MD[4]

HCA Healthcare/USF Morsani College of Medicine GME Programs, Brandon Florida[1], St. Vincent Hospital and Health Care Center, Indianapolis, Indiana[2], Obstetrix Medical Group of Houston, Houston, Texas[3], Johns Hopkins All Children's Maternal, Fetal & Neonatal Institute, Brandon, Florida[4]

Background: Duodenal atresia (DA) is an abnormality of heterogeneous etiology, including various genetic mutations, genetic deletions and chromosomal abnormalities, such as Trisomy 21 and familial inheritance patterns. It presents as a foregut and midgut malformation resulting from failure of the bowel to recanalize during gastrointestinal tract development during weeks six and seven. The incidence of intestinal atresia ranges from 1.3-3.5 per 10,000 live births. Approximately 20% are associated with a chromosomal anomaly. DA, the most common small intestine atresia responsible for 60% of all intestinal atresia, occurs in 0.9 infants per 10,000 (1).

Duodenal atresia is often diagnosed prenatally via ultrasound with visualization of a "double bubble" sign within the abdominal cavity representing the presence of fluid within the stomach and duodenum. This is generally diagnosed after 20 weeks gestational age. Other features that may be seen include polyhydramnios, fetal growth restriction, or additional anomalies of the cardiac, genitourinary, or skeletal systems (1-2).

All fetuses should be offered genetic testing via karyotype and most mutations are sporadic. There are cases of familial genetic syndromes associated with DA often caused by microdeletions leading to mutation of genes. Here we present a case of familial DA with evidence of microduplication of 17q12. While phenotypes of 17q12 duplications and microdeletions have been described in the literature with variable presentations, there are no documented cases 17q12 microduplication association with DA.

Clinical Report: A 26-year-old G3P1011 was referred for anatomic ultrasound with Maternal Fetal Medicine due to maternal obesity (BMI >40), history of seizure disorder not requiring medications during this pregnancy, and marijuana use. She has low risk genetic testing. Her first ultrasound was performed at 21 weeks. No abnormal anatomy was noted but full survey was not able to be completed due to maternal body habitus and fetal position. Upon return at 25 weeks, "double

bubble" sign was seen with suspicion for DA. Amniocentesis was offered and declined. The father of the baby (FOB) noted that he himself was diagnosed with DA shortly after delivery that was not diagnosed prenatally. He required emergent surgical intervention. Later in the pregnancy, polyhydramnios was noted as well (29wks) and continued to increase in volume until delivery. Delivery was recommended at 34 weeks gestation following administration of antenatal steroids due to non-reassuring fetal testing and development of Preeclampsia with severe features.

A 2070 g baby girl was born via emergent primary low transverse caesarean delivery secondary to non-reassuring fetal status with fetal bradycardia. APGARS were 2 and 8 at 1 and 5 minutes respectively. She was intubated in the operating room and transitioned to the NICU in stable condition. Duodenal atresia was confirmed via imaging postnatally. The following day, pediatric surgery performed a laparoscopic duodenduodenostomy and laparoscopic Ladd's procedure with appendectomy to resolve operative findings including duodenal atresia with malrotation and a left inguinal hernia. The infant recovered very well from surgery. She was discharged from the NICU after six weeks of routine postoperative care. Genetic testing was performed following delivery with evidence of 17q12 microduplication. Parental testing was offered.

Discussion: Results of this patient's whole genome SNP microarray analysis identified a duplication of 17q12 with numerous OMIM genes from ZNHIT3 to HNF1B included in the duplication. Genomic rearrangements of 17q12 result in an array of phenotypes. Clinical features of microdeletion of 17q12 include renal cysts, maturity-onset diabetes, and Mullerian aplasia/dysgenesis, while clinical features associated with 17q12 microduplication are primarily neurologic and may include seizure disorders, intellectual disability, autism spectrum disorder, schizophrenia, speech and motor delay, renal disease and a few documented cases of esophageal atresia (3-5). Online Mendelian Inheritance in Man (OMIM) reports that the inheritance pattern of the 17q12 microduplication is autosomal dominant

Many features previously listed in this report are attributed to this microduplication, yet OMIM does not cite duodenal atresia as a possible phenotype. Prior to this case, there is only one documented report of a 17q12 microduplication in a patient with duodenal atresia (5-6). Interestingly, there is also a documented case of duodenal atresia attributed to 17q12 microdeletion including HNF1B (7). In this case, we propose that 17q12 microduplication may be a genetic finding in familial DA representing a more extreme phenotype with similar causation as those cases of microduplication with

esophageal atresia. While these cases of esophageal atresia and 17q12 microduplication are rare, we believe similar mechanisms of gene mutation leading to obstruction may also cause the clinical finding of DA in this family.

With enhanced genetic screening available both postnatally and prenatally, findings representing familial causes of DA may allow practitioners the opportunity for more thorough counseling prenatally based on proposed phenotypes associated with this microdeletion. Enhanced prenatal screening and genetic testing of families with a history of DA may also assist in earlier diagnosis.

Poster #39

Managing May-Thurner Syndrome and Associated Complications Throughout Pregnancy and Postpartum

Jessica A Young, MD[1,2], Stephen Zweibach, MD[1], Nicole L Plenty, MD[3], Tiffany R Tonismae, MD[4]

HCA Healthcare/USF Morsani College of Medicine GME Programs, Brandon Florida[1], St. Vincent Hospital and Health Care Center, Indianapolis, Indiana[2], Obstetrix Medical Group of Houston, Houston, Texas[3], Johns Hopkins All Children's Maternal, Fetal & Neonatal Institute, Brandon, Florida[4]

Background: May-Thurner syndrome (MTS) is a congenital anatomic variation of the right iliac vein which causes outflow obstruction of the left common iliac vein. While rare, patients with this syndrome are at increased risk of injury, including proximal deep vein thrombosis (DVT). Risk of thrombosis is further exacerbated during pregnancy. Here we present a rare case of MTS diagnosed during early pregnancy due to multiple simultaneous thromboses.

Case Report: A 32-year-old G3P2 at 9 weeks and 1 day with past medical history of complex migraines presented to the emergency room (ER) with complaints of continued shortness of breath and chest pain one day after being diagnosed with a pulmonary embolism (PE) at a different facility.

Echocardiogram was obtained to rule out any alternate pathology and ejection fraction (EF) was found to be 55-60%. One week prior to this hospitalization, she presented to the emergency room for shortness of breath, abdominal discomfort, and left lower extremity pain; the patient was found to have a right ovarian vein thrombosis as well as an abdominal thrombosis and subsequently diagnosed with MTS. Therapeutic lovenox (1 mg/kg twice daily) was initiated prior to discharge from the hospital. While repeat imaging studies at our facility (ultrasound of the aorta, common iliac veins, and lower extremities) did not reveal any active thrombi, therapeutic lovenox was continued due previous diagnosis, persistent symptoms, and active PE per maternal-fetal medicine (MFM), hematology-oncology, and vascular surgery recommendations.

At 27 weeks, patient presented to the ER for persistent shortness of breath and epigastric pain. Repeat echocardiogram was obtained with normal EF but other imaging noted a new PE. She was again seen by hematology-oncology and lovenox was increased. She was discharged home in stable condition.

She returned at 32wks with severe pelvic pain with no evidence of preterm labor. MRI revealed right ovarian vein

thrombosis and thromboses in the bilateral common femoral veins. She was discharged with instructions to continue with therapeutic lovenox. She was scheduled for induction of labor at 37 weeks. Her lovenox was held 24 hours prior to admission. Her labor and delivery course were unremarkable. Lovenox was restarted 6 hours after delivery. She was discharged on postpartum day one in stable condition.

At three weeks postpartum, the patient was seen for routine follow-up by hematology. Repeat imaging revealed continued compression of the left iliac vein and the right ovarian vein thrombus with extension into the inferior vena cava remains stable. Lovenox was decreased to 70 mg every 12 hours and will continue for a minimum of three months. Imaging will be repeated prior to discontinuing anticoagulation with consideration for stenting of vein by interventional radiology.

Discussion: There are no approximations documented in the literature of prevalence of MTS amongst pregnant popular-tions. While the true incidence of MTS is unknown as most patients remain asymptomatic, approximately 18-49% of patients diagnosed with left lower extremity DVT are found to have this syndrome. A retrospective analysis of CT scans revealed a prevalence of 22-24 % left iliac vein compression in the general population. Risk of venous thromboembolism (VTE) is further exacerbated during pregnancy as seen in this case. One study estimates the relative risk of DVT is increased fivefold during pregnancy and up to twenty times during the postpartum period. In the US, VTE is one of the leading causes of maternal mortality, accounting for 9.3% of all deaths. Risk factors associated with MTS include: reproductive age females; oral contraceptive use; scoliosis of the lower lumbar; hypercoagulable disorders; and radiation exposure. Traditionally, VTE is managed with anticoagulants, such as weight-based unfractioned heparin and low-molecular weight heparin, considered safe in pregnancy. Catheter-directed thrombolysis, pharmacomechanical thromboectomy, and open surgical thrombectomy requiring multiple fluoroscopic procedures are therapies available for treatment of VTE, however, these options are not routinely recommended in pregnancy due to risk of maternal bleeding and fetal teratogenesis and are only used if the risks of not treating the maternal patient greatly outweigh potential risks to the fetus. Research is ongoing for endovascular devices that could directly deliver thrombolysis at the site of the clot without causing detrimental effects to mother and fetus; consensus recommendations are needed in the use of thrombolytics in pregnancy. The ATOMIC registry demonstrated that patency rates for acute and long-term outcomes were 84% at 19 months and 93% at 20 months respectively. There are no trials regarding the use of stents in

pregnant patients, however, a few case reports of stents placed in pregnant patients at great risk of literally losing life and limb present surprisingly good overall maternal outcomes with limited effect to the fetus.

Conclusion: MTS should be a differential diagnosis for all cases of unprovoked left DVT and PE. We propose management of this patient as a potential strategy for future MTS cases.

Poster #40
Aortic Dissection in Pregnancy: A Case Report and Literature Review

Yanshu Cheng, MD, Kathryn R Rawls, DO, Jeffrey Sandate, MD, Robert S Corn, MD, Dale W Stovall, MD

Methodist Dallas Medical Center, Dallas, Texas

Purpose: Presentation of a patient who presented to labor and delivery who was subsequently diagnosed with aortic dissection, and review of the literature on this rare event.

Methods: Case report and PubMed search using key words aortic dissection, pregnancy, and postpartum

Results: Our case was a 19 year old G2P0010 at 36w0d who presented to Labor and Delivery with sudden onset of severe back pain. She denied shortness of breath, nausea, vomiting, headaches, vaginal bleeding, contractions, vision changes, or recent trauma. Her prenatal records revealed only a history of isolated club foot and an elevated blood pressure (BP) of 143/89 at her last prenatal visit. On admission, her blood pressures were 180s/110s, HR 80s-100s, and O2 sat 100% on room air. She had no fundal or CVA tenderness. Her non-stress test was reactive and OB ultrasound was normal. Her white blood count, electrolytes, lipase, and amylase were normal. Her urine drug screen was negative. Her BP responded to labetalol 30 mg IV. Magnesium was initiated for seizure prophylaxis. Her pain continued despite morphine 4 mg IV. Within an hour from arrival, she began reporting increasing chest pain. Initial troponin and CKMB levels were negative, and an EKG showed normal sinus rhythm with a prolonged QT interval. A stat CT angiography (CTA) revealed a Stanford type B dissection from the subclavian artery to the aortic bifurcation. Vascular and Cardiothoracic surgery were consulted. Given the patient's high risk for mortality, a stat low transverse cesarean was performed. She was then transferred to the ICU and started on IV esmolol and cardene gtt for systolic BP control to <120. On post-operative day 1, she began reporting return of her back pain that was previously controlled on dilaudid. A repeat CTA revealed an aneurysmal degeneration of the descending thoracic aorta with a maximum diameter of 4 cm. The patient then underwent a thoracic endovascular aortic repair (TEVAR) involving coverage of the subclavian artery for persistent pain and aneurysmal degeneration. After surgery, the patient's pain improved. A repeat CTA 48 hours post-op revealed stable vascular findings. Her QT prolongation resolved. She was discharged the next day in stable condition on nifedipine with

follow-up scheduled in the OB and Vascular clinics. Pubmed search identified several prior publications regarding women who were either pregnant or postpartum and developed aortic dissection. By definition, Stanford type A dissection involves the ascending aorta, whereas type B dissection is limited to the aorta distal to the left subclavian artery. A 1998-2008 US National Inpatient Sample database analysis revealed just how rare this condition is in pregnancy with only 0.0004% of all pregnancies being complicated by aortic dissection and pregnancy-associated dissections totaling only 0.1% of all cases of aortic dissection. While the complete mechanism of aortic dissection is unclear, the primary event involves an intimal tear that eventually results in the creation of a false lumen. Increased aortic wall stress and medial degeneration are considered the main predisposing risk factors. In general, manifestations of these aortic changes can be seen in connective tissue disorders (Marfan syndrome, Ehlers-Danlos, Loeys-Dietz), bicuspid aortic valve, aortic coarctation, Turner's syndrome, inflammatory diseases (Takayasu's, giant cell arteritis, Behçet's), familial thoracic aortic aneurysm and dissection (TAAD), and hypertension. In pregnancy, an increased risk of aortic dissection is associated with connective tissue disorders (most often Marfan's) and pre-existing/pregnancy-related hypertension, although it has been postulated and reported in several case reports that pregnancy alone can be considered an independent risk factor with a relative risk increase of 25-fold.

Conclusions:

1. In women <50 years old, almost 50% of aortic dissections occur around the time of pregnancy.

2. Based on the published literature, the majority of dissections are Stanford type A (79-89%) with 11-21% Stanford type B dissections with roughly 20-30% of tears originating near or at the subclavian artery.

3. Aortic dissection should be considered in women who are either near term in pregnancy or recently postpartum who present with a sudden-onset of severe back pain that is not improved with opioid therapy and is associated with chest pain.

4. Pregnant women with either a known history of a connective tissue disorder or a history of hypertension are at increased risk for aortic dissection.

5. In a patient with a Type B dissection who develops persistent pain despite adequate blood pressure control or

ongoing uncontrolled hypertension, surgical repair is recommended.

Poster #41
Double Vision After Vaginal Delivery

Maya E Reuven, DO, Jonathan D Baum, MD, Benjamin Morgan, MD

Jersey Shore University Medical Center, Neptune, NJ

Learning Objectives:
1. Recognize diplopia as a rare complication of labor epidural and develop a differential diagnosis.
2. Discuss the pathophysiology of intracranial hypotension.
3. Compare similar cases and review similar cases and management.

Background: Cranial nerve palsy is a rare complication after labor epidural. The pathophysiology of cranial nerve palsy involved intracranial hypotension following dural puncture with continued cerebral spinal fluid (CSF) leak. As CSF decreases, the cranial nerves on the dorsal aspect of the brain become vulnerable to compression and ischemia. Almost 90% of reported cases of cranial nerve palsy are associated with a post dural puncture headache with typical onset within 24 hrs after the procedure. We present a case of unilateral cranial nerve palsy without headache or other sequelae suggestive of intracranial hypotension.

Clinical Case: A 33-year-old post partum female presented to the ED with sudden onset of diplopia seven days after a vaginal delivery. Her pregnancy, labor and delivery were uncomplicated. Dural puncture was suspected after labor epidural, however, her postpartum course was uncomplicated and she went home without complaint of postpartum day number two.

Neurology examination confirmed a right lateral rectus palsy, which explained her diplopia. Differential diagnosis included intracranial hemorrhage, mass effect, and demyelinating disease, which were ruled out with CT scan and MRI. Infectious, metabolic, autoimmune, and endocrine etiologies were also ruled out. The diagnosis of right abducens nerve palsy due to intracranial hypotension was made and managed conservatively. Improvement of symptoms noted at 18 days post-partum with complete resolution at 6 weeks.

Conclusion: Obstetricians and anesthesiologists should be aware of the rare but potential complication of cranial nerve palsies after neuraxial placement of analgesia. It is a diagnosis of exclusion. The most commonly reported affected nerve is the abducens's nerve which innervates the lateral rectus

muscles of the eye. Disfunction of this muscle can case deconjugate gaze thus causing diplopia. It is thought to be more vulnerable to compression given its longer intracranial course. Headache after dural puncture is the most common complication of intracranial hypotension and is usually seen in combination with cranial nerve palsies. However, our patient exhibited none of these symptoms. Appropriate work up by a neurologist should be performed for all other intracranial pathologies. Treatment can be conservative such as in this case but can also include other treatments such as blood patch or intrathecal normal saline infusion. Regardless of intervention, majority of cranial nerve palsies resolve within several months.

Poster #42

Prenatal Diagnosis of Cranium Bifidum Due to Potocki-Shaffer Syndrome in Monochorionic-Diamniotic Twin Gestation

Benjamin T Bonebrake, BS, BA[1], Erin L Grimes, MD[1]. Alyssa D Cady, MS, LCGC[2], Robert G Bonebrake, MD[3], Hemant Setpathy, MD[3], Joshua D Dahlke, MD[3]

University of Nebraska College of Medicine, Omaha, NE[1], University of Nebraska Medical Center, Dept. of Genetics, Omaha, NE[2], Nebraska Methodist Women's Hospital and Perinatal Center, Omaha, NE[3]

Purpose: To present a case report of prenatal diagnosis of cranium bifidum (Catlin Marks) in monochorionic-diamniotic twin gestation.

Methods: Our patient, a 23 year old G5P2022 presented to high risk clinic for management of newly diagnosed, spontaneously conceived monochorionic, diamniotic twin gestation. Initial detailed anatomic survey of both fetuses appeared normal. At 25 weeks gestation, routine ultrasound was notable for a prominent, bulging anterior of Twin B. Subsequent follow up ultrasound at 27 weeks demonstrated similar findings in Twin A. The remaining fetal anatomy, including neuroanatomy appeared normal in both twins, with initial differential diagnosis that included encephalocele, cranium bifidum, and neoplasm. Fetal MRI was performed and findings were consistent with cranium bifidum in both fetuses. Upon further history obtained with the father having a similar and persistent parietal cranial defect. She subsequently gave birth at 34 3/7 weeks by primary cesarean for malpresentation of Twin A and suspected fetal growth restriction of both twins. After delivery, the neonate had genetic testing that demonstrated a heterozygous ~537kb gene deletion that included the ALX4 gene, a pathogenic finding for Potocki-Shaffer Syndrome.

Results: Potocki-Shaffer Syndrome (PSS) is a rare autosomal dominant genetic disease caused by gene deletions of the 11p11.2p12 region resulting in haploinsufficiency. Symptoms most prominently include cranial facial abnormalities, developmental delay, intellectual disability, multiple exostoses, and cranium bifidum. Cranium bifidum, or enlarged biparietal foramina, has also been called 'Catlin marks' after an initial description of 16 cases over five generations of the Catlin family in 1922. There is a wide range of phenotypic expression due to the heterozygous nature of the gene deletions and may include sensorineural

hearing loss and autistic behaviors. This heterozygous nature also leads to some variability within families based on the severity of the deletion. PSS cases are mostly familial with a small de novo rate and a penetrance of greater than 90%. In addition to providing parents genetic information for future pregnancy, earlier detection and diagnosis of PSS can lead to early interventions for developmental delay, referrals to audiologists and ophthalmologists, and full skeletal surveys for exostoses. A Pubmed search of terms including 'cranium bifidum', 'Catlin marks', 'parietal foramina', and 'pregnancy' with one case report by Fernandez et al describing prenatal detection and ultrasound findings in a singleton pregnancy similar to ours. Based on our search, our patient represents the first prenatally detected case of cranium bifidum affecting monochorionic twins with neonatal confirmed genetic testing.

Conclusion: While rare, the genetic conditions associated with cranium bifidum should be considered in the setting of abnormal neuroanatomic findings that develop in the second trimester.

Poster #43

Diagnosis of a Longitudinal Vaginal Septum and Possible Uterus Didelphys Secondary to Coital Injury with an Artificial Phallus

Lauren G Sword, DO[1], Olga M Colón-Mercado, MD[1], James Baron, MD[1], Mark Sanchez, MD[1], Tiffany R Tonismae, MD[2], Nicole L Plenty, MD[3]

HCA Healthcare/USF Morsani College of Medicine GME Program, Brandon Regional Hospital, Brandon, FL[1], Johns Hopkins All Children's Hospital; Maternal, Fetal, and Neonatal Institute, St. Petersburg, FL[2], Obstetrix Medical Group of Houston, Houston, TX[3]

Background: Müllerian duct anomalies (MDAs) are rare defects of the female genital system that result from failure of development, fusion, recanalization or resorption of the Müllerian ducts during embryologic development. Uterus didelphys is one of the least common MDAs and occurs when the Müllerian ducts fail to fuse, resulting in two separate uterine cavities and duplicated cervices. A longitudinal vaginal septum has been found to run between the two cervices in most cases. While commonly asymptomatic, some women with a longitudinal vaginal septum may experience dyspareunia, difficulty with tampon use and coital difficulty. Uterus didelphys often goes unnoticed during pelvic and speculum examinations, with diagnosis commonly achieved during infertility work ups with the use of both imaging and surgical modalities. Vaginal postcoital injuries are very rare and identification of MDAs and/or vaginal anomalies secondary to sexual trauma have been minimally reported. We present the case of a 23-year-old nulligravid female whose possible identification of uterus didelphys was achieved secondary to a coital injury to her undiagnosed longitudinal vaginal septum with an artificial phallus.

Case Report: The patient is a 23-year-old nulligravid female without significant past medical history who presented to the emergency department due to heavy postcoital bleeding associated with lightheadedness and dizziness. The vaginal bleeding began after her partner used an artificial phallus for penetration. The patient and her partner started engaging in sexual activity three weeks prior to the incident and they reported vaginal intercourse was difficult because of a narrow vaginal canal. The patient also reported that she had always had redundant tissue in her vagina and would experience continued vaginal bleeding during her periods despite proper tampon placement, leading her to believe she had a "second vagina". Initial speculum examination was limited due to

active bleeding, which obstructed adequate visualization of the vaginal walls or cervix. A bimanual examination revealed a complete longitudinal vaginal septum and cervical duplication was suspected. A transvaginal ultrasound was performed and revealed two separate endometrial cavities, duplication of the cervix and a vaginal septum. Due to hemodynamic instability, decision was made to proceed to the operating room for examination under anesthesia. Examination revealed two vaginal canals with a complete longitudinal vaginal septum with a 2 cm proximal laceration. A speculum was inserted in both vaginal canals and two normal-appearing cervices were identified. The septal laceration was repaired with 3-0 chromic in running fashion with excellent hemostasis achieved. The patient tolerated the procedure well and was discharged home on postoperative day 1.

Discussion: Tears to a longitudinal vaginal septum secondary to coital injury has only been reported once in the literature. Our case follows this precedence, with a possible additional diagnosis of uterus didelphys, a very rare congenital anomaly, during the work-up. Our case confirms the previously reported co-existence of longitudinal vaginal septa with uterus didelphys. While most patients with longitudinal vaginal septa are asymptomatic, our patient experienced the commonly cited symptoms of difficulty with intercourse and tampon use. Similarly, she went undiagnosed at her well-woman visit, even after bimanual and speculum examinations. A high index of suspicion is required in order to achieve a diagnosis, in addition to a combination of imaging and surgical techniques. While transvaginal ultrasound is an adequate initial imaging modality, it is often followed by MRI, which is considered the best noninvasive imaging modality for the differentiation of a septate, bicornuate and uterus didelphys. The MRI also allows for the diagnosis of renal anomalies, which have been identified in 30-50% of MDAs. Most providers will also use hysteroscopic and laparoscopic surgery to confirm the diagnosis of a uterus didelphys. Because fertility rates are similar between women with normal uterine cavities and those with uterus didelphys, surgery is reserved for those who have had recurrent abortions or premature deliveries with no known etiology.

Conclusion: Uterus didelphys is a rare MDA that is often undiagnosed until infertility leads to extensive anatomic workup. Due to the co-existence of MDAs and vaginal septa, especially uterus didelphys, a high index of suspicion should prompt further imaging to arrive at a complete diagnosis. Even with proper diagnosis, treatment is reserved for patients experiencing symptoms or reproductive difficulties.

Poster #44

Amniotic Fluid Embolism and the Possible Protective Effects of Heterozygous Factor V Leiden: A Case Report

Sanela Andelija, DO[1], Olga Colón-Mercado, MD[1], Jessica Young, MD[1,4], Kevin Rivera Rodriguez, MD[1], Tiffany R Tonismae, MD[1,2], Nicole L Plenty, MD[3], Greg Den Haese, MD, PhD[1]

Hospital Corporation of America /University of South Florida Morsani College of Medicine Graduate Medical Education Consortium, Brandon, FL[1], Maternal, Fetal, Neonatal Institute, Johns Hopkins All Children's Hospital, St. Petersburg, FL[2], Obstetrix Medical Group of Houston, Houston, TX[3], St. Vincent Women's Hospital, Obstetrics and Gynecology Residency Program, Indianapolis, IN[4]

Background: Amniotic fluid embolism (AFE) is a rare and commonly fatal obstetric emergency theorized to trigger an inflammatory reaction much like the systemic inflammatory response syndrome (SIRS) of sepsis, leading to vascular constriction and coagulation. This often results in acute respiratory distress syndrome (ARDS), cardiopulmonary arrest, disseminated intravascular coagulation (DIC), and death. With similar theorized mechanisms, we suspect factors that may modify mortality in sepsis may also modify mortality in AFE. Specifically, we ask if alterations in the coagulation cascade of heterozygous Factor V Leiden mutation (FVL+/-) can decrease mortality as seen in studies with severe sepsis. The following case describes the labor course of a patient with FVL+/- complicated by a postpartum AFE that did not progress to DIC.

Case Report: Patient is a 31-year-old G2P0 with a history of FVL+/- who presented for a scheduled induction of labor at 40 weeks and 5 days gestational age. Her pregnancy was otherwise uncomplicated. Emergency cesarean section was required due to an umbilical cord prolapse. Approximately 30 minutes following surgery, the patient developed sudden onset of shortness of breath, tachypnea, confusion, cyanosis, hypotension, brady-cardia, and hypoxemia with an oxygen saturation of 21% despite supplemental oxygen. She lost palpable pulses, and CPR was initiated as intubation was performed. Return of spontaneous circulation was achieved following CPR and administration of a single dose of epinephrine. She was transferred to the ICU, where she was started on Levophed for refractory hypotension. Chest X-ray showed severe airway disease, and chest CTA further demonstrated airspace opacities in both lungs. No evidence of venous thrombosis was noted. Additional lab findings showed

a fibrinogen level of 399 mg/dL and a normal coagulation panel and platelet range. Shortly after the cardiopulmonary arrest, there was a high concern for AFE based on the clinical scenario and imaging findings. While prognosis was initially guarded, the patient's condition drastically improved overnight. She was successfully extubated on postoperative day one following significant improvement in vitals, imaging, and was started on prophylactic Lovenox. She was transferred to the postpartum unit on postoperative day 2 with an uneventful remainder of her hospitalization until discharge on postoperative day five.

Discussion: We present the above case as an atypical presentation of AFE. While criteria set by the Society for Maternal-Fetal Medicine (SMFM) and Amniotic Fluid Embolism Foundation for AFE diagnosis includes the development of DIC, DIC is not always present in the setting of sepsis or AFE. Studies have shown that a FVL+/- carrier status in severe sepsis has been associated with improved survival in humans and mice. With AFE theorized to have mechanisms similar to the SIRS response of sepsis, we suspect factors that attenuate mortality in sepsis, such as DIC, may also have a similar result in AFE. We explored whether alterations in the coagulation cascade, as seen in FVL+/-, can alter the progression to DIC. We believe the mechanisms involved in FVL+/-, including resistance to cleavage by activated Protein C (APC), and increased thrombin formation help decrease mortality in patients with AFE, similar to what has been seen with sepsis in FVL+/- mouse studies.

Although one may argue that increased circulation of thrombin can lead to multi-organ microvascular thrombosis and death, thrombin is an essential activator of APC. With increased levels of APC present and its potential to decrease morbidity and mortality by pathways preventing progression to DIC, recombinant APC is being investigated in sepsis. The (PROWESS) study demonstrated that administration of recombinant human activated protein C (drotrecogin alfa) resulted in lower mortality (24.7%) in the treatment group versus placebo group (30.8%). While further investigation, such as the PROWESS-SHOCK clinical trial, failed to yield similar results or demonstrate statistically significant improvement in mortality rates in adults with severe sepsis; other studies suggest that APC may mitigate coagulopathy and inflammatory effects in more select populations of sepsis patients, specifically phenotypes of sepsis associated coagulopathy.

Conclusion: While AFE is a very rare condition with limited risk factors and high morbidity and mortality, we believe certain protective factors may be present in populations,

including FVL+/-. Whether FVL+/- is an evolutionary advantage given the high prevalence in the population versus an unfavorable inheritance remains controversial. It seems the largest protection of FVL+/- lies behind its mechanism to decrease mortality in severe sepsis and possibly DIC development, which may be protective for patients with suspected AFE. To our knowledge, there are no published cases describing the effects of FVL+/- on AFE prognosis. We believe that additional studies may be extremely beneficial to improve the morbidity and mortality of this rare, but deadly, disease. Additionally, we believe further research on the realm of FVL+/- carriers in sepsis can help improve survival rates among pregnant sepsis patients as well.

Poster #45
The Unexpected Finding of Uterine Torsion at Time of Term Cesarean Section; A Case Report

Molly Roy, MD[1], Martin J Caliendo, MD[2]

University at Buffalo, Buffalo, NY[1], Kaleida Health-Oishei Children's Hospital, Buffalo, NY[2]

Background: Uterine torsion is a rare obstetric emergency that is often difficult to recognize even in the setting of commonly described symptoms. Only hundreds of cases have been reported in the literature dating as far back as the 1950s. In the prior reported cases, symptoms were most often suggestive of uterine rupture or placental abruption requiring emergent laparotomy prior to the intra-operative diagnosis of uterine torsion 2. This report describes a unique case of uterine torsion diagnosed incidentally at the time of primary cesarean section at term.

Case Description: The patient is a 28 year old G1 P0 who was compliant with pre-natal care at a local family medicine clinic. Her pregnancy was complicated by GDMA1. First trimester sonogram was unremarkable for uterine abnormalities, fibroids, or adnexal masses. Her growth sonogram and antenatal surveillance testing were unremarkable, and the patient presented for scheduled induction of labor at 41w2d gestation. Upon admission, fetal breech presentation was diagnosed on bedside sonogram. No additional abnormalities were noted on bedside sonogram. In reviewing delivery options, the patient elected for primary cesarean section. In compliance with hospital policy for elective surgery, surgery was scheduled for 8 hours after the patient's last full meal. During this time frame the fetus was kept on continuous monitoring in the Labor and Delivery unit. The fetal heart tracing was reassuring without uterine contractions. Approximately 4 hours after initiation of monitoring, a spontaneous fetal heart rate deceleration to the 90s was observed. The patient denied any abdominal pain, uterine contractions or vaginal bleeding. Physical exam demonstrated a soft, non-tender uterus, in addition to a closed thick cervix with an unengaged breech. Despite fetal resuscitative efforts bradycardia persisted over 7 minutes, therefore a decision was made to proceed with emergent cesarean delivery.

The patient underwent rapid sequence general endotracheal anesthesia. The abdominal cavity was entered utilizing a modified Joel Cohen technique. Immediately upon entry, the right broad ligament, ovary, and uterine vessels were noted to be obscuring the operative site. It appeared that the uterus was

tightly rotated to the right approximately 360 degrees. To gain further exposure the abdominal incision was extended vertically. At this point the uterus was exteriorized and normal anatomical orientation was reestablished.

Decision was made for delivery through trans-fundal incision due to fetal lie, as well as proximity of large engorged vessels over the lower uterine segment. No signs of ischemia or necrosis were appreciated. Uterus was closed with 0-monocryl suture in 2 layers, and midline fascial incision was closed with 1-PDS. Skin was closed with stainless steel staples. Neonatal weight was 3.9kg, APGAR score was 7 at both 1 and 5 minutes, umbilical artery cord pH 7.1, and base excess 2.0.

Discussion: The presentation of this case differs from the majority of publications describing cases of uterine torsion. In the majority of instances the patient will have complaints of abdominal pain, pelvic pressure, preterm contractions, or vaginal bleeding. However our patient remained completely asymptomatic. Additionally most pregnancies will deliver prior to the expected due date, as well as exhibit signs of fetal or placental compromise. This patient carried to post-term with a normal size fetus, until the spontaneous prolonged deceleration led to the emergent Cesarean Delivery. Lastly most uterine torsion's will demonstrate vascular compromise, tissue necrosis and increased risk of postpartum endometritis. Our patient had an uncomplicated postpartum maternal and neonatal course.

Through this unusual presentation of uterine torsion in pregnancy, we have been able to demonstrate key points of surgical management at the time of intraoperative diagnosis. Most importantly is recognition of torsion, and establishment of proper anatomical position prior to hysterotomy. As in this case, adequate visualization via midline laparotomy may be necessary to safely identify pelvic landmarks and restore anatomy. Additionally, delivery through the anterior lower uterine segment of the uterus may not be possible due to distorted anatomy as has previously been described 7. Specifics of vascular changes as a result of torsion should be considered when making the hysterotomy, as was done in our decision to deliver the fetus through a trans-fundal incision, in order to decrease vascular or ureteral injury that may prompt cesarean hysterectomy. Furthermore, with the high risk of maternal morbidity, an interdisciplinary approach at a high level or care facility is recommended.

Poster #46

Uterine Sandwich Method: A Case of Posterior Placenta Previa in an In Vitro Fertilization Pregnancy Complicated by Velamentous Cord Insertion

Joseph N Farshchian, MS4, Rhiannon E Anderson, MS3, Jose Castaneda, MD, Martin Castaneda, MD

Florida Atlantic Univ., College of Medicine, Boca Raton, FL

Body of Abstract: The risk of postpartum hemorrhage (PPH) and placental adhesion anomalies including placenta previa may be increased in pregnancies conceived by IVF and other forms of assisted reproduction technology. The uterine compression suture, known as the "uterine sandwich method", may be useful in pregnancies complicated by placenta previa. We report an unusual case of placenta previa complicated by velamentous cord insertion which was treated by B-Lynch suture, Bakri balloon tamponade, and vaginal packing.

A 35-year old woman, gravida 4, abortus 2, at 37-weeks gestation presented for her scheduled C-section. A week prior an ultrasound showed no changes in the patient's previously diagnosed posterior placenta previa. The patient has been followed by maternal-fetal-medicine due to her high risk pregnancy (IVF conception, placenta previa, and velamentous cord insertion) which lead to the decision of performing a C-section. Past medical history includes chronic PID and hypothyroidism, the latter controlled by 50 mcg levothyroxine daily. NST evaluation demonstrated fetal heart rate of 140 bpm. Her pre-operative vital signs were as follows: Blood pressure 120/60, heart rate 90 bpm, temperature of 36.8°C, and respiratory rate of 18. Laboratory testing was unremarkable. The patient was taken to the operating room and spinal anesthesia was given. A lower segment caesarean section was performed and a 3170-gram baby with Apgar scores of 9 and 9 at 1 and 5 minutes, respectively, was delivered. The placenta was found to extending over the internal cervical os and posterior uterus. After a 30-second delayed cord clamping, cord blood was collected and Pitocin started. The patient also received a dose of methergine and tranexamic acid for bleeding control. The placenta slowly delivered spontaneously. The uterus was exteriorized and cleared of clots of debris. At this point, there was blood oozing noted from the lower uterine segment. A Bakri balloon was then utilized. The balloon was placed through the uterine incision while the catheter portion was guided through the cervix into the vaginal canal. A #1 chromic was readed for the B-Lynch suture. The uterine incision was then closed with a #1 chromic in running locked fashion, and the second layer using the same stitch. The second layer was closed with

interrupted mattress sutures along the incision to obtain good hemostasis. The uterine tone was found adequate at this point, however, the decision was made to fill the Bakri balloon with 240 mL normal saline and to tie down the B-Lynch suture. The posterior cul-de-sac was cleared of all clots and debris, and ovary and fallopian tubes were inspected and appeared normal. The patient tolerated the procedure well and was taken to the recovery room in satisfactory condition. The Bakri balloon and vaginal packing was taken out on the morning after surgery. The was patient's hemoglobin is 10.8 post-op day 1 with no evidence of postpartum bleeding or hemorrhage. The patient was discharged 3 days later without any complications.

Placenta previa and velamentous cord insertion increase the risk for PPH, particularly in patients with multiple risk factors such as in the patient reported. In high-risk pregnancies with multiple complications, it is important for surgeon's to be aware of their therapeutic options. The B-Lynch suture has been found to be highly successful in arresting cases of PPH resulting from uterine atony, particularly in cases of placenta previa. In addition, the use of a tamponade-balloon such as the Bakri has been shown to be effective in controlling PPH originating from the placental site. Here, a combination of the discussed procedures was enlisted to ensure minimal risk of complications. In this case, the combination of B-Lynch sutures, Bakri balloon tamponade, uterotonics, and vaginal packing were sufficient in achieving hemostasis and preventing post-operative complications.

Central Prize Award

2005

"Impact of Chromic Catgut Versus Polyglactin 910 Versus Fast-Absorbing Polyglactin 910 Sutures for Perineal Repairs: A Randomized Control Trial"

Emmanuel Bujold, M.D.

Sainte-Justine Hospital, University Montreal

Montreal, Quebec

2006

"Comparison of the Adequacy of the Conventional Smears to Liquid-Based Preparations on Vaginal Cuffs"

Kory A. Harward, D.O.

Aultman Health Foundation/NEOUCOM

Canton, Ohio

2007

"Triggering Receptors of Myeloid Cells (TREM)-1: A Novel Marker of Infection Associated Spontaneous Preterm Birth"

Stephen J. Fortunato, M.D.

Centennial Women's Hospital

Nashville, Tennessee

2008

"Yolk Sac on Transvaginal Ultrasound as a Prognostic Indicator in the Treatment of Ectopic Pregnancy with Single-Dose Methotrexate"

Gary H. Lipscomb, M.D.

University of Tennessee

Memphis, Tennessee

2009

"Soluble Fms-Like Tyrosine-1 (sFlt-1) Production is Enhanced During Hypertension in Response to Tumor Necrosis Factor-alpha (TNF-α) and Agonistic Autoantibodies to the Angiotension II Type I Receptor (ATI-AA)"

Marc R. Parrish, D.O.

University of Mississippi Medical Center

Jackson, Mississippi

Central Prize Award

2010

"The Impact of Genotype on Nifedipine Pharmacokinetics When Used as a Tocolytic"

David M. Haas, M.D.

Indiana University School of Medicine
Indianapolis, Indiana

2011

"Reducing Postpartum Hemorrhage with Removal of Placenta at 10 vs 15 Minutes: A Randomized Clinical Trial"

Everett F. Magann, M.D.

University of Arkansas for Medical Sciences
Little Rock, Arkansas

2012

"Harnessing the Electronic Health Record for the Provision of Population-Based Preconception Care"

Heather L. Straub, M.D.

Northshore University HealthSystem
Evanston, Illinois

2013

"Cost Effectiveness and Clinical Utility of Repeated Syphilis Screening in the Third Trimester in a High-Risk Population"

Linda-Dalal J. Shiber, M.D.

MetroHealth/Case Western Reserve University
Cleveland, Ohio

2014

"A Study of Preterm Neonates: Delayed Cord Clamping vs. Delayed Cord Clamping plus Cord Stripping, a Prospective Randomized Trial. Is Cord Stripping Beneficial?"

Margaret S. Krueger, D.O.

Univ. South Alabama Children's and Women's Hospital
Mobile, Alabama

Central Prize Award

2015

"Randomized Clinical Trial of Medical Therapy vs. Radiofrequency Endometrial Ablation in the Initial Treatment of Heavy Menstrual Bleeding: Treatment Outcomes and Life Quality Assessment"

Sherif A. Shazly, M.B., B.Ch.

Mayo Clinic

Rochester, Minnesota

2016

"The Risk of Expectant Management of Low Risk Pregnancy at Term and Optimal Timing of Delivery: A National Population-Based Study"

Gustavo Vilchez, M.D.

University of Missouri - Kansas City

Kansas City, Missouri

2017

"Association Between Gestational Weight Gain Adequacy and Composite Maternal and Neonatal Morbidity"

Han-Yang Chen, Ph.D.

The University of Texas Health Science Center

Houston, Texas

2018

"A Comparison of Vaginal Versus Buccal Misoprostol for Term Cervical Ripening in Women for Labor Induction at Term (the IMPROVE Trial): A Triple Masked Randomized Controlled Trial"

David M. Haas, M.D.

Indiana University School of Medicine

Indianapolis, Indiana

2019

"The Relationship Between Glucose Testing in an Index Pregnancy and Outcomes in a Subsequent Pregnancy: Implications for Testing Guidelines"

Emmet Hirsch, M.D.

NorthShore University HealthSystem

Evanston, Illinois

Central Prize Award

2020

"Adverse Outcomes Associated with Pregnancy Conception Methods Among Low-Risk Pregnancies"

Morgen S. Doty, D.O.
McGovern Medical School-UTHealth
Houston, Texas

President's Certificate of Merit Award

2005

"Detection of Gestational Diabetes Mellitus by Homeostatic Indices of Insulin Sensitivity: A Preliminary Study"

Robert P. Kauffman, M.D.

Texas Tech University School Medicine
Amarillo, Texas

2006

"The Clinical Utility of Maternal Depression Screening Before and After Delivery"

Trent E.J. Gordon, M.S.

Evanston Northwestern Healthcare
Evanston, Illinois

2007

"In Vitro Chemotaxis of Human Bone Marrow-Derived Mesenchymal Stem Cells Following Exposure to Soluble Factors from Epithelial Ovarian Carcinoma Cell Lines"

Neelima Vegesna, M.D.

Southern Illinois University School of Medicine
Springfield, Illinois

2008

"In Vitro Vascular Reactivity in a Mouse Model of Preeclampsia Induced by Over-Expression of sFlt-1"

Fangxian Lu, M.D.

University of Texas Medical Branch
Galveston, Texas

2009

"Mild Preeclampsia Near Term: Deliver or Deliberate? The Prospective Randomized PreNaTe Trial"

Michelle Y. Owens, M.D.

University of Mississippi Medical Center
Jackson, Mississippi

President's Certificate of Merit Award

2010

"Cervical Ripening for Induction of Labor: A Prospective Randomized Trial of Misoprostol versus Oxytocin in Conjunction with Foley Balloon"

Erica R. Downey, M.D.
Aultman Hospital
Canton, Ohio

2011

"Knowledge Gap of Recommendations in ACOG Practice Bulletins: A Survey of Members of Central Association of Obstetricians and Gynecologists"

Suneet P. Chauhan, M.D.
Eastern Virginia Medical School
Norfolk, Virginia

2012

"Peripartum Complications with Cesarean Delivery: A Review of Maternal-Fetal Medicine Unit Publications"

Ibrahim A.I. Hammad, M.D.
Eastern Virginia Medical School
Norfolk, Virginia

2013

"Obstetric Recommendations in ACOG Practice Bulletins vs UpToDate: A Comparison"

Emily N. Myer, M.D.
Eastern Virginia Medical School
Norfolk, Virginia

2014

"The Effects of Metformin on Postpartum Weight Retention in Women with Gestational Diabetes: A Randomized, Placebo-Controlled Trial"

Jerrie S. Refuerzo, M.D.
University of Texas Health Science Center
Houston, Texas

President's Certificate of Merit Award

2015

"Acute FeTal Behavioral Response to Prenatal Yoga: A Single Blinded, Randomized Controlled Trial (TRY Yoga Study)"

Shilpa Babbar, M.D.

University of Missouri Kansas City

Kansas City, Missouri

2016

"Assessment of Twin Fetal Growth: Use of Singletons versus Twin-Specific Nomograms"

Hector Mendez-Figueroa, M.D.

University of Texas Health Science Center

Houston, Texas

2017

"Preoperative Cesarean Section Intravenous Acetaminophen Treatment for Postoperative Pain Control: A Randomized Double-Blinded Placebo Control Trial"

Sarah K. Shelton, M.D.

University of Tennessee Medical Center

Knoxville, Tennessee

2018

"Intention to Treat: Obstetrical Management at the Threshold of Viability"

Tiffany R. Tonismae, M.D.

Indiana University School of Medicine

Indianapolis, Indiana

2019

"Increases in Albumin-Adjusted Serum Calcium Over Time Predict Ovarian Cancer"

Gary G. Schwartz, Ph.D., M.P.H., Ph.D.

UND School of Med. & Health Sciences

Grand Forks, North Dakota

President's Certificate of Merit Award

2020

"Enhanced Recovery After
Scheduled Cesarean Delivery"

Lisette D. Tanner, M.D., M.P.H.
McGovern Medical School-UTHealth
Houston, Texas

Community Hospital Award

2005

"Multilocus Interactions as Maternal TNF-α, IL-6 and IL-6R Genes Predict Spontaneous Preterm Labor in European-American Women"

Stephen F. Fortunato, M.D.

Centennial Women's Hospital
Nashville, Tennessee

2006

"Amniotic Fluid Interleukin (IL)-1 and IL-8 Concentrations: Racial Disparity in Spontaneous Preterm Birth"

Stephen J. Fortunato, M.D.

Centennial Women's Hospital
Nashville, Tennessee

2007

"Racial Disparity in Maternal-Fetal Genetic Epistasis in Spontaneous Preterm Birth"

Stephen J. Fortunato, M.D.

Centennial Women's Hospital
Nashville, Tennessee

2008

"Distinct Pathophysiologic Pathways Induced by In Vitro Infection and Cigarette Smoke in Normal Human Fetal Membranes"

Stephen J. Fortunato, M.D.

Centennial Women's Hospital
Nashville, Tennessee

2009

"C-Reactive Protein and the Outcome of Emergency Cerclage"

Sogol Jahedi, M.D.

Advocate Lutheran General Hospital
Park Ridge, Illinois

Community Hospital Award

2010

"Aberrant Fetal Growth and Mortality
(Early, Late, and Postneonatal):
An Analysis of Milwaukee Births, 1996-2007"
Suneet P. Chauhan, M.D.
University of Wisconsin School of Medicine
Milwaukee, Wisconsin

2011

"Group B Streptococcus Colonization
Leads to Early-Term Births"
Stephen J. Fortunato, M.D.
The Perinatal Research Center
Nashville, Tennessee

2012

"Development of an OB Dashboard: Measuring
What Matters in Perinatal Quality and Safety"
Gregory L. Goyert, M.D.
Henry Ford Health System
Detroit, Michigan

2013

"Human Lysophosphatidylcholine
Acyl-transferase 1 mRNA is Found in
Amniotic Fluid and Maternal Serum"
Robert A. Welch, M.D.
Providence Hospital & Medical Centers
Southfield, Michigan

2014

"Prospective Comparison of Efficacy, Outcomes,
and Cost of Laparoscopic, Vaginal,
and Robotic Approaches to Hysterectomy
in a Community Institution"
Dana M. Benden, M.D.
Gundersen Health System
La Crosse, Wisconsin

Community Hospital Award

2015
"A Randomized Control Trial of Foley Catheter Placement for Induction of Labor: Stylette vs. No Stylette"
Marie M. Forgie, D.O.
Aurora Sinai Medical Center
Milwaukee, Wisconsin

2016
"Severe Maternal Morbidity and Hospital Cost Among Hospitalized Deliveries in the United States"
Han-Yang Chen, Ph.D.
Aurora Health Care
Milwaukee, Wisconsin

2017
"Management of the Third Stage of Labor in Second Trimester Deliveries: How Long is Too Long?"
Jessica A. Behrens, D.O.
Aurora Sinai Medical Center
Milwaukee, Wisconsin

2018
"Newborn Birth Weight or Body Mass Index: Predictors of the Duration of Neonatal Brachial Plexus Palsy"
Leen Al-Hafez, M.D.
Houston Methodist Hospital
Houston, Texas

2019
"To Treat or Not to Treat: Effect of One Elevated Glucose Tolerance Test Value"
Leah A. Hong, M.D.
Henry Ford Health System
Detroit, Michigan

Community Hospital Award

2020

"Group B Streptococcus Rectovaginal Colonization
and Resistance Patterns in HIV Positive
Compared to HIV Negative Pregnant Patients"

Nicholas A. Callais, B.S.
LSU-Health Shreveport
Shreveport, Louisiana

Young Investigator Award

2005

"Pregnancy Loss After First Trimester Viability in Patients with Sickle Cell Trait: Time for A Reappraisal?"

Michelle Y. Taylor, M.D.

University of Mississippi Medical Center
Jackson, Mississippi

2006

"An Evaluation of Health Care Providers' Sexual Violence Screening Practices"

Heather L. Littleton, Ph.D.

University of Texas Medical Branch
Galveston, Texas

2007

"Autologous Platelet Gel in Reduction of Pfannenstiel Cesarean Incision Drainage in Obese Women: A Randomized Controlled Trial"

Alexis G. Johnston, D.O.

Aultman Hospital
Canton, Ohio

2008

"Vascular Function in the Offspring Later in Life in a Mouse Model of Maternal Obesity and Preeclampsia"

Egle Bytautiene, M.D.

University of Texas Medical Branch
Galveston, Texas

2009

"Extended Antibiotic Prophylaxis for Prevention of Surgical Site Infections in Morbidly Obese Women Undergoing Combined Hysterectomy and Medically Indicated Panniculectomy: A Cohort Study"

Sherif A. El-Nashar, M.D.

Mayo Clinic
Rochester, Minnesota

Young Investigator Award

2010

"Phenazopyridine Does Not Improve Catheter-Associated Discomfort Following Gynecologic Surgery: Results of a Randomized Controlled Trial"

Charles K. Anderson, M.D.

Loyola Univ. Medical Center

Maywood, Illinois

2011

"Racial Difference in Gestational Age Specific Neonatal Morbidity: Further Evidence for Different Gestational Lengths"

Ryan W. Loftin, M.D.

University of Cincinnati

Cincinnati, Ohio

2012

"Knowledge of Nutrition During Pregnancy: A Survey of CAOG Members"

Stephanie T. Trexler, M.D.

Eastern Virginia Medical School

Norfolk, Virginia

2013

"When is the Optimal Time to Deliver Women with Stable Placenta Previa?"

Laura A. Hart, M.D.

UT Health - University of Texas Medical School

Houston, Texas

2014

"Differential Morbidity Among Preterm Small versus Appropriate for Gestational Age: Perhaps Unverifiable"

Caroline C. Marrs, M.D.

University of Texas Health Science Center at Houston

Houston, Texas

Young Investigator Award

2015

"Body Mass Index and Magnesium Sulfate Neuroprotection: A Secondary Analysis From a Multicenter Randomized Control Trial"

Gustavo Vilchez, M.D.

Wayne State Univ./Detroit Med. Center
Detroit, Michigan

2016

"Diabetes During Pregnancy: Influence of Body Mass Index on Composite Morbidity"

Amy E. O'Neil Dudley, M.D., MPH

McGovern Medical School- UTHealth
Houston, Texas

2017

Among Diabetics Sonographic Estimated Fetal Weight and Composite Neonatal Morbidity: Suspected Appropriate versus Large for Gestational Age

Leen Al-hafez, M.D.

Houston Methodist Hospital
Houston, Texas

2018

"Hypertension Among Women of Reproductive Age: Impact of 2017 American College of Cardiology/American Heart Association High Blood Pressure Guideline"

Han-Yang Chen, Ph.D.

University of Texas Health Science Center
Houston, Texas

2019

"The Influence of Insufficient Prenatal Care on Severe Maternal Morbidity."

Michael William DeGrandis, BA

University of Cincinnati Medical School
Cincinnati, Ohio

Young Investigator Award

2020

"Labor Induction with Prostaglandin E1 versus E2:
A Comparison of Outcomes"

Matthew J. Bicocca, M.D.
McGovern Medical School-UTHealth
Houston, Texas

Distinguished Professor Lectureship Honoring

George W. Morley, M.D.

"Approaching Invasive Gyn Disease via
Minimally Invasive Technology"
Introduction by
Rudi Ansbacher, M.D.
Presented by
R. Kevin Reynolds, M.D.

University of Michigan Medical Center
Ann Arbor, Michigan
October 18, 2005

GEORGE W. MORLEY, M.D
(1923 – 2005)

Dr. George Morley was one of America's most distinguished gynecologic oncology surgeons and truly a memorable leader in the specialty. He spent his entire academic career at The University of Michigan, Ann Arbor where he was revered by students, house staff, colleagues and patients. Although Dr. Morley was widely published, it was in the operating room where he is fondly remembered for being a patient and effective teacher who inspired and motivated through talent and effervescent enthusiasm. Many of the principles he held most dear he collected in his beloved "Morleyisms," a booklet of sayings he used to help with his mentoring and philosophy of living life to the fullest. Dr. Morley often said "I got to treat, and to train to treat – what more could anyone ask for:" a fitting epitaph for this great physician and humanitarian.

DR. GEORGE W. MORLEY MEMORIAL PAPER

2006

"Endometrial Cells Identified in Cervical Cytology in Women ≥ 40 Years of Age: Criteria for Appropriate Endometrial Evaluation"

Heather N. Beal, M.D.

Southern Illinois University School of Medicine
Springfield, Illinois

2007

"Family History as a Risk Factor for Pelvic Organ Prolapse"

Mary T. McLennan, M.D.

St. Louis University
St. Louis, Missouri

2008

"Laparoscopically-Assisted Uterine Fibroid Cryoablation (UFC)"

Harriette L. Hampton, M.D.

University of Mississippi
Jackson, Missippi

2009

"Activity of Dasatinib a Novel Small Molecule Kinase Inhibitor of Both the SRC and ABL Proteins in Human Endometrial Cancer Cells Along With SRC Expression in a Large Cohort of Surgically Staged Nonendometroid (Type II) Endometrial Cancers"

Boris J.N. Winterhoff, M.D.

Mayo Clinic
Rochester, Minnesota

2010

"Radical Parametrectomy for Cervical Cancer Found on Pathological Examination of Extrafascial Hysterectomy: A Cohort Study & A Systemic Review of the Literature"

Sherif A. El-Nashar, M.D.

Mayo Clinic
Rochester, Minnesota

DR. GEORGE W. MORLEY MEMORIAL PAPER

2011

"The Impact of the Mismanagement of Atypical Glandular Cell Pap Tests"

Jessica J. Shank, M.D.
University of Michigan
Ann Arbor, Michigan

2012

"Hysterectomy Trends Since 2003: The Impact of Technology on Traditional Routes"

Katherine E. Kowalczyk, D.O.
Grand Rapids Medical Education Partners
Grand Rapids, Michigan

2013

"Utilization of an Ex Vivo Human Placental Perfusion Model to Predict Potential Fetal Exposure to Carboplatin During Pregnancy"

Judith A. Smith, Pharm.D.
UT MD Anderson Cancer Center
Houston, Texas

2014

"A Prospective Study on the Incidence of Post-Operative Lymphedema in Women with Endometrial Cancer"

Elizabeth E. Hopp, M.D.
Medical College of Wisconsin
Milwaukee, Wisconsin

2015

"Tumor Diameter as a Predictor of Lymphatic Dissemination in Endometrioid Endometrial Cancer"

Danielle M. Greer, Ph.D.
Center for Urban Population Health
Aurora UW Medical Group
Milwaukee, Wisconsin

DR. GEORGE W. MORLEY MEMORIAL PAPER

2016

"Outcomes of Vaginal Hysterectomy With and Without Perceived Contraindications to Vaginal Surgery"

Jennifer J. Schmitt, D.O.

Mayo Clinic
Rochester, Minnesota

2017

"Initial Impact of a Cervical Cancer Screening and Tracking Program Within a Community Health System's Electronic Health Record"

Alexa R. Lowry, B.S.

Univ. of Wisconsin School of Medicine & Public Health
La Crosse, Wisconsin

2018

"Chronic Diseases, Self-Reported Health Status and Prescription Opioid Analgesic Use Among Women of Reproductive Age"

Han-Yang Chen, Ph.D.

University of Texas Health Science Center
Houston, Texas

2019

"A System-Level Approach to Improving Cervical Cancer Screening Rates & Surveillance: Implementation of an Electronic Health Record Tracking System in a Community Health System"

Courtney K. Pfeuti, B.A.

Univ. of Wisconsin School of Medicine & Public Health
Madison, Wisconsin

2020

"AHCC Supplementation to Support the Immune System in the Elimination of Persistent Human Papillomavirus Infections in Women "

Judith A. Smith, Pharm.D.

McGovern Medical School-UTHealth
Houston, Texas

Distinguished Professor Lectureship Honoring

Jack A. Pritchard, M.D.

"Dr. Pritchard: The Man and His Legacy"
Introduction by
Norman F. Gant, Jr., M.D.
Presented by
Larry C. Gilstrap, III, M.D.

American Board of Obstetrics and Gynecology
Dallas, Texas
October 17, 2006

JACK A. PRITCHARD, M.D.
(1921 – 2002)

Dr. Jack Pritchard is considered by many to be the "father of modern obstetrics." At age 33 Dr. Pritchard became Chair of Ob-Gyn at the University of Texas Southwestern and Chief of Ob-Gyn at Parkland Hospital in Dallas, where he dedicated his career to being a relentless champion of patient care as the classic "triple threat:" teacher, researcher and clinician. As a pioneer in evidence-based medicine, the most important member of his life-long research team was his wife, Signe. In 1969 Dr. Pritchard became the editor of the 14th Edition of *Williams Obstetrics*, crafting this century old classic to remain as relevant today as in the past. Jack Pritchard's greatest legacy "lies in the countless thousands of ob-gyn's, those trained and those to follow, and in the countless millions of women and infants, some yet unborn, who will be enriched by his priceless contributions to the art and science of ob-gyn."

DR. JACK A. PRITCHARD MEMORIAL PAPER

2006

"Expectant Management of Preterm Premature Rupture of Membranes and Non-Vertex Presentations: What Are the Risks?"

David F. Lewis, Jr., M.D.

Louisiana State University Health Science Center
Shreveport, Louisiana

2007

"Comparison of Intracervical Foley Bulb Methodologist for Cervical Ripening: A Randomized Clinical Trial"

Jason M. Hoppe, D.O.

Aultman Hospital
Canton, Ohio

2008

"Overestimation of Fetal Weight by Ultrasound: Does It Increase Cesarean Delivery for Labor Arrest?"

Jerrie S. Refuerzo, M.D.

University Texas Health Science Center
Houston, Texas

2009

"Randomized Clinical Trial Evaluating the Frequency of Membrane Sweeping with an Unfavorable Cervix at 39 Weeks"

Everett F. Magann, M.D.

Navel Medical Center - Portsmouth
Portsmouth, Virginia

2010

"Study of Obstetric Foley Techniques (The SOFT Trial): A Randomized Controlled Trial "

Megan J. Dejong, M.D.

Loyola Univ. Medical Center
Maywood, Illinois

DR. JACK A. PRITCHARD MEMORIAL PAPER

2011

"Cost-Effectiveness of Routine
Third Trimester Antibody Screening in
Rh Negative Pregnancies"

Jill E. Minger, M.D.
MetroHealth Medical Center
South Euclid, Ohio

2012

"Outcomes in Cephalic versus Non-cephalic
Fetuses in the Setting of Preterm Premature
Rupture of Membranes"

Jean R. Goodman, M.D.
Univ. Oklahoma Health Sciences Center
Oklahoma City, Oklahoma

2013

"Circulating Cell-Free Nucleic Acid (CCFNA)
Screening for Fetal Aneuploidy: Changing the
Landscape of Prenatal Screening and Diagnosis"

Lee P. Shulman, MD
Feinberg School Medicine/Northwestern University
Chicago, Illinois

2014

"Maternal and Cord Blood Levels
of Docosahexaenoic Acid (DHA)
After Commercially Available Supplementation"

Steffen A. Brown, M.D.
University of New Mexico School of Medicine
Albuquerque, New Mexico

2015

"UltraSound Examinations to Improve Detection
of Fetal Growth Restriction in Uncomplicated
Pregnancies: A Pilot, Multi-Center R
andomized Clinical Trial (USE RCT)"

Ibrahim A. Hammad, M.D.
Eastern Virginia Medical School
Norfolk, Virginia

DR. JACK A. PRITCHARD MEMORIAL PAPER

2016

"Racial/Ethnic Disparity in Magnesium Sulfate Adverse Effects: A Sub-Group Analysis of a Multicenter Randomized Controlled Trial"

Gustavo Vilchez, M.D.

University of Missouri - Kansas City
Kansas City, Missouri

2017

"Risk of Neonatal and Infant Mortality in Twins and Singletons by Gestational Age in the United States"

Han-Yang Chen, Ph.D.

The University of Texas Health Science Center
Houston, Texas

2018

"Persistence and Extent of Neonatal Brachial Plexus Palsy: Association with Number of Maneuvers and Duration of Shoulder Dystocia"

Morgen S. Doty, D.O.

University of Texas Health Science Center
Houston, Texas

2019

"Adverse Outcomes Among Low-Risk Pregnancies at 39 to 41 Weeks: Stratified by Fetal Growth "

Hector Mendez-Figueroa, M.D.

Baylor College of Medicine
Houston, Texas

2020

"Marijuana Use in Pregnancy and the Risk of Preterm Birth"

Rachel Gilbert, D.O.

LSU Health Sciences Center
Baton Rouge, Louisiana

Distinguished Professor Lectureship Honoring

Kermit E. Krantz, M.D.

"Dr. Krantz: The MMK and So Much More"
Introduction by
Tom G. Sullivan, M.D.
Presented by
John W. Calkins, M.D.

University of Kansas Medical Center
Kansas City, Kansas
October 20, 2008

KERMIT E. KRANTZ, M.D.
(1923 – 2007)

Dr. Kermit Krantz was the world-renowned forefather of urogynecology and pelvic reconstructive surgery who is best known as the co-developer of the Marshall-Marchetti-Krantz (MMK) procedure for urinary stress incontinence. Trained as an anatomist, Dr. Krantz also invented the expandable women's tampon still used today. An identical twin who was orphaned by age 13, Kermit Krantz spent 31 years as Chairman of Ob-Gyn at The University of Kansas Medical Center in Kansas City where he championed patient rights above all else. At the University Hospital he is credited with desegregating labor, delivery and the nursery. A brilliant diagnostician and devoted researcher who is fondly remembered for his irrepressible personality, Dr. Krantz was equally esteemed by the clinicians he trained and the countless patients he cared for.

DR. KERMIT E. KRANTZ MEMORIAL PAPER

2008

"Glycine Absorption in Operative Hysteroscopy: The Impact of Anesthesia."

Marie-Eve Bergeron, M.D.

Centre Hospitalier Universitaire de Quebec
Quebec, Canada

2009

"Bethesda 2001 Plus Reflex HPV DNA Testing Versus Bethesda 1991: Impact on Triage, Cost and Efficacy"

William J. Todia. M.D.

MetroHealth/Case Western Reserve University
Cleveland, Ohio

2010

"Resolution of Chronic Pelvic Pain After Hysterectomy and Alternative Treatments: Does Depression Make a Difference?"

Lee A. Learman, M.D., Ph.D.

Indiana University School of Medicine
Indianapolis, Indiana

2011

"Cervical Cancer Screening in the United States 1993-2010: Characteristics of Women Who are Never Screened"

Suneet P. Chauhan, M.D.

Eastern Virginia Medical School
Norfolk, Virginia

2012

"Burnout Among the Alumni from the University of Kansas Obstetrics and Gynecology Residency Programs"

Kimberly A. Brey, M.D.

University of Kansas School of Medicine
Kansas City, Kansas

DR. KERMIT E. KRANTZ MEMORIAL PAPER

2013

"Cervical Cytology and Histology in Women
Following Solid Organ Transplant,
A Longitudinal Cohort"
Margaret E. Long, M.D.
Mayo Clinic
Rochester, Minnesota

2014

"Evaluation of Ethics Education in Obstetrics &
Gynecology Residency Programs:
A Survey of Ob/Gyn Residency Program Directors"
John J. Byrne, M.D., MPH
University of Chicago
Chicago, Illinois

2015

"Molecular Evaluation of Fetal and Newborn Skeletal
Dysplasia: Applying Next Generation Sequencing
(NGS) to Providing Accurate Diagnostic Information"
Lee P. Shulman, M.D.
Feinberg School of Medicine/ Northwestern University
Chicago, Illinois

2016

"Correlates of Long-Acting Reversible Contraception
versus Sterilization Use in Advanced Maternal Age"
Shelby N. Apodaca, M.D.
Texas Tech University - El Paso
El Paso, Texas

2017

"Randomized Clinical Trial: Diathermy versus
Scalpel in Abdominal Wall Incisions
During Repeat Cesarean Delivery"
Martin J. Caliendo, M.D.
Women and Children's Hosp. of Buffalo
Buffalo, New York

DR. KERMIT E. KRANTZ MEMORIAL PAPER

2018

"How Long is Too Long? Intraoperative Time Intervals and Umbilical Artery pH Depression at Scheduled Cesarean"

Rebecca R. Rimsza, M.D.

Saint Louis University School of Medicine

St. Louis, Missouri

2019

"Increasing Selection of Preconception Expanded Carrier Screening and Its Impact on Preimplantation Genetic Diagnosis (PGT-M)"

Lee P. Shulman, M.D.

Feinberg School of Medicine

Chicago, Illinois

2020

"Integration of Evidence from Randomized Controlled Trials into Clinical Guidelines by the American College of Obstetricians and Gynecologists"

Rigoberto Gutierrez, MS3

Memorial Hermann Southwest Hospital

Houston, Texas

Dr. Bryan D. Cowan
FAR (Fellows and Residents)
Research Network Award

INAUGURATED 2012
Suneet P. Chauhan, M.D., P.I.

BRYAN D. COWAN, M.D.
(1949 – 2011)

Dr. Bryan Cowan was President of the Central Association of Obstetricians and Gynecologists at its 75th Annual Meeting in 2008. His distinguished career in reproductive endocrinology culminated as Chair of the Department of Obstetrics and Gynecology at the University of Mississippi Medical Center in Jackson. A lifelong dedication to mentoring and scholarship instilled a respect for research in all the residents and fellows he trained. Following Dr. Cowan's premature death, the CAOG and his wife, Dr. Harriette Hampton, have jointly established this research network to honor his legacy and to encourage future women's health care research.

Dr. Bryan D. Cowan
FAR (Fellows and Residents)
Research Network Award

2012

"Neonatal Brachial Plexus Palsy with Vaginal Birth
After Cesarean: A Case Control Study"
Ibrahim A.I. Hammad, M.D.
Eastern Virginia Medical School
Norfolk, Virginia

2013

"Shoulder Dystocia is Strongly Associated
With a Large Fetal Abdominal-Head
Circumference Size Difference"
Theresa M. Conyac, M.D.
NorthShore University HealthSystem
Evanston, Illinois

2014

"Tocolysis in Patients with Advanced Preterm Labor:
A Randomized Clinical Trail"
Ann R. Tucker, M.S.
University Mississippi Medical Center
Jackson, Mississippi

2015

"Use of Scoring Systems to Predict
Prolonged Hospitalization and Severity
of Acute Pyelonephritis in Pregnancy"
Amy M. Valent, D.O.
University of Cincinnati
Cincinnati, Ohio

2016

"Histologic Chorioamnionitis with Funisitis
and Likelihood of Suspected Triple I
at Term: A Case-Control Study"
Morgen S. Doty, D.O.
Saint Peter's University Hospital
New Brunswick, New Jersey

Dr. Bryan D. Cowan
FAR (Fellows and Residents)
Research Network Award

2017 and 2018
No Candidate Research Papers

2019
"Cesarean Section Does Not Improve Survival Outcomes Less Than 25 Weeks Gestational Age"
Tiffany R. Tonismae, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

2020
No Candidate Research Papers

Central Poster Awards

2005

"Variation in Expression of VEGF and VEGF Receptors in Ovarian Cancer Cell Lines"
Lisa M. Little, M.D.
Southern Illinois University School of Medicine
Springfield, Illinois

"Inquiry Into Shoulder Pain Following Laparoscopy"
David J. Mitchell, M.D.
Aultman Health Foundation
Canton, Ohio

2006

"The Impact of Combined Antibiotic Prophylaxis in Twin Pregnancies Complicated by Preterm Premature Rupture of Membranes"
Amy Farrell, M.D.
St. Louis University School of Medicine
St. Louis, Missouri

"Findings in Patients With an HCG Below 2000 mIU/ml Undergoing D&C to Exclude Ectopic Pregnancy"
Gary H. Lipscomb, M.D.
University of Tennessee Health Science Center
Memphis, Tennessee

2007

"The Impact of Maternal Obesity on Satisfactory Detailed Anatomic Ultrasound Image Acquisition"
Fadi R. Khoury, M.D.
CASE-MetroHealth Medical Center
Cleveland, Ohio

"Thrombotic Thrombocytopenic Purpura (TTP) in the Pregnant or Puerperal Patient 1955-2006: Primary of Recurrent Disease Sometimes Associated with Preeclampsia/HELLP Syndrome"
James N. Martin, Jr., M.D.
University of Mississippi Medical Center
Jackson, Mississippi

Central Poster Awards

2008

"The Neonatologist in Alleged Perinatal Asphyxia:
The Obstetrician's Best Friend"
Jonathan K. Muraskas, M.D.
Loyola University Medical Center
Maywood, Illinois

"Utilization of Delayed Umbilical Cord
Clamping Among SMFM Membership"
Jessica L. Nyholm, M.D.
University of Minnesota
Minneapolis, Minnesota

2009

Non-Gynecologic Disease Detected at the
Time of Gynecologic Surgery:
A Continuing Diagnostic Challenge"
Allan A. Adajar, M.D.
St. Francis Hospital
Evanston, Illinois

"Early Return of Bowel Function After
Gynecologic Surgery Using Chewing Gum"
James M. Clark, M.D.
Aultman Health Foundation
Canton, Ohio

"Vaginal Cleansing Before Cesarean Delivery to
Reduce Postoperative Infectious Morbidities: A
Randomized Controlled Trial"
David M. Haas, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

"Fetal Gastroschisis:
Epidemiological Characteristics and
Maternal-Fetal Outcomes"
Kiran B. Tam Tam, M.D.
University of Mississippi Medical Center
Jackson, Mississippi

Central Poster Awards

2010

Outcomes Study: A Prospective/Observational Study of 2,331 Pubic Bone Stabilization Sling Procedures for Stress Urinary Incontinence. Is This Procedure Equal to other Anti-Incontinent Procedures?
Stephen H. Cruikshank, M.D.
West Va. Univ. School of Med. (Charleston Campus)
Charleston, West Virginia

Absence of the Fourth Ventricle in First-Trimester Fetuses: The Intracranial Translucency (IT) as a Potential Screening Tool for Fetal Neural Tube Defects in the Late First Trimester
Norman A. Ginsberg, M.D.
Feinberg School of Medicine of Northwestern Univ.
Chicago, Illinois

The Effect of Antenatal Corticosteroids on Maternal Serum Glucose Values in Women with Gestational and Pre-gestational Diabetes
Allison E. Kreiner, M.D.
Akron General Medical Center
Akron, Ohio

Unaffected Women with BRCA 1/2 Mutations and Their Use of Family History in Making Decisions Concerning Prophylactic Surgery
Carly J. Stewart, B.A.
Feinberg School of Medicine of Northwestern Univ.
Chicago, Illinois

Central Poster Awards

2011

"Diagnostic Accuracy of Saline
Infusion Sonohysterography in Patients
with Endometrial Polyps"
Riva N. Branch, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Birth Attendant and Neonatal Mortality
in Newborns Delivered at 37 Weeks or Later:
United States, 2000-2004"
Han-Yang Chen, M.S.
Center for Urban Population Health & Univ. Wisconsin
Madison, School of Medicine & Public Health
Madison, Wisconsin

Cesarean Section and the Effect on Bladder Capacity"
Jessica Fischetti-Galvin, D.O.
Jersey Shore University Medical Center
Neptune, New Jersey

"Uterine Rupture and Perinatal
Morbidity and Mortality Associated with Oxytocin
Use in a Trial of Labor with a Prior Uterine Scar"
Elliot M. Levine, M.D.
Illinois Masonic Medical Center
Chicago, Illinois

Central Poster Awards

2012

"An Unusual and Rare Presentation of Problems in a Community Hospital Can Place a Patient at Significant Risk: A Report of a Ten Year Old Female with a Pelvic Mass and Pain with Subsequent Surgery, Discharge, and an Acute Abdomen Three Weeks Later"
Michael G. Flax, M.D.
University of New Mexico
Albuquerque, New Mexico

"Gestational Length: How Long is too Long?"
Norman A. Ginsberg, M.D.
Northwestern Feinberg School of Medicine
Chicago, Illinois

"What Prevents Eligible Patients from Receiving Progesterone Therapy to Prevent Recurrent Preterm Birth"
Amanda Meyer, M.D.
Advocate Lutheran General Hospital
Park Ridge, Illinois

"Outcomes of Different Routes of Hysterectomy by Uterine Weight in Overweight and Obese Patients"
Danish S. Siddiqui, M.D.
Aurora Sinai Medical Center
Milwaukee Wisconsin

Central Poster Awards

2013

"The Impact of Diminished Ovarian Reserve
on IVF Delivery Rates"
Tamara A. Adducci, M.D.
Medical College of Wisconsin
Milwaukee, Wisconsin

"Decreasing the Abdominal Approach with Evolution
of Robotic Surgery Program for Treatment of
Endometrial Cancer Patients in a Community
Institution"
Dana M. Benden, M.D.
Gundersen Lutheran Medical Center
La Crosse, Wisconsin

"Retained Products of Conception in Patients with a
Negative Urine hCG: A Case Series Report"
Carlos M. Fernandez, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Neonatal Brachial Plexus Palsy in
Cesarean Section"
Gloria T. Too, M.D.
Eastern Virginia Medical School
Norfolk, Virigina

Central Poster Awards

2014

"Clinico-Pathological Findings of Hysterectomy Specimens in Women with Abnormal Uterine Bleeding: Are We Taking Full Advantage of Minimally Invasive Techniques?"
Morgan A. Morton, M.D.
University of Nebraska Medical Center
Omaha, Nebraska

"Variation in Management Strategies and Outcomes Between Sterilized and Non-Sterilized Patients with Abnormal Uterine Bleeding"
Steven J. Radtke, M.D.
Southern Illinois Univ. School of Medicine
Springfield, Illinois

"The Use of Prostaglandin E_1 in Peripartum Patients with Asthma"
Megan C. Rooney Thompson, M.D.
University of Tennessee Medical Center
Knoxville, Tennessee

"Cervical Length Screening: Are Cervical Portio Measurements Acceptable for Screening?"
Melissa L. Verchio, M.D.
Aultman Hospital
Canton, Ohio

Central Poster Awards

2015

"Management of a Live Cervical
Ectopic Pregnancy"
Carlos M. Fernandez, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Diagnosing Pulmonary Embolism in Pregnancy: Are
Biomarkers and Clinical Prediction Models Useful?"
Rachel Fournogerakis, M.D.
Advocate Lutheran General Hospital
Park Ridge, Illinois

"Risk Stratification and Prophylaxis
of Venous Thromboembolic Events
in Obstetrics and Gynecology"
Elliot M. Levine, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Incidence of Chorioamnionitis and
Risk of Neonatal Infection"
Angela D. Yates, M.D.
University of Tennessee Medical Center
Knoxville, Tennessee

Central Poster Awards

2016

"Development of a Novel Antibody-Based Assay for Simultaneous Identification of a Pathogen and Determination of its Antimicrobial Susceptibility"
Jonathan P. Faro, M.D./Ph.D.
The Woman's Hospital of Texas
Houston, Texas

"Decidualized Endometrioma of Pregnancy: A Cause for Concern"
Carlos M. Fernandez, M.D.
Illinois Masonic Medical Center
Chicago, Illinois

"Decline in Frequency of Acute PID Following Preventative Screening"
Elliot M. Levine, M.D.
Illinois Masonic Medical Center
Chicago, Illinois

"Obstetric Triage: A Model for Analysis of an Acute Care Service"
Megan L. Smith, M.D.
Aultman Hospital
Canton, Ohio

Central Poster Awards

2017

"Clinical Variance of the NTSV Metric"
Melissa Dennis, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Radiofrequency Volumetric Thermal Ablation ofUterine Leiomyomata: Comparison with Other Methods"
Elliot M. Levine, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"The Effects of Volume and Timing of Blood Loss on Cefazolin Adipose Concentrations Using a Validated Physiologic Model"
Avinash S. Patil, M.D.
Valley Perinatal Services
Phoenix, Arizona

"Maternal Complications Associated with Periviable Delivery"
Robert M. Rossi, M.D.
University of Cincinnati College of Medicine
Cincinnati, Ohio

Central Poster Awards

2018

"Ectopic Pregnancy: Consideration of Vascularity Index as a Novel Diagnostic Criterion"
Carlos M. Fernandez, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Obstetric Model of Induction of Labor: Does Time of Labor Induction Affect Patient Satisfaction?"
Bryant L. Johnson, D.O.
Aultman Hospital
Canton, Ohio

"Cesarean Scar Pregnancy Management Protocol Essential to Reducing Maternal Morbidity and Mortality"
Dennis J. Lutz, M.D.
UND School of Medicine & Health Sciences
Minot, North Dakota

"Live Intraligamentous Pregnancy at 36 Weeks"
Francesca Popper, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

Central Poster Awards

2019

"HPV Vaccination: Optimizing Rates in Our Ambulatory Clinic at Aultman Hospital"
Brennan N. Anderson, D.O.
Aultman Hospital/NEOMED
Canton, Ohio

"Are There Specific Antepartum Factors and Labor Complications That Predict Elevated Immediate Postpartum Edinburgh Postnatal Depression Scale Scores?"
Katherine V. Ayo, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

"Migration of Angular Pregnancy to Centric Position: A Case Report"
Katherine M. Tadros, D.O.
Advocate Illinois Masonic Hospital
Chicago, Illinois

"Contraception Planning in a Designated Obstetrical Opioid Use Disorder Clinic"
Craig V. Towers, M.D.
University of Tennessee Medical Center
Knoxville, Tennessee

Annual Meetings & Presiding Presidents

1929
St. Louis, Missouri
Washington Univ-Barnes
Palmer Findley, M.D. (Pro Tem)*

1930
Excelsior Springs, Missouri
The Elms Hotel
*Palmer Findley, M.D.**

1931
Chicago, Illinois
Shoreland Hotel
*Fred J. Taussig, M.D.**

1932
Memphis, Tennessee
Peabody Hotel
*Rudolph W. Holmes, M.D.**

1933
Milwaukee, Wisconsin
Hotel Schroeder
*Norman F. Miller, M.D.**
*Percy W. Toombs, M.D.**

1934
New Orleans, Louisiana
Roosevelt Hotel
*Everett D. Plass, M.D.**

1935
Omaha, Nebraska
Fontenelle Hotel
*Willard R Cooke, M.D.**

1936
Detroit, Michigan
Hotel Statler
*Buford G. Hamilton, M.D.**

1937
Dallas, Texas
Adolphus Hotel
*Jean P. Pratt, M.D.**

*Deceased

1938
Minneapolis, Minnesota
Radisson Hotel
*Robert D. Mussey, M.D.**

1939
Kansas City, Missouri
Muehlenbach Hotel
*Ralph A. Reis, M.D.**

1940
Indianapolis, Indiana
Lincoln Hotel
*Jennings C. Litzenberg, M.D.**

1941
New Orleans, Louisiana
Roosevelt Hotel
*Thomas B. Sellers, M.D.**

1942-1945
No Meetings, World War II

1946
Chicago, Illinois
Drake Hotel
*John H. Moore, M.D.**

1947
Louisville, Kentucky
Brown Hotel
*Earl C. Sage, M.D.**

1948
Denver, Colorado
Shirley Savoy Hotel
*William Mengert, M.D.**

1949
Oklahoma City, Oklahoma
Hall of Mirrors, Municipal Auditorium
*George Kamperman, M.D.**

1950
Milwaukee, Wisconsin
Hotel Schroeder
*Lawrence M. Randall, M.D.**

*Deceased

1951
Detroit, Michigan
Hotel Statler
*Russell J. Moe, M.D.**

1952
Memphis, Tennessee
Peabody Hotel
*John I. Brewer, M.D.**

1953
Houston, Texas
Shamrock Hotel
*W. O. Johnson, M.D.**

1954
St. Louis, Missouri
Jefferson Hotel
*Harold C. Mack, M.D.**

1955
Columbus, Missouri
Deshler-Hilton
*Frank L. McPhail, M.D.**

1956
New Orleans, Louisiana
Roosevelt Hotel
*Harold L. Gainey, M.D.**

1957
Omaha, Nebraska
Sheraton-Fontanelle
*Arthur B. Hunt, M.D.**

1958
Minneapolis, Minnesota
Leamington Hotel
*Herbert E. Schmitz, M.D.**

1959
Chicago, Illinois
Drake Hotel
*Axel N. Arneson, M.D.**

*Deceased

1960
Kansas City, Missouri
Muehlenbach Hotel
*Isadore Dyer, M.D.**

1961
Cleveland, Ohio
Statler-Hilton
*Edwin J. DeCosta, M.D.**

1962
Dallas, Texas
Sheraton-Dallas
*Richard D. Bryant, M.D.**

1963
Denver, Colorado
Denver Hilton
*Zeph J.R. Hollenbeck, M.D.**

1964
Milwaukee, Wisconsin
Schroeder Hotel
*Kenneth E. Cox, M.D.**

1965
Cincinnati, Ohio
Netherland Hotel
*Herman L. Gardner, M.D.**

1966
Biloxi, Mississippi
Broadwater Beach Hotel
*William C. Keettel, M.D.**

1967
Detroit, Michigan
Sheraton-Cadillac
*C. Paul Hodgkinson, M.D.**

1968
Oklahoma City, Oklahoma
Skirvin Hotel
*C. Gordon Johnson, M.D.**

*Deceased

1969
Memphis, Tennessee
Sheraton-Peabody
*Frederick J. Hofmeister, M.D.**

1970
Chicago, Illinois
Drake Hotel
*George J.L. Wulff, Jr., M.D.**

1971
White Sulphur Springs, West Virginia
The Greenbrier
*Thomas W. McElin, M.D.**

1972
St. Louis, Missouri
Stouffer's Riverfront Inn
*James S. Krieger, M.D.**

1973
Scottsdale, Arizona
Camelback Inn/Mountain Shadows
*David G. Decker, M.D.**

1974
New Orleans, Louisiana
Royal Sonesta
*Russell J. Paalman, M.D.**

1975
Colorado Springs, Colorado
The Broadmoor
*Brooks Ranney, M.D.**

1976
Houston, Texas
Shamrock Hilton
*Raymond H. Kaufman, M.D.**

1977
Biloxi, Mississippi
Broadwater Beach Hotel
*Clifford P. Goplerud, M.D.**

*Deceased

1978
Kansas City, Missouri
Crown Center
*William B. Goddard, M.D.**

1979
White Sulphur Springs, West Virginia
The Greenbrier
John B. Nettles, M.D.

1980
Minneapolis, Minnesota
Radisson South
*Tommy N. Evans, M.D.**

1981
Scottsdale, Arizona
Camelback Inn/Mountain Shadows
David G. Anderson, M.D.

1982
San Antonio, Texas
Hilton Palacio Del Rio
*Warren H. Pearse, M.D.**

1983
Colorado Springs, Colorado
The Broadmoor
*Sam P. Patterson, M.D.**

1984
Detroit, Michigan
Westin Renaissance Center
*Kenneth J. Vander Kolk, M.D.**

1985
New Orleans, Louisiana
Fairmont Hotel
George D. Malkasian, Jr., M.D.

1986
Milwaukee, Wisconsin
Hyatt Regency
Joseph C. Scott, Jr., M.D.

*Deceased

1987
Tarpon Springs, Florida
Innisbrook
Stacy R. Stephens, M.D.

1988
Salt Lake City, Utah
Marriott Hotel
Preston V. Dilts, Jr., M.D.

1989
Scottsdale, Arizona
Camelback Inn/Mountain Shadows
*James H. Maxwell, M.D.**

1990
Louisville, Kentucky
The Galt House
L. Russell Malinak, M.D.

1991
Colorado Springs, Colorado
The Broadmoor
*James P. Youngblood, M.D.**

1992
Chicago, Illinois
Westin Hotel
John J. Sciarra, M.D., PhD

1993
White Sulphur Springs, West Virginia
The Greenbrier
Willam R. Anderson, M.D.

1994
Memphis, Tennessee
Peabody Hotel
Bruce H. Drukker, M.D.

1995
Palm Desert, California
Marriott's Desert Springs
Melvin V. Gerbie, M.D.

*Deceased

1996
Houston, Texas
Lincoln Post Oak
James G. Blythe, M.D.

1997
Scottsdale, Arizona
The Scottsdale Princess
Karl C. Podratz, M.D., PhD

1998
Kansas City, Missouri
Westin Crown Center
Washington C. Hill, M.D.

1999
Maui, Hawaii
Ritz Carlton Kapalua
*John C. Morrison, M.D.**

2000
Chicago, Illinois
Fairmont Hotel
Robert J. Sokol, M.D.

2001
No Meeting – Cancelled After 9/11

2002
Las Vegas, Nevada
Bally's Hotel & Casino
Paul G. Tomich, M.D.

2003
La Jolla, California
Torrey Pines - Hilton
*Sherman Elias, M.D.**

2004
Washington, D.C.
Omni Shoreham Hotel
Abbey B. Berenson, M.D.

*Deceased

2005
Scottsdale, Arizona
Camelback Inn Resort
Stephen H. Cruikshank, M.D.

2006
Las Vegas, Nevada
The Venetian Resort
Jerry J. St. Pierre, M.D.

2007
Chicago, Illinois
The Drake Hotel
Mark I. Evans, M.D.

2008
New Orleans, Louisiana
The Ritz Carlton
*Bryan D. Cowan, M.D.**

2009
Maui, Hawaii
The Grand Wailea
Dennis J. Lutz, M.D.

2010
Las Vegas, Nevada
The Venetian Resort
Christine H. Comstock, M.D.

2011
Nassau, Bahamas
The Atlantis Resort
Gayle L. Olson, M.D.

2012
Chicago, Illinois
The Drake Hotel
John W. Calkins, M.D.

2013
Napa, California
The Meritage Resort
Stephen J. Fortunato, M.D.

*Deceased

2014
Albuquerque, New Mexico
The Tamaya Resort
*Kirk D. Ramin, M.D.**

2015
Charleston, South Carolina
Charleston Marriott
Barbara V. Parilla, M.D.

2016
Las Vegas, Nevada
The Venetian Resort
Roger P. Smith, M.D.

2017
Scottsdale, Arizona
Scottsdale Plaza Resort
David F. Lewis, M.D.

2018
Minneapolis, Minnesota
Radisson Blu Mall of America
Lee P. Shulman, M.D.

2019
Cancun, Mexico
Pyramid at The Grand Oasis
Vanessa M. Barnabei, M.D., Ph.D.

2020
Virtual Meeting Only
Cancelled by COVID-19 Pandemic
Suneet P. Chauhan, M.D., Hon. D.Sc.

*Deceased

Keynote Speaker

2005
"Aging is Everybody's Business"
Suzanne R. Kunkel, Ph.D.
Oxford, Ohio

2006
"Ethnobotany: The Quest for New Cures"
Paul A. Cox, Ph.D.
Provo, Utah

2007
"Government and Politics in
Women's Healthcare"
Ruth S. Hanft, Ph.D.
Washington, D.C.

2008
No Designated Keynote Speaker

2009
"The Future of Women's Health Care:
I Once Was A Doctor"
Norman F. Gant, Jr., M.D.
Dallas, Texas

2010
"Counseling Patients for
Cardiovascular Risk"
Barry A. Franklin, Ph.D.
William Beaumont Hospital Health Center
Royal Oak, Michigan

2011
"Obstetrical Trials that Changed Clinical Practice"
Catherine Y. Spong, M.D.
Bethesda, Maryland

2012
"Healthcare Disparities for Women Worldwide: Report
from a Year as Jefferson Fellow"
Douglas W. Laube, M.D.
University of Wisconsin Medical School
Madison, Wisconsin

Keynote Speaker

2013
"Putting the 'M' Back in
Maternal Fetal Medicine"
Larry C. Gilstrap, III, M.D.
American Board Ob-Gyn
Dallas, Texas

2014
"Future Changes in the Practice of
Obstetrics and Gynecology"
Willam F. Rayburn, M.D.
University of New Mexico
Albuquerque, New Mexico

2015
"Cancer Survivorship:
Navigating the Aftermath"
Sigrun Hallmeyer, M.D.
Oncology Specialists, SC
Park Ridge, Illinois

2016
"The Second Victim"
Patrice M. Weiss, M.D.
Virginia Tech Carilion School Medicine
Roanoke, Virginia

2017
"The New Labor Guidelines:
Better or Not?"
Thomas J. Garite M.D.
E.J.Quilligan Professor Emeritus
Universty of California, Irvine
Littleton, Colorado

2018
"50 Years of Progress in Ob-Gyn
Genetic Testing"
Joe Leigh Simpson, M.D.
Florida International Univ. College Med.
Miami, Florida

Keynote Speaker

2019
"Global Women's Health Challenges"
John J. Sciarra, M.D., Ph.D.
Northwestern University
Chicago, Illinois

2020
No Designated Keynote Speaker
COVID-19 Virtual Meeting

CAOG VISIONARY AWARD

Inaugurated in 2007 to recognize visionary leadership and "game changing" contributions which have fundamentally altered both the structure and the stature of the Central Association of Obstetricians & Gynecologists. By its very definition this award is bestowed infrequently with great admiration for exceptional dedication and service.

RECIPIENTS

Karl C. Podratz, M.D., Ph.D.
Awarded 2007

"As President in 1997 his vision introduced the CAOG to a professional management model as institutional support waned and he also promoted the current election process for officers and trustees."

Mark I. Evans, M.D.
Awarded 2009

"As President in 2007 his vision championed both academic and community excellence which translated into and promoted the vigorous clinically oriented portion of the scientific program enjoyed annually."

Dennis J. Lutz, M.D.
Awarded 2015

"As CAOG Managing Director since 2005 and as President in 2009 his vision firmly established todays financial viability and operational templates while his prodigious corporate memory instilled an enduring legacy of tradition, academic rigor & collegiality."

CAOG VISIONARY AWARD (cont)

Barbara V. Parilla, M.D.
Awarded 2018

"As President in 2015 and Vice President and Trustee before that, her vision and unwaivering leaderhip actively promoted mentoring and role modeling as essential to optimal training in the speciality of obstetrics, gynecology and women's health care."

"PTO Endowment Fund"

In 1994 the CAOG established the PTO Fund (Presidents-Trustees-Officers) and solicited voluntary contributions from all past presidents, past board members and past officers to supplement the operating funds. Since 1999 the serving officers and board members have also been annually asked to each contribute generously so the Fund continued to grow.

In 2005 the Board created a permanent "PTO Endowment Fund" with interest income providing stipends for the annual scientific awards. Donations are annually solicited to continue to grow that fund. All contributors are recognized in both the quarterly CAOG Newsletter and the Annual Program Book. Thanks again to these 2018 special supporters.

2020 PTO Fund Contributors

David G. Anderson, M.D.
Lester A. Ballard, Jr., M.D.
Vanessa M. Barnabei, M.D., Ph.D.
Everett A. Beguin, Jr., M.D.
Dana M. Benden, M.D.
Brent W. Bost, M.D., MBA
Allan G. Charles, M.D.
Suneet P. Chauhan, M.D., Hon. DSc.
Christine H. Comstock, M.D.
Stephen H. Cruikshank, M.D.
Emily A. DeFranco, D.O., M.S.
Joel R. DeKoning, M.D.
LeRoy J. Dierker, Jr., M.D.
James R. Dolan, M.D.
Bruce H. Drukker, M.D.
Philip N. Eskew, Jr., M.D.
Michael G. Flax, M.D.

2020 PTO Fund Contributors (cont.)

Stephen J. Fortunato, M.D.
Marilynn C. Frederiksen, M.D.
Norman F. Gant, M.D.
Melvin V. Gerbie, M.D.
William P. Gideon, M.D., MPH
Gita P. Gidwani, M.D.
Norman A. Ginsberg, M.D.
Jean R. Goodman, M.D.
William E. Graham, M.D.
Peter B. Greenspan, D.O.
Thomas L. Gross, M.D.
Edwin J. Humphrey, III, M.D.
Robert J. Jaeger, M.D.
Richard T. Jennings, M.D.
Larry H. Johnson, M.D.
Randall T. Kelly, M.D.
Elliot M. Levine, M.D.
Gary F. Lockwood, M.D.
Robert P. Lorenz, M.D.
Dennis J. Lutz, M.D.
Sherburne M. MacFarlan, M.D.
George D. Malkasian, M.D.
Federico G. Mariona, M.D.
G. Rodney Meeks, M.D.
Frank C. Miller, M.D.
Jacob F. Palomaki, M.D.
Barbara V. Parilla, M.D.
J. Coffy Pieternelle, M.D.
Thomas F. Purdon, M.D.
Oney C. Raines, III, M.D.

2020 PTO Fund Contributors (cont.)

M. Gary Robertson, M.D.
Paul T. Schnatz, M.D.
Walter R. Schwartz, M.D.
John J. Sciarra, M.D., Ph.D.
Robert J. Sokol, M.D.
Jerry J. St. Pierre, M.D.
Irene A. Stafford, M.D.
Charles R. Stedman, M.D.
Stacy R. Stephens, M.D.
James E. Sumners, M.D.
Shaila Sundaresh, M.D.
Craig V. Towers, M.D.
James W. Van Hook, M.D.
Andrew F. Wagner, M.D.
Gilbert R. Wessel, M.D.
Kinion E. Whittington, D.O.
W. Wayne Workman, M.D.

2010 - 2020
Archive Contributors

The previous call for old CAOG member directories, program books and other memorabilia was a great success.

Thanks to these great CAOG supporters for their hoarding habits and generosity:

Joe E. Belew, M.D.

Joel R. DeKoning, M.D.

Michael G. Flax, M.D.

James A. Hall, M.D.

Dennis J. Lutz, M.D.

Jeffrey N. Maurus, M.D.

John B. Nettles, M.D.

Herbert F. Sandmire, M.D.

Roger P. Smith, M.D.

Gilbert R. Wessel, M.D.

W. Wayne Workman, M.D.

Can anyone help the CAOG with other pre-1970 archive donations?

In Memoriam

John J. Barton, M.D.
Loves Park, IL

James W. Bohm, M.D.
Kenner, LA

H. Edwin Campbell, M.D.
Carmel, IN

William H. Lee, M.D.
Castle Rock, CO

Joseph S. O'Connor, M.D.
Glenview, IL

Mario A. Petrini, M.D.
Fort Myers, FL

Kirk D. Ramin, M.D.*
Northfield, MN

Peter K. Thompson, M.D.
Houston, TX

Alan M. Wagner, M.D.
Estero, FL

*CAOG Past President

CAOG
Future Meetings

"Changing the Face of Women's Health"

2021
The Meritage Resort
Napa, California
October 6, 7, 8, 9
(Wed., Thur., Fri., & Sat.)

2022
Location TBD
Mid-October
(Wed., Thur., Fri., & Sat.)

2023
Location TBD
Mid-October
(Wed., Thur., Fri., & Sat.)

UND School of Medicine & Health Sciences
University of North Dakota