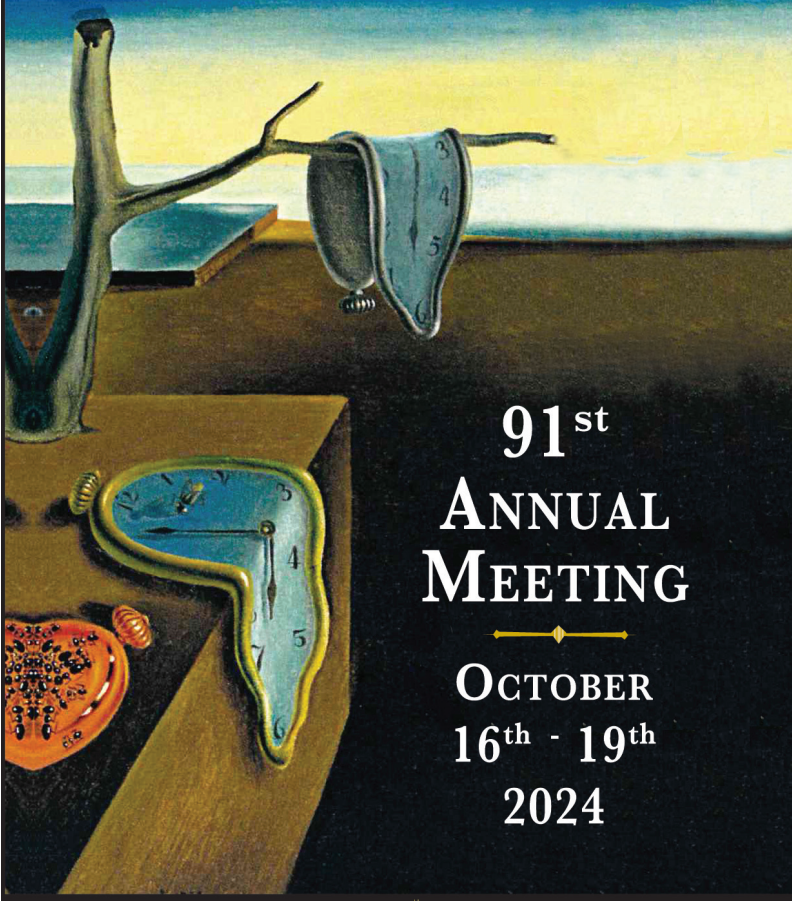
The Central Association of Obstetricians & Gynecologists



91st Annual Meeting

October 16th - 19th 2024

Indianapolis

The Hyatt Regency
Indianapolis, Indiana

CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS
(FOUNDED 1929)

2024 ANNUAL MEETING

OCTOBER 16 – 19, 2024

THE HYATT REGENCY
1 S. CAPITOL AVENUE
INDIANAPOLIS, INDIANA 46204

Telephone (317) 632-1234
www.hyatt.com

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.

The CAOG extends its appreciation and gratitude to these valued friends from industry for their generous support of the educational and scientific objectives of the 91st Annual Meeting.

All About Wellness & Beauty

BillionToOne

Cincinnati Children's Fetal Care Center

GE Healthcare

GRAIL

Hologic, Inc. *

Kitch Attorneys & Counselors

Mayne Pharma

MPRINT Hub

Natera

Organon

PathGroup

Pediatrix Medical Group

Pfizer Vaccines

Samsung Womens Health

Sutter Health

Thermo Fisher Scientific

(* Denotes Gold Level)

2024 Central Association of Obstetricians and Gynecologists

Officers

President
David M. Haas, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

President Elect I
Jean R. Goodman, M.D.
Univ. of Missouri School of Medicine
Columbia, Missouri

President Elect II
Thomas F. Arnold, M.D.
UND School of Medicine & Health Sciences
Dickinson, North Dakota

Vice President
Tacoma A. McKnight, M.D.
Northwestern Medical Faculty, Emeritus
Central Region, Chicago, Illinois

Secretary-Treasurer
Dani G. Zoorob M.D., MHA, MBA, MHI
Louisiana State University
Shreveport, Louisiana

Immediate Past President
Andrew F. Wagner, M.D.
Northwestern University
Chicago, Illinois

TRUSTEES

Joanie Y. Hare M.D. (2021 – 2024)
Houston Perinatal Associates
Houston, Texas

Tiffany R. Tonismae, M.D. (2022 – 2024)
University of Louisville
Louisville, Kentucky

David A Billings, M.D. (2022 – 2025)
Trinity Health
Minot, North Dakota

Deborah C. Sherman, M.D. (2022 – 2025)
Southeast Texas Ob-Gyn Associations, PA
Beaumont, Texas

Shilpa Babbar, M.D., M.S. (2023 – 2026)
Children's Mercy Kansas City
Kansas City, Missouri

Catherine L. Van Hook, M.D. (2023 – 2026)
University of Toledo Medical Center
Toledo, Ohio

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* - 2024

Dani G. Zoorob M.D., MHA, MBA, MHI, Chair
Louisiana State University
Shreveport, Louisiana

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

Jacques S. Abramowicz, M.D.
University of Chicago
Chicago, Illinois

Karolina Adam M.D.
Houston Perinatal Associates
Houston, Texas

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

Emmet Hirsch, M.D.
NorthShore University Health System
Evanston, Illinois

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

J. Ricardo Loret de Mola, M.D.
Southern Illinois Univ. School of Medicine
Springfield, Illinois

Sara R. Novotny, M.D.
University of Mississippi Medical Center
Jackson, Mississippi

Michelle Y. Owens M.D.
Univ. of Mississippi Medical Center
Jackson, Mississippi

* Ex officio members not listed

EXHIBITS/INDUSTRY COMMITTEE* - 2024

Jean R. Goodman, M.D., M.B.A., Chair
University of Missouri
Columbia, Missouri

Thomas F. Arnold, M.D., Vice Chair
UND School of Medicine & Health Sciences
Dickinson, North Dakota

Dani G. Zoorob M.D., M.H.A., M.B.A., M.H.I.
Louisiana State University
Shreveport, Louisiana

David M. Haas, M.D., M.S.*
Indiana University School of Medicine
Indianapolis, Indiana

Tacoma A. McKnight, M.D.*
Northwestern Medical Faculty, Emeritus
Central Region, Chicago, Illinois

* Ex officio board members

BYLAWS COMMITTEE* - 2024

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

Susan M. Mou M.D, Vice Chair.
University Health - 4
Kansas City, Missouri

Veronica T. Mallett, M.D.
CommonSpirit Health
Morehouse School of Medicine
Nashville, Tennessee

Charles W. Schauberger M.D.
Gundersen Health System
LaCrosse, Wisconsin

David M. Haas, M.D., M.S.*
Indiana University School of Medicine
Indianapolis, Indiana

Tacoma A. McKnight, M.D.*
Northwestern Medical Faculty, Emeritus
Central Region, Chicago, Illinois

Jean R. Goodman, M.D., M.B.A.*
University of Missouri
Columbia, Missouri

Thomas F. Arnold, M.D.*
UND School of Medicine & Health Sciences
Dickinson, North Dakota

Dani G. Zoorob M.D., M.H.A., M.B.A., M.H.I.*
Louisiana State University
Shreveport, Louisiana

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

* Ex officio board members

MEMBERSHIP COMMITTEE* - 2024

Rebecca C. Pierson, M.D., Chair
Community Fertility Specialty Care
Indianapolis, Indiana

Teresa Tam, M.D., Vice Chair
All for Women's Healthcare, SC
Chicago, Illinois

Luissa V. Kiprono, D.O.
World Gateway Perinatal Consultants, PLLC
San Antonio, Texas

Ann K. Lal, M.D.
Loyola University Medical Center
Chicago, Illinois

Nadia N. Megahed, M.D.
Vanderbilt University Medical Center
Nashville, Tennessee

Sharon T. Phelan, M.D.
University of Alabama
Birmingham, Alabama

Theresa L. Robinson, M.D.
HCA – Woman's Health Group
HCA – Women's Hospital of Texas
Houston, Texas

* Ex officio members not listed

NOMINATING COMMITTEE - 2024*

Chair
President
David M. Haas, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

Vice Chair
President Elect I
Jean R. Goodman, M.D., M.B.A.
University of Missouri
Columbia, Missouri

Immediate Past President
Andrew F. Wagner, M.D.
Northwestern Univ.
Chicago, Illinois

Second Past President
James W. Van Hook, M.D.
Univ. of Toledo Medical Center
Toledo, Ohio

Member-at-Large
Angelina K. Gangestad, M.D.
University Hospitals Case Medical Center
Cleveland, Ohio

Member-at-Large
Peter S. Marcus, M.D.
Ascension St. Vincent Hospital
Indianapolis, Indiana

Member-at-Large
Erica E. Nelson, M.D.
Southern Illinois University School of Medicine
Springfield, Illinois

* Ex officio members not listed

PLANNING COMMITTEE - 2024

Jacques S. Abramowicz, M.D.

Karolina Adam, M.D.

Thomas F. Arnold, M.D.

Shilpa Babbar, M.D., M.S.

David A. Billings, M.D.

Victoria K. Floyd, C.N.M.

Angelina K. Gangestad, M.D.

Jean R. Goodman, M.D.

David M. Haas, M.D., M.S.

Joanie Y. Hare, M.D.

Rochelle Hickel, CAOG Exec. Director

Emmet Hirsch, M.D.

Mary L. Johnson, CME Program Admin.

Elliot M. Levine, M.D.

J. Ricardo Loret de Mola, M.D.

Dennis J. Lutz, M.D.

Tacoma A. McKnight, M.D.

Sarah R. Novotny, M.D.

Michelle Y. Owens, M.D., M.S.

Deborah C. Sherman, M.D.

Julie A. Tillman, M.D.

Tifffany R. Tonismae, M.D.

Brownsyne M. Tucker Edmonds, M.D.

Catherine L. Van Hook, M.D.

Andrew F. Wagner, M.D.

Robert A. Wild, M.D., M.P.H., Ph.D.

Dani G. Zoorob, M.D., MBA, MHA

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 available electronically for all attendees. 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

The University of North Dakota School of Medicine and Health Sciences designates this Live activity for a maximum of 17.00 *AMA PRA Category 1 Credit(s)™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Category 1 Credit Certificates

Award Certificates will be e-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 17 cognate credits to this program.

Sign-In Protocol

The only recognized **"official record"** of member attendance is your signature on the green card arranged alphabetically in the historic membership books. These have all been updated to begin with 2015, but show meeting attendance since 2005. Consecutive attendance records come from the green card signatures only.

Daily signature sheets are also required for credit documentation. Your attention to this is appreciated.

GENERAL INFORMATION

REGISTRATION (Regency Ballroom)

Registration for all attendees will take place during the following hours:

Wednesday, October 16	1:00 p.m. – 9:00 p.m.
Thursday, October 17	6:00 a.m. – 1:30 p.m.
Friday, October 18	6:00 a.m. – 1:00 p.m.
Saturday, October 19	6:00 a.m. – 12:00 noon

NAME BADGES (two different colors)

Please wear your name badge to all CAOG events. This is your identification for admission to CAOG activities. Attendees registered for educational credits will receive a white badge. Partners and guests will receive a tan badge. All badges will be in CAOG "green" holders. Ribbons denote state and other information (officers, speakers, award winners, new members).

WELCOME RECEPTION (Wednesday, October 16)

The traditional CAOG Welcome Reception will be held in the Regency Ballroom on Wednesday, October 16 from 6:00 p.m. – 9:00 p.m. in the Exhibit Hall, which also opens this evening. **Admission is by name badge** so please register on arrival.

PARTNERS/GUESTS PROGRAM (Thursday, October 17)

The traditional partners/guests program will be hosted by Tanya Haas. It will start with a continental breakfast at 9:30 a.m. in the Theory Room. At 10:30 we will take a short bus ride to Newfields, the main art museum in Indianapolis, where those attending will be mesmerized in the Dali Alive exhibit, a wonderful immersive experience surrounding the art and life of the Surrealist artist, Salvador Dali. Seeing the art projected onto large rooms and animated to move is truly a unique experience. You will need a ticket to attend so make sure you have registered with Rochelle if you wish to take part in this opportunity.

SUNRISE LECTURES (white badge holders only)

Sunrise scientific lectures will be held each morning in the Regency Ballroom. These will begin at 6:30 a.m. on Thursday, October 17, Friday, October 18, and Saturday, October 19. A buffet breakfast will precede each lecture at 6:00 a.m. Speakers and other audience members always appreciate your promptness. Sunrise lecture topics include cardiovascular health across the lifespan, equity in women's health care, and understanding and addressing rising rates of cervical cancer in the U.S.

SCIENTIFIC SESSIONS

All general scientific sessions will be held in the Regency Ballroom. The sessions will begin at 7:30 a.m. on Thursday, Friday and Saturday. Hot topic lectures will be part of each general session.

HOT TOPIC LECTURES AND KEYNOTE ADDRESS

Five "hot topic" lectures will be presented, with three on Thursday, one Friday and one on Saturday. These will complement the 22 original research oral presentations by emphasizing the most up-to-date information on (1) inpatient and outpatient coding and billing, (2) ways to improve maternity care, (3) menopausal therapy, (4) wellness-retention with building a sustainable healthcare workforce, and (5) sexual health, the sex you don't know your patients are having.

The Keynote Address will be delivered on Friday, October 18th by Dr. Jeanne Conry from Granite City, California. The title of her talk is "Hope for Maternal-Child Health Across the Globe: How the U.S. and Global Partners are Creating a Brighter Future".

PRESIDENTIAL ADDRESS (Friday, October 18)

CAOG President David M. Haas, M.D., M.S. from Indianapolis, Indiana will be escorted to the podium by the Past Presidents of CAOG who are in attendance. He will deliver his Presidential Address at 12:15 p.m. on Friday in the Regency Ballroom. All registrants are invited to attend his thought-provoking presentation, "Mentorship and Sponsorship: Keys to All Our Future".

The 91st incoming CAOG President, Jean R. Goodman, M.D., M.B.A. will be installed in a brief ceremony immediately following the Presidential Address.

ANNUAL BUSINESS MEETING (Friday, October 18)

The CAOG Annual Business Meeting will be held following the Presidential Address at 1:00 p.m. on Friday, October 18, in the Regency Ballroom. New members elected in 2023 will be introduced at this time and membership certificates will be presented.

RECEPTION/DINNER/AWARDS/DANCE (Friday, Oct. 18)

The traditional Friday Evening CAOG Gala Banquet is the highlight of the Annual Meeting. This year is no exception. The reception will begin at 6:00 p.m. in the Regency Foyer. Dinner will follow at 7:00 in the Regency Ballroom. Awards for the best papers and posters will be presented along with other special acknowledgements by Dr. David Haas.

Following dinner plan to enjoy the big band sound of Bobby & The Aristocats. Their show is extremely high energy and crowd engaging – you won't want to leave the dance floor.

DRESS/ATTIRE Business dress is suggested for the Friday night reception and dinner, whereas business casual is appropriate for other meeting events. Saturday support your preferred sports team by wearing your favorite team apparel to the meeting for the **"Team CAOG"** group photo to be taken during the break.

CHILD CARE

The CAOG will not provide childcare at this meeting. The Hyatt Regency can provide recommendations for childcare. Please contact the hotel if interested in assistance arranging childcare.

INDUSTRY EXHIBITS

The Industry Exhibits will be located in the **Regency Ballroom**. The Scientific Posters will also be displayed in the same area. Hours are:

Exhibit Set-Up

Wednesday, October 16	1:00 p.m. – 5:00 p.m.

Exhibit Hall Hours

Wednesday, October 16	6:00 p.m. – 9:00 p.m.
Thursday, October 17	6:00 a.m. – 12:00 noon
Friday, October 18	6:00 a.m. – 10:30 a.m.

Exhibit Dismantle

Friday, October 18	10:30 a.m.

SCIENTIFIC POSTER DISPLAYS

The Scientific Poster session will be located in the Regency Ballroom with the Exhibit Hall. Poster judging will be:

Thursday, October 17	10:00 – 10:45 a.m.
Friday, October 18	9:45 – 10:30 a.m.

Poster Set-Up

Wednesday, October 16	1:00 p.m. – 5:00 p.m.

Poster Hours

Thursday, October 17	6:00 a.m. – 12:00 p.m.
Friday, October 18	6:00 a.m. – 10:30 a.m.

Poster Take Down

Friday, October 18	10:30 a.m.

CAOG ANNUAL MEETING POLICY

Absolutely no refunds after
5:00 pm (CDT) Friday, September 13, 2024

PROGRAM SCHEDULE

91st Annual Meeting Central Association of Obstetricians and Gynecologists Hyatt Regency October 16 – 19, 2024

WEDNESDAY, OCTOBER 16, 2024

9 a.m. – 1 p.m. CAOG Officers and Trustees Annual Meeting Theory Room

1:00 – 9:00 p.m. General Registration (Regency Ballroom)

6:00 – 9:00 p.m. Welcome Reception (Regency Ballroom)

6:00 – 9:00 p.m. Industry Exhibits Open (Regency Ballroom)

THURSDAY, OCTOBER 17, 2024

6:00 a.m. General Registration (Regency Ballroom)

6 a.m. – 12 noon **INDUSTRY EXHIBITS OPEN**

6 a.m. – 12 noon **SCIENTIFIC POSTER SESSION OPEN**

6:00 – 6:30 a.m. Breakfast (Regency Ballroom)

6:30 – 7:30 a.m. **Sunrise Lecture** (Regency Ballroom)
"It's All About Heart: Cardiovascular Health Across the Lifespan"
Natalie A. Cameron, M.D., MPH
Northwestern University
Feinberg School of Medicine
Chicago. Illinois

FIRST SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
David M. Haas, M.D., M.S. – CAOG President
Thomas F. Arnold, M.D. – CAOG President Elect II

7:30 a.m. Opening Remarks

7:30 - 8:30 a.m. **Hot Topic #1**
"Outpatient and Inpatient
Coding and Billing"
Jon K. Hathaway, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

8:30 - 9:00 a.m. **Paper #1** **Young Investigator's Award**
"A Functional MRI Method
to Characterize Uterine
Contractility and Menstrual Pain"
Kendra Juliette, B.S.
Wayne State Univ. School Med.
Endeavor Health
Detroit, Michigan

Discussant: Elliot M. Levine, M.D.
Chicago, Illinois

9:00 - 9:30 a.m. **Paper #2** **Dr.Kermit E. Krantz Memorial Paper Award**
"Clinical Evaluation of Effectiveness and
Safety of Amberen® and Smart-B®
Complex in Perimenopausal Women"
Lee P. Shulman, M.D.
Feinberg School of Medicine of
Northwestern University
Chicago, Illinois

Discussant: Emmet Hirsch, M.D.
Evanston, Illinois

9:30 - 10:00 a.m. **Paper #3** **Central Prize Award**
"Theoretical vs. Actual Access to Care"
Mark I. Evans, M.D.
Icahn School of Medicine at Mount Sinai
& Fetal Medicine Foundation of America
New York, New York

Discussant: Dennis J. Lutz, M.D.
Minot, North Dakota

10:00 – 10:45 a.m. **Break/Refreshments/Exhibits/Posters**
(Regency Ballroom)

SECOND SCIENTIFIC SESSION

(Regency Ballroom)

Moderators:
Dani G. Zoorob, M.D. – CAOG Secretary/Treasurer
Joanie Y. Hare, M.D. – CAOG Trustee

10:45 – 11:30 a.m. **Hot Topic #2**
"Physiologic Birth, Collaborative Care, and Other Transformative Ways to Improve Maternity Care"
Amy Romano, MBA, MSN, CNM
Primary Maternity Care
Milford, Connecticut

11:30 - 12:00 **Paper #4** **President's Certificate of Merit Award**
"Identification of Molecular Signatures for the Detection of Fetal Growth Disorders at the First Gestational Trimester in Circulating DNA Isolated from Urine Samples"
Rene G. Cortese, Ph.D.
Univ. of Missouri School of Medicine
Columbia, Missouri

Discussant: Andrew F. Wagner, M.D.
Chicago, Illinois

12:00 - 12:30 p.m. **Paper #5** **Dr. Jack A. Pritchard Memorial Paper Award**
"Comparison in Latency based on Amniotic Fluid Index (AFI) in Patients with Preterm Prelabor Rupture of Membranes (PPROM)"
David M. Greiner, M.D.
University of Nebraska Medical Center
Omaha, Nebraska

Discussant: David F. Lewis, M.D.
Shreveport, Louisiana

12:30 – 1:30 p.m. **Hot Topic #3**
"Menopausal Therapy: HRT After WHI"
Makeba Williams, M.D.
Washington Univ. School of Medicine
St. Louis, Missouri

2:00 – 3:30 p.m. "Strategies for Successful Interviewing

Matching into Ob-Gyn Residency:
Tips From Program Directors" (No CME)

Dani G. Zoorob, M.D. – Moderator
Chair
Louisiana State University
Shreveport, Louisiana

Nicole P. Scott,M.D. – Panelist
Program Director
Indiana University
Indianapolis, Indiana

Michael Boldt, M.D. – Panelist
Program Director
University of Cincinnati
Cincinnati, Ohio

Mistie R. Mills, M.D. – Panelist
Program Director
University of Missouri
Columbia, Missouri

Intended Audience: 4th year medical students applying for Ob-Gyn Residency Match (3rd years are also welcome)

FRIDAY, OCTOBER 18, 2024

6:00 a.m. General Registration (Regency Ballroom)

6:00 - 10:30 a.m. **INDUSTRY EXHIBITS OPEN**

6:00 - 10:30 a.m. **SCIENTIFIC POSTER SESSION OPEN**

6:00 - 6:30 a.m. Breakfast (Regency Ballroom)

6:30 - 7:30 a.m. **Sunrise Lecture** (Regency Ballroom)
"Implementing Health Equity:
Women's Health and Beyond"
Brownsyne M. Tucker Edmonds, M.D.
Indiana Health University
Indianapolis, Indiana

THIRD SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Tacoma A. McKnight, M.D. – CAOG Vice President
Tiffany R. Tonismae, M.D. – CAOG Trustee

7:30 a.m. Announcements

7:30 - 8:00 a.m. **Paper #6**
"Evaluation of the Published Obstetrics and Gynecology Ultrasound Curriculum Based Upon Expert Consensus Recommendations"
Emanuel P. Gaziano, M.D.
University of Minnesota
Minneapolis, Minnesota

Discussant: Jacques S. Abramowicz, M.D.
Chicago, Illinois

8:00 - 8:30 a.m. **Paper #7**
"Umbilical Artery Doppler Assessment in Severe Preeclampsia: A Retrospective Cohort Study"
Daniel E. Core, M.D.
LSU Health Sciences Center
Shreveport, Louisiana

Discussant: Emily A. Defranco, D.O., M.S.
Lexington, Kentucky

8:30 - 9:00 a.m. **Paper #8 Community Hospital Award**
"Simulation Improves OBGYN Resident Comfort Providing Pregnancy Options Counseling"
Emily Lluch, M.D.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

Discussant: Erica E. Nelson, M.D.
Springfield, Illinois

9:00 - 9:45 a.m. **Hot Topic #4**
"The Wellness-Retention Connection: Building a Sustainable Healthcare Workforce"
Chemen M. Neal, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

9:45 – 10:30 a.m. **Break/Refreshments/Exhibits/Posters**
(Regency Ballroom)

FOURTH SCIENTIFIC SESSION

(Regency Ballroom)

Moderators:
Andrew F. Wagner, M.D. – CAOG Past President
David A. Billings, M.D. – CAOG Trustee

10:30 - 11:00 a.m. **Paper #9** **Dr. Bryan D. Cowan**
FAR Research Network Award
"First Trimester Herbicide Concentrations and Gestational Diabetes in Nulliparas"
Kevin L. Moss, B.S.
Indiana University School of Medicine
Indianapolis, Indiana

Discussant: Catherine L. Van Hook, M.D.
Toledo, Ohio

11:00 - 11:30 a.m. **Paper #10**
"Correlating Trajectories of Epigenetic Profiles in Maternal Blood During Pregnancy with Ultrasound Findings Associated with Fetal Growth Disorders"
Stephanie Allred, M.D.
University of Missouri
Columbia, Missouri

Discussant: Angelina K. Gangestad, M.D.
Cleveland, Ohio

11:30 - 12:15 **Keynote Address**
"Hope for Maternal-Child Health Across the Globe: How the U.S. and Global Partners are Creating a Brighter Future"
Jeanne A. Conry, M.D., Ph.D.
The Environmental Health Leadership Foundation
Granite City, California

12:15 – 1:00 p.m. **Presidential Address**
"Mentorship and Sponsorship: Keys to All Our Future"
David M. Haas, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

1:00 p.m. **Installation of New President**

1:00 – 1:30 p.m. **Annual Business Meeting CAOG**

6:00 – 10:00 p.m. **Annual Gala**
Reception/Dinner/Awards/Dance
(Regency Ballroom)

SATURDAY, OCTOBER 19, 2024

6:00 a.m. General Registration (Regency Ballroom)

6:00 – 6:30 a.m. Breakfast (Regency Ballroom)

6:30 - 7:30 a.m. **Sunrise Lecture** (Regency Ballroom)
"Understanding and Addressing Rates of Cervical Cancer in the U.S."
Melissa Martinez-Adorno, M.D.
Manchester Medical Center
Manchester, New Hampshire

FIFTH SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Jean R. Goodman, M.D., MBA – CAOG President Elect I
Deborah C. Sherman, M.D. – CAOG Trustee

7:30 a.m. Announcements

7:30 - 7:45 a.m. **Paper #11**
"Addressing Social Determinants of Health (SDOH) to Improve Health Equity and Outcomes Within Obstetrical Populations"
Kristen Cecil, M.D.
Southern Illinois Univ. School Medicine
Springfield, Illinois

7:45 - 8:00 a.m. **Paper #12** **Dr. George W. Morley Memorial Paper Award**
"Use of Indocyanine Green (ICG) in the Detection of Fibrosis and Inflammatory Changes Related to Endometriosis: A Retrospective Cohort Study"
Christopher-Armand Z. Mabini, D.O.
Ascension Healthcare-St. Francis Hospital
Evanston, Illinois

8:00 - 8:15 a.m. **Paper #13**
"Comparison of Serum Inflammatory Markers in the Mid-Second Trimester in Patients with Short vs. Normal Cervical Lengths"
Lindsay E. Beechem, B.S.
Univ. of Kentucky College of Medicine
Lexington, Kentucky

8:15 - 8:30 a.m. **Paper #14**
"Neonatal Opioid Withdrawal Syndrome During the COVID 19 Pandemic"
Barbara V. Parilla, M.D.
Univ. of Kentucky College of Medicine
Lexington, Kentucky

8:30 - 8:45 a.m. **Paper #15**
"Survey of Reproductive Health in Women with Tuberous Sclerosis Complex Suggests a Risk for Preeclampsia"
Nkiru Ezeakudo, B.S.
Univ. of Cincinnati College of Medicine
Cincinnati, Ohio

8:45 - 9:00 a.m. **Paper #16**
"Prenatal Screening for Trauma Exposure and PTSD: What Happens Next?"
Michelle L. Miller, Ph.D.
Indiana University School of Medicine
Indianapolis, Indiana

9:00 – 9:30 a.m. **Break/Refreshments**
(Regency Ballroom)

SIXTH SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Shilpa Babbar, M.D., MS – CAOG Trustee
Catherine L. Van Hook, M.D. – CAOG Trustee

9:30 - 10:30 a.m. **Hot Topic #5**
"Sexual Health: The Sex You Don't Know Your Patients are Having"
Sarah T. Cigna, M.D., M.S.
George Washington University
School of Medicine and Health Sciences
Washington, D.C.

10:30 - 10:45 a.m. **Paper #17**
"Association of Post-Surgical Resection Immune Profiles with Fertility Outcomes in Patients With Endometriosis"
Nina Tran, B.S.
Southern Illinois Univ. School Medicine
Springfield, Illinois

10:45 - 11:00 a.m. **Paper #18**
"Timeliness of Diagnosis and Treatment of Postpartum Hypertensive Disorders in the Emergency Department"
Gabrielle Ezell, M.S.
Michigan State Univ. College of Human Med
Flint, Michigan

11:00 - 11:15 a.m. **Paper #19**
"The Evaluation of Multimodal Pain Management During Gynecologic Procedures: An Observational Clinical Study"
Kellie E. Mullany, B.S.
The Carle Illinois College of Medicine
Urbana, Illinois

11:15 - 11:30 a.m. **Paper #20**
"Endocan Levels and Early Onset Childhood Obesity in Term Infants Born to Mothers with Obesity"
Marim Zoma, B.S.
Loyola University Chicago
Stritch School of Medicine
Maywood, Illinois

11:30 - 11:45 a.m. **Paper #21**
"Patterns of Fetal Growth in Overweight and Obese Pregnant Women"
Thomas N. Bischoff Ogas, B.S.
Houston Center for Maternal Fetal Med.
Houston, Texas

11:45 - 12:00 noon **Paper #22**
"Maternal Death and Education Level Correlation: An Analysis of North Dakota Health Trends"
Thomas F. Arnold, M.D.
UND School Medicine & Health Sciences
Dickinson, North Dakota

ADJOURN

A Qualtrics link will be sent by e-mail for the pre-test, post-tests and evaluations.

The pre-test will be sent prior to the conference.

The post-tests will be sent with the evaluation each day.

Please complete all to track attendance and receive educational credits.

We try to RECYCLE name badges so please turn them in to the CAOG Registration Desk before departing.

Thank You
For Attending!

SCIENTIFIC PRESENTATIONS

THURSDAY, OCTOBER 17, 2024

6 a.m. - 12 noon **INDUSTRY EXHIBITS OPEN**

6 a.m. - 12 noon **SCIENTIFIC POSTER SESSION OPEN**

6:00 - 6:30 a.m. Breakfast (Regency Ballroom)

6:30 - 7:30 a.m. **Sunrise Lecture** (Regency Ballroom)
"It's All About Heart: Cardiovascular Health Across the Lifespan"
Natalie A. Cameron, M.D., MPH
Northwestern University
Feinberg School of Medicine
Chicago. Illinois

Learning Objectives:

- Review the significant aspects of cardiovascular health across a woman's life span.
- Develop a plan for reducing cardiovascular health risks across a woman's life span.

FIRST SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
David M. Haas, M.D., M.S. – CAOG President
Thomas F. Arnold, M.D. – CAOG President Elect II

7:30 - 8:30 a.m. **Hot Topic #1**
"Outpatient and Inpatient
Coding and Billing"
Jon K. Hathaway, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

Learning Objectives:

- Explain the difference between outpatient and inpatient coding and billing.
- Incorporate outpatient and inpatient coding and billing into your practice.

8:30 - 9:00 a.m.

Paper #1 **Young Investigator's Award**

A Functional MRI Method to Characterize Uterine Contractility and Menstrual Pain

Kendra E Juliette, BS[1], Taytum F Kahl, BS[2], Emmet Hirsch, MD[3], Frank F Tu, MD, MPH[3], Kevin M Hellman, PhD[3]

Wayne State University School of Medicine, Department of Obstetrics & Gynecology, Endeavor Health, Detroit, MI[1], Department of Obstetrics & Gynecology, Endeavor Health, The University of Chicago Pritzker School of Medicine, Chicago, IL[2], Department of Obstetrics & Gynecology, Endeavor Health, Department of Obstetrics & Gynecology, The University of Chicago Pritzker School of Medicine, Evanston, IL[3]

Background: Dysmenorrhea (menstrual pain) negatively impacts the quality of life for many individuals and is often refractory to treatment. Although the mechanisms responsible for pain are not fully understood, it is widely hypothesized that menstrual pain is caused by uterine contractions. However, prior research involved either invasive methods, which could provoke contractions, or small sample sizes. To address this knowledge gap, the present study used a novel magnetic resonance imaging (MRI)-based strategy that allows for noninvasive measurement of uterine contractions. Using cine (continuous)-T2 weighted sequences, which capture one frame every 2 seconds over a 10 minute window, it is possible to visualize uterine contractions. Because our strategy was noninvasive and well tolerated, it was feasible to accommodate a larger sample size.

Methods: The study objective was to evaluate whether participants with menstrual pain were more likely to have differences in uterine contractile occurrence, frequency, or duration. Reproductive-age menstruating women were enrolled, and the presence of conditions associated with secondary dysmenorrhea, including fibroids and endometriosis, was also assessed.

In order to study the role of myometrial contractions in menstrual pain, we performed continuous MRI sequences and evaluated myometrial activity including frequency and duration of uterine contractions. Ninety-eight participants with primary dysmenorrhea, 28 pain-free controls, 17 with endometriosis, and 8 with fibroids had menstrual pain during imaging and sufficient image quality for uterine evaluation with MRI. Participants underwent MRI during the first 48 hours of menstrual bleeding onset and were asked to avoid taking analgesic medications prior. MRI data was acquired on

a 3.0T whole-body scanner (Siemens Skyra) using a high performance body coil. Continuous MRI was acquired using half-Fourier acquisition single-shot turbo spin echo (HASTE) sequence. Associated participant pain ratings were obtained using the numerical rating scale from 0 (no pain at all) to 10 (worst pain imaginable). Eligible dysmenorrhea participants were required to have reported menstrual pain greater than 5 without pain relievers.

Five reviewers naive to participant diagnoses viewed digitally archived cineMRI clips and double-scored the frequency and duration of uterine contractions. Uterine contractions (>=10 seconds) were differentiated from peristalsis (<10 seconds) by duration of myometrial activity. All reviewers underwent extensive training in uterine event coding, but none had formal professional training in radiological assessment. To assess uterine activity, a region of interest was drawn over the uterine corpus perpendicular to the axis of the cervix. Myometrial event frequency was identified by counting the episodes of changed myometrial signal intensity over time. Kappa statistics were calculated for interrater reliability. A Pearson Chi square test was used to evaluate the proportion of subjects with or without contractions and among different races. Mann Whitney U tests and Kruskal-Wallis tests were used to compare pain-free controls to dysmenorrhea and secondary dysmenorrhea groups respectively

Results: Inter-reviewer reliability to identify uterine contraction frequency and duration was analyzed, yielding a high agreement between reviewers to identify myometrial events (Kappa agreement = 97%, $p<0.001$). Participants with primary dysmenorrhea were more likely to have uterine contractions (90%) compared to pain-free controls (61%, $p=0.001$). Additionally, participants with primary dysmenorrhea had a higher frequency of uterine contractions (3.38 contractions/10 min) in comparison to pain-free controls (1.88 contractions/10 min, $p=0.003$).

In analyses including participants with endometriosis and fibroids, those with a secondary dysmenorrhea diagnosis experienced more uterine contractions ($p=0.004$) and higher contraction frequency ($p=0.028$) compared to pain-free controls. Specifically, 76% of participants with endometriosis and 75% of participants with fibroids experienced uterine contractions.

The duration of uterine contractions was no different between participants with dysmenorrhea [median (IQR):47 (32,67) seconds] and pain-free controls [median (IQR):47 (26,140) seconds], ($p=0.83$). Additionally, no significant differences were observed between participants with secondary dysmenorrhea due to endometriosis [median

(IQR):46 (34,81)] or fibroids [median (IQR):53 (31,61)] and pain-free controls [median (IQR:47 (26,140). (p=1.0).

Discussion: Overall, cineMRI uterine contraction measurements were highly consistent across reviewers, suggesting that uterine contractility can be reliably measured. For the first time using a noninvasive method and a moderate-sized cohort, it is demonstrated that uterine contractions occur in the vast majority of participants with either primary or secondary dysmenorrhea. However, uterine contractions were also observed in more than half of pain-free controls. Given that uterine contractions can occur even in the absence of menstrual pain, there are likely additional underlying mechanisms responsible for uterine pain. As our prior work has found evidence of pelvic visceral hypersensitivity to bladder distension among many dysmenorrhea sufferers, we hypothesize that a similar visceral hypersensitivity to uterine contractions may be necessary for the perception of menstrual pain.

Discussant: Elliot M. Levine, M.D.
Chicago, Illinois

9:00 - 9:30 a.m.

Paper #2 **Dr.Kermit E. Krantz Memorial Paper Award**

Clinical Evaluation of Effectiveness and Safety of Amberen® and Smart-B® Complex in Perimenopausal Women

Lee P. Shulman, MD/PhD[1], Lauren J Green, BS[2], Vera A Kachko, MD/PhD[3], Irina V Kuznetsova, MD/PhD[4], Yulia B Uspenskaya, MD/PhD[5], Denis I Burchakov, MD[6]

Feinberg School of Medicine of Northwestern University, Chicago, IL[1], Alliance Pharma plc and Alliance Pharmaceuticals Ltd, Chippenham, UK[2], Alliance Pharma plc and Alliance Pharmaceuticals Ltd, Chippenham, UK[3], Vitbiomed Medical Centre, Moscow, Russia[4], Medsanchast No 14 LLC, Moscow, Russia[5], NOCHU DPO Higher School of Medicine, Moscow, Russia[6]

Purpose: To evaluate the effectiveness and safety of Amberen® (a succinate-based non-hormonal supplement) combined with a Smart-B® Complex (vitamin B) in women with typical mild to moderate climacteric syndrome during perimenopause.

Methods: 105 women, ≤ 50 years old, with mild to moderate climacteric syndrome in perimenopause completed the randomized, double-blind, placebo-controlled, comparative, prospective study. Participants were divided into either the investigational (IG) (n=52) or placebo group (PG) (n=53) for 90-days, followed by a 90-day observational period. Assessment was done at the start of the trial and at days 30, 60, 90 and 180.

Results: Primary outcomes were changes in the vasomotor, psycho-somatic and psychological dysfunction determined by the Greene Climacteric Scale (GCS) and changes in estradiol level. Comparative analysis showed a statistically significant improvement between treatment groups for most GCS symptoms at day 180, such as difficulty sleeping (p=0.000), hot flashes (p=0.000), night sweats (p=0.000), feeling tense or nervous (p=0.000), irritability (p=0.000), sadness or depression (p=0.000), headaches (p=0.000), lack of sex drive (p=0.000), muscle and joint pain (p=0.01), dizziness or fainting (p=0.05) and other, except for numbness of the feet and legs (p=0.07), difficulty breathing (p=0.16) and tingling in some body parts (p=0.15) when compared to the placebo group. Statistically significant improvement demonstrated in the IG with an increase in mean estradiol levels from 88.3 pg/ml (day 0) to 126.2 pg/ml (day 180) compared to a

decrease from 99.6 pg/ml to 35.7 pg/ml in the PG respectively (p=0.708 and 0.000).

Secondary efficacy parameters were changes in State-Trait Anxiety Inventory (STAI), Hospital Anxiety and Depression Scale (HADS) and Well-being, Activity, Mood questionnaire (WAM). There was a statistically significant improvement in STAI parameters from day 30 compared to the placebo group: situational (p=0.042), trait (p=0.026) and actual anxiety (p=0.0242). HADS parameters of anxiety and depression decreased by day 60 with a statistically significant difference between treatment groups (p=0.000 for both). The IG had a statistically significant increase in WAM parameters with activity (p=0.000) and wellbeing (p=0.000) increasing from day 60 and mood (p=0.042) from day 90.

The study also evaluated plasma leptin levels, body weight, BMI, hip and waist circumferences and other hormonal changes. Subgroup analysis demonstrated a significant decrease in the mean leptin concentration at day 90 between the IG (17.7ng/ml) and PG (23.4ng/ml) (p=0.011). At day 180, there were no significant differences between the mean body weight of the treatment groups (p=0.572), BMI (p=0.555), hip circumference (p=0.290) or waist circumference (p=0.497), however, there was a decreasing trend in the IG. Mean FSH levels decreased from 29.6 mIU/ml to 14.9 mIU/ml between day 0 and 180 compared to an increase in the PG (p=0.741 and 0.000). The same trend was observed for LH levels, mean LH levels decreased from 23.0 mIU/ml to 10.7 mIU/ml compared to an increase in the PG (p=0.471 and 0.000).

At baseline, all subjects were in amenorrhea, but during the course of the trial some of them presented with spontaneous menstruation with intervals between bleeding episodes less than 60 days. It was found in both subgroup analyses and individual data that they had resumed menstrual cycle, and their US results showed an increase in endometrial thickness. In the IG a total of 37 subjects resumed their menstrual cycle on day 180. For those subjects mean serum estradiol levels increased from 103.42 pg/ml (day 0) to 149.96 pg/ml (day 180), mean serum FSH levels decreased from 22.76 mIU/ml (day0) to 8.11 mIU/ml (day 180), mean serum LH levels decreased from 20.05 mIU/ml (day 0) to to 7.30 mIU/ml (day 180).

No serious or life-threatening adverse events or side effects were registered during the trial, vital signs were monitored and showed no differences between IG and PG.

Conclusion: This trial supports the safe use of a succinate-based non- hormonal supplement with a vitamin B complex to improve vasomotor, psycho-somatic and psychological symptoms of climacteric symptoms in perimenopausal

women that also correlate with minor changes in endocrine and metabolic function. ClinicalTrials.gov Identifier: NCT03897738.

Discussant: Emmet Hirsch, M.D.
Evanston, Illinois

9:30 – 10:00 a.m. **Central Prize Award**

Theoretical vs. Actual Access to Care

Mark I Evans, MD[1], Christian R Macedonia, MD[2], Gregory F Ryan, MBA[3], David W Britt, PhD[3], Jaqueline M Worth, MD[1], George M Mussalli, MD[1], Lawrence D Devoe, MD[4]

Icahn School of Medicine at Mt. Sinai and Fetal Medicine Foundation of America, New York, NY[1], Lancaster Maternal Fetal Medicine, Lancaster, PA[2], Fetal Medicine Foundation of America, New York, NY[3], Medical College of Georgia at Augusta University, Augusta, GA[4]

Purpose: The United States has the highest maternal and neonatal mortality rates among the 45 high-income countries demonstrating enormous discrepancies between white and black mothers and infants. These outcome discrepancies have worsened over the last decade despite the availability of insurance coverage from the Affordable Care Act (ACA) to over 40 million previously uninsured Americans. We have compared differences in each state government's acceptance of Medicaid expansion, overall insurance coverage, and ACA marketplace uptake. We next investigated how states implemented new ACA-enabled paradigms allowing the creation of very large monopolies for health care using Accountable Care Organizations (ACOs), in exchange for accepting Medicaid expansion to increase care for indigent patients. ACO's were granted exemptions from Stark and Sherman Anti-trust prohibitions and permitted rewarding for "in house" referrals and could punish physicians for "system leakage." However, many states did not expand Medicaid benefits, although the federal government would be paying 90% of costs. Nevertheless, they retained those regulatory waivers, actually exacerbating inequalities.

Methods: Using publicly available, de-identified databases such as the US Census and CDC, we compared closures of hospital and L&D units, maternal mortality ratios (MMRs), neonatal mortality rates (NMRs), occurrence of maternity or health care deserts (DSRTs), and under-resourced (URS) areas across all states and DC. After considering several approaches for standardization including population, area, population density, healthcare deserts, proximity, and hospital beds, we selected population and square mileage as the primary denominators to compare 10 pairings of reasonably comparably sized states by their percentages of patients living in DSRTs reflecting lower rates of overall insurance coverage, Medicaid expansion, life expectancy, and multiple health morbidity rates. We evaluated ratios of DSRTs, MMR, and NMR within pairs.

Results: Nationwide, there have been more than 100 hospital and 300 L & D closures since ACA. These have occurred disproportionately in rural areas, usually as large ACOs were allowed to just shut "under-performing" hospitals within their systems. Overall, US MMR for white patients is 26.6 and for black patients 69.9. NMR is 4.4 and 10.38 respectively. In NY, MMR is 14.1 and 55.6 respectively, but in GA white patients are 59.7 and black patients 95.6. (i.e. white GA ≈black NY). Overall health status declined for people of color and, when exposed to challenges like DSRTs and UNR, such stresses have disproportionately larger impacts for a lower health status group compared to a higher one. TX has DSRTs affecting 24.4% of its population vs CA at 0.09%. Dividing TX by CA gives a ratio of 271, MMR ratio of 2.69, NMR ratio of 1.28. FL/NY: DSRTs 1.71, MMR 1.18, NMR 2.37; for middle sized states: OH/PA: DSRTs 191, MMR 1.44, NMR 1.17; ; GA/IL: DSRTs 1.91, MMR 1.89, NMR 1.00; LA/OR: DSRTs 1.78, MMR 2.41, NMR 1.44, IN/MA: DSRTs 440, MMR 2.1, NMR 1.43; MO/IL: DSRTs 1.42 MMR 1.28, 1.25; TN/VA: DSRTs 1.14, MMR1.39, NMR 1.01; MS/MN: DSRTs 4.93, MMR 3.44, NMR 1.66. For smaller states: WV/ME: DSRTs 2116.5, MMR 25.1, NMR 1.0. Most differences are $p<.001$ (not shown).

Conclusions: Theoretically, ACA coverage should have universally improved actual access to care. However, some medical metrics such as maternal-child care have significantly worsened. Not only have MMR and NMR increased, but the disparities between white and black patients have widened (not shown). Our data suggest these have been partly due to ACA/ACO sanctioned hospital and L & D closures. While health system margins increased, more DSRTs and URSs appeared, particularly impacting care for both poor white and black patients in rural areas compared to urban areas with the latter having more available care providers.

Since the 1980s, the societal and political power of physicians relative to hospitals, insurance companies, and governmental authorities has significantly declined as have health care performance metrics. DSRTs is not a perfect parameter for defining risks for poor care risks, but it does identify a serious problem in how the American health care industry has changed from a professionally driven model to a big business model. Health care delivery employing big business rather than medical ethical and performance standards has fundamentally failed. As an example, mandating in-house referrals, imposed by corporate management may be cost-efficient in the short run but can deny patients access to better care that might be available in other hospitals or medical offices that can improve outcomes

and ultimately better economics for patients, governments, and private insurance carriers. US medicine has reached a crossroad, and decisions must be made. As with other sanctioned monopolies like utilities, the medical enterprise representing 17% of US Gross National Product has an obligation to serve areas with low financial performance as well as those that are more lucrative. In business, unfettered monopolies lead to higher prices and lower quality goods. We now see that the business practices of healthcare monopolies have worsened maternal child health and also lead to inequalities of care.

Discussant: Dennis J. Lutz, M.D.
Minot, North Dakota

10:00 - 10:45 a.m. **Break/Refreshments/Exhibits/Posters**

SECOND SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Dani G. Zoorob, M.D. – CAOG Secretary/Treasurer
Joanie Y. Hare, M.D. – CAOG Trustee

10:45 – 11:30 a.m. **Hot Topic #2**
"Physiologic Birth, Collaborative Care, and Other Transformative Ways to Improve Maternity Care"
Amy Romano, MBA, MSN, CNM
Primary Maternity Care
Milford, Connecticut

Learning Objectives:

- Review the history of collaborative care between obstetricians and midwives.
- Implement a model to improve maternity care using collaborative techniques.

11:30 a.m. - 12:00 noon

Paper #4 **President's Certificate of Merit Award**

Identification of Molecular Signatures for the Detection of Fetal Growth Disorders at the First Gestational Trimester in Circulating DNA Isolated from Urine Samples

Rene G Cortese, PhD[1,2], Grace Smith, BSc[1], Kylie Cataldo, MSc[1], Justin Hummel, MSc[1,2], Jean R Goodman, MD, MBA[1]

Department of Obstetrics, Gynecology and Women's Health, School of Medicine, University of Missouri, Columbia, MO[1], Institute for Data Science and Informatics, University of Missouri, Columbia, MO[2]

Background: Many potential adverse health outcomes that could affect the mother and fetus are associated with fetal growth disturbances (FGD) during pregnancy. Screening of fetal growth abnormalities is based on fetal biometric measurements using ultrasound in which serial sonographic assessments of fetal size over time are used to estimate fetal growth and identify any deviation from normative trajectories. However, besides the unprecedented technological development in the field, errors and approximations still hinder FGD detection and assessment. Hence, there is an unmet need for reliable early pre-natal biomarkers of fetal growth that can be assessed using low-invasive approaches. We have previously reported maternal blood circulating DNA (cirDNA) profiles accurately detects early gestation FGD. In this study, we hypothesized that markers in cirDNA isolated from urine can be used as early detection markers of FGDs.

Methods: Participants (n=25) were recruited during first prenatal visit and urine samples were prospectively collected at the first gestational trimester in urine preservative and stored at -80 °C until use. Small, Large and Adequate for Gestational Age (SGA n=7, LGA n=8, and AGA n=10, respectively) status was determined at birth according to weight and gestational age, following the revised reference chart for the US. Fluidic and cellular fraction of the urine were separated by centrifugation, and DNA were isolated from each fraction separately (i.e., circulating and genomic DNA, respectively). The total DNA amount in each fraction was quantified using qPCR. DNA fragmentation was assessed using specific qPCR assays corresponding to intact, nucleosome-size, and fragmented DNA, respectively. The mitochondrial/nuclear DNA was calculated using specific qPCR assays. DNA methylation profiles were studied in 12 genes associated with placental homeostasis. Furthermore, machine learning approaches were applied to build molecular

signatures for the prediction of LGA and SGA occurrence using first trimester urine samples. Prediction accuracy was assessed by Receiving-Operating Curve (ROC) analysis and Positive and Negative Predictive values (PPV and NPV, respectively) were calculated.

Results: In the cellular fraction, the total concentration of DNA was decreased in LGA (mean DNA=1.15 ± 0.35 ng/mL) compared to SGA (mean DNA=3.47 ± 0.94 ng/mL) and AGA pregnancies (mean DNA=3.83 ± 1.40 ng/mL), although the differences were not statistically significant (p=0.101; Kruskal Wallis test). However, we observed significant differences in the fragmentation of genomic DNA (mean DNA fragmentation index, DFI = 0.66 ± 0.27 ng/mL, 1.14 ± 0.27 ng/mL, and 0.31 ± 0.14 ng/mL, for SGA, LGA and AGA pregnancies respectively; p=0.025; Kruskal Wallis test) and mitochondrial DNA (mean mitochondrial/nuclear ratio, MNR = 1.54 ± 0.49 ng/mL, 11.89 ± 4.37 ng/mL, and 2.75 ± 1.12 ng/mL, for SGA, LGA and AGA pregnancies respectively; p=0.017; Kruskal Wallis test), as well as in DNA methylation on 3 out of the 12 studied genes ($p<0.05$; Kruskal Wallis test).

In the fluidic fraction we observed a non-significant increase in the concentration of total cirDNA (mean cirDNA concentration=0.84 ± 0.36 ng/mL, 0.72 ± 0.25 ng/mL, and 0.37 ± 0.14 ng/mL, for SGA, LGA and AGA pregnancies respectively; p=0.162; Kruskal Wallis test) and cirDNA fragmentation (mean DNA fragmentation index, DFI = 60.05 ± 43.81 ng/mL, 43.16 ± 25.25 ng/mL, and 3.65 ± 1.57 ng/mL, for SGA, LGA and AGA pregnancies respectively; p=0.946; Kruskal Wallis test) in SGA and LGA compared to AGA pregnancies, resembling the differences previously observed in the plasma fraction. None of the 12 studied genes showed significant differences ($p>0.05$; Kruskal Wallis test) in cirDNA methylation in the fluidic fractions of SGA, LGA and AGA pregnancies.

Using a machine learning approach, we combined these molecular and epigenetic cirDNA markers in signatures and assessed their performances for discriminating between FGD and AGA pregnancies. A signature based only in markers from the genomic DNA markers distinguished between FGD and AGA pregnancies with high accuracy (AUC=0.97, Predictive Positive Value, PPV=92 %, and Negative Predictive Value, NPV=97%). In turn, a signature based only in cirDNA markers has a lower accuracy (AUC=0.85, Predictive Positive Value, PPV=92%, and Negative Predictive Value, NPV=87%), which only increases slightly when cirDNA markers are combined with genomic DNA markers (AUC=0.89, Predictive Positive Value, PPV=92%, and Negative Predictive Value, NPV=87%)

Conclusions: DNA isolated from maternal urine holds a high potential as a marker to detect FGDs, as early as the first trimester of pregnancy. Our novel marker panels will enable accurate prediction of FGDs using a non-invasive approach that can be easily translated to clinical practice. Considering the easy access to urine samples and the relative simplicity of the approach, the application of these panels holds the potential to enable a disruptive path toward precision medicine in FGD.

Discussant: Andrew F. Wagner, M.D.
Chicago, Illinois

12:00 - 12:30 p.m.

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

Comparison in Latency Based on Amniotic Fluid Index (AFI) in Patients with Preterm Prelabor Rupture of Membranes (PPROM)

David M Greiner, MD[1], Niranjana Balu, BS, BA[1], Ellie Staab, BS[1], Elizabeth Lyden, MS[1], Robert G Bonebrake, MD[2], Joshua Dahlke, MD[2]

University of Nebraska Medical Center, Omaha, NE[1], Methodist Women's Hospital, Elkhorn, NE[2]

Purpose: To compare length of time from diagnosis to delivery in patients with preterm premature rupture of membranes (PPROM) between those with normal amniotic fluid or low amniotic fluid at time of diagnosis.

Methods: This is a retrospective cohort of all patients diagnosed with PROM at Methodist Women's Hospital in Elkhorn, NE, between January 1, 2015, and December 31, 2021. The primary outcome was to compare latency, defined as days from diagnosis to delivery, between patients with normal amniotic fluid (AFI >/= 5cm) and patients with oligohydramnios (AFI <5cm) at the time of diagnosis. All patients during the study timeframe were included if they had a discharge diagnosis code of PROM (ICD O42.xxx). Inclusion criteria included: singleton gestation with diagnosis of PPROM between 23 weeks 0 days and 33 weeks 6 days gestational age, with an ultrasound performed within 48 hours of diagnosis. Exclusion criteria were those with diagnosis at less than 23 weeks 0 days, or greater than 33 weeks 6 days, no ultrasound within 48 hours of diagnosis, multiple gestation, and patients without available record of delivery. Data was obtained from chart review and patients were classified based on diagnostic test used (ROM plus or traditional diagnostic methods of ferning, pooling, and/or nitrazine test) and amniotic fluid was dichotomized to normal (AFI >/= 5cm) or oligohydramnios (AFI <5cm).

Patient characteristics were compared based on AFI group using Fisher's exact test for categorical variables and the Wilcoxon rank sum test or Kruskal Wallis test for continuous variables. Multivariable logistic regression was used to identify independent predictors of latency (dichotomized 0-7 days vs. 7 days). Variables significant at the $p<0.15$ level were included in the multivariable model Analyses were done

using SAS, Version 9.4. P<0.05 was considered statistically significant.

Results: Of the patients screened, 1,324 patients had PROM listed as a diagnosis code and were screened for inclusion. 822 patients were excluded due to gestational age >34 weeks, 82 had multiple gestation, 63 had rupture of membranes before 23 weeks, 60 did not have an ultrasound performed within 48 hours of diagnosis, 49 were reviewed and did not meet clinical criteria for PPROM, 30 charts were duplicates, and 7 were excluded for other reasons (2 infant charts, 1 chart without any documentation, 3 patients discharged against medical advice and delivered elsewhere, and 1 intrauterine fetal demise). The remaining 211 patients were reviewed, and data collected. 130 (68%) patients had normal amniotic fluid and 81 (38%) with oligohydramnios. Maternal characteristics were identified and compared between the two groups, as seen in Table 1. There were statistically significant differences in gestational age at diagnosis (p = 0.006), method of delivery (p = 0.031), number of prior term deliveries (p = 0.035), gestational age at delivery (p = 0.0012), and neonatal birth weight (p = 0.001) between normal fluid and oligohydramnios groups. ROM plus was positive and used as the diagnostic test for PPROM in 98 patients (46%). Of those 98 patients, 66 (67%) had normal fluid and 32 (33%) had oligohydramnios. The median latency in the normal fluid group was 8 days (range 0-53) and 4 days (range 0-38) in the oligohydramnios group (p = 0.084)

In univariable analysis, AFI group (p = 0.033), gestational age at diagnosis (p <0.001), and indication for delivery (p = 0.015) were predictors of latency > 7 days and were included in the multivariable model. Patients with normal fluid vs oligohydramnios were more likely to have latency > 7 days (aOR 2.45, 95% CI 1.27-4.70) when adjusting for gestational age and indication for delivery.

Conclusion: While ultrasound evaluation of AFI does not have a direct role in the diagnosis of PPROM, it is often used to help support a diagnosis that may be in question, and this study may suggest it can help predict latency. Our data suggests that patients with normal fluid, regardless of diagnostic test are 2.45 times more likely to have a latency > 7 days than patients with oligohydramnios, when corrected for gestational age and indication for delivery. There was a significant difference in gestational age at diagnosis between the groups, which may be a confounding variable, as latency and gestational age at diagnosis are inversely proportional. There was not a statistically significant difference in the rate

of infection or pre-term labor as a delivery indication between groups, suggesting that regardless of fluid status, the patients may have similar associated maternal risks related to PPROM.

Discussant: David F. Lewis, M.D.
Shreveport, Louisiana

12:30 – 1:30 p.m. **Hot Topic #3**
"Menopausal Therapy: HRT After WHI"
Makeba Williams, M.D.
Washington Univ. School of Medicine
St. Louis, Missouri

Learning Objectives:

- Review the findings of the Women's Health Initiative (WHI).
- Discuss the efficacy and saftey of hormone replacement therapy in menopause.

2:00 – 3:30 p.m. "Strategies for Successful Interviewing Matching into Ob-Gyn Residency: Tips From Program Directors" (No CME)

Dani G. Zoorob, M.D. – Moderator
Chair
Louisiana State University
Shreveport, Louisiana

Nicole P. Scott,M.D. – Panelist
Program Director
Indiana University
Indianapolis, Indiana

Michael Boldt, M.D. – Panelist
Program Director
University of Cincinnati
Cincinnati, Ohio

Mistie R. Mills, M.D. – Panelist
Program Director
University of Missouri
Columbia, Missouri

Intended Audience: 4th year medical students applying for Ob-Gyn Residency Match (3rd years are also welcome)

Format: In person.

Learning Objectives:

- Understand PD perspectives on the new ob-gyn match program with advice for success.
- Gain insights into successful strategies for online zoom interviewing.
- Learn keys for preparing your rank list.

Note: The PDs will have a set of questions to answer which will cover the above topics. There will be time for questions from the audience, which should be focused on general advice and sets of circumstances. Registration at the CAOG Annual Scientific Meeting is equired to attend this session.

SCIENTIFIC PRESENTATIONS
FRIDAY, OCTOBER 18, 2024

6:00 a.m.	General Registration (Regency Ballroom)
6:00 – 10:30 a.m.	**INDUSTRY EXHIBITS OPEN**
6:00 - 10:30 a.m.	**SCIENTIFIC POSTER SESSION OPEN**
6:00 - 6:30 a.m.	Breakfast (Regency Ballroom)
6:30 - 7:30 a.m.	**Sunrise Lecture** (Regency Ballroom) "Implementing Health Equity: Women's Health and Beyond" **Brownsyne M. Tucker Edmonds, MD** Indiana Health University Indianapolis, Indiana

Learning Objectives:

- Describe some of the disparities found in women's health care.
- Implement a program to improve health equity today and in the future.

THIRD SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Tacoma A. McKnight, M.D. – CAOG Vice President
Tiffany R. Tonismae, M.D. – CAOG Trustee

7:30 - 8:00 a.m.

Paper #6

Evaluation of the Published Obstetrics and Gynecology Ultrasound Curriculum Based Upon Expert Consensus Recommendations

Emanuel P Gaziano, MD[1], Jane K Burns, AS, RT, RDMS Krista Wald, AAS, BA

Editor, obimages.net, (formerly) Dept. Ob/Gyn University of Minnesota, Minneapolis, MN[1], Texas Christian Hospital Pavilion for Women, The George Washington University, Houston, TX[2], Former Staff Sonographer at Maternal Fetal Medicine Clinics, The Mother Baby Center, Allina Health, and Children's Hospitals and Clinics, Minneapolis, MN[3]

Purpose: In 2018, experts published recommendations for training and assessing obstetric and gynecologic ultrasound skills in residency programs[1]. This report evaluates the effectiveness of these recommended guidelines among various practitioners.

Methods: Few attempts have been made to develop specific courses based on guidelines from the consensus recommendations. On May 1, 2022, obgyncourses.com published an online curriculum of 18 narrated video courses covering 26 topics that followed all published recommendations. These courses were approved for 32 *AMA PRA Category I Credit (s)*™ and were available to all practitioners for a small fee. Identical courses are permanently available without charge on obimages.net and YouTube (https://www.youtube.com/channel/UCQyjGyf2dFRPFXqLx-GbXww).

The program consisted of 18 video courses, each comprising text, images, and voice-over videos, with an average video duration of 14 minutes. Four levels of difficulty covered the recommended topics. In addition, guided by consensus recommendations, free competency quizzes were made available online.
https://obgyncourses.com/competency-quizzes-usefulness/

In total, 68 students were enrolled and completed 578 courses. After each course, a quiz was undertaken, and a pass rate of 70% was required to proceed to the next unit. The score for each completed course was calculated, and a survey was conducted to evaluate the course content and student satisfaction levels. The demographic profile of the participants was assessed, and a statistical analysis was performed to assess the variation in performance among individual courses and the survey results.

Results: Among the 68 students, 38.2% were practicing ultrasound technicians, followed by Ob/Gyn residents (24%), OB/Gyn practicing physicians (17.6%), and perinatology fellows or practicing perinatologists (4.4%).

Private practice Ob/Gyn (24%) and academic-based practice (22.1%) were the most common work environments, followed by hospital-based Ob/Gyn Clinic (13.2%), hospital-based perinatology Clinic (13.2%), and radiology-based clinics (5.9%).

The Level 1 course had the highest mean scores with "Aspects of Exam" (86.1%), "Characteristics of Ultrasound Equipment" (89.4%), and "Official Statements" (86.2%). The standard deviations ranged from 6.7 to 11.7, indicating different degrees of dispersion of student scores from the mean across different courses.

Independent t-tests were conducted to compare the courses with low scores to the average score of all courses. Four courses had significantly lower scores than the other courses. These courses were Level 1, "First Trimester," Level 2, "Major Malformations in Early Gestation," Level 2, "Sonographic Evaluation of The Uterus," and Level 2, "The Placenta." The mean score for the Level 1 "First-trimester" course was 81.9%, while the average score of all other courses was 86.9% (p=.001). The other courses with lower scores were Level 2, "Major Malformations in Early Gestation" (p=.001 with a mean score of 82.7%), Level 2, "Sonographic Evaluation of The Uterus" (p=.001 with a mean score of 80%), and Level 2 "The Placenta" (p=0.019 with mean score 82.3%). Importantly, students who performed well on the normal anatomy of the fetal heart course also scored well on the fetal cardiac malformations course.

Sixteen students completed the free competency quiz. Their scores range from a minimum of 78.8% to a maximum of 92.3%, with a mean (average) score of 85%.

Four survey questions were necessary for course completion:

1. Were these courses an effective review of my level of learning?
2. Were the courses evidence-based and necessary for my learning level?
3. Did these courses enhance my current knowledge base?
4. Were these courses fair, balanced, objective, and free of bias?

The participant choices were strongly disagreed, disagreed, neutral, agree, and strongly agree. More than 80% of the respondents agreed or strongly agreed with each survey question.

In addition, the survey questions were arranged on a Likert scale, and the averages were made into a single variable for

each course. Using this method, course satisfaction levels were high. With a maximum score of 5.0, Level 1 courses showed an average satisfaction level of 4.49, Level 2 showed a satisfaction score of 4.53, and Level 3 scored 4.27.

Conclusions: The consensus group's curriculum and competency suggestions were valuable for practitioners and trainee residents. The dispersion of mean scores across different courses varied, indicating differences in the difficulty level of course content. This suggests a need for course design modifications, particularly for the first trimester, major malformations in early gestation, sonographic evaluation of the uterus, and advanced placental topics. Overall, the satisfaction levels were high in each category of survey questions.

References available upon request.

Discussant: Jacques S. Abramowicz, M.D.
Chicago, Illinois

8:00 - 8:30 a.m.

Paper #7

Umbilical Artery Doppler Assessment in Severe Preeclampsia: A Retrospective Cohort Study

Daniel E Core, MD, Madison Catalanotto, BS, Elizabeth Hixson, BS, Rose Maxwell, PhD, MBA, Dani Zoorob, MD, MHA, MBA, MHI

Louisiana State University Health Sciences Center at Shreveport, Shreveport, LA

Purpose: Monitoring fetal stability in preeclampsia diagnosed prior to 34 weeks gestation typically entails at least daily assessment of fetal well-being, usually with a non-stress test and serial growth and amniotic fluid assessment. Umbilical artery doppler (UAD) assessment is utilized to guide management for fetal growth restriction (FGR) and is utilized to predict fetal-placental deterioration. Some evidence suggests utility of UAD assessment for preventing neonatal morbidity in hypertensive disease in pregnancy and in predicting adverse outcomes in patients with preeclampsia

We aimed to evaluate the incidence of abnormal umbilical artery doppler waveforms in patients with early onset severe preeclampsia without FGR and to evaluated if abnormal dopplers were associated with early delivery prior to 34 weeks gestation and adverse maternal-fetal outcomes.

Methods: This is a retrospective cohort study of individuals with singleton pregnancies with International Classification of Diseases, Ninth or Tenth Revision–defined severe preeclampsia diagnosed prior to 34 weeks gestational age unaffected by fetal growth restriction from January 1, 21018 through January 27, 2023 at a large tertiary care center. Fetal growth restriction was defined as estimated fetal weight less than the tenth percentile Hadlock or Alexander or abdominal circumference less than the tenth percentile Hadlock. Abdominal circumference was not used prior to February 2021 when ACOG and the Society for Maternal Fetal Medicine (SMFM) updated their definition of FGR. Systolic/diastolic ratios were calculated from UAD interrogation at least once weekly. Our study was approved by the IRB (ID:00002216). Exclusion criteria were multiple gestations, multiple congenital anomalies, congenital infection, aneuploidy, and if patient left against medical advice for greater than 24 hours. The primary outcome was delivery prior to 34 weeks gestation. Secondary outcomes were primary cesarean delivery, cesarean delivery due to fetal distress and maternal and fetal complications. Maternal outcomes were HELLP, neurologic manifestation (seizure,

stroke, PRESS), renal failure (creatinine greater than 1.1 mg/dL or twice baseline), liver transaminase values twice normal concentration, pulmonary edema, or death. Fetal complications included acidosis (umbilical artery pH < 7.1), 5-minute APGAR <7, perinatal death, sepsis (blood culture positive), IVH (grade III or less), periventricular leukomalacia, respiratory distress syndrome (RDS, defined as need for ventilatory support and pathologic findings on chest imaging), bronchopulmonary dysplasia, and necrotizing enterocolitis, perinatal death.

Patient characteristics and outcomes were compared with chi-square, T-tests, and Fisher's Exact test where appropriate. Odds ratios and relative risks were calculated to compare outcomes.

Results: Of 194 patients identified with severe preeclampsia, 107 met inclusion criteria. There was no significant difference in demographic and medical data between patients with normal and abnormal dopplers. 34 patients developed abnormal UAD (22 elevated, 10 absence, 2 reversal). Mean gestational age at delivery was 1.49 weeks less for patients with abnormal dopplers (p<.001) and they had higher likelihood of delivering before 34 weeks (OR 3.906, CI 1.237 – 12.335) particularly for worsening severe features (OR 3.850, CI 1.424 – 10.412) and were less likely to undergo vaginal delivery (OR .120, CI .027 - .542). Patients with abnormal dopplers were more likely to have neonatal morbidity (OR 6.462, CI 1.419 – 29.419) and RDS (OR 4.753 CI 1.317 – 17.162). Subgroup analysis revealed patients with elevated UAD were more likely to be delivered prior to 34 weeks for worsening severe features (OR 3.713, CI 1.144 – 12.050). They were more likely to have significant neonatal morbidity (RR 1.404, CI 1.213 – 1.624) and RDS (OR 9.660, CI 1.224 – 76.246). Patients with absent end diastolic flow were more likely to delivery prior to 34 weeks (RR 1.521, CI 1.289 – 1.795) for abnormal fetal testing (OR 6.923, CI 1.707 – 28.076) and were more likely to undergo primary CS (OR 7.231, CI 1.428 – 36.605).

Discussion: Our retrospective study shows patients with severe preeclampsia without FGR displayed high incidence of abnormal umbilical artery flow that were associated with loss of maternal/fetal stability prior to 34 weeks. Elevated end diastolic flow was associated with worsening severe features and absent end diastolic flow associated with worsening fetal testing. These results suggest clinical utility in Doppler interrogation of the umbilical artery in severe preeclampsia without FGR. Neither SMFM nor ACOG recommend obtaining umbilical artery dopplers, although both list reversal of end-diastolic flow as an indication for delivery.

Limitation of this study include the lack of rigid criteria for worsening severe feature necessitating delivery, particularly in the use of uncontrolled blood pressures as a criteria. It is possible that abnormal Doppler could have biased providers towards delivery prior to 34 weeks for elevated blood pressures that would have been treated otherwise. However, this trend was not seen in patients with absent diastolic flow. A large randomized-controlled trial of a diverse patient population would more definitively show benefit of umbilical artery Doppler assessment.

Discussant: Emily A. DeFranco, D.O., M.S.
Lexington, Kentucky

8:30 - 9:00 a.m. **Community Hospital Award**

Paper #8

Simulation Improves OBGYN Resident Comfort Providing Pregnancy Options Counseling

Emily W Lluch, MD[1], Tess Chase, MD[2], Stefanie Poehaker, PhD, PMH-C[2], Tiffany R Tonismae, MD[3]

Orlando Health Bayfront Hospital, St. Petersburg, FL[1], Johns Hopkins All Childrens Hospital, St. Petersburg, FL[2], University of Louisville, Louisville, KY[3]

Purpose: To describe a multi-modal educational initiative including lectures, local resources, and a simulated patient interaction on pregnancy options counseling to increase Obstetrics and Gynecology (OBGYN) resident's self-perceived confidence in providing thorough, non-directive counseling for patients with unplanned pregnancy.

Methods: OBGYN residents at Orlando Health Bayfront Hospital in St. Petersburg, Florida were asked to complete a multi-modal educational initiative on pregnancy options counseling. The educational initiative included pre-work viewing "The Framework: Counseling for Patient-Centered Abortion Care" from the University of California San Francisco Bixby Center for Global Reproductive Health, and a group lecture on pregnancy options (parenting, adoption, abortion) including techniques for providing empathetic, non-directive counseling and local resources for each pregnancy outcome. The trainees then participated in an immersive simulated patient interaction of an unplanned pregnancy, allowing learners to synthesize and implement the counseling framework. The simulation took place at the Johns Hopkins All Children's Hospital Center for Medical Simulation and Innovative Education in St. Petersburg, Florida. Residents were grouped into teams of three, with one resident counseling this patient on their options and the other two observing from a separate room. The small group simulation session was repeated for all trainees. The simulation was followed by an in-depth debriefing session including the residents, an OBGYN attending physician facilitator, and the standardized patient. The debrief focused on analysis of language used with patients, ensuring non-directive counseling, identification of knowledge gaps, clinical process improvements, legal considerations for providing care in a restrictive state and past clinical experiences caring for patients with unplanned pregnancies. Pre and post surveys were administered prior to the lecture and after the simulation assessing resident comfort with all aspects of pregnancy options counseling. All OBGYN residents at Orlando Health

Bayfront Hospital were allowed to participate in the educational intervention regardless of desire to participate in the study. This study was deemed exempt by the Orlando Health Bayfront Institutional Review Board (IRB).

Results: 10 residents were present for the lecture, immersive simulated patient interaction and debrief. All 10 residents completed the pre and post surveys. Residents who were not present for the implementation of all components of the curriculum were excluded from the study. Residents were equally distributed among training years. Most (70%) residents had counseled less than 6 patients on pregnancy options. 80% of trainees reported 1- 2 hours of education pertaining to abortion care and less than 6 experiences counseling on abortion care. 60% of trainees reported 1-2 experiences counseling on adoption. Survey responses to questions asking about resident's comfort level providing pregnancy options counseling, counseling specific to parenting, adoption, and abortion, and comfort with screening for domestic violence and reproductive coercion were compared pre and post intervention using a paired t-test. Overall, simulation training significantly improved residents comfort providing pregnancy options counseling (95% CI [-1.43, -0.37] p=0.004, Cohen's d=1.22), and screening for reproductive coercion (95% CI [-2.26, -0.14] p=0.03, Cohen's d=0.813). Positive trends were noted in providing resources for abortion referral (95% CI [-2.839, .039] p=.055) and screening for domestic violence (95% CI [-2.651, .051] p=.057). Opinions regarding whether state laws changed the way residents counseled patients did not change after the simulation (95%CI [-1.82, 1.82] p=1.0) however, most residents reported that state laws did change the way they counseled their patients. Of the 10 residents, 5 reported they strongly agreed that state laws affect their counseling, 4 reported they agreed, and 1 reported they somewhat agreed.

Conclusions: Simulation training can serve as a valuable supplementary tool for trainees to practice skills in non-directive pregnancy options counseling. Comprehensive, dedicated training improved resident comfort with pregnancy options counseling and screening for reproductive coercion. Resident comfort with providing resources for abortion referral and screening for domestic violence may show significance at larger sample sizes, as they were positive trends within our study despite a small sample size. This may be particularly beneficial for residents with limited clinical experience providing patients with non-directive pregnancy options counseling due to legislative interference.

Discussant: Erica E. Nelson, M.D.
Springfield, Illinois

9:00 - 9:45 a.m. **Hot Topic #4**
"The Wellness-Retention Connection: Building a Sustainable Healthcare Workforce"
Chemen M. Neal, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

Learning Objectives:

- Describe the wellness retention connection in ob-gyn.
- Outline a plan for building a sustainable healthcare workforce.

9:45 - 10:30 a.m. **Break/Refreshments/Exhibits/Posters**

FOURTH SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Andrew F. Wagner, M.D. – CAOG Past President
David A. Billings, M.D. – CAOG Trustee

10:30 - 11:00 a.m. **Dr. Bryan D. Cowan**
Paper #9 **FAR Research Network Award**
First Trimester Herbicide Concentrations and Gestational Diabetes in Nulliparas

David M Haas, MD[1], Kevin L Moss, BS[1], Hani Faysal, MD[1], Lynn M Yee, MD[2], Robert M Silver, MD[3], William A Grobman, MD[4]

Indiana University School of Medicine, Indianapolis, IN, Northwestern University, Chicago, IL[2], University of Utah School of Medicine, Salt Lake City, UT[3], Ohio State University School of Medicine, Columbus, OH[4]

Background: Environmental exposures, such as pesticides, during pregnancy have been associated with several adverse pregnancy outcomes, including miscarriage and shorter gestational length at birth. However, their relationship with gestational diabetes (GDM) is uncertain.

Objective: The objective of this study was to analyze first-trimester urinary herbicide concentrations for their associations with GDM.

Study Design: This was a nested case-control study analysis of the Nulliparous Pregnancy Outcomes Study- Monitoring Mothers-to-be (nuMoM2b) study. The study included participants at the three midwestern study sites. We analyzed individuals according to whether they developed GDM. Urinary herbicide concentrations at the upper quartile was the exposure of interest. To assess the association of glyphosphate and metabolites with GDM, conditional logistic regression was used for matched pairs models. To test whether the association of herbicides with GDM was modified by BMI, an interaction term of herbicide (dichotomous variable) * BMI was included.

Results: The 118 cases of nuMoM2b participants with GDM were matched with 118 randomly selected age-matched controls who had no adverse pregnancy outcome. Participants with GDM were less likely to be Non-Hispanic White (26.3% vs. 40.7%; p=0.02), had a higher mean BMI (30.7±8.3 vs.

26.1 ±6.3; p<0.01), and were less likely to have graduated from college (55.1% vs. 72.0%; p=0.007). Glyphosate concentrations were above the limit of detection (LOD) in 93.6% of analyzable samples. In the adjusted conditional logistic regression for the matched pairs model, participants with glyphosate in the upper quartile had significantly higher odds of having GDM (odds ratio [OR] 3.27, 95% confidence interval [CI] 1.04 – 10.3), with the OR of 1.23 (95% CI 1.02-1.47) for the interaction with BMI. Compared to participants with BMI < 25 kg/m2, the adjusted odds of GDM for participants with obese BMI (≥30 kg/m2) was elevated (OR 8.52, 95% CI 1.27 – 57.2).

Conclusion: First trimester urinary glyphosate concentrations were associated with development of GDM, and the magnitude of this association increased at higher BMI.

Discussant: Catherine L. Van Hook, M.D.
Toledo, Ohio

11:00 - 11:30 a.m.

Paper #10

Correlating Trajectories of Epigenetic Profiles in Maternal Blood During Pregnancy with Ultrasound Findings Associated with Fetal Growth Disorders

Stephanie I Allred, MD, Joey Khoukaz, BSc, Kylie Cataldo, MSc, Jean Goodman, MD, MBA, Rene G Cortese, PhD

University of Missouri, Columbia, MO,

I**ntroduction:** Fetal growth disorders are classified using estimated fetal weight and gestational age of the fetus. It is estimated that in 8.6% of pregnancies, the fetus is small for gestational age (SGA, <10th percentile), 80.9% appropriate for gestational age (AGA, 10-90th percentile), and 10.5% large for gestational age (LGA, >90th percentile). Screening for growth disorders via serial ultrasounds occurs in patients with incidentally found growth disorders or risk factors. We previously demonstrated that these growth disorders are associated with epigenetic changes in DNA, that can be detected as early as the first gestational trimester. Abnormal DNA methylation can have a negative effect on intrauterine fetal growth. DNA Methylation can vary during different stages of gestation, and the trend can be useful in understanding fetal development and may identify patients at risk of fetal growth disorders.

Methods: Participants (n=12) were recruited during first prenatal visit and maternal blood and placenta samples were collected at each trimester and at birth, respectively. Fetal growth measurements were obtained throughout pregnancy. Participants were separated into three groups (SGA, AGA, and LGA) according to neonatal weight and gestational age at birth following the revised reference chart for the US. DNA was isolated from plasma samples collected at first, second, and third trimesters and placenta samples. The amount and fragmentation of circulating DNA as well as mitochondrial DNA content was determined by quantitative PCR methods. DNA methylation was quantified by methylation-sensitive enzymatic restriction (MSRE-PCR).

Results: In the first trimester, SGA and LGA participants had a significantly increased amount of circulating DNA compared with AGA participants as well as significant DNA methylation differences in 2/10 studied genes ($p<0.05$; F-test). In the second trimester, differences in cirDNA amount and DNA methylation remained significant only on LGA/AGA, but not on the SGA/AGA comparisons. Moreover, new significant difference between LGA and AGA compared with

AGA samples arose in the amount of fragmented DNA, mitochondrial DNA content and DNA methylation in two genes. In placenta samples, only significant differences in DNA methylation in one gene in SGA/LGA was detected. Among both the SGA and LGA participants, three out of seven patients had no measured evidence of fetal growth disorder by ultrasound. SGA and LGA participants represented both patients who underwent serial ultrasound to assess fetal growth and those who did not.

Conclusion: Observing these trends can be clinically useful and can reflect variations in the fetal growth trajectory. This research paves the way for the development of epigenetic-based molecular diagnostic approaches for the detection and monitoring of fetal growth disorders, independent of existing known risk factors.

Discussant: Angelina K. Gangestad, M.D.
Cleveland, Ohio

11:30 - 12:15 **Keynote Address**
"Hope for Maternal-Child Health Across the Globe: How the U.S. and Global Partners are Creating a Brighter Future"
Jeanne A. Conry, M.D., Ph.D.
The Environmental Health Leadership Foundation
Granite City, California

Learning Objectives:

- Discuss maternal-child health challenges across the globe.
- Predict how U.S. and global partners could create a brighter future of maternal-child health.

12:15 – 1:00 p.m. **Presidential Address**
"Mentorship and Sponsorship: Keys to All Our Future"
David M. Haas, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

Learning Objectives:

- Describe the roles of mentorship and sponsorship in ob-gyn training programs.
- Develop a personal plan to encourage mentorship and sponsorship for trainees.

1:00 p.m. **Installation of New President**

1:00 - 1:30 p.m. **Annual Business Meeting CAOG**

6:00 – 10:00 p.m. **Annual Gala**
Reception/Dinner/Awards/Dance
(Regency Ballroom)

SCIENTIFIC PRESENTATIONS

SATURDAY, OCTOBER 19, 2024

6:00 a.m.	General Registration (Regency Ballroom)
6:00 - 6:30 a.m.	Breakfast (Regency Ballroom)
6:30 - 7:30 a.m.	**Sunrise Lecture** (Regency Ballroom) "Understanding and Addressing Rates of Cervical Cancer in the U.S." **Melissa Martinez-Adorno, M.D.** Manchester Medical Center Manchester, New Hampshire

Learning Objectives:

- Explain the rising rates of cervical cancer in the U.S.
- Outline a plan for reducing the rates of cervical cancer in the U.S.

FIFTH SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Jean R. Goodman, M.D., MBA – CAOG President Elect I
Deborah C. Sherman, M.D. – CAOG Trustee

7:30 - 7:45 a.m.
Paper #11
Addressing Social Determinants of Health (SDOH) to Improve Health Equity and Outcomes within Obstetrical Populations

Kristen R Cecil, MD, Summer Lawrence, BS, Teresa Wilson, BA, Kathleen Groesch, BS, MS, Paula Diaz-Sylvester, PhD, Melanie Nielsen, BS, Kristin Delfino, PhD, Erica E Nelson, MD, Jongjin Anne Martin, MD

Southern Illinois University School Medicine, Springfield, IL

Introduction/Purpose: Social determinants of health (SDOH) are non-medical factors that have been shown to influence health outcomes. Racial and ethnic disparities are significant within maternal morbidity and mortality. Access to food, transportation, stable housing, child care and utilities are a few social needs that can affect a patient's health during pregnancy. To potentially improve health outcomes within our obstetrical population, we focused on identifying the social needs of our patients, we aimed to provide information to assist them with accessing resources and evaluate how social needs may be mitigated in the prenatal clinic environment.

Methods: The Department of Ob/Gyn at Southern Illinois University School of Medicine implemented the assessment of SDOH for each patient by documenting their needs (similar to a vital sign) during their prenatal care (IRB# 23-384). A standardized Social Needs Screening Tool was utilized to identify and potentially address social needs within the obstetrical population presenting to a primarily government insured or underinsured prenatal clinic, typically at their first prenatal appointment. Providers and staff were trained regarding how to address positive screens, how to link patients to resources and added SDOH ICD-10 codes to the electronic medical record (EMR). Demographics and relevant health and obstetrical data were extracted from the EMR. Comparisons were performed using t-test (continuous variables), Mann Whitney test (discrete variables) and Chi-square or Fisher's test as appropriate for categorical variables.

Results: A total of 312 social needs screening tools were entered into REDCap from August 2023 – January 2024. Of the 312 surveyed subjects, 84 (27%) reported at least one social need. Among the subjects reporting needs, the majority (63%) had only 1 need, 21% reported 2 needs, 11% had 3 needs and 5% had > 3 needs. Of the 84 patients reporting

needs, our providers documented this for 47 (56%) patients by stating the needs were addressed or at least acknowledged. Of the 84 patients with needs, only 48 (57%) answered they would like to receive assistance to address these needs. Of these, 22 (45%) were able to access resources. The most common need was childcare with 31 patients screening positive for this need. This was followed by utility insecurity (21 patients) and food insecurity (20 patients). Race, ethnicity, type of insurance, BMI and alcohol use showed no significant differences between patients with needs when compared to those who did not report a need. Conversely, patients reporting needs were significantly older (28 ± 5.4 vs. 26 ± 5.9, p=0.009), had been pregnant more times (4 [1-17] vs. 3 [1-13], p<0.001), had a greater number of living children (2 [0-15] vs. 1 [0-10]; p=0.024), had higher incidence of current recreational drug use (42% vs. 26%; p=0.048) and higher incidence of current tobacco use/vaping (42% vs. 19%; p<0.001). When comparing comorbidities during pregnancy, patients reporting needs had a higher incidence of depression (50% vs. 31%, p=0.003) and lower incidence of diabetes (4.8% vs. 13%, p=0.035). Obesity rates (44.1% vs. 47%, p=0.602) and hypertension rates (14.3% vs. 20%, p=0.23) were high in this patient population, but not significantly different between groups. To date, delivery data was available for 228 subjects. From these 228 subjects, 60 had reported at least 1 need during pregnancy and 168 had none. No significant differences between patients reporting needs vs. those without needs were observed in regards to the occurrence of maternal comorbidities or neonatal outcomes such as preterm birth, low birth weight, macrosomia and NICU admissions. No maternal deaths were reported and only 2 neonatal demises occurred (1 in each group). Adherence to prenatal care, estimated by the number of no-shows to prenatal appointments, was not significantly different between patients with needs vs. without needs.

Conclusions: Social needs such as assistance for childcare, transportation needs and food insecurity can be detrimental to patients' mental health contributing to higher rates of depression, as well as recreational drug and tobacco use. These needs can be addressed by facilitating access to available resources. However, only 57% of patients with needs were willing to receive any help and roughly half of them were actually able to access resources. In summary, assessing our obstetrical population to evaluate SODH and how they are managed is an important first step to identify potential processes to be targeted which would positively affect obstetrical care in the future. Here, we found that the current processes to provide resources need to be optimized in order to increase feasibility and successful access to

community resources. We think that by overcoming this challenge and increasing patient awareness regarding available resources, more patients would be willing to receive help and resolve their needs.

7:45 - 8:00 a.m.

Paper #12 **Dr. George W. Morley Memorial Paper Award**

Use of Indocyanine Green (ICG) in the Detection of Fibrosis and Inflammatory Changes Related to Endometriosis: A Retrospective Cohort Study

Christopher-Armad Z Mabini, DO, MSAEd[1], Maria Teresa Tam, MD[1], Carlos M Fernandez, MD[2], Elliot M Levine, MD[3], Sohail Siddique, MD[4]

Ascension Illinois - St Francis Hospital, Evanston, IL[1], Advocate Illinois Masonic Medical Center, Chicago, IL[2], Rosalind Franklin University, North Chicago, IL[3], Ascension Illinois, Chicago, IL[4]

Purpose: This study aims to determine if ICG fluorescence can detect fibrosis and inflammatory changes and if it is associated with histopathologic evidence of endometriosis in patients undergoing minimally invasive excision of suspected endometriosis.

Methods: This retrospective cohort study reviewed 178 medical records from July 1, 2014, to December 31, 2023, at three community-based hospitals, conducted by a single fellowship-trained MIGS surgeon. Institutional Review Board approval was obtained (#RIL20220137). Inclusion criteria were reproductive-aged females (18-50 years) undergoing planned robotic-assisted excision of suspected endometriosis. Exclusion criteria included a prior histopathologic diagnosis of endometriosis (n=33), history of major abdominal or pelvic surgery (n=39), gynecologic and non-gynecologic inflammatory conditions (n=16), and use of ICG without peritoneal biopsy (n=2). Data on patient demographics, clinical symptoms, duration of symptoms, and medical and surgical history was collected. Operative reports confirmed the use of ICG and its correlation with pathology findings. In the ICG and Control cohorts, peritoneal biopsies were analyzed for histopathologic evidence of endometriosis, fibrosis, or inflammatory changes. Statistical analysis determined the sensitivity, specificity, NPV, and PPV of ICG-detected fibrosis. Chi-square and logistic regression were used to analyze the data and control for confounding variables.

Results: Of the 178 charts that met inclusion criteria, 88 charts were analyzed after applying exclusion criteria. These were divided into two cohorts: ICG cohort (n=49) and Control cohort (No ICG use; n=39). In the ICG group, 40 charts demonstrated histopathological findings of endometriosis. Additionally, 21 charts presented histopathological evidence

of fibrosis, and 14 charts showed concurrent endometriosis and fibrosis. Among the 9 charts without endometriosis, 7 exhibited histopathological evidence of fibrosis or inflammation. The most common symptoms reported by patients were dysmenorrhea (56%), chronic pelvic pain > 6 months (40.9%), and abnormal uterine bleeding (AUB) (31.8%).

Chi-square analysis demonstrated statistical significance in ICG's ability to detect fibrosis when examining all eligible records from ICG use and control cohorts ($\chi^2 = 9.412$, df = 1, Goodman and Kruskal tau = 0.107, Pearson's R value = 0.327, p-value < 0.002). Furthermore, when assessing the differences in the relationship between fibrosis and endometriosis between the ICG use and control cohorts, chi-square analysis demonstrated a statistical significance between the presence of fibrosis and endometriosis when ICG is used (ICG cohort: $\chi^2 = 5.490$, df = 1, p-value < 0.019) versus control group (Control cohort: $\chi^2 = 0.310$, df = 1, p-value = 0.578) and maintains significance even when cohorts are pooled together (Composite: $\chi^2 = 7.019$, df = 1, p-value = 0.008, likelihood ratio = 0.012). Analysis of all 258 peritoneal biopsies between ICG use cohort and control cohort further supported ICG's ability to detect fibrosis, with a sensitivity of 85.1%, negative predictive value of 92.5%, specificity of 40.8%, and positive predictive value of 24.2%.

Logistic regression analysis identified significant predictors of fibrosis including clinical symptoms of dysmenorrhea (OR=7.995, df = 1, p-value < .005), history of chronic pelvic pain (OR=5.014, p-value < .025), presence of histopathologic-proven endometriosis at time of surgery (OR=7.490, df = 1, p-value<0.006), and history of depression/anxiety (OR=4.096, df = 1, p-value < 0.015).

Overall, the findings suggest that ICG fluorescence significantly improves the detection of fibrosis, which is strongly associated with the presence of endometriosis. ICG can enhance diagnostic accuracy and aid in a thorough and directed removal of endometriosis and related fibrosis and inflammatory changes.

Conclusion: Significant associations from chi-square and logistic regression analyses support the use of ICG fluorescence as a helpful adjunct to white light laparoscopy for the intraoperative identification of endometriosis-related fibrosis and inflammation. The high sensitivity and NPV of ICG fluorescence in detecting fibrotic and inflammatory changes highlight its potential value in identifying fibrosis even when endometriosis is not confirmed on histopathology. In the absence of histopathological evidence of glands and stroma, the presence of fibrosis or inflammatory changes may suggest that the presence of endometriosis cannot be

definitively excluded. These findings support the growing literature proposing that fibrosis and inflammation are integral to the natural history and pathogenesis of endometriosis. Larger prospective studies are warranted to validate our findings and assess patient outcomes such as pain relief, quality of life, fertility, and re-operation. Further quantitative studies are needed to analyze ICG perfusion time and intensity and their impact on detecting endometriosis and related fibrosis and inflammatory changes.

8:00 - 8:15 a.m.

Paper #13

Comparison of Serum Inflammatory Markers in the Mid-Second Trimester in Patients with Short vs. Normal Cervical Lengths

Lindsay E Beechem, BS[1], Ashley Boerrigter, MD[2], Calvin Ward, MD[3], Heather True, PharmD, MS[4], Ilhelm Messaoudi, PhD[3], Cynthia Cockerham, BSN, RN[2], Wendy Whitley, BSN, RN[2], Asmita Shrestha, MPH[2], John O'Brien, MD[2]

University of Kentucky College of Medicine, Lexington, KY[1], University of Kentucky Division of Maternal-Fetal Medicine, Lexington, Kentucky[2], Baptist Health Lexington Division of Maternal-Fetal Medicine, Lexington, KY[3], University of Kentucky Department of Microbiology, Immunology and Molecular Genetics, Lexington, Kentucky

Objective: Preterm birth is a leading global cause of neonatal morbidity and mortality that is increasing in incidence. Risk factors include a history of preterm birth, a short cervix or bleeding in the current pregnancy, and maternal infection, among other factors. Various inflammatory biomarkers differ in concentration throughout pregnancy in women who ultimately deliver preterm versus at term. Research is ongoing regarding the relationship between cytokine profiles and cervical shortening. This pilot study aimed to discover differences in inflammatory markers in the serum of women with a short cervix compared to those without during the mid-second trimester of pregnancy.

Methods: This is an IRB-approved, single institution, prospective cohort study. Pregnant people who met inclusion criteria (maternal age 18-45 years, singleton gestation, no fetal anomalies, no vaginal progesterone use in the previous 4 weeks, no uncontrolled medical disease) were enrolled in the study at 18 – 24 weeks gestational age. They were separated into two groups: nulliparous women with cervical length >30 mm (control group) and patients with any number of prior pregnancies with a short cervix (defined as ≤30 mm) on transvaginal ultrasound in this pregnancy (short cervix group). Maternal blood was collected for analysis at time of enrollment. The Luminex platform was used to analyze samples for immunological markers. Stata 15 was utilized for analysis. The Shapiro-Wilk test was used to test for normality (all were non-parametric), then t-tests were performed.

Data/Results: Ten patients with a short cervix were compared to 44 control patients. Groups were similar with regard to age, gestational age at enrollment, BMI, and tobacco

use status. There was a significant increase in preterm birth (<37 weeks) in patients with a short cervix (p=0.03). Twenty-eight cytokines were analyzed: EGF, eotaxin, G-CSF, GM-CSF, IFN-a2, IFN-gamma, IL-10, IL-12p40, IL-12p70, IL-13, IL-15, IL-17A, IL-1Ra, IL-1a, IL-1b, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IP10, MCP-1, MIP-1a, MIP-1b, TNF-a, TNF-b, and VEGF. The only significant difference at a significance level of 0.05 was in the anti-inflammatory cytokine Epidermal Growth Factor (EGF), in which patients with a short cervix had higher levels compared to patients in the control group (129.0 pg/mL vs. 67.9, p=0.01). The remainder of the maternal serum cytokines tested showed no statistically significant difference between groups.

Conclusions: Our data indicates that mid-trimester cervical shortening may not be due to a systemic inflammatory process. EGF, the only cytokine in this study with a significant difference between groups, is known to stimulate the growth of epidermal tissues during development and throughout life, but more research is needed regarding its role specifically in the preterm birth pathway. Our study is limited by small sample size, which may mask true differences between groups. Although the platform we utilized for analysis is large, it is not all-encompassing and there are cytokines that we did not analyze. Lastly, we did not compare maternal serum biomarkers of inflammation to markers found in the cervicovaginal space; the latter may be more likely to yield variation related to other pathways leading to preterm birth. Other pathways including structural variation in cervical stroma function are likely important in this subgroup and deserve further investigation.

8:15 - 8:30 a.m.

Paper #14

Neonatal Opioid Withdrawal Syndrome During the COVID 19 Pandemic

Barbara V Parilla, MD[1], Cynthia Cockerham, BSN, RN[1], Gregory Hawk, PhD[2], Asmita Shrestha, MPH[1], Rupin Sharma, MD[3]

University of Kentucky College of Medicine, Lexington, Kentucky[1], Dr. Bing Zhang Department of Statistics, University of Kentucky, Lexington, Kentucky[2], University of Kentucky College of Medicine, Division of Neonatology, Lexington, Kentucky[3]

Purpose: To evaluate Neonatal Opioid Withdrawal Syndrome (NOWS) pre and post COVID-19 pandemic in a comprehensive perinatal substance treatment program.

Methods: Prospective cohort study of pregnant patients with OUD enrolled in a multidisciplinary treatment program between January 2015 and July 2023. 404 patients were delivered prior to the COVID-19 pandemic (January 2015-December 2019) while 277 patients delivered during the pandemic (January 2020-July 2023). Primary outcomes assessed were NOWS and length of treatment. Secondary outcomes included maternal psychosocial data, engagement with PNC, and obstetric outcomes. Fisher's Exact test and two-sample t-tests were utilized for analysis.

Results: 681 total patients with OUD were analyzed. Comparisons are pre-pandemic v post-pandemic. Maternal age was 28.9 +/- 4.7 v 29.7 +/- 5.1 years, p=.045. There was no significant difference in race or tobacco use between the groups. Psychiatric disorders were more common during the COVID pandemic including anxiety 52.6 v 70.2% p<.0001, bipolar 12.3 v 20.6% p=.0073, panic disorder 1.4 v 6.1% p=.0028, PTSD 6 v 28.9% p<.0001, and depression 58.9 v. 65.8% p=.099. Pregnant persons experienced more IPV during COVID based on positive AAS score 43.8% v 62.9%, p=.0001. There was a significant difference in utilization of medication for opioid use disorder (MOUD) at enrollment with buprenorphine 94.4 v 64.9% and no MOUD 4.8 v 31.7% p<0001. Patients were less likely to be on buprenorphine products as their chosen treatment at both enrollment and delivery timepoints in the post Covid era (p< 0.0001). Prenatal visits were also decreased during the COVID pandemic 11.5 +/- 7.1 v 9.6+/- 7.5, p=.0009. There was no significant difference in GA at delivery. Treatment for NOWS was significantly higher during COVID 37.7% v 53.5%,

p=.0007, as was days of treatment for NOWS 15.0 +/- 9.5 v 20.7 +/- 11.3, p= .0001. Breast feeding also decreased during COVID, 23% v 9.1%, p=.0001.

Conclusions: NOWS was significantly higher during the COVID pandemic despite a decrease in MOUD utilization. This is likely due to multiple factors (multifactorial) including less utilization of non-pharmacologic interventions such as “Eat, Sleep, Console” and breastfeeding at our institution during the pandemic.

8:30 - 8:45 a.m.

Paper #15

Survey of Reproductive Health in Women with Tuberous Sclerosis Complex Suggests a Risk for Preeclampsia

Nkiru Ezeakudo, BS[1], David Ritter, MD, PhD[2], Michael Boldt, MD[3]

University of Cincinnati College of Medicine, Cincinnati, OH[1], Cincinnati Childrens Hospital Medical Center, Cincinnati, OH[2], University of Cincinnati, Cincinnati, OH[3]

Purpose: Limited retrospective studies have investigated reproductive health outcomes in women with tuberous sclerosis complex (TSC). We sought to understand the baseline reproductive health of women in a single large TSC clinic.

Background: Tuberous sclerosis complex (TSC) is a rare genetic disease occurring in approximately 1 in 6000 live births. Mutations in TSC1 or TSC2 genes lead to overactivation of the mTOR pathway resulting in a multiorgan disease affecting the skin, heart, brain, lungs, and kidneys (Northrup et al. Ped Neurol 2021). Currently, disease-modifying therapy is available through using mTOR inhibitors (everolimus or sirolimus). Previous studies have demonstrated menstrual dysregulation which is more pronounced in those taking mTOR inhibitors to treat their TSC (Mowry et al Frontier in Reproductive Health 2022). Additionally, there is a knowledge that there may be increased risks during pregnancies affected by TSC but providers are unsure of how to manage or provide recommendations (Rose et al. Orphanent J Rare Disease 2024). As more mild cases of TSC are diagnosed, understanding how the disease and treatments interact with reproductive health is of great importance to providing optimal obstetric and gynecologic care.

Methods: We conducted a cross-sectional cohort study of women diagnosed with TSC and who are over the age of 18 years at the Cincinnati Children's Hospital Medical Center Tuberous Sclerosis Clinic. All women or their legal guardians were invited to participate and after consent, completed a self-report survey on menarche, menstrual irregularity, menorrhagia, past pregnancies, pregnancy outcomes, and menopause and its associated symptoms. Individuals were excluded if they presented to the clinic without a legal guardian. Descriptive statistics were performed. The participants were also separated based on mTOR inhibitor use, socioeconomic status, and education level to better

compare differences between populations. A Chi-square analysis was performed to further analyze these differences.

Results: In the first 50 participants, the average age at the time of participation was 32.5 ± 12 years. Within the cohort, 25% of surveys were completed by a legal guardian, 30% of women were college graduates and 48% had a household income >$75,000. The age of menarche is 12.2 ± 1.7 years. Irregular menstrual cycles were experienced by 18 respondents (36%) and of those treated with mTOR inhibitors 22% (4/18) experienced changes in their menstrual cycles. Among the patients we surveyed, 74% reported past or present use of contraception, although the majority of respondents reported no use of contraception at the time of the survey. The most common method of contraception was the intrauterine device. The average age of menopause was 44 ± 7 years (N=16). The majority of respondents reported heat flashes (N=9), mood changes (N=8), sleep changes (N=8), and weight gain (N=8) while a minority reported vaginal dryness (N=4).

There were 52 reported pregnancies in 22 participants (2.4 ± 1 pregnancies per individual). About 10% of pregnancies resulted in spontaneous abortion, which is comparable to the incidence in the general population and 26% of pregnancies had recurrent bleeding. Interestingly, 19% of pregnancies (N = 14) were complicated by pre-eclampsia which is higher than the rate reported in the general population.

Conclusion: Tuberous sclerosis complex is a rare genetic condition that has multiorgan involvement, however, the impact on reproductive health is understudied. In our cohort, one-quarter of the women who reported mTOR inhibitor use reported changes in their menstrual patterns. Additionally, the rate of pre-eclampsia among participants was higher than the rate of pre-eclampsia in the general population. These findings suggest that increased attention to women with TSC is needed during pregnancy and that TSC-induced changes may be influencing reproductive health. Our study is limited by sampling of a single medical center, racial/ethnic homogeneity, and by self-reporting of medical diagnoses. Future prospective work is needed to collect data that will help manage reproductive changes induced by TSC disease and treatments which will require multidisciplinary collaboration in caring for women with TSC.

8:45 - 9:00 a.m.
Paper #16
Prenatal Screening for Trauma Exposure and PTSD: What Happens Next?

Michelle L Miller, PhD, David M Haas, MD, MS, Marissa Ward, BA

Indiana University School of Medicine, Indianapolis, IN

Background: The perinatal period is an exceptionally vulnerable time to experience posttraumatic stress disorder (PTSD). PTSD is a psychiatric disorder that occurs after experiencing at least one traumatic event and is characterized by intrusive thoughts, avoidance of trauma-related stimuli, negative changes in mood and cognition, and heightened physiological arousal. Pregnancy, labor and delivery, and entry into the postpartum period can be extremely stressful or retraumatizing for individuals with past trauma histories. This is especially true for individuals with a prior reproductive or interpersonal trauma history. Additionally, the perinatal period is ripe for experiencing new traumatic experiences, such as intimate partner violence, life-threatening pregnancy complications, or traumatic birth experiences. Thus, identifying individuals who experience perinatal PTSD and helping them to engage in treatment if desired is essential.

Objective: Our team introduced screening for trauma exposure and accompanying PTSD symptoms at three clinics across the state of Indiana to better understand perinatal PTSD and increase implementation of treatment efforts.

Method: A brief PTSD screen was implemented in both urban and rural settings utilizing the PC-PTSD-5 (a 5-item screen) or the PCL-6 (a 6-item screen). The clinics included Eskenazi Health, IU School of Medicine (IUSM) Coleman Center, and the Logansport Memorial Hospital Women's Health Center. Eskenazi Health is a safety net healthcare system in Indianapolis, serving primarily racial and ethnic minority patients who have public insurance. Eskenazi Health recruitment took place at the weekly high-risk obstetrics clinic. The IUSM Coleman Center is a high-volume clinic that primarily serves low-risk patients. The Logansport Memorial Hospital Women's Health Center is our rural community partner who is located in one of the most disadvantaged census tracts in the state (9th decile) and nation (92nd percentile). At all locations, a team member distributed a screening packet to all English-speaking pregnant adults to assess trauma exposure and PTSD symptoms, often alongside other mental health screening measures. Patients provided

contact information if they were interested in hearing more about clinical research interventions aimed at reducing PTSD symptoms. Interested participants were then contacted by IUSM team members to complete the eligibility screening for intervention studies.

Results: At Eskenazi Health, 91 patients were screened. There were 19 patients (20.8%) that scored above clinical threshold for probable PTSD (≥14 on the PCL-6). There were 27 patients (26.9%) that provided their contact information to hear more about our programs aimed at the reduction of PTSD symptoms. At Logansport, 334 patients were screened. Over half endorsed trauma exposure (53.3%, n=178). About 1 in 4 trauma-exposed patients (25.9%, n = 46) scored above clinical threshold for probable PTSD (≥3 on the PC-PTSD-5). There were 94 patients (28.1%) that provided their contact information to hear more about our programs. At the IUSM Coleman Center, there were 24 patients screened. There were 7 patients (29.2%) that endorsed trauma exposure with 2 trauma-exposed patients (26.9%) that scored above clinical threshold (≥3 on the PC-PTSD-5). Only 1 patient left their contact information to hear more about our programs.

For rural patients, the most endorsed PTSD symptom type among trauma-exposed women was internal and external avoidance of trauma-related stimuli (n=52, 29.2%). For urban patients, the most commonly endorsed PTSD symptom type was intrusive symptoms (e.g., nightmares, intrusive memories; n=47, 29.1%).

Conclusions: Results from screening at three obstetric clinics suggest that trauma exposure and accompanying PTSD symptoms are common in low- and high-risk prenatal women in urban and rural settings. There is a strong association between perinatal PTSD symptoms and the worst perinatal health outcomes, including pre-eclampsia, gestational diabetes, preterm birth, and increased likelihood of maternal and infant mortality. However, rates of engagement from screening alone were very low, suggesting selective screening for perinatal PTSD may not be sufficient. Future research needs to investigate how to implement: 1) universal screening of prenatal patients for trauma exposure and PTSD symptoms to normalize and incorporate discussion into prenatal care; 2) trauma-informed, stepped care models with a range of disciplines and provider types to help manage PTSD symptoms that arise during pregnancy; and 3) increased patient engagement in brief promising treatment interventions that address perinatal PTSD (Narrative Exposure Therapy (NET), Written Exposure Therapy (WET)).

9:00 - 9:30 a.m. **Break/Refreshments**

SIXTH SCIENTIFIC SESSION
(Regency Ballroom)

Moderators:
Shilpa Babbar, M.D., MS – CAOG Trustee
Catherine L. Van Hook, M.D. – CAOG Trustee

9:30 - 10:30 a.m. **Hot Topic #5**
"Sexual Health: The Sex You Don't Know Your Patients are Having"
Sarah T. Cigna, M.D., M.S.
George Washington University
School of Medicine and Health Sciences
Washington, D.C.

Learning Objectives:

- Explain why you may not know the sex your patients are having.
- Devise a valid survey to determine how much sex your patients are having.

10:30 - 10:45 a.m.

Paper #17

Association of Post-surgical Resection Immune Profiles with Fertility Outcomes in Patients with Endometriosis

Nina K Tran, BS, J Ricardo Loret de Mola, MD, Nathan McGee, BS, Paula Diaz-Sylvester, PhD, Kathleen Groesch, BS, MS, Teresa Wilson, BA, Sarah Nelson, BS, Andrea Braundmeier-Fleming, PhD

Southern Illinois University School Medicine, Springfield, IL

Introduction/Purpose: Endometriosis is a benign gynecological disease which is defined as the implantation of endometrial tissue on the mesenchymal surface of peritoneal organs. This disease is associated with systemic inflammation and sub- or infertility. We have reported that endometriosis associated systemic inflammation is characterized by increased inflammatory T-helper 17 (Th17) T cells and decreased tolerant T regulatory cells (Tregs). We have also reported decreased Treg localization in the eutopic endometrium of patients with endometriosis which may favor ectopic implant immune evasion and growth, contributing to sub-fertility or infertility in these patients. Treatment for endometriosis consists of hormonal suppression with or without surgical resection of disease. How these treatments impact future fertility is still unknown, as the majority of patients with endometriosis still require treatment with assisted reproductive techniques (ARTs), such as in vitro fertilization, in order to conceive. Determination of a patient's immune response after surgical disease resection may identify patients that are likely to conceive with ART intervention. The aim of this study was to assess if a patient's systemic immune profile (Th17:Treg), after surgical disease resection, was associated with ART fertility outcomes in patients with endometriosis. We hypothesized that patients with greater systemic inflammation would have diminished fertility outcomes evidenced by a reduction in embryonic blastulation and implantation, as well as decreased pregnancy and live birth rates.

Methods: Twenty subjects with surgically confirmed endometriosis were enrolled at Southern Illinois University School of Medicine, Department of Ob/Gyn, Division of REI and included in this nested analysis from a larger study (IRB# 14-220). Peripheral blood was collected on the day of surgery (DOS) and at ~1-3 weeks post-surgical intervention (PSI). CD4+ cells and sub-types were identified via flow cytometry using cell surface markers specific to Tregs (CD25 and FoxP3) and Th17 (ROR-gamma T). As a measure of immune

status (inflammatory vs. tolerant), Th17/Treg ratio was calculated for each patient. Post-surgical ART outcomes, such as implantation, blastocyst, pregnancy and live birth rates were extracted from the electronic health records of endometriosis patients (E). Values were compared to patients with tubal factor infertility (T) (IRB# 24-482), part of the analysis involved stratification by fresh embryo transfer (FT) or frozen embryo transfer (FRT). Spearman correlation and Wilcoxon rank test were used for statistical analysis ($p<0.05$).

Results: Included in this analysis were 15 surgically confirmed endometriosis patients who underwent a FT and 5 endometriosis subjects who underwent a FRT. Tubal factory infertility (T) patients included 66 with FT and 45 with FRT. We found that several fertility outcomes were decreased in patients with endometriosis and were dependent on embryo transfer type. Blastulation rates, which were only calculated for FT, were decreased in patients with endometriosis, E 29% vs. T 50%. However, implantation rates were comparable for both patient groups regardless of transfer type, (FT: E=40% vs. T=41% and FRT: E=67% vs. T=56%). Pregnancy rates were also decreased in patients with endometriosis, but this decrease was greater in FRT cycles (FT E=48% vs. T=52% and FRT: E=42% vs. T=64%). Similarly, live birth rates were decreased in patients with endometriosis and this was greatest in FRT cycles (FT: E=48% vs. T=52% and FRT: E=42% vs. T=64%). Immune profiles (Th17/Treg) for patients with endometriosis were not significantly altered after surgical resection (PSI) and there was no correlation of DOS Th17/Treg with any ART outcome. However, PSI Th17/Treg positively correlated with pregnancy rates ($r=0.4410$, $p=0.02$), but no other ART outcome.

Conclusions: From our limited data set, we found that surgical treatment of endometriosis did not decrease systemic inflammation. We also found that patients with endometriosis have decreased ART success, which may be due to reported factors other than systemic inflammation, such as diminished oocyte quality and embryonic endometrial attachment. Our analyses did find that higher postoperative Th17/Treg ratios, indicative of inflammation shortly after surgery, may be favorable for pregnancy success, but not live birth rate. Overall, in this pilot study, surgical resection of disease may not benefit ART success because it does not effectively reduce disease associated inflammation for each patient; yet, our conclusions are limited as we did not measure immune profiles immediately prior to ART treatment. Also, we were not able to control for length of time between surgical excision of endometriosis and ART cycles. However, our findings warrant further investigations into the relationship

between a patient's immune profile, response to surgical treatment and ART success in patients with endometriosis.

10:45 - 11:00 a.m.

Paper #18

Timeliness of Diagnosis and Treatment of Postpartum Hypertensive Disorders in the Emergency Department

Gabrielle Ezell, MS[1], Nicolina Smith, DO/MBA/MSCR[2], Mary Condon, MSN[2], Katherine Joyce, MD/MPH[2], John Joseph, MD[2], D'Angela Pitts, MD[2]

Michigan State University College of Human Medicine, Flint, MI[1], Henry Ford Health, Detroit, MI[2]

Objective: During the postpartum period, approximately 12% of patients will seek treatment in the emergency department (ED). Within this group, Black patients are seen in higher proportions. Hypertension is a common reason for ED visits in the postpartum period. Due to the vast etiologies, this often leads to delayed diagnosis and treatment. The most worrisome of etiologies is preeclampsia, eclampsia and hemolysis elevated liver enzymes and low platelet syndrome (HELLP). In turn, this can lead to more severe complications such as stroke, heart failure, kidney injury and other severe maternal complications. This study aims to assess time to diagnosis and treatment of hypertensive disorders in postpartum patients, with a focus on potential disparities in care amongst patient groups, that identify areas for quality improvement. It is our hope that this will positively impact the care of future post-partum patients.

Study Design: This retrospective study was conducted at a large multi-centered medical institution in the metro-Detroit area. Encounters of interest included postpartum ED visits from November 2015 to December 2022. The study population consisted of patients presenting with hypertension from postpartum day 2 through day 28. Our primary outcomes focused upon average time elapsed between severe range blood pressure (BP) readings (defined as BP>160/110) and administration of antihypertensives and magnesium sulfate for maternal neuroprotection. Secondary outcomes included the presence of diagnostic laboratory work up, specifically complete blood count, complete metabolic panel, urine protein and creatinine while being evaluated in the ED.

Results: Our study size included 430 patients who presented to the ED in the post-partum period for hypertensive concerns. The average day of presentation for patients was postpartum day six. 372 patients (86.5%) exhibited severe range blood pressure in the ED. The average time between first severe blood pressure reading and antihypertensive administration was 189 minutes for Black patients and 370

mins for White patients. Of the patients with severe hypertension, only 72% received a complete blood count, 66% received creatinine and liver profile labs, and 4% had urine protein ordered. In addition to laboratory testing, only 15 patients (4.03%) with severe range blood pressure received the correct magnesium sulfate dose, per institutional protocol. There were no statistically significant differences in the time of first blood pressure reading, laboratory evaluation, or treatment of severe range blood pressure between racial groups. There was also no statistically significant difference between magnesium sulfate administration within racial groups. However, the administration rate was low given the number of patients who would have benefited from seizure prophylaxis.

Conclusion: The results of the study showed the most significant area for improvement is in the timeliness of administration of antihypertensive medications after severe range blood pressure readings. Additional areas for improvement were observed in ordering essential laboratory tests to evaluate the severity of preeclampsia. Contrary to the existing literature indicating potential disparities within racial groups, our institution demonstrated equal expeditious care for both Black and White patients. This finding is still delayed beyond the recommended treatment time to decrease severe maternal morbidity. Based on these findings, a robust and targeted quality improvement plan will be implemented to enhance the identified areas of concern.

11:00 - 11:15 a.m.

Paper #19

The Evaluation of Multimodal Pain Management During Gynecologic Procedures: An Observational Clinical Study

Kellie E Mullany, BS, Monica Bhagavan, BS, Emilie Lemieux, MS, Beverly London, MD, Nancy E Fay, MD

The Carle Illinois College of Medicine, Urbana-Champaign, IL

Introduction: Common clinic visit procedures such as colposcopies and intrauterine device insertions often involve painful techniques. Despite 54.8% of women self-reporting anxiety related to pelvic exams, pain management tools are not routinely incorporated. This anxiety contributes to increased reports of pain and discomfort during pelvic procedures or exams. Gynecological procedures, in general, manifest a multimodal system of pain and discomfort - these include uterine cramping, cervical pain, and cognitive anxiety.

Although the American Society for Clinical Pathology has issued recommendations on colposcopy and other common gynecological procedures, there is currently no mention of pain management or statements addressing future improvements in this regard. Pain management protocols for gynecologic procedures have significant differences when compared across different practices. Our study represents a novel contribution to the field by comprehensively examining women's discomfort with pain during gynecological procedures, uniquely addressing all three components of pain, namely uterine cramping, cervical pain, and cognitive anxiety. By studying the benefits of multimodal pain management programs, we hope to ultimately use our findings to help shape recommendations to alleviate discomfort and pain across the field.

Methods: Our study follows an observational design methodology with self-reported patient feedback on pain, anxiety, and overall experience during gynecologic procedures at local clinic sites. The study protocol had inclusion criteria of patients over the age of eighteen who underwent any gynecologic procedure at a participating obstetric and gynecology (OB/GYN) clinic in the Champaign-Urbana area. Procedures include a wide range of practices including pelvic and bimanual examinations, intrauterine device insertions, sexually transmitted infection testing, pap smear, colposcopy, hysteroscopy, and more. All survey data is being collected using the secure and HIPAA-compliant online platform Qualtrics. Patients are able to access the survey through recruitment flyers placed at participating sites via a Quick Response code or TinyURL link. The data collected

from patient survey responses on women's health procedures utilizes a visual analog scale for reported pain and emotional distress throughout the OB/GYN visit. The type of procedure performed and pain management techniques used before, during, and after the procedure are collected. Additional data is collected including patient demographics, past medical history, and visit satisfaction. An assessment is planned to gauge ways to improve the patient experience.

Our research team will process the collected data in accordance with HIPAA guidelines. Upon completion of data cleaning and organization, we will conduct descriptive statistics to delineate participant demographics and reported experiences. Employing statistical software, we will scrutinize correlations between variables such as procedure type and pain levels through regression and correlation analysis. Furthermore, we will execute multiple logistic regression analyses to investigate the intricate relationship between various factors and patient satisfaction or reported pain levels, while accounting for potential confounding variables. Subsequently, subgroup analysis will be meticulously conducted, stratified by age, procedure type, and medical history, thereby facilitating an in-depth examination of potential variations within these categories. Additionally, a thematic analysis of open-ended responses will be undertaken. We look forward to the interpretation of results that will be contextualized within existing literature, thereby elucidating implications for future research endeavors and healthcare practices.

Results: Survey results from outpatient OB/GYN settings in Central Illinois highlight disparities in practices and patient pain experiences. Data collection continues to proceed. Initial results revealed that 83% of patients completed the survey to an extent usable for data analyses. 60% of participants were in the age group of 21-52. Procedures performed include uterine biopsy, hysteroscopy, colposcopy, and checking for infection with 20% having the procedure done for the first time. Patients had varying forms of pain management regimens from music and warm blankets to pharmacologic pain control. A larger variation was seen in patient-reported emotional distress/anxiety before the procedure than in the self-reported pain scale with ranges of 10 and 5 respectively. Patients who were having a repeat procedure ranked their pain with an average of 4.25 and anxiety of 4.6. In patient satisfaction, patients expressed a desire for pain and emotional distress intervention through more instruction on pain management/stress relief prior to the procedure, education on the procedure, and additional pharmacologic/non-pharmacologic interventions for pain management during the procedure.

Conclusion: This study aims to assess multimodal pain management regimens for gynecologic procedures and exams. The investigation into pain and anxiety responses could create a standard of care for gynecologic procedures. Long-term goals would be advocacy for improving women's health practices throughout large hospital systems and on a national level.

11:15 - 11:30 a.m.

Paper #20

Endocan Levels and Early Onset Childhood Obesity in Term Infants Born to Mothers with Obesity

Marim Zoma, BS[1], Daisy Marty, MD[2], Stephanie Rodriguez, MD[2], Michael Stokas, MD[2], Emily Holthaus, MD[3], Jonathan K Muraskas, MD[2]

Loyola University Chicago Stritch School of Medicine, Maywood, IL[1], Loyola University Medical Center, Maywood, IL[2], UT Southwestern Medical Center, Dallas, TX[3]

Introduction: Maternal obesity induces a physiologic state of chronic low-grade inflammation with elevated levels of circulating inflammatory markers such as C-reactive protein (CRP), interleukin (IL)-6, IL-8, and tumor necrosis factor (TNF)-α that has been linked to various negative long-term outcomes in offspring, such as cardiovascular disease, metabolic syndrome, and obesity. However, this epidemic also impacts pregnancy itself and significantly increases the risk of maternal morbidity and mortality. In the United States, obesity in pregnant women has risen dramatically, with prevalence ranging from 10 to 35%.

The number of overweight adults worldwide has now surpassed one billion, and according to the World Health Organization (WHO), 160 million children and adolescents were obese in 2022, including 65 million females and 95 million males. Furthermore, several human and animal studies demonstrate that the intrauterine environment plays a critical role in programming future body composition.

Endothelial dysfunction has been measured in infants born to mothers with obesity, specifically with Endocan, a proteoglycan expressed by vascular endothelial cells. This relatively new biomarker is associated with inflammation and dysfunction in the endothelium. Maternal obesity and a high-fat diet have been shown to have deleterious effects through fetal programming, predisposing offspring to adverse cardiometabolic and neurodevelopmental outcomes.

Infant levels of Endocan at birth can be an important marker in predicting outcomes in affected infants. We have demonstrated that preterm infants (<33 weeks gestation) with high levels of Endocan at birth are at a higher risk of early-onset childhood obesity (one to two years of age). This study aims to identify an association between cord blood Endocan levels and early onset childhood obesity in term infants. We hypothesize that elevated Endocan at birth is associated with a higher BMI in the early childhood period.

Methods: Over an 18-month period, we prospectively enrolled 148 term infants, 92 of which have reached one year of age for this preliminary analysis. Endocan arterial cord blood was drawn at birth and processed without knowledge of maternal history. All births resulted from uncomplicated pregnancies, with all infants being admitted to the normal newborn nursery. Our investigation focused on the infant's birth weight and BMI percentiles and their growth patterns at six-, nine-, and twelve-month well-child visits. We also analyzed the average grams gained per day from the six-month visit to the twelve-month visit. We used a BMI at 95th percentile as the cutoff for childhood obesity, and comparisons were established using the Mann Whitney U test.

Results: Using umbilical cord arterial Endocan level as our biomarker in predicting early onset childhood obesity in term infants, we did not find statistically significant results for BMI percentiles at six-, nine-, and twelve-month well-child visits ($p=0.758$ at six months, $p=0.239$ at nine months, and $p=0.651$ at twelve months).

Conclusion: Our results indicate that the vulnerable preterm infants in our previous study (<33 weeks gestation) are perhaps more susceptible to fetal programming compared to term infants. Despite a significant correlation between Endocan and childhood obesity in a preterm cohort, the negative findings in this term cohort study will continue to be investigated. It is important to note that a significant number of study patients have not yet reached two years of age, which may be more optimal to determine trends in obesity. Data assessing childhood BMI at later stages of life could be associated with more significant findings and further support Endocan as a biomarker for early-onset childhood obesity. Our results have the potential to suggest that fetal programming of body composition might have a later onset i.e., two to three years of age in term infants.

11:30 - 11:45 a.m.

Paper #21

Patterns of Fetal Growth in Overweight and Obese Pregnant Women

Thomas N Bischoff Ogas, BS, Alfredo Gei, MD, MScPH, Jorge Barraza, MD, Isabel Garza, MD, Juan Bueno, MD, Karolina Adam, MD

Houston Center for Maternal-Fetal Medicine (affiliated with Mednax), Houston, TX

Introduction: The United States is witnessing an obesity epidemic. The maternal body mass index (BMI) and gestational weight gain (GWG) influence fetal growth. Pre-pregnancy obesity is considered an important risk factor for fetal macrosomia. Fetal macrosomia in turn, in the absence of maternal / gestational diabetes, is independently associated with the development of overweight / obesity during childhood.

Little is known about fetal growth patterns (FGP's) in overweight /obese women and whether they can be modified in utero. The present study was performed to characterize FGP's among overweight and obese pregnant women (BMI>30) in an urban private Maternal Fetal Medicine (MFM) practice.

Methods: Retrospective review of the ultrasound database of a private MFM practice in Houston. Standard WHO definitions of overweight and obesity were used based on pre-pregnancy maternal weight. Overweight and obese patients with good dating criteria were evaluated using serial growth ultrasounds at approximately monthly intervals until 32 weeks and then every 3 weeks until delivery. Patients whose fetal growth was noted to be excessive (EFW>=90th p/GA and/or AC>95th p/GA) were counseled about the implications of fetal macrosomia at birth and advised to restrict their intake of simple and complex carbohydrates.

Perinatal outcomes of mothers and infants were recorded and reviewed. We utilized the change in percentiles (EFW and AC) between ultrasounds divided by the interval of time between the studies (Delta EFW (or AC) centile/ Delta time in days between studies), to determine EFW and AC velocities.

Considering the temporal trends of EFW and AC velocity, we categorized the fetal growth in 3 main groups: normal, accelerated or decelerated.

Accelerated fetal growth was defined as an EFW delta velocity >2 MOM (multiples of the median). The data was summarized as means and standard deviations or median and range for ordinal variables. Chi squares, Kruskall-Wallis,

Mann-Whitney U and Student-t tests were used as appropriate to evaluate the data. A level of significance of 0.05 was chosen. Sigmastat 4.0 was used for statistical calculations.

Results: 41 women were included in the study. The average patient was 33.6 years old (± 4.7), Gravida 2 (range:1-7) and weighed 98.9 kg (± 18.8) with a BMI of 36.3 (± 6.5). The most common comorbidities in this cohort were gestational or pregestational diabetes (26/41), chronic hypertension (8/41) and hypothyroidism (6/41).

The median gestational age at delivery was 37 weeks (range: 32-42 weeks). The cesarean section rate was 65.9%. The average birthweight was 3229 g (±0.6). Four neonates had a birthweight of 4000 g or more. There were no cases of birth asphyxia or birth trauma in this cohort. Fourteen children (34.1%) were admitted to the NICU and 10 developed hypoglycemia (24.4%). All women had at least 3 ultrasounds, 69% had 4 and 31.7% had 5.

The average delta in velocity between US studies was:

• 7.98 (+/-49) for EFW and 21.7 (+/-72) for the AC (between 1st and 2nd US)

• 6.4 (+/-58) for EFW and 23.7 (+/-93) for the AC (between 2nd and 3rd US)

• 14.9 (+/- 64) for EFW and 48.9 (+/-151) for the AC (between 3rd and 4th US)

• 36.2 (+/-2) for EFW and 3.3 (+/- 11) for the AC (between 4th and 5th US)

Between the 1st and 2nd US, 18/41 (43.9%) of women showed an increase in delta EFW velocity by > 2 MOM. The birthweight of these patients was significantly higher than those who did not demonstrate such an increase (3386.7 +/- 0.5 vs 3104 g +/- 0.7; P< 0.0001). This subset of women was considered to have an acceleration of the fetal growth. Most of them (13/18) had a concomitant (and significant) increase of the delta AC velocity (p=0.004).

By the third US, 5/18 continued to show an acceleration pattern whereas 2 had a stable EFW velocity (delta of 0) and 11 had a decrement in the delta growth velocity. The birthweight of those fetuses who continued accelerating was significantly higher than those who decelerated or whose growth was stable (3913.4 g +/- 0.31 vs 3184.2 +/- 0.44; p<0.0001). These patients were considered to have a regression to the mean pattern.

No statistically significant differences were observed in CS rates, NICU admission or rates of neonatal hypoglycemia likely due to a type II error.

Conclusions:

1-Not enough importance has been given to the serial evaluation of fetal growth in overweight and obese pregnant women.

2-The changes in fetal growth velocity (AC and EFW) over time can be utilized as a tool for early detection of abnormal fetal growth patterns.

3-Accelerated patterns of fetal growth can be modified through lifestyle modifications if suggested by the provider and implemented by the pregnant mother.

4-FGPs in obese women between 24 and 28 weeks can be a predictor of birthweight.

5-This data suggests that the prevention of the obesity epidemic may start in utero by addressing excessive fetal growth patterns.

11:45 - 12:00 noon

Paper #22

Maternal Death and Education Level Correlation: An Analysis of North Dakota Health Trends

Madelyn V Jablonski, BS[1], Jonah W Muller, BA[1], Thomas F Arnold, MD[2], Steffen P Christensen, MD[3], Dennis J Lutz, MD[4]

University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND[1], University of North Dakota School of Medicine and Health Sciences, Dickinson, ND[2], University of North Dakota School of Medicine and Health Sciences, Fargo, ND[3], University of North Dakota School of Medicine and Health Sciences, Minot, ND[4]

Background: This study investigates the correlation between maternal mortality rates and socioeconomic factors, particularly education level and race in a rural state. Lower educational attainment often correlates with reduced socioeconomic status and healthcare access, potentially contributing to escalating maternal mortality rates, especially among Native American communities. North Dakota's demographic composition, with significant Native American and Caucasian populations, offers insights into persistent disparities in healthcare. Systemic challenges, including limited obstetric care and healthcare underfunding, exacerbate health inequities, with Native American/Alaska Native peoples experiencing higher rates of poverty, unemployment, and lack of insurance coverage. Addressing these structural inequities through targeted interventions is crucial for improving maternal health outcomes and narrowing healthcare disparities. By highlighting the intricate relationship between education, race, and maternal mortality, this study underscores the urgency of promoting educational opportunities, socioeconomic conditions, and healthcare accessibility within vulnerable populations to combat the rising maternal mortality rates and advance maternal well-being.

Objective: The primary objective of the study was to analyze maternal mortality trends in North Dakota over a 15-year period (2008-2022) and assess the impact of the education level and racial background on maternal mortality rates. Specifically, this data was used to determine if lower levels of education are associated with heightened maternal mortality rates and to explore any disparities between Native American and Caucasian populations.

Methods: Maternal mortality data was obtained from the North Dakota Department of Health and Human Services. In North Dakota, maternal mortality is defined as a death while pregnant or within 1 year of the end of pregnancy from any cause related to or aggravated by the pregnancy. The data set consisted of 119 unique records of maternal deaths, including information on race, education level, year of death, and underlying cause of death. The data was analyzed using IBM SPSS software and was stratified by education level and race to evaluate potential associations with maternal mortality rates.

Results: Analysis of the data set revealed a concerning trend of increasing maternal mortality rates in North Dakota, with rates well exceeding the national average. Mothers without a college degree accounted for 75% of all maternal deaths in North Dakota, indicating a significant association between lower education levels and heightened maternal mortality rates. In North Dakota, Native Americans constitute the largest minority group, warranting a focused examination of their maternal mortality rates. Over the past 15 years, 25 of the 86 maternal deaths were among Native American women. Of the 25 Native American maternal deaths, 76% of the individuals also did not have a college degree. The findings of this study highlight the critical importance of addressing education, race, and socioeconomic factors in maternal health interventions. Lower education levels were identified as a significant risk factor for maternal mortality, emphasizing the need for targeted initiatives to improve educational opportunities and socioeconomic conditions, particularly within vulnerable populations.

Conclusion: In summary, this study provides valuable insights into the complex interplay of education, race, and maternal mortality in North Dakota. Identifying education level and racial background as key determinants of maternal health outcomes emphasizes the importance of tailored interventions to address these disparities. Multifaceted approaches involving the healthcare systems, policymakers, and educators in both the Caucasian and Native American communities are essential to effectively reduce maternal mortality rates and promote maternal well-being. Moving forward, concerted efforts to improve data collection practices, increase awareness, and implement evidence-based interventions are crucial to achieving meaningful improved maternal mortality rates and ensuring equitable access to maternal care for all populations.

ADJOURN

A Qualtrics link will be sent by e-mail for the pre-test, post-tests and evaluations.

The pre-test will be sent prior to the conference.

The post-tests will be sent with the evaluation each day.

Please complete all to track attendance and receive educational credits.

We try to RECYCLE name badges so please turn them in to the CAOG Registration Desk before departing.

Thank You
For Attending!

SCIENTIFIC POSTERS

POSTER SESSIONS

THURSDAY
OCTOBER 17, 2024
6:00 A.M. – 12:00 NOON

FRIDAY
OCTOBER 18, 2024
6:00 A.M. – 10:30 A.M.

Poster #1

"Development of a Multi-Institutional E-learning Platform to Increase Health Professions Students' Knowledge of Social Determinants of Health (SDoH) in an OBGYN Setting."

Mila D. Shah-Bruce, M.D., PhD
LSU Health Sciences Center in Shreveport
Shreveport, Louisia

Poster #2

"A Comparative Study of Evolving Three-Year Trends in Wellness, Inclusiveness, and Sense of Belonging Efforts Among Residency Program Websites Across Six Medical Specialties"

Catherine Little, M.D.
LSU Health Sciences Center in Shreveport
Shreveport, Louisiana

Poster #3

"Perinatal Outcomes Associated with Prenatal Cannabis Exposure in a High-Risk Obstetric Population"

Kristina M. Gambino, M.D.
LSU Health Sciences Center in Shreveport
Shreveport, Louisiana

Poster #4

"Enhancing Cultural and Religious Sensitivity: Tracking Changes in OB/GYN Residency Programs From 2021 to 2024"

Keely M. Charles, M.D.
LSU Health Sciences Center in Shreveport
Shreveport, Louisiana

Poster #5

"Is the Weight All We Can See? A Study to Evaluate How BMI and Other Patient Characteristics Impact Incomplete Fetal Anatomy Survey Ultrasounds"

Elizabeth Paige Hart, M.D.
Ascension St. Vincent Indianapolis
Indianapolis, Indiana

Poster #6
"Investigating the Effect of Vaccination with Messenger RNA Coronavirus Disease 2019 Vaccine on False Positive RPR in Pregnancy"

Audrey E. Martin, D.O.
Ascension St. Vincent Indianapolis
Indianapolis, Indiana

Poster #7
"A Retrospective Matched Cohort Study to Compare Effectiveness of Foley Induction in the Nulliparous versus Multiparous Patient"

Danielle L. Lanzdorf, D.O.
Ascension St. Vincent Indianapolis
Indianapolis, Indiana

Poster #8
"A Retrospective Study evaluating the Association Between Postpartum Hemorrhage and Depression PHQ9 Scores"

Jessica H. Meichtry, M.D.
Ascension St. Vincent Indianapolis
Indianapolis, Indiana

Poster #9
"Identification of Tryptophan Catabolic Alterations in Endometrial Tumor Microenvironments"

Sarah M. Nelson, B.S.
Southern Illinois University School of Medicine
Springfield, Illinois

Poster #10
"Referral Times and Time-to-Treat Gynecological Cancer Prior to and During the COVID-19 Pandemic"

Amber D. Bottrell, B.A.
Southern Illinois University School of Medicine
Springfield, Illinois

Poster #11
"Once versus Twice Daily Iron Supplementation in Pregnancy"

Jasmine D. Walker, B.A.
University of Missouri School of Medicine
Columbia, Missouri

Poster #12
"Contrasting Department Chair Leadership Styles Concerning Clinical Faculty Burnout and Well-Being in an Academic Health Care System"

Jasmine D. Walker, B.A.
University of Missouri School of Medicine
Columbia, Missouri

Poster #13
"A Tale of Two Anencephalies: Multimodal Imaging Approach for Prenatal Diagnosis and Management"

Jenci Hawthorne, M.D.
University of Louisville
Louisville, Kentucky

Poster #14
"Management of Pregnancy after Peripartum Cardiomyopathy"

Ella M. Kinder, M.S.
University of Missouri - Kansas City
Kansas City, Missouri

Poster #15
"The Emotional and Social Impacts of Menstrual Practices on Women in Rural Guatemala"

Lauren V. Evelti, B.S.
Kansas City University
Kansas City, Missouri

Poster #16
"Prosperity in an Academic Career: Developing An Academic Specialist Fellowship"

Sarah L. Dreibelbis, D.O.
University of Kansas Medical Center
Kansas City, Kansas

Poster #17
"MenoPatch: Advancing Transdermal Hormone Replacement Therapy for Menopausal Symptom Management"

Ameek K. Bindra, B.A.
Carle Illinois College of Medicine
University of Illinois at Urbana - Champaign
Urbana, Illinois

Poster #18
"The HystAssist: A Novel Approach for Training Residents on Vaginal Hysterectomy"

Abigail R. Kostolansky, B.A.
Carle Illinois College of Medicine
University of Illinois, Urbana - Champaign
Urbana, Illinois

Poster #19
"The Relationship Between Diet Quality, Residing in a Food Desert, and Psychosocial Characteristics in Early Pregnancy"

Emma S. Ryan, M.D.
Indiana University School of Medicine
Indianapolis, Indiana

Poster #20
"Changes in Address and the Child Opportunity Index after Delivery in a Cohort of First-time Mothers"

Katherine E. Modrall, B.A.
Indiana University School of Medicine
Indianapolis, Indiana

Poster #21
"Is a Decreased Rate of Postpartum Oxytocin Associated with Increased Postpartum Bleeding Episodes After the Initial Recovery Period?"

Sophia Davis, M.D.
Mount Sinai South Nassau
Oceanside, New York

Poster #22
"Evaluating Breastfeeding Rates and Factors Influencing Success"

Chava R. Welton, M.D.
Mount Sinai South Nassau
Oceanside, New York

Poster #23
"Internal Validation of an AI-Assisted Algorithm for PC-06.0 (Unexpected Complications in Term Newborns) Measures"

Nabila S. Azeem, M.D.
University of Toledo College of Medicine
Toledo, Ohio

Poster #24
"Effect of Maternal Race and Ethnicity on Cervical Length and Preterm Delivery"

Nabila S. Azeem, M.D.
University of Toledo College of Medicine
Toledo, Ohio

Poster #25
"Cross-Sectional Survey of 22q11.2 NIPT Screening: A Study of Provider Knowledge"

Juliana H. Simon, B.A.
University of Toledo College of Medicine
Toledo, Ohio

Poster #26
"The Effect of an Antepartum Wellness Program on Maternal Mental Health During Prolonged Hospitalization"

Danielle Saucier, M.D.
University of Toledo College of Medicine
Toledo, Ohio

Poster #27
"Maternal Pre- and Post- Delivery White Blood Cell Counts as Early Indicators of Chorioamnionitis in Preterm Deliveries"

Danielle G. Iben, B.S.
University of California - Davis
Davis, California

Poster #28
"Do Obstetrical Interventions in Periviable Deliveries Yield Greater Survivability for Twins Compared to Singleton Gestations?"

Patrick S. Kim, M.D.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

Poster #29
"Pneumomediastinum in the Setting of Hyperemesis Gravidarum: A Case Report"

Patrick S. Kim, M.D.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

Poster #30
"Worsening Fetal Hydrops in the Setting of Refractory Fetal Supraventricular Tachycardia: A Case Report"

David J. Rivera, M.D.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

Poster #31
"Management and Delivery of a Patient with a Placental Chorioangioma and Severe Polyhydramnios"

Kelsey M. Pozerski, D.O.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

Poster #32
"Infant Safe Sleep: Prenatal Provider Knowledge and Practice Patterns in Cincinnati, Ohio"

Katy McFarland, MPH
University of Cincinnati
Cincinnati, Ohio

Poster #33
"Effectiveness of Office Hysteroscopy on a Patient's Health-Related Quality of Life (HRQoL)"

Teresa Tam, M.D.
Ascension Healthcare
Chicago, Illinois

Poster #34
"Designing a Novel Maternal Mortality and Morbidity Pre-Clinical Pathology Teaching Module to Improve Vital Statistic Reporting"

Abigail L. Pleiss, B.S.
Univ. North Dakota School of Medicine & Health Sciences
Grand Forks, North Dakota

Poster #35
"Retained Intraabdominal Fetal Parts Following Dilation and Evacuation"

Allie D. Stover, B.S.
Univ. North Dakota School of Medicine & Health Sciences
Grand Forks, North Dakota

Poster #36
"Delayed Diagnosis of Congenital Imperforate Hymen Resulting in Obstructing Hematometrocolpos"

Courtney M. Hanson, B.S.
Univ. North Dakota School of Medicine & Health Sciences
Bismarck, North Dakota

Poster #37
"Massive Perivillous Fibrin Deposition with Unexpected Asymmetric IUGR"

Danielle R. O'Hare, B.A.
Univ. North Dakota School of Medicine & Health Sciences
Grand Forks, North Dakota

Poster #38
"Phenylalanine Hydroxylase Deficiency (Phenylketonuria) in a Pregnant Patient"

Tatiana M. Roberts, B.S.
Univ. North Dakota School of Medicine & Health Sciences
Grand Forks, North Dakota

Poster #39
"A Survey-Based Exploration of Fertility, Reproductive Health, and Contraception in Females Considering Bariatric Surgery"

Catherine Chen, B.S.
Northwestern University Feinberg School of Medicine
Chicago, Illinois

Poster #40
"Empowering Women's Health: Introducing and Implementing Manual Vacuum Aspiration for Enhanced Family Planning in a Community Hospital Setting"

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

Poster #41
"Utilization of Vaginal Ultrasound Surveillance During the Second Trimester and Postpartum to Detect and Repair Failure of Transabdominal Cerclage and Allow Targeted Avoidance of Failure"

James E. Sumners, M.D.
Cox Medical Center South
Springfield, Missouri

Poster #42
"Managing Idiopathic Subglottic Stenosis During Pregnancy: A Multidisciplinary Approach"

Matthew E. Kinney, M.S.
University of Louisville
Louisville, Kentucky

Poster #43
"Prenatal Detection and Monitoring of an Intracardiac Teratoma"

Margaret E. Finn, M.D.
University of Louisville
Louisville, Kentucky

Poster #44
"Tuberous Sclerosis Presenting with Psychiatric Symptoms in Pregnancy: A Case Report"

Ann K. Porter, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #45
"Postpartum Intracranial Thrombus and Hemorrhages: Case Report and Literature Review"

Claire R. Chastain, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #46
"Balancing Fertility and Treatment of Endometrial Carcinoma in a Young Patient with PCOS"

Anna M. Shunnarah, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #47
"Melanosis of the Vagina: A Case Report"

Regan E. Shaw, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #48
"Sigmoid and Cecal Volvulus following Cesarean Twin Delivery"

Alicia Dent Agard, B.S., B.S.M.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #49
"Stage IV Malignant Pheochromocytoma and Pregnancy"

Madison A. Poiroux, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #50
"Management of Grade IV Astrocytoma Diagnosed during Pregnancy"

Shriya Meesala, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #51
"Case Report: Diagnosis and Management of a Suspected Rare Form of Fetal Encephalocele"

Leila Yang, B.S.
Frederick P. Whiddon College of Medicine
at the University of South Alabama
Mobile, Alabama

Poster #1

Development of a Multi-Institutional E-learning Platform to Increase Health Professions Students' Knowledge of Social Determinants of Health (SDoH) in an OBGYN Setting

Mila D Shah-Bruce, MD, PhD, Amanda Mahoney, DPT, Maira Qayyum, MD, Daniel Core, MD, Qinsong Zhao, PhD, Urska Cvek, ScD, Kamryn Jones, BS, Rachel Cline, BA, Dani G Zoorob, MD, MHA, MBA, MHI, Deborah Smith, BSN, MPH, PhD

Louisiana State University-Health Sciences Center-Shreveport, Shreveport, LA

Background: Social determinants of health (SDoH) encompass the conditions in which people are born, live, learn, work, play, worship, and age. These factors are particularly relevant in obstetrics and gynecology, where health disparities are linked to worse outcomes for disadvantaged populations. Non-Hispanic Black patients, for example, are three times more likely to die from pregnancy-related complications compared to White patients. While online platforms have proven effective in enhancing healthcare education by offering flexible learning schedules, there is a notable lack of e-learning platforms specifically designed to improve knowledge and clinical reasoning regarding health disparities in the OBGYN setting. To address this gap, we developed a free e-learning platform integrating social determinants of health into clinical reasoning.

This study aimed to assess the impact of our platform on increasing awareness and understanding of SDoH and their role in healthcare disparities through pre- and post-test case assessments.

Methods: A repository of virtual case simulations targeting Obstetrics and Gynecology foundational knowledge, incorporating social determinants of health, was developed by a multidisciplinary team from the Louisiana State University Health Sciences Center-Shreveport (LSU-HS), including the School of Medicine (Department of Obstetrics and Gynecology) and the School of Allied Health Professions, as well as the Louisiana State University-Shreveport (LSU-S) Department of Computer Sciences.

Physician assistant and physical therapy students from LSUHS – School of Allied Health Professions, who had completed or were completing their women's health clinical rotation, were included. Thirty students were recruited via email and campus instructors; however, three did not complete the modules, and one had incomplete pre/post-tests.

Participants accessed the e-learning platform via their student email. Surveys administered before and after completing ten virtual case modules assessed students' comfort and competency regarding SDoH in OBGYN. The surveys included 25 questions across four categories: perceived importance of SDoH in healthcare, confidence in understanding and discussing SDoH, confidence in discussing SDoH with patients, and perceived impact of SDoH on clinical outcomes and decision-making. The post-test survey also assessed the perceived usefulness and impact of the modules. A Wilcoxon Signed Ranks test was utilized to determine whether subjects' comfort level with the SDoH in OBGYN had changed. The Wilcoxon Signed Rank test and descriptive statistics were generated using the SPSS Version 29.

Results: Pre-survey results indicated that 60% of participants had never heard of SDoH, 63.3% lacked confidence in listing the five SDoH domains, and nearly 65% had never received formal training on SDoH. Most participants (80%) believed interprofessional teams were better positioned to assess SDoH than single professionals, 60% acknowledged the impact of SDoH on clinicians' decision-making, and 96.7% recognized the impact on patients' decision-making. Post-survey results showed that 80% of participants felt the e-learning tool influenced their decision-making perceptions. User-friendliness was rated highly, with 48.1% giving it a 10 out of 10, and approximately 74% found the platform easy to use. Open-ended feedback praised the modules' accessibility and clarity, though suggestions included a refresher on SDoH before the modules and adding explanations for answers. The Wilcoxon Signed Ranks test analysis indicates that the e-learning platform significantly impacted students' confidence level in discussing the following domains: living situation and housing stability ($p<0.014$), food security ($p<0.007$), personal safety ($p<0.025$), financial stressors ($p<0.002$), employment ($p<0.008$), and education ($p<0.014$). The e-learning platform significantly increased participants' confidence in knowing the SDoH ($p<0.001$), listing the five domains of SDoH ($p<0.001$), and perception that they had formal training on SDoH ($p<0.001$).

Conclusions: The e-learning platform significantly increased students' knowledge of SDoH and their confidence in applying it in an OBGYN clinical context. Initially, most participants were unfamiliar with SDoH, but post-module completion showed improved confidence in discussing all five SDoH domains with patients. These findings emphasize the importance of integrating SDoH modules into health professions curricula using e-learning platforms. Future

research should involve larger student populations and include pre-health programs such as medical, nursing, and occupational therapy to validate these findings further.

Poster #2

A Comparative Study of Evolving Three-Year Trends in Wellness, Inclusiveness, and Sense of Belonging Efforts Among Residency Program Websites Across Six Medical Specialties

Catherine Little, MD[1], Luiza Bastos, MS[2], Adelaide Schultz, BS[1], Grace Dean, BS[1], Kathryn Self, BS[1], Melanie Green, BS[1], Hind Moussa, MD[3], Dani Zoorob, MD[1]

LSU Health Sciences Center in Shreveport, Shreveport, LA[1], Charles University, Prague[2], ProMedica Health System, Toledo, OH[3]

Introduction: Wellness and Belonging are vital factors shaping today's healthcare landscape. Recognized for fostering a resilient and effective healthcare workforce, these factors are crucial in promoting resident well-being, preventing burnout, and enabling high-quality care and sound clinical decisions. Wellness and Belonging competencies are also essential for addressing health inequalities, as a diverse healthcare workforce reflects the communities it serves, enriching patient care with varied perspectives and experiences.

Beyond clinical exposure and academic reputation, students increasingly value residency programs that prioritize well-being, professional growth, and inclusiveness. Prospective residents consider these factors when selecting programs, highlighting the importance of comprehensive and easily navigable program websites. Effective communication of a program's commitment to wellness and inclusiveness is crucial in attracting and retaining top medical talent.

The primary objective of this study was to evaluate the presence, persistence, and integration of wellness and belonging initiatives within residency programs across six medical specialties by analyzing program websites. The secondary objective was to identify trends and disparities in the promotion of wellness and belonging initiatives over time, from the 2020 to the 2023 interview cycles, across different specialties.

Methodology: Data were collected and analyzed from the websites of ACGME-accredited residency programs across six specialties: Obstetrics and Gynecology, Anesthesia, General Surgery, Internal Medicine, Orthopedics, and Physical Medicine and Rehabilitation. This study spanned two time points, the 2020 and 2023 interview cycles, with data collected within one month of the Match process, facilitating longitudinal trend comparison.

Nine medical students developed 22 attributes to evaluate wellness and belonging initiatives. The data, systematically organized and analyzed, allowed for the identification of trends and disparities across specialties and over time. The collection was conducted by a diverse team of students from two large medical schools in the Midwest and South, representing various racial, geographical, and gender demographics. The number of analyzed websites varied between the two periods due to the rise in accredited programs and/or improved website accessibility. Thus, percentages were utilized to optimize comparison.

Results: A total of 3,385 ACGME-accredited program websites were analyzed across the 2020 and 2023 interview cycles. The initial analysis, completed by March 2021, included 1,636 programs. This number increased to 1,749 for the second analysis, completed by March 2024.

In 2021, PM&R and OB/GYN programs demonstrated a strong commitment to wellness and belonging, with PM&R programs having the highest percentage of developed website components at 70%, compared to an average of 25% across five other specialties. OB/GYN programs exhibited a significant focus on belonging, with 36% emphasizing inclusiveness in their goals and mission statements.

By 2024, both PM&R and OB/GYN showed a declining trend. PM&R programs saw a decrease in developed belonging components to 31%, and the presence of wellness-focused pages dropped from 61% to 36%. OB/GYN programs experienced a reduction in inclusiveness in communications from 37% to 17%. In contrast, other specialties saw an increase in this criterion. Despite some positive developments, such as an increase in the use of pronouns from 4% to 20%, OB/GYN programs generally saw a decrease in most categories. Notably, there was a significant reduction in LGBTQIA+ representation and gender diversity among faculty and residents. While other specialties doubled their mentions of a holistic application review process, OB/GYN programs saw a decline from 18% to 12%.

Between 2021 and 2024, Internal Medicine, Orthopedics, and General Surgery programs showed minimal progress or declines in key belonging or inclusiveness areas. Orthopedics experienced significant drops, including mentions of wellness in leadership communications (from 22% to 7%) and the presence of dedicated DEI officers or residents (from 21% to 4%). General Surgery also observed a decline in dedicated DEI officers or residents from 12% to 7%, though there was some improvement in gender diversity among faculty, increasing from 55% to 70%.

Overall, anesthesiology demonstrated the peak progress between 2021 and 2024. The percentage of Underrepresented

in Medicine residents increased from 48% to 72%. Additionally, involvement with underserved or lower socioeconomic communities rose from 13% to 39%, and explicit mentions of a holistic application review process increased from 1% to 33%.

Conclusion: Our study indicates significant variations in the integration of wellness and belonging practices across residency programs. The findings underscore the importance of accessible information on program websites, which serve as crucial resources for prospective applicants. Additionally, the study highlights areas needing improvement to better support and inform future residents.

Poster #3

Perinatal Outcomes Associated with Prenatal Cannabis Exposure in a High-Risk Obstetric Population

Kristina M Gambino, MD[1], Rose Maxwell, PhD[2], Dani Zoorob, MD, MHA, MBA, MHI[1]

LSU Health Sciences Center in Shreveport, Shreveport, LA[1], Wright State University, Dayton, OH[2]

Background: Cannabis is the most frequently used recreational drug among pregnant women in the United States, with usage rates increasing due to legalization and decriminalization. Self-reported cannabis use during pregnancy varies from 2-28%, particularly among young, urban, socioeconomically disadvantaged women. These self-reported rates are suspected to be underestimated due to fear of retaliation and discrimination. Pregnant patients often perceive marijuana use as relatively safe, leading to its continued use throughout pregnancy and postpartum. Alternatives to cannabis commonly include tobacco smoking and vaping. While the use of traditional tobacco products during pregnancy has declined overall, the use of alternative tobacco products, such as vaping, has risen. The perinatal effects of cannabis alone and in combination with tobacco products have not been well-studied. Animal studies have shown that tetrahydrocannabinol (THC) crosses the placenta, potentially affecting the fetus. Evidence suggests that cannabis use may disrupt neurodevelopment, with some human studies indicating increased risks of stillbirth, low birth weight, and preterm birth.

This study aims to assess whether cannabis use is associated with increased risks of preterm birth, cesarean delivery, low birth weight, and hypertensive disorders of pregnancy, and to compare these outcomes with those in patients using both cannabis and tobacco products, as well as those using cannabis with other recreational products.

Methods: A retrospective cohort study was conducted on subjects (n=416) with documented cannabis and tobacco use during pregnancy, who delivered between July 2020 and August 2023 at a large university-based medical center in Louisiana. Whereas 416 charts were reviewed, 325 patients met the inclusion criteria, which included positive urine drug screens, English-speaking patients, intrauterine pregnancy, and delivery during the same admission as when collecting the drug screen, where urine drug screen results were available. Chart reviews included confirmation of self-reported cannabis, tobacco, and other recreational drug use with urine drug screen findings. Statistical analyses were

performed using Chi-Square and Fisher's Exact tests. The study was approved by the Institutional Review Board (IRB: STUDY00002464).

Results: The average patient age was 21.58 years (SD 11.44), with an average Gestational Age of 29w+6d (SD 15 d). There group analyzed included 188 (58%) White, 131 (40%) Black, 6 (2%) of other races with 5 (2%) being of Hispanic ethnicity. Upon presentation for delivery, 128 (39%) were nulliparous, whereas 197 (61%) were multigravida, with 242 (74%) being singleton pregnancies and 83 (26%) being multifetal. Fetal Growth restriction was noted in 44 (13.5%) of patients, Hypertensive disorders in 80 (45%) patients, and diabetes in 18 (6%) of patients.

The analysis revealed no statistically significant differences in the rates of preterm birth among the three groups ($p = 0.603$; Chi-Square Test). Additionally, the mode of delivery showed no significant differences between cannabis-only patients and those who used other recreational drugs ($p = 0.60$; Chi-Square Test). The rate of small for gestational age neonates did not differ between the cannabis-only group and the other recreational drug use group ($p = 0.387$; Fisher's Exact Test). Placental size comparisons also showed no significant differences ($p = 0.138$; Chi-Square Test). Lastly, the development of hypertensive disorders of pregnancy was not significantly different between the groups ($p = 0.283$; Chi-Square Test).

Limitations of the study include the small sample size, single recruitment site, and potential confounding factors such as advanced maternal age, pre-existing health conditions, and obesity.

Conclusions: Prenatal cannabis exposure was not associated with increased rates of preterm birth, small for gestational age neonates, primary cesarean delivery, or hypertensive disorders of pregnancy. Furthermore, there were no significant differences in these perinatal outcomes between patients who used only cannabis, those who used cannabis and tobacco, and those who used cannabis with other recreational drugs. These findings contribute to the understanding of perinatal outcomes associated with prenatal cannabis exposure, highlighting the need for larger studies to confirm these results and explore the long-term effects on child development. Health professionals should continue to monitor and counsel pregnant patients on the potential risks associated with cannabis use.

Poster #4

Enhancing Cultural and Religious Sensitivity: Tracking Changes in OB/GYN Residency Programs from 2021 to 2024

Hannah Hansen, MD[1], Keely M Charles, MD[1], Amber Hunt, MSMP[1], Lillian Lauck, MS[1], Alexandra Martinez, MS[1], Nabila Azeem, MD[2], Yasmin Hasbini, MD[2], James Dishuck, BS[3], Hind Moussa, MD[4], Dani Zoorob, MD, MHA, MBA, MHI[3]

LSU Health Sciences Center in Shreveport, Shreveport, LA[1], University of Toledo, Toledo, OH[2], LSU Health Sciences Center Shreveport, Shreveport, LA[3], ProMedica Health System, Toledo, OH[4]

Introduction: Cultural competency training, which includes understanding and respecting diverse religious beliefs and practices, is crucial for providing culturally sensitive patient care. In residency programs, a focus on this type of competency may not only enhance patient care but also promote mental health and wellness for resident trainees. The Accreditation Council for Graduate Medical Education (ACGME) suggests integrating this training into core competencies such as interpersonal and communication skills, patient care, and professionalism. Promoting inclusivity within residency training prepares residents to effectively care for patients from diverse backgrounds, enhancing their ability to provide personalized care.

This research study seeks to track and analyze the evolution of cultural and religious support purported on Obstetrics and Gynecology residency websites over three years.

Methods: In 2021 and 2024, a comprehensive evaluation of the websites of ACGME-accredited OB/GYN residency programs in the U.S. was conducted, focusing on data from the recently concluded interview cycles. A unique set of evaluation criteria was developed to assess the incorporation of cultural and religious diversity, as well as the integration of corresponding competency training into resident education. The process of devising the 18 key questions for the assessment involved rigorous formulation, validation, and refinement by a group of religiously and culturally diverse medical students. The collection of data was conducted by students from two larger medical schools, one in the Midwest and another in the South.

The number of analyzed websites between the two time periods was noted to be discrepant due to the rise in accredited programs and/or improved website accessibility. Thus, instead of absolute numbers, percentages were utilized

to optimize comparison. Data was also categorized based on geographical/administrative CREOG regions to facilitate easier understanding and regional comparison.

The evaluation criteria included factors such as the program's efforts in recruiting and respecting the needs of residents of diverse religious backgrounds, the presence of cultural, religious, and racial non-discrimination statements, and the program's support towards residents' religious obligations, among others.

Results: A total of 577 OB/GYN residency program websites were analyzed: 285 in 2021 and 292 in 2024.

There was a positive trend toward supporting cultural and religious competencies across all CREOG regions in OB/GYN residency programs. Programs expressing an interest in recruiting residents from diverse religious backgrounds nearly doubled from 12% to 26%. The percentage of residency programs providing formal cultural competency education to staff rose from 7% to 17%. Additionally, there were improvements in support for resident involvement in advocacy or policy issues related to cultural competency and an increase in programs allowing residents to opt out of practices conflicting with their beliefs. The proportion of residency programs implementing a holistic review of applications increased from 17% to 33%.

Regional analysis highlighted significant shifts across different CREOG regions. Regions 1 and 3 showed a marked rise in the percentage of programs demonstrating interest in investment to recruit residents of diverse religious backgrounds, indicating increased acceptance of religious variety. Specifically, Region 1 saw an increase from 12% to 38%, while Region 3 jumped from 0% to 20%.

Regions 2 and 4 experienced substantial growth in implementing formal cultural competency education, rising from 5% to 18% in Region 2 and from 9% to 46% in Region 4. Region 5 stood out overall in multiple areas, such as integrating cultural competency into the residents' didactic curricula and supporting residents in researching religious and cultural diversity issues.

Despite improvements in most areas, some criteria showed minimal progress. Support for residents with religious obligations remained static at 0% across all regions. Similarly, explicit policies addressing time off for religious holidays declined from 2% to 1%.

In Regions 3 and 4, there was a decline in the percentage of programs addressing opportunities and procedures for reporting harassment on their websites, with Region 4 experiencing a significant drop from 16% to 1%. This decline suggests a potential lack of transparency and support for residents facing such cultural issues.

Lastly, specialized cultural mentorship programs to accommodate International Medical Graduates remained largely absent, with only 1% of programs offering such support in both cycles.

Conclusion: Our study provides a comprehensive analysis of cultural and religious competencies in OB/GYN residency programs across the US, based on data from 2021 and 2024. The findings suggest a generally positive trend in the improvement of these competencies over the three years with significant progress noted in most areas. However, the regional analysis revealed varied trends across CREOG regions, showcasing the need for region-specific strategies. This research underscores the importance of continuous evaluation and enhancement of cultural and religious competency training in residency programs to ensure that future healthcare providers are well-equipped to deliver inclusive and respectful patient care.

Poster #5

Is the Weight All We Can See? A Study to Evaluate How BMI and Other Patient Characteristics Impact Incomplete Fetal Anatomy Survey Ultrasounds

Elizabeth Paige Hart, MD[1], Barbara Matakevich, DO[1], Todd Foster, PhD[2]

Ascension St. Vincent OB GYN Residency, Indianapolis, IN[1], Ascension St. Vincent Hospital Medical Education, Indianapolis, IN[2]

Anatomy ultrasounds are recommended each pregnancy to assess for fetal anomalies with additional ultrasounds indicated based on risk factors. Incomplete anatomy ultrasounds can range from 4% to 35.5% with obesity impacting ability to adequately visualize fetal anatomy. American College of Obstetrics and Gynecology (ACOG) has guidelines for standard anatomy screening. American Institute for Ultrasound Medicine (AIUM) uses ACOG guidelines in addition to other structures for both a screening and detailed ultrasound. This is a retrospective case study with the primary objective to identify the rate of incomplete fetal anatomy ultrasounds in a high risk, limited-resource population receiving prenatal care at the Ascension Joshua Max Simon Primary Care Center Women's Health Center (PCC-WHC). Additionally, the impact of obesity classes (i.e. Class 1, 2, 3) and other patient characteristics (gravity, parity, gestational age, fetal presentation, history of cesarean delivery, history of laparotomy, diabetes mellitus) on the incomplete anatomy scan rate was evaluated. Secondary objectives included identifying the rate of completion of follow-up ultrasounds and the success rate of identifying complete anatomy in subsequent ultrasounds. Additionally, the study identified the most common incomplete anatomic structures.

A query in Athena electronic medical records found anatomy ultrasounds that were completed between October 1, 2022 and September 30, 2023 on a GE Voluson E10 ultrasound by AIUM certified sonographers at the PCC-WHC and read by a Maternal Fetal Medicine specialist. Inclusion criteria of receiving prenatal care at the PCC-WHC, were 18 years old at time of delivery, had a singleton pregnancy and the anatomy ultrasound completed between 18+0 and 22+0 weeks gestation, as well as exclusion criteria of receiving an anatomy ultrasound at another facility other than the PCC-WHC was then applied to the participants. The data was collected and subjected to statistical analyses. Bivariate analysis was performed to compare BMI and incomplete anatomy ultrasounds as well as patient characteristics and incomplete anatomy ultrasounds. Univariate logistic

regression identified variables for final multivariate regression analysis.

Of the 468 charts that were queried through the Athena electronic medical record, only 287 (61.3%) patient records met inclusion/exclusion criteria. The rate of incomplete fetal anatomy in the final study population was found to be 55.1%. The univariate logistic regression models found body mass index, both categorically and continuously, fetal presentation, and gestational age at ultrasound to be statistically significant in predicting an incomplete ultrasound. Previous cesarean section, diabetes, presence of fibroids, gravidity, status of high-risk, patient age, and prior laparotomy were all found to be non-significant using univariate regression models and were not included in the final model. BMI class, fetal presentation, and gestational age at anatomy ultrasound (days) were included in the final generalized additive regression model. Specifically, Class 2 ($x2=11.04$, $p<0.001$) and Class 3 ($x2=7.43$, $p=0.001$) obesity significantly impacted the rate of incomplete anatomy. Only breech presentation was found to be significantly associated with an incomplete ultrasound examination ($x2=5.22$, $p=0.02$). Gestational age was also found to be statistically significant in the final regression model as well ($x2=9.18$, $p=0.002$) with an earlier gestational age at ultrasound being more associated with an incomplete finding. Views of the heart were the most likely organ group to be incompletely or suboptimally viewed in the primary anatomy ultrasounds. Of the various incomplete views of the heart, the aortic arch view was least likely to be visualized. The rate of completing a secondary or follow-up ultrasound if the initial anatomy ultrasound was found to be incomplete was 90.5%. Of the repeat scans, 54.1% were completed by sonographers at the PCC-WHC and 45.9% of the scans were completed at MFM. The rate of complete anatomy ultrasound on a follow up/secondary ultrasound was found to be 72.0%. Again, the views of the heart were most likely to be read as suboptimal or incomplete, with the aortic arch view again being the most common incomplete view.

This study found more emphasis is needed on ultrasound timing. 36.5% of queried anatomy ultrasound were completed outside the recommended ACOG timing window. Likely multifactorial reasoning for this within our clinic structure and with our population, care should be taken to prioritize scheduling anatomy ultrasounds between 18+0 and 22+0 weeks. The importance of proper counseling regarding the limitation of ultrasounds in the obese population should be the standard of care for all providers in order to manage patient's expectations. Educational efforts should be directed towards proper counseling regarding expectations and timing of ultrasounds in the later part of the window to optimize views. Follow up ultrasounds may be helpful in completing missing

anatomical structure, but within the obese population may still have incomplete views.

Poster #6
Investigating the Effect of Vaccination with Messenger RNA Coronavirus Disease 2019 Vaccine on False Positive RPR in Pregnancy

Audrey E Martin, DO, June Murphy, DO, Todd Foster, PhD, CPI

Ascension St. Vincent Indianapolis, Indianapolis, IN

Objective: This retrospective chart review will examine pregnant women seen in the Indiana Ascension Medical Group system (See appendix) between the dates of December 11th, 2020 to December 31st, 2022 who had a false positive RPR after COVID vaccination compared to those who had a false positive without COVID vaccination.

Methods: This was a retrospective chart review of women, aged 18 years or greater, who were pregnant and had positive RPR testing from December 11th, 2020 to December 31st, 2022.The primary variable of the study is a falsely reactive RPR meaning, a positive Rapid Plasma Reagin with a negative treponemal test. We further collected the following data: treponemal confirmatory testing, COVID-19 vaccination status, COVID-19 vaccination type, COVID-19 infection. We also documented demographic data including age, insurance type, race, and BMI. Patients were excluded from the study if they had a COVID infection prior to positive RPR, or have a known history of syphilis (Positive RPR with positive treponemal confirmatory testing).

Results: We identified 212 pregnant women with a reactive RPR value between December 11th, 2020 to December 31st, 2022 in the Indiana Ascension Medical Group and Women's Health clinic. After reviewing exclusion criteria a total of 59 pregnant women were found to have a falsely reactive RPR; meaning, the non-treponemal testing/RPR was reactive but the treponemal testing was negative. Of those with a falsely reactive RPR, 48.1% had received a COVID vaccination prior to the falsely reactive test. Of that 48.1%, a majority had a falsely reactive RPR within 300 days of vaccination and 30% had a falsely reactive RPR within 100 days of vaccination. Of those who received a SARS-CoV2 vaccination prior to a falsely reactive RPR, 57% received a Pfizer-BioNtech vaccine and 30% received a Moderna vaccine. There was no statistically significant difference between groups (falsely positive RPR vs falsely positive RPR with COVID vaccination prior) in regard to Age, Race, BMI, Insurance type.

Conclusion: When comparing pregnant women with falsely positive RPR to women with SARS-CoV2 vaccination preceding falsely positive RPR, almost half had been exposed to the SARS-CoV2 vaccination prior to the falsely positive RPR. This phenomena occurred mostly within the first 300 days of vaccination and almost 1/3rd occurred within the first 100 days after vaccination.

Poster #7

A Retrospective Matched Cohort Study to Compare Effectiveness of Foley Induction in the Nulliparous versus Multiparous Patient

Danielle L Lanzdorf, DO, Peter S Marcus, MD, Todd Foster, PhD, Elizabeth Carlson, BS, Nadia Kahn, BS

Ascension St. Vincent, Indianapolis, IN

Objective: To evaluate the effectiveness of foley balloon for labor induction in the nulliparous vs multiparous patient in terms of length of induction and successful vaginal delivery.

Methods: This was a single center retrospective cohort study. All inductions between January 1st, 2021 to December 31st, 2022 performed at Ascension St. Vincent's Women's Hospital were evaluated. Inclusion criteria consisted of gestational age 34+0 weeks to 42+0 weeks, singleton live births, and cephalic presentation. Covariates included known factors that increase likelihood of cesarean delivery including obesity, advanced maternal age, pre gestational diabetes and extremes of fetal weight. This study compared length of induction and mode of delivery within and between nulliparous and multiparous patients. Preliminary data on impact of timing of foley insertion was evaluated to determine if its use as a primary versus secondary method for induction of labor impacted outcomes.

Results: Length of time for induction of nulliparous patients with a foley (1524 minutes), without a foley (1084 minutes), multiparous patients with a foley (878 min) and without a foley (601.5 min) were all statistically significant. Successful vaginal delivery was also lowest in the nulliparous foley group (64%) and highest in the multiparous no foley group (95.8%). All patients with foley balloon induction/ripening had longer labors and increased rates of cesarean delivery. Foley balloon for cervical ripening/induction was associated with longer labors and increased incidence of cesarean delivery in the nulliparous versus multiparous patient.

Conclusion: Foley balloon for cervical ripening/induction was associated with less favorable outcomes in the nulliparous versus multiparous patient. However, based on preliminary data this effect may be dependent on whether the foley is used as an initial induction agent or only after other methods have failed to achieve a favorable cervix.

Poster #8

A Retrospective Study Evaluating the Association Between Postpartum Hemorrhage and Depression PHQ9 Scores

Jessica H Meichtry, MD

Ascension St. Vincent Indianapolis, Indianapolis, IN

Objective: This retrospective chart review examine the relationship between blood loss in postpartum hemorrhage and the change in PHQ-9 scores in women receiving prenatal care at Ascension Joshua Max Simon Primary Care Center Women's Health Clinic and delivered at Ascension St. Vincent Women's Hospital-Indianapolis.

Methods: This was a retrospective chart review of women with a postpartum hemorrhage from January 1, 2023 through December 31st, 2023. We assessed variables including mode of delivery, gestational age, first live birth, age of the patient at delivery, hemorrhage medications/devices utilized, and range of time between PHQ9 surveys. Previable and IUFDs were excluded from the study.

Results: We identified 700 patients who received prenatal care, postpartum care, and delivered at Ascension St. Vincent Women's Hospital-Indianapolis. Of these 700 patients, 71 patients had a postpartum hemorrhage (10.1%). Of these 71 patients, 25 patients had a PHQ 9 recorded at their NOB and their postpartum appointment (35.2%). Overall, the majority of patients at their NOB appointment and 6 week postpartum appointment did not have any depression (72%, 80%). A multiple linear regression model was unable to be performed assessing mode of delivery, gestational age at delivery, parity, patient age at delivery and the presence of hemorrhage medications due to sample size.

Conclusion: When assessing the relationship between the amount of blood loss in PPH and worsening PHQ-9 scores there was no statistically significant association even when excluding one outlier ($t=0.67$, $p=0.51$). Only 35.2% of patients who had a postpartum hemorrhage had a PHQ 9 recorded at their NOB and postpartum appointment.

Poster #9
Identification of Tryptophan Catabolic Alterations in Endometrial Tumor Microenvironments

Sarah M Nelson, BS, J. Ricardo Loret de Mola, MD, Kathleen Groesch, BS, MS, Teresa Wilson, BA, Paula Diaz-Sylvester, PhD, Taylor Badger, MD, Laurent Brard, MD, PhD, Andrea Braundmeier-Fleming, PhD

Southern Illinois University School of Medicine, Springfield, IL

Introduction/Purpose: Endometrial cancer (EC) is the most common gynecologic cancer in the US with increasing incidence and mortality. To proliferate and metastasize, tumor cells must evade immune detection and attack. Evasion of immune detection and establishment of immune tolerance is regulated by a specific type of T cells, known as regulatory T cells (Tregs), through activation of the transcription factor, Foxp3. Our previous data indicated that patients with EC exhibited peripheral inflammation, evident by decreased inducible Tregs (iTreg) and total Treg populations and increased inflammatory cytokines (IL-17A, IL-21, IL-22, TNF-α, IL-10 and IL-1β). However, analysis of the immune profiles within EC tumors showed elevated Foxp3 expression, which indicated an immune tolerant tumor microenvironment (TME). Catabolism of the amino acid, tryptophan (Trp), by tumor cells and specific immune cell populations has been reported to alter effector immune cell function by promoting Treg differentiation. Transport of Trp into cells is regulated by SLC3A2, which is part of the heterodimeric LAT1 transporter. Once Trp enters the cytoplasm, intracellular indoleamine 2,3-dioxygenase (IDO1) catabolizes Trp, to produce kynurenine (Kyn). Catabolism of Trp to Kyn can be blocked by BIN1 (a tumor suppressor, Myc interacting protein) which inhibits IDO1 enzymatic activity. Kyn is a known ligand of the aryl hydrocarbon receptor (AhR) which, when activated, can induce the expression of IDO1, in both an autocrine and paracrine fashion. Activation of the AhR by Kyn has been shown to regulate the polarization of CD4+ cells to Tregs through the production of stimulatory cytokines such as IL-4, IL-10 and TGF-b1. Based on our preliminary data and existing literature, we hypothesized that EC tumor cells promote Treg differentiation of infiltrating CD4+ cells, within the tumor microenvironment through cytokine regulation of tryptophan catabolism by IDO1.

Methods: The study population (IRB# 16-493) includes postmenopausal patients who underwent a hysterectomy at Southern Illinois University School of Medicine, Department of Ob/Gyn, Division of Gynecologic Oncology. Endometrial

tissue biopsies were pathologically analyzed to confirm the presence of EC. A total of 35 patients were analyzed for this study; 8 Controls and 27 EC. Tissue biopsies and plasma samples were collected during surgery. To investigate alterations in the Trp catabolism pathway, tumor expression of AhR, BIN1, IDO1 and SLC3A2 was determined using quantitative real-time PCR (qPCR). Additionally, we used ELISA and qPCR to define the plasma and tissue expression of inflammatory cytokines (IL-1β, IL-4, IL-6 and IFN-γ) which are known regulators of IDO1. To assess Treg infiltration into the TME, we measured FOXp3 expression and performed immunohistochemical staining for FOXp3 in tissue samples. EC patients were categorized by disease stage and tumor histotype was determined by pathological analysis. The Mann-Whitney U test was used to analyze differences among EC and control patients, and within EC tumors we analyzed differences by disease staging.

Results: Of the 27 EC patients, 13 were stage I-II and 14 stage were III-IV. Tumor histotypes represented 16 endometrioid EC, 7 serous, 3 carcinosarcoma and 1 mixed EC. Compared to endometrial biopsies from control patients, IDO1 expression was significantly increased ($p=0.0159$) in stage I-II EC tumors, but no changes in SLC3A2, BIN1 or AhR. Stage III-IV EC tumors had significantly decreased BIN1 and SLC3A2 ($p=0.0091$ and $p=0.0121$, respectively), but no alteration in IDO1 or AhR expression. We found no differences in inflammatory cytokine expression in EC tumors compared to control patients. All EC tumors, regardless of stage displayed elevated Foxp3 expression ($p=0.0204$) compared to RORγt. Consistent with this, EC tumors had increased Treg localization compared to tissue biopsies from control patients.

Conclusions: Early stage (I-II) EC tumors had an immune tolerant TME via increased Treg localization, which may be mediated through IDO1 stimulation of Treg differentiation. Late stage (III-IV) EC tumors also expressed increased Treg localization; however, this may not be mediated by IDO1 catabolism of Trp. Together, these data support that EC tumors establish an immune tolerant TME to evade immune recognition and promote tumor survival.

Poster #10
Referral Times and Time-to-Treat Gynecological Cancer Prior to and During the COVID-19 Pandemic

Amber D Bottrell, BA, Stella Udoetuk, BA, Teresa Wilson, BA, Kathleen Groesch, BS, MS, Paula Diaz-Sylvester, PhD, Melanie Nielsen, BS, Kristin Delfino, PhD, J Ricardo Loret de Mola, MD, Laurent Brard, MD, PhD

Southern Illinois University School of Medicine, Springfield, IL

Introduction/Purpose: Considering the significant impact of gynecological cancers on women's health, timely treatment plays a crucial role in minimizing morbidity and mortality. Endometrial cancer (EC) stands as the most prevalent gynecologic cancer, while ovarian cancer (OC), although less common, carries a higher fatality rate. The referral process from primary care practitioners (i.e., Ob/Gyn and family medicine physicians) and emergency medicine physicians to gynecologic oncologists (Gyn/Onc) serves as a vital link in the healthcare system, ensuring prompt care. Delays in referrals, particularly for EC and OC, result in assessment and treatment delays and ultimately lead to suboptimal outcomes. The coronavirus disease (COVID-19) pandemic prompted alterations in healthcare practices to reduce exposure risks. Although some changes have persisted post stay-at-home orders and mask mandates, the full impact of resource triaging during the pandemic on gynecologic cancer care remains uncertain. This study aims to investigate referral times and the time-to-treat EC and OC. Our hypothesis posits that during-COVID-19, delays in treatment for EC and OC patients occurred. Our specific focus was to assess the influence of COVID-19 on time from transfer of care and time to surgery.

Methods: This retrospective chart review included women undergoing surgical management for EC or suspicion of OC at SIU School of Medicine, Department of Ob/Gyn, Division of Gynecologic Oncology (IRB# 23-343). Subjects seen by the Gyn/Onc between January 1, 2019 and March 11, 2020 were categorized as ‘pre-COVID-19’ and those presenting between March 12, 2020 and May 30, 2021 were considered ‘during-COVID-19’. Patients attending any appointments for their cancer work-up, including surgery, that spanned both the pre- and during-COVID-19 timeframes were excluded. Date of presentation to the referring physician, date of referral to the Gyn/Onc, date of surgery, insurance status, race, age, BMI, gravidity, parity, comorbidities and cancer grade were extracted from the Electronic Health Record. Rural-urban commuting area (RUCA) codes were utilized to determine subjects’ geolocation in order to establish potential delays due

to differences in access to transportation or commute time. Chi-square (for categorical variables) and T-test or Mann-Whitney U-test (for numerical variables) were utilized for comparisons.

Results: A total 151 patients were included in this study. Of these, 58% presented for surgical evaluation pre-COVID-19 and 42% were during-COVID-19. There were no significant differences (all p-values ≥ 0.05) between the pre- and during-COVID-19 groups, respectively, in regards to: Age at time of surgery (62.3 ± 12.0 vs. 60.0 ± 12.6 years); Insurance type (Medicare: 51% vs. 39%, Medicaid: 19% vs 23%, Commercial: 27% vs. 32%, Uninsured: 2% vs. 6%); RUCA codes (Metro: 51% vs. 49%, Micro: 18% vs. 25%, Rural/Small: 31% vs. 26%); Race (White: 90% vs. 79%, African American: 5% vs. 5%, Asian: 0% vs. 3%, American Indian/Alaskan Native: 1% vs. 0%, Other/declined: 5% vs. 13%); BMI (37.0 ± 10.1 vs. 36.2 ± 10.0); Comorbidities at time of presentation (95% vs. 94%), Gravidity (2.5 ± 2.2 vs. 2.1 ± 1.7) or Parity (2.0 ± 1.6 vs. 1.9 ± 1.6). The cohort during-COVID-19 was found to have significantly shorter 'time from symptom onset to referral' compared to the pre-COVID-19 group (median [range]: 34 [7 – 111] days vs. 42 [6 – 298] days, respectively, p=0.009). In addition, there was a significantly shorter time period from the time of referral to surgery (8 [2 – 123] days vs.13 [2 – 125] days, respectively, p=0.006).

Conclusions: Despite homogeneous patient populations prior to and during the pandemic era, these findings indicate a noteworthy reduction in both the time to transfer care and the duration from referral to surgery during the COVID-19 pandemic period. Although various factors may contribute to this outcome (i.e., elective surgeries were cancelled allowing more operating room access for cancer cases), our findings suggest that the challenges posed by the COVID-19 pandemic compelled the medical field to enhance efficiency in the health care delivery system. Further investigation is necessary to understand the specific modifications in the referral and time-to-treat processes that have resulted in shorter wait times. A thorough exploration of these changes has the potential to unveil strategies pertinent to improving timeliness of care and enhancing outcomes in the surgical treatment of gynecologic cancers, specifically EC and OC.

Poster #11
Once versus Twice Daily Iron Supplementation in Pregnancy

Jasmine D Walker, BA[1], Gabrielle E Quinn, BS[2], Laura C Schulz, PhD[1], Erma Z Drobnis, PhD[1], Mistie P Mills, MD[1], Daniel L Jackson, MD[3]

University of Missouri, Columbia, MO[1], Meharry Medical College, Nashville, TN[2], Mercy Clinics, Saint Louis, MO[3]

Purpose: Iron-deficiency anemia in pregnancy is generally defined by a hemoglobin concentration < 11 g/dL. It affects up to 25% of all pregnancies in the United States. Typically, pregnant women take iron supplements to improve iron status in the blood. However, at least in non-anemic, non-pregnant young women, there is a decreasing absorbance of iron with increasing frequency of iron doses. Additionally, oral iron supplements are associated with gastrointestinal side effects. Thus, it has been suggested that once-daily or every-other-day iron supplements may paradoxically provide better treatment of iron-deficiency anemia than more frequent supplementation. The purpose of this study was to investigate whether once- versus twice-daily iron supplementation in anemic pregnant women is more effective and additionally, whether more frequent iron supplementation would increase gastrointestinal side effects.

Methods: Anemic pregnant women participated in a randomized controlled study at the University of Missouri to investigate the effects of once- versus twice-daily iron supplementation during pregnancy. Blood was drawn from patients between 14- and 28-weeks' gestation, and if hemoglobin results indicated that the subject was anemic, they were invited to participate in the study. All subjects were randomly assigned to one of two treatment groups. Both groups took one pill in the morning and one pill in the evening. The morning pill was a 325 mg ferrous sulfate iron supplement. The evening pill was either a second 325 mg ferrous sulfate iron supplement (group 2) or a placebo containing cellulose (group 1). Maternal blood was collected at enrollment for assessment of hemoglobin and at delivery, for assessment of hemoglobin and hematocrit. Additionally, a cord blood sample was collected at delivery and hemoglobin was recorded 24 hours postpartum. Subjects were also given validated questionnaires regarding the incidence and intensity of gastrointestinal symptoms including nausea, heartburn, and abdominal pain, and their impact on daily activities.

A sample size calculation based on the effects of iron supplementation in non-pregnant women predicted that

seventeen participants would be needed in each treatment arm. However, accrual was halted prematurely due to the move of the principal investigator to another institution. In total, twenty subjects were randomized in the study. The gastrointestinal symptom questionnaire was not completed by one subject and delivery data were not available for a separate subject, who did not deliver at the University of Missouri.

Results: In the group that received an iron supplement twice daily, there were significantly higher hemoglobin [Group 1: mean 10.8 g/dL, 95% CI 10.4-11.2; Group 2: mean 11.7 g/dL, 95% CI 11.0-12.3; p=0.03] and hematocrit [Group 1: mean 32.3, (31.4-33.3); Group 2: mean 34.6, (33.2-36.0); p=0.02] values at delivery. However, at baseline, prior to randomization, group 2 also showed evidence of higher hemoglobin and hematocrit levels than group 1 ($p<0.1$). Changes in hemoglobin [Group 1: mean 0.8 g/dL, (0.5-1.1); Group 2: mean 1.1 g/dL, (0.7-1.6); p=0.26] and hematocrit [Group 1: mean 2.5, (1.4-3.6); Group 2: mean 3.3, (2.2-4.4); p=0.31] levels from baseline to delivery did not differ between the groups. Estimated blood loss at delivery [Group 1: mean 605.0 ml, (267.3-942.7); Group 2: mean 483.3 ml, (352.7-614.0); p=0.54] did not differ between the groups, nor did 24-hour postpartum hematocrit [Group 1: mean 29.7, (28.6-30.8); Group 2: mean 30.7, (28.1-33.3); p=0.50]. Only one participant overall, who was in group 1, required a transfusion at delivery. This incidence was too small to detect a difference between the treatment groups. There were no significant differences in the incidence or severity of gastrointestinal side effects, which were higher in the group that received once-daily iron. [Group 1: mean 1.9 symptoms, (0.8-3.0); Group 2: mean 1.2 symptoms, (0.3-2.2); p=0.37]. The intensity and inconvenience of side effects were nearly identical, for nausea [Group 1 Intensity: mean 0.6, (0.2-1.0); Group 2 Intensity: mean 0.7, (-0.1-1.4); p=0.88] [Group 1 Inconvenience: mean 0.6, (0.1-1.1); Group 2 Inconvenience: mean 0.6, (-0.2-1.3); p=0.92], heartburn [Group 1 Intensity: mean 0.6, (0.2-1.0); Group 2 Intensity: mean 0.1, (-0.1-0.3); p=0.07) [Group 1 Inconvenience: mean 0.7, (0.2-1.2); Group 2 Inconvenience: mean 0.1, (-0.1-0.3); p=0.06], and abdominal pain [Group 1 Intensity: mean 0.3, (0.0-0.6); Group 2 Intensity: mean 0.3, (-0.2-0.7); p=0.86] [Group 1 Inconvenience: mean 0.3, (0.0-0.6); Group 2 Inconvenience: mean 0.2, (-0.2-0.7); p=0.77].

Conclusion: This small study suggests that administering iron twice a day may provide superior treatment for iron status in pregnant women with anemia compared to once-a-day administration, without worsening gastrointestinal side effects.

Poster #12
Contrasting Department Chair Leadership Styles Concerning Clinical Faculty Burnout and Well-Being in an Academic Health Care System

Karen Marie Thies, DO, PhD, Jean R Goodman, MD, MBA, Jasmine D Walker, BA

University Missouri School of Medicine, Columbia, MO

Purpose: To demonstrate the effects of two Department Chair leadership styles on physician burnout and wellness after changing Department Chairs within an Academic Health Care organization (AHCO).

Methods: This retrospective study utilizes the University of Missouri School of Medicine (UM-SOM) physician wellness surveys to examine the effects of two consecutive Department Chair leadership styles on physician wellness/burnout within the Department of Obstetrics and Gynecology from 2021 to 2022. The two leadership styles compared were production-based (a revenue-generating health care delivery mode) and servant-based (centered on quality of patient care/experience, decreasing costs, and addressing the well-being of professional providers). After one year of leadership change, the UM-SOM physician wellness surveys captured multiple metrics about physician wellness and burnout under these contrasting leadership styles. The UM-SOM survey remained the same during the transition of department chairs, lending a reliable comparison of the effects of leadership styles on physician wellness and burnout. The metrics assessed were categorized into key outcomes: basics, safety, respect, appreciation/connection, and joy. Key results quantified individual burnout and turnover intent. Basics centered on poor sleep, physical stressors, and sadness. The culture of respect category assessed civility and accountability. Appreciation and connection queried feeling appreciated and not sharing supervisor values.

Results: The results of the SOM clinical faculty physician wellness survey for the Department of Obstetrics and Gynecology favored a chair with a servant-based leadership style over a productivity-based one within twelve months of the new leadership philosophy. The individual burnout rate decreased by 32%, and turnover intent decreased by 56%. Poor sleep, physical stressors, and sadness improved by 59%, 41%, and 59%, respectively. Civility increased by 21%, accountability enhanced by 53%, feeling unappreciated decreased by 55%, and sharing the supervisor's values improved by 82%. Joy at work went to 100%. While these

metrics showed improvement under the new leadership within the obstetrics and gynecology department, the same survey, including all the UM-SOM departments, showed slightly worsening conditions or minimal improvement in the same metrics. This is reflected in a comparison of the burnout with the all-inclusive UM-SOM clinical faculty burnout rate, showing an increase of 7%, while the Department of Obstetrics and Gynecology decreased by 32% under their new Chair's leadership style.

Conclusion: Department chair leadership styles within the AHCO can profoundly impact physician burnout and wellness. This retrospective study reveals the positive impact on physician wellness and burnout assessed through the SOM clinical faculty wellness surveys after transitioning from a nineteen-year productivity-based chair leadership style to a newly appointed chair with a servant-based leadership style. The results are reliably captured by the UM- SOM physician wellness surveys over two consecutive years, during which the clinical faculty and the wellness survey remained constant. Contrasting leadership styles with healthcare delivery models can help understand the results. The servant leadership ship style is integral to a value-based healthcare delivery model and serves the mission of the AHCO. Servant leadership integrated with a value-based delivery model within the AHCO will improve patient care and experience, decrease healthcare costs, and improve healthcare professionals' work lives. The productivity-based leadership ties into the old-school mindset of a volume healthcare delivery mode with doctors as revenue-generating centers. The changing economics of health care and the decreasing revenues only push healthcare professionals harder, driving burnout and compromising wellness in a productivity-based leadership and volume-based healthcare delivery mode. The retrospective study results show a 75% burnout for clinical faculty during such productivity-based administration within the obstetrics and gynecology department. Within 12 months of servant-based leadership, the same clinical faculty's burnout rate decreased by 32%. Productivity-based leadership enhances clinical faculty burnout while compromising their wellness; this is not a sustainable leadership style for the AHCO mission regarding healthcare professionals' wellness or patient care. This study would suggest that an effective means to mitigate the rising burnout rate within the healthcare profession in AHCO can start with a servant-based leadership style at the level of the department chair.

Poster #13

A Tale of Two Anencephalies: Multimodal Imaging Approach for Prenatal Diagnosis and Management

Samantha L Stone, MD[1], Jenci Hawthorne, MD[2], Elizabeth Farabee, [2], Katherine Byrket, MD[2], Emily Root, MD[2], Talitha Jones, MD[2], Amy Kimm, MD[2], Tanya Franklin, MD[2], Tiffany R Tonismae, MD[2]

University of Missouri, Columbia, MO[1], University of Louisville, Louisville, KY[2]

Purpose: This case series provides vital insight into diagnosis, imaging modalities, prenatal counseling, and delivery recommendations in the setting of anencephaly and/or encephalocele.

Methods: This study is a case series detailing the diagnosis, imaging, counseling, and delivery approach of two individual cases. The first case included the course of a pregnant patient whose prenatal anatomy ultrasound at 24 weeks and 5 days gestation demonstrated anencephaly. This patient's case also provided details of Neonatology and Palliative Care consultations and her primary cesarean section for delivery. The second case involved a prenatal ultrasound suspicious for anencephaly, with fetal MRI later revealing encephalocele. This patient also proceeded with primary cesarean section for delivery.

We searched PubMed for all English language articles from 2000 to 2023, with search terms including "anencephaly," "encephalocele," "anencephaly diagnosis," "encephalocele diagnosis," "anencephaly management," and "encephalocele management."

Results: Case 1: This patient presented to care at 24 weeks 5 days gestation with an anatomy ultrasound that diagnosed fetal anencephaly. In addition to late entry to prenatal care, her pregnancy was complicated transaminitis, possible fetal ventricular septal defect, and polyhydramnios.

Counseling throughout the patient's prenatal course included details of anencephaly, including that it is considered a lethal defect with no treatment or corrective surgery. Discussions with the patient also surrounded the fetus' potential course following delivery, including likelihood of passing. The patient accepted consultations from the Neonatology and Palliative Care teams.

Ultimately at a gestational age of 30 weeks and 1 day, the patient was admitted in latent labor and proceeded with a primary cesarean section. On delivery, the infant was clearly anencephalic, with the defect extending from brow ridge to

base of skull. The cavarum was absent. The overall volume of the infant's head was smaller than expected, with the rest of the body was normal for gestational size. The infant remained with mother and father and passed within two hours following delivery.

Case 2: This patient presented to care at 35 weeks 3 days gestation with an initial ultrasound suspicious for anencephaly. This case was complicated by several maternal pregnancy complications, including polyhydramnios, suspected pregestational diabetes, insufficient prenatal care, and advanced maternal age.

A follow-up fetal ultrasound one week later revealed posterior skull with central defect with herniation of meninges and fetal brain through defect which appeared more consistent with a large encephalocele rather than anencephaly.

Fetal MRI the next day demonstrated a small cranial vault with a large occipital encephalocele containing nearly the entirety of the brain parenchyma through a defect measuring up to 3.1 cm. The encephalocele sac contained fluid as well as herniated brain component measuring up to 7.1 x 9.7 x 4.5 cm. The herniated brain component contained most of the bilateral cerebral hemispheres which appeared separated with no obvious corpus callosum.

In the absence of operative repair options with Pediatric Neurosurgery, the parents opted for palliative care and a primary cesarean section at 37 weeks 0 days gestation. On delivery, the infant appeared to have a small cranial vault and a large occipital encephalocele containing nearly the entirety of the brain parenchyma. The infant later passed on day three of life.

Conclusions: These two cases underscore the importance of advanced imaging modalities, such as fetal MRI, in diagnosing and differentiating complex fetal anomalies like anencephaly and encephalocele. This case series highlights the challenges in managing such cases and the need for further research to improve prenatal counseling and intervention strategies as well as counseling regarding delivery route recommendations and discussions.

Poster #14
Management of Pregnancy after Peripartum Cardiomyopathy

Ella M Kinder, MS[1], Priya Barua, MS[1], Devika Maulik, MD[1], Shilpa Babbar, MD[2]

University of Missouri-Kansas City, Kansas City, MO[1], Advent Health, Children's Mercy, Kansas City, MO[2]

Peripartum cardiomyopathy (PPCM) is a condition in which maternal heart failure develops in the last month of pregnancy, delivery, or up to 5 months postpartum. While the pathophysiology of the disease is still unclear, it is hypothesized to be multifactorial. Complications to the fetus include an increased risk for heart conditions, growth restriction, and intrauterine demise. Maternal complications include cardiogenic shock, acute respiratory distress, and long-term heart failure after pregnancy. Improvement of cardiac function after PPCM can happen up to 5 years after diagnosis. Patients are advised to avoid pregnancy with continued reduced ejection fraction or wait at least 5 years after their ejection fraction (EF) has stabilized.

This is the case of a 27-year-old G1P1 who presented 3 weeks after a cesarean delivery with worsening dyspnea initially diagnosed as pneumonia. Despite treatment, her dyspnea persisted leading to a work-up indicating PPCM with an ejection fraction (EF) of 20%. She was stabilized and started on metoprolol and empagliflozin. A year later, her EF improved to 48%. Her EF stabilized for a year but subsequently declined to 36% the year after. Return to baseline cardiac function occurred 6 years after her initial diagnosis when her EF reached 50%. Later that year, she became pregnant again. At the start of pregnancy, she was asymptomatic but her EF decreased to 40%. Empagliflozin was discontinued when she became pregnant and the metoprolol dose was decreased. Her EF returned to 50% a month later and she remained asymptomatic. After consultation with high-risk obstetrics and cardiology, she was started on hydralazine and isosorbide mononitrate with continued monitoring of her EF. This case report will discuss the patient's disease progression and pregnancy management in the setting of heart failure with recovered ejection fraction after PPCM. This patient's management involves the use of heart failure therapy, serial echocardiograms, and ultrasound, and utilizing a multidisciplinary approach between obstetrics and cardiology. The patient remains pregnant and continues to be followed.

PPCM in subsequent pregnancies is not well studied, but cardiac complications frequently re-emerge in the peripartum

and postpartum period. This case report discusses PPCM in a second pregnancy to gain a better understanding of the disease process and management. Many patients desire pregnancy after PPCM and understanding the management and implications of this is crucial.

Poster #15
The Emotional and Social Impacts of Menstrual Practices on Women in Rural Guatemala

Lauren V Evelti, BS, Gautam Desai, DO

Kansas City University, Kansas City, MO

In the United States, there are some studies which have been conducted that examined the attitude and impact of menstruation. Similarly, there has been research done in areas outside of the US, primarily in Africa, exploring menstrual practices in developing countries. Here certain factors affect women of reproductive age, leading to negative impacts in various aspects of their lives. However, there is a paucity of literature on how women in Centra America, particularly Guatemala, are affected by the female reproductive cycle. Women in developing countries still face religious stigma as well as cultural and societal pressures when it comes to menstruation and menstrual practices. Women of reproductive age face material barriers including access to appropriate products and establishment of good hygiene practices, and emotional barriers such as the stress and anxiety that comes with managing one's period. Often, women do not have a complete understanding of the menstrual cycle which contributes to their poor hygienic practices and limited social support stemming from a lack of openness surrounding the topic.

The investigators wanted to add to the body of literature regarding how women in Guatemala are affected by the menstrual cycle emotionally and socially. We hypothesized that older patients would report more stigma regarding their menses when compared to a younger population, as well as reporting a greater impact on their lives. We also felt the results would indicate that older patients had a better knowledge base of menstruation.

After Kansas City University (KCU) IRB approval, the investigators, during KCU's Global Health Outreach: Guatemala, in February of 2024, recruited subjects for the research. Inclusion criterion were any individual who identified as a female with a menstrual cycle over the age of 13 living in various rural towns surrounding Antigua, Guatemala seeking medical care. Patients were advised that they did not have to participate in order to receive free medical care and were free to discontinue the survey at any time. The survey instrument was a 23-item tool in Spanish language related to the menstrual cycle. Patients between the ages of 13-17 years required parental/guardian permission and had to also give assent to participate. Consenting adults and adolescent self-identified females (n=88) were given the

survey asking background information, basic information on their menses, and emotional and social influences that can affect their periods. Subjects were not randomized.

After data analysis, there were some statistically significant differences between older and younger participants in some of the attitudes and experiences related to menstruation. A cross-tabulation was conducted on these statistically significant results. The age groups were split into two, younger being <40 years old and the older group being 41 years and older. One area of difference was the emotion of judgement (p value = 0.044). For the women in the younger group, it was expected that 40.9 would never experience judgement and 20.1 would experience some form of judgement during menstruation. Data showed that 45 participants responded never feeling judged, while 16 reported some judgement. The younger women who never experienced judgement during their period represented 51.1% of the group for that response. On the other hand, the group of older women showed that 13 of them have experienced some judgement during their menses, which is greater than the expected number of 8.9. Further analysis revealed the investigators' hypothesis that an older age group of Guatemalan women would have a greater understanding of what happens to their bodies with menstruation compared to the younger age group (p value = 0.029). There was a higher number of individuals in the older group category (n=22) compared to the expected (n=17.5) who had some or a lot of understanding. While for the younger group, there was a higher number of those who had no understanding (n=26) than expected (n=21.5). Overall, 39.8% of the younger patients said they have some understanding of what happens to their bodies during menstruation. The general trend is that the younger group has less understanding while the older group has a deeper understanding. There was no other significant difference noted in any other analysis.

In conclusion, our study reveals the overlooked emotional and social impacts of menstrual practices on women in Guatemala, where research is lacking. We found significant age-related differences, with younger women facing less emotional vulnerability and less understanding compared to older women. This research underscores the importance of further research and interventions in this area to support reproductive health of women in Guatemala and elsewhere. Despite a small sample size, statistically significance associations were noted, which may be able to guide future healthcare outreach in the region.

Poster #16
Prosperity in an Academic Career: Developing an Academic Specialist Fellowship

Sarah L Dreibelbis, DO, Shadae Beale, MD, Valerie French, MD, Caitlin Linscheid, MD

University of Kansas Medical Center, Kansas City, KS

Introduction: Academic specialists practice the breadth of obstetrics and gynecology yet miss the opportunity that their subspecialty colleagues experience during sub-speciality training to formally learn research and education skills during fellowship. We therefore developed a fellowship for the obstetrician-gynecologist to gain a robust skillset preparing for a career in academic medicine.

Methods: We designed a one-year fellowship for obstetrician-gynecologists to pursue additional training in academic medicine. The fellowship focuses on education techniques, research skills and navigating the structure of an academic medical department. This poster will display the curriculum of the fellowship including rotation schedule, research support and the approach to training a future medical educator.

Results: The Academic Specialist Fellowship at the University of Kansas accepted its first fellow in the summer of 2022. The fellow has the following month-long rotations: 3 inpatient obstetric rotations, 3 inpatient gynecology rotations, 3 research rotations and 3 elective rotations. The educational objectives for each fellow are developed in collaboration with the fellow, customizing their goals to their interests. For example, a fellow may have a recurring teaching role during the third-year medical student clerkship orientation or lead a dedicated resident didactic. Each fellow develops an independent research project with a dedicated mentor and will have a publishable manuscript at the completion of the fellowship. The fellow participates in a longitudinal teaching curriculum including creation of an educational project and peer-to-peer feedback

Conclusion: An Academic Specialist Fellowship provides obstetrician-gynecologists training in research and education skills to lay a strong foundation for a career in academic medicine.

Poster #17
MenoPatch: Advancing Transdermal Hormone Replacement Therapy for Menopausal Symptom Management

Ameek Bindra, BA[1], David Krist, MD, PhD[1], Hamna Khalid, BS[1], Kamryn Abraskin, BS, MM[1], Dishan Gunya[2], Adam Szeremeta, BS[3], Sanskruthi Priya Guduri, BS[1], Christine Chien, MD[4], Brian Aldridge, MS, PhD[1]

Carle Illinois College of Medicine, University of Illinois, Urbana-Champaign, Urbana, IL[1], University of Illinois, Urbana-Champaign, Urbana, IL[2], Gies College of Business, University of Illinois, Urbana-Champaign, Urbana, IL[3], Carle Health, Urbana, IL[4]

Purpose: Menopause typically spans the ages of 45 to 55 in women as the menstrual cycle ceases following the physiological decrease in circulating estrogen. This transition unfolds gradually, with various symptomatic manifestations experienced even during the perimenopausal period prior to menopause. Common symptoms include night sweats, mood swings, fatigue, and sleep disturbances. However, both perimenopausal and menopausal symptoms remain largely neglected and untreated despite its substantial implications on a woman's health and daily experience. In fact, around 80% of women encounter one or more menopausal symptoms, however only 10% actively seek relief (Doamekpor et al.). Hormone replacement therapy (HRT), typically combining estrogen and a progestin, provides symptomatic relief and mitigates the risk of diabetes, osteopenia, and cardiovascular ailments. HRT is most commonly administered via oral and transdermal routes. However, orally administered estrogen carries an elevated risk of venous thromboembolism (VTE), while transdermal patches offer limited dosage options.

Currently, only two commercially available patches deliver both estrogen and progestin at fixed doses. If these patches and their doses are not suitable for a patient, they must resort to an estrogen patch supplemented with an oral progestin. Existing estradiol patches offer limited dosing options and need to be replaced once or twice a week. The hallmark feature of MenoPatch is its ability to deliver customizable doses of estrogen and progestin through the innovative port system. This provides clinicians the flexibility to increase hormone concentrations to meet each patient's unique needs without requiring patch removal, ensuring precise symptom management and less time to identify a patient’s dosing needs. The patch contains an advanced release mechanism that delivers hormones consistently and in a controlled manner throughout its wear time, reducing fluctuations in

hormone levels and minimizing side effects seen with traditional treatments. Additionally, MenoPatch aspires to offer extended wear with monthly applications, simplifying treatment schedules and decreasing frequent interventions.

Accordingly, we are developing a transdermal patch that allows customizable dosing to provide a convenient method to administer HRT for symptomatic relief during menopause.

Methods: MenoPatch is an innovative transdermal patch, engineered for effective management of the spectrum of menopausal symptoms via tailored dosage and sustained administration. MenoPatch is a modified reservoir style patch with two innovative elements: (1) a 3D-printed reservoir with a rubber septum through which customized additions of hormone can be added via needle-less syringe, and (2) a proprietary hydrogel imbedded in the reservoir to allow steady hormone administration over the course of four weeks. A commercially available rate-controlled release membrane seals the hydrogel within the reservoir.

Made from thermoplastic polyurethane (TPU 88A), the 3D-printed reservoir designs (diameters of 2 inch, 1 inch, or 0.5 inch) provide sturdy containment, protecting the hydrogel solution. We synthesized several versions of an alginate-polyacrylamide hydrogel to allow sustained hormone release for a prolonged therapeutic effect. Once 100-200 mg of dehydrated hydrogel was fixed into the reservoir, the underside of the reservoir was sealed with a rate-controlled release membrane (CoTran 9716, 3M) using Permatex 80050 silicon glue. The glue was allowed to dry for 24 hours before using a needle-less syringe to load the patch with a hormone formulation (17β-estradiol at 10 mg/mL in 70% ethanol). To test in-vitro hormone elution from the patch, we employed g Franz diffusion cell studies (300 mL volume, PermeGear) with an acceptor solution of 1xPBS pH 7.2 with 5% ethanol. Enzyme-linked immunosorbent assay (ELISA, Abcam) measurements were then used to measure the concentrations of hormone that eluted from the patch and into the acceptor solution.

Results: The devised transdermal patch integrates key components including a reservoir containing a dehydrated hydrogel, a dual-release mechanism comprising the hydrogel and a rate-controlling release membrane, and a port enabling customizable hormone delivery. A novel port and reservoir was developed for the drug delivery system, while utilizing readily available commercial materials for the rate-controlling membrane.

In vitro studies using a Franz diffusion cell demonstrated the patch's capacity to effectively release hormones. ELISA analyses of samples collected from the diffusion cell

confirmed the presence of eluted hormones. After loading the prototype patch with 15 mg 17β-estradiol, the Franz diffusion experiments were conducted in an incubator set at 32°C, resulting in the elution of 0.16 mg estradiol into the acceptor solution at 22 hours. By 71 hours, 2.9 mg estradiol had eluted into the acceptor solution. These initial experiments did not incorporate hydrogel into the patch.

Conclusions: We have been able to successfully build and test a prototype transdermal patch that can be loaded with customized amounts of 17β-estradiol through a needle-less port system. Work is ongoing to incorporate a novel hydrogel to allow steady rates of hormone elution over several weeks.

Poster 18
The HystAssist: A Novel Approach for Training Residents on Vaginal Hysterectomy

Brittany N Vill, MD, MS[1,2], Manaka Sato, MD[1,2], Abigail R Kostolansky, BA[1,2], Joseph M Maurice, MD, MS[3]

Carle Illinois College of Medicine, University Illinois at Urbana-Champaign, Urban, IL[1], Carle Foundation Hospital, Urbana, IL[2], Creighton University School of Medicine, Omaha, NE[3]

Background: Laparoscopic hysterectomy gained popularity over time; however, the literature on costs, postoperative pain, and healthcare resource utilization still favored the vaginal approach. Despite the surgical benefits of vaginal hysterectomy, the rates of vaginal hysterectomy have decreased over the years. Decreasing rates of vaginal hysterectomy have been attributed to multiple factors, which prohibit effective resident training. Such factors include, but are not limited to, access to the operative fields while the patient is in lithotomy, the need for tactile appreciation of structures, and ubiquitous access to laparoscopic surgical tools. Residency graduates do not feel competent in their vaginal hysterectomy skills, and as a result are less likely to offer this surgical approach. In one cohort of recent Obstetrics and Gynecology graduates, individuals reported that 16.1% of the hysterectomies they performed were vaginal. Gressel et al. reported increased difficulty for residents seeking exposure to abdominal and vaginal approaches, accompanied by an increase in laparoscopic hysterectomies. Despite decreased rates of abdominal and vaginal hysterectomies, the Accreditation Council for Graduate Medical Education (ACGME) requires 15 cases for each hysterectomy. Our aim was to create a vaginal hysterectomy simulator that would enable Obstetrics and Gynecology trainees to practice the pertinent steps and identify tactile landmarks utilized in a vaginal hysterectomy.

Methods: The HystAssist utilized the following components: a bony pelvis housed in a plastic shell, a silicone external genitalia component, and a replaceable internal genitalia component. The bony pelvis provided the structure and bony landmarks for the simulator and fixation of ligaments. The external genitalia component provided a realistic surgical view. The internal genitalia included the cervix, uterus, broad ligament, utero-ovarian ligaments, fallopian tubes, and ovaries. These components were modeled in computer aided design (CAD) to create the negative impressions for molds. By consolidating the components into an internal genitalia

mold, our team created multiple, identical silicone models. To validate our design criteria, we performed consumer testing on residents, the consumers who would be most frequently in contact with our product. A preliminary iteration of the model was shared with PGY-2 Obstetrics and Gynecology residents at Carle Foundation Hospital. Residents answered survey questions using a Likert scale.

Results: To evaluate the HystAssist accuracy, a survey with quantitative questions utilizing Likert scale and open-ended qualitative questions was created. Our preliminary validation performed with two PGY-2 Obstetrics and Gynecology residents. Our responses averaged greater than three, a neutral response. Two questions received a below average response regarding the ability to perform instrumentation on the pelvic ligaments and the likelihood that the trainee would recommend the HystAssist to fellow residents. In assessing the qualitative feedback, these two questions highlighted the central point for improvement in our design: improved pelvic ligament fixation. Improving our pelvic ligaments would improve the fidelity of the procedure sequence and, thus, the fidelity of our model. We hope to continue providing trainees with the opportunity to test our model and provide feedback with the standardized questions. From this, we can continue to iterate and improve the HystAssist.

Qualitative questions were also included in the survey. Through these open-ended questions, we discovered that trainees prefer increased similarity to the anatomy for the pelvic ligaments, which would allow trainees to better understand the sequence and skill necessary to perform a vaginal hysterectomy. Additionally, a larger vaginal opening was requested to improve cervical visualization. While our anterior and posterior fornices are appropriate for training and creating an initial colpotomy, improved silicone layering internally to create anterior and posterior tissue planes would benefit the uterus's excision.

Conclusion: HystAssist is in the process of meeting its intended purpose as a vaginal hysterectomy simulator. Its current iteration models the pertinent pelvic anatomy and allows Obstetrics and Gynecology residents to practice the preliminary steps of the vaginal hysterectomy. These qualities were validated by trainees in the field. Our device has an internal genitalia component that can be inserted into the external pelvic device. This practice is consistent with the current gold standard of simulators which employ porcine biologic tissues disposed of after a single use. Additionally, our current product can be used in different external models. The cost-effectiveness and reproducibility of our internal genitalia model meet our requirement of creating a device that

costs less than current vaginal hysterectomy training models.

While the visual and tactile function of our product has met the preliminary requirements, honing in the sequence of the case and creating a tissue plane encasing the internal genitalia are two points for improvement that would revitalize our design. Improvements to the internal genitalia model would allow us to improve trainee access to practicing the main steps of the vaginal hysterectomy.

Poster #19
The Relationship Between Diet Quality, Residing in a Food Desert, and Psychosocial Characteristics in Early Pregnancy

Emma S Ryan, MD, Kevin L Moss, BS, Mitchell Grecu, BS, Haley Schmidt, BS, David A Haas, MD, MS

Indiana University School of Medicine, Indianapolis, IN

Background: Access to high quality nutrition is an important part of a healthy pregnancy, and multiple risk factors for poor maternal nutrition have been identified.

Objective: The objective of this study was to examine the relationship between self-reported diet quality and residing in a food desert during early pregnancy. Secondary outcomes included examining the relationship between diet quality and measures of antenatal depression and stress during early pregnancy.

Study Design: This study is a secondary analysis of data collected in the Hoosier Moms Cohort study. Diet quality was based on patient self-report via the Automated Self-Administered 24-Hour Dietary Assessment Tool and food deserts were defined based on the USDA Food Access Research Atlas. Comparisons of food quality tertile with participant demographics and living in a food desert were performed using chi-square tests for categorical variables and ANOVA for continuous variables.

Results: A total of 242 participants were included in this analysis and 37.3% resided in a food desert. Obese ($p=0.0007$) and younger ($p < 0.0001$) participants were more likely to be in the lowest diet quality tertile. Residing in a food desert was not associated with poor diet quality ($p= 0.06$). Higher antenatal depression scores were noted in the lowest diet quality tertile ($p= 0.049$). Compared to participants in highest diet quality tertiles, those in the lowest tertile were independently associated with age (OR 0.86, 95%CI 0.80-0.92) and obesity (OR 3.81, 95%CI 1.76-8.24). Adding food deserts into the model did not substantially change those estimates, while residing in a food desert was not associated with lowest diet quality tertiles (OR 1.09, 95% CI 0.55-2.15).

Conclusion: Residing in a food desert was not found to be independently associated with diet quality in early pregnancy. Lower maternal age and pre-pregnancy obesity were associated with poorer diet quality in early pregnancy.

Poster #20
Changes in Address and the Child Opportunity Index after Delivery in a Cohort of First-time Mothers

Katherine E Modrall, BS, Alexander Yusman, David Guise, BS, Olivia Abraham, BS, Alekhya Jampa, MBBS, Ligia Vasquez-Huot, BS, Sara K. Quinney, PhD, Pharm D, David M Haas, MD, MS

Indiana University School of Medicine, Indianapolis, IN

Background: The Child Opportunity Index (COI) characterizes social determinants of health across the United States including education, health and environment, and social and economic factors. The objective of the study was to determine if the nulliparous pregnant persons changed addresses between the time of delivery and at the time of follow-up 9-11 years after delivery and to evaluate the trajectory of the COI over time.

Methods: We analyzed data from nulliparous pregnant people participating in the nuMoM2b Heart Health follow-up Study (HHS). Residential addresses at delivery and at follow-up (~9 years) were compared to determine if the participant changed addresses and to evaluate the COI trajectory. Descriptive characteristics (age, race, income, pregnancy outcomes) and the COI trajectory were compared for those who did and did not move using chi-square and t-tests.

Results: 410 participants were analyzed. 304 (74%) of the participants changed addresses resulting in changes in census tracts. Moving was associated with a lower mean maternal age (24.3 vs. 27.2 yrs, $p \leq 0.001$) and a lower average income (62.3% vs 41.1% <200% FPL, $p \leq 0.001$) compared to the participants who did not move. 123 (40.5%) participants moved to a neighborhood with a higher COI quintile, 56 (18.4%) participants moved down a COI quintile, and 125 (41.1%) participants did not have a change in COI category. White participants who moved addresses were significantly more likely to increase their COI category (55%) compared to non-White participants who moved addresses (22.2%, $p \leq 0.001$). There were no differences in how COI changed between White and non-White participants who did not move.

Conclusion: The majority of the participants moved in the years after delivering their first child. Moving was typically associated with an improvement in COI categories, with disparities seen as White participants were more likely to increase their COI if they moved compared to non-White groups.

Poster #21

Is a Decreased Rate of Postpartum Oxytocin Associated with Increased Postpartum Bleeding Episodes After the Initial Recovery Period?

Shelly Thai, MD, Sophia Davis, MD, Jonathan Rosner, MD, Cheryl Dinglas, DO, Dina El-Kady, MD, Robert Dean, MD

Mount Sinai South Nassau, Oceanside, NY

Abstract Body: Patients on magnesium for seizure prophylaxis receive lower rate of postpartum oxytocin infusion to maintain a maximum IV fluid rate of 125cc/hr. We explore if this reduced rate is linked to increased incidence of postpartum bleeding within 24 hours after delivery.

Methods: This IRB-approved retrospective study examines 2020 deliveries at a single institution, focusing on singletons with severe pre-eclampsia requiring 24 hours postpartum magnesium. We identified 71 eligible patients and matched 1:2 with controls based on delivery year, age, parity, and delivery method. Data analysis involved relative risk and Chi-Square calculations with p less than 0.05 considered significant. The primary outcome was episodes of post-partum bleeding defined as any episode of bleeding secondary to atony regardless of quantitative blood loss. Secondary outcomes included postpartum hemorrhage and uterine atony at time of delivery.

Results: Gestational age, birth weight, age, parity, delivery method, gestational hypertension, and gestational diabetes between the two groups were similar. Chronic hypertension (21% vs 1% $P<0.01$) and BMI (38 vs 32 $P<0.05$) were higher in the magnesium cohort. The primary outcome suggested a trend toward increased incidence of postpartum bleeding, not statistically significant (RR=3, (CI:-0.94 to 2.97) $p=0.3$). Secondary outcomes revealed significantly higher atony rates at delivery (RR 14, (CI:1.5 to 5.5) $p<0.05$) and an increase in postpartum hemorrhage, not statistically significant (RR 1.6, (CI:-1.24 to 2.68) $p=0.09$).

Conclusion: This study does not show a significant increase in episodes of post-partum bleeding in the first 24 hours with decreased rate of post-partum oxytocin in patients receiving magnesium. Further research is warranted to confirm these findings with better matched cohorts and larger sample size so that a standardized protocol may be instituted across all hospitals to appropriately target bleeding secondary to atony in high risk populations.

Poster #22
Evaluating Breastfeeding Rates and Factors Influencing Success

Chava R Welton, MD, Juliana Gabbay, MD, Xiteng Yan, MD, Fredric Moon, DO, Cheryl Dinglas, DO

Mount Sinai South Nassau Hospital, Oceanside, NY

Methods: This is a retrospective cohort study of women who delivered between 2021-2023, receiving prenatal care and delivering at our institution. Patients were surveyed via phone in which they were asked about breastfeeding, preparedness, and influencing factors. Chart review was then performed to obtain demographic characteristics and maternal and neonatal complications. T-test and Chi-square analyses were performed for continuous and categorical values respectively to compare those patients that breastfed to those that did not.

Results: 120 patients were surveyed in which 92 reported breastfeeding (76.7%). When comparing baseline demographics, there were no differences between the groups, except English as a primary language in a larger proportion in the breastfeeding group. When comparing medical conditions, prenatal complications, and medications, there were no differences among the groups, however there was a trend toward significance for substance use with a p-value of 0.1. Only 31 out of the 92 patients reported breastfeeding for at least 6 months. Most patients (83.7%) felt prepared to breastfeed and maternal and neonatal health benefit was the most common reason for breastfeeding. Difficulty with latching and supply were reported as the most common challenges in the non-breastfeeding group.

Conclusions: Our study showed that many patients initiate breastfeeding but do not continue for the recommended 6-month duration. Primary language, substance use, and need for more education/support may be barriers to success.

Poster #23

Internal Validation of an AI-Assisted Algorithm for PC-06.0 (Unexpected Complications in Term Newborns) Measures

Nabila S Azeem, MD[1], Hailey Cox, DO[1], Dani Zoorob, MD, MHA, MBA, MHI[2], David Harper, MD[3], James W Van Hook, MD[3], Hind Moussa, MD[3]

University of Toledo, Toledo, OH[1], LSU Shreveport, Shreveport, LA[2], University of Toledo College of Medicine, Toledo, OH[3]

Introduction: The evaluation of perinatal care quality is crucial for ensuring optimal outcomes for newborns. The PC-06 measure, introduced by The Joint Commission in 2019, assesses unexpected complications in term newborns using electronic clinical quality measures (eCQMs) derived from Electronic Health Records (EHRs). Accurate data collection and analysis are vital for healthcare providers to make informed decisions and improve care practices.

The PC-06 measure evaluates the outcomes of term newborns using eCQMs derived from EHR data. This process involves the electronic collection and standardized extraction of relevant newborn data. The overall PC-06.0 rate includes both severe and moderate outcomes. Since 2019, our hospital system has tracked this measure, initially through chart review and more recently through EHR-derived eCQMs. The Obstetric Safety Committee observed an increase in the PC-06.0 rate following the implementation of the algorithm.

This study aims to internally validate the eCQM tool used to measure PC-06.0 (Unexpected Complications in Term Newborns) in a large referral-based community hospital.

Study Design: This retrospective chart review of 2023 delivery data aligns with the PC-06.0 measure at a large referral-based community hospital in Northwest Ohio. Neonates born at and remaining in the hospital were identified and classified under the PC-06.0 measure using the algorithm. A diverse group of reviewers was selected to review neonate charts and validate the categorization of newborns under PC-06.0.

Results: The initial PC-06.0 rate for 2023 was 29.29%, with 104 newborns identified as having unexpected complications in the term newborns. After validation, only 86 (82.69%) of these cases were confirmed, resulting in a revised PC-06.0 rate of 21.1% for deliveries.

Conclusion: Our findings suggest that the algorithm used for identifying PC-06.0 overestimated the number of unexpected complications in term neonates, leading to inflated PC-06.0 data and reports. Providers should exercise caution when relying on algorithms and artificial intelligence for data collection, as these tools can potentially result in inaccurate data. This study underscores the importance of rigorous validation processes to ensure the accuracy of perinatal care performance metrics.

Poster #24
Effect of Maternal Race and Ethnicity on Cervical Length and Preterm Delivery

Nabila S Azeem, MD, Maggie Wong, MD, Yasmin Hasbini, MD, Katherine Chen, MD, Nauman Khurshid, MD, Hind Moussa, MD, James W Van Hook, MD

University of Toledo, Toledo, OH

Study Design: This is a retrospective cohort analysis of patient's identified with a short cervix (<2.5cm) at the time of their anatomic survey ultrasound between 16-24 weeks gestation. Patient's demographic data including their race and ethnicity were collected in addition to cervical lengths throughout pregnancy and gestational age at delivery. Short cervical lengths and gestational age at delivery were compared between racial groups.

Results: 351 patients were identified with short cervixes (<2.5cm) in our study. Among those identified with a short cervix, there was no statistical significance between short cervical lengths of White (p=0.66, 95% CI = -0.23-0.10), African American (p=0.46, 95% CI= -0.51-0.17), and Hispanic patients (p=0.74, 95% CI=-0.46-0.24). No statistically significant difference was identified between gestational age at delivery between White, African American, and Hispanic patients (p=0.36). Furthermore, there was no statistically significant difference between odds of delivery <37, <34, and <28 weeks between our racial groups or CL <2.0, <1.5, and <1.0cm between our racial groups (Table 1).

Conclusions: Maternal race and ethnicity are not associated with degree of cervical length shortening or gestational age at delivery among patients identified with a short cervix on mid-trimester ultrasound.

Poster #25
Cross-Sectional Survey of 22q11.2 NIPT Screening: A Study of Provider Knowledge

Juliana Simon, BA[1], Nabila Azeem, MD[1], James Van Hook, MD[2], Dani Zoorob, MD[3], Hind Moussa, MD[3]

University of Toledo, Toledo, OH[1], University of Toledo College of Medicine[2], LSU Shreveport, Shreveport, LA[3]

Purpose: Our study's primary objective is to assess the knowledge and attitudes regarding non-invasive prenatal testing (NIPT) to screen for 22q11.2 deletion syndrome in healthcare providers caring for obstetrical patients.

Introduction: 22q11.2 deletion syndrome is a clinically significant microdeletion syndrome associated with substantial morbidity and mortality. Non-invasive prenatal testing (NIPT) has revolutionized prenatal screening, offering a non-invasive method to detect various genetic abnormalities, including 22q11.2 deletion. Despite its potential benefits, the integration of NIPT for 22q11.2 deletion into clinical practice remains inconsistent.

This study aims to assess the knowledge and attitudes of healthcare providers towards NIPT for 22q11.2 deletion, shedding light on current practices and identifying gaps in provider education and confidence in patient counseling. By understanding these factors, we can better inform future clinical guidelines and educational initiatives to enhance the utilization of NIPT in prenatal care.

Methods: A cross-sectional survey using an online multiple-choice format was conducted among healthcare providers in OB/GYN departments and Maternal-Fetal Medicine divisions at an academic medical center and a large referral center-community hospital system in Northwest Ohio. Participants included trainees, staff, and faculty members, who accessed the anonymous survey via a link or QR code. The survey, administered using QuestionPro software, is comprised of 18 multiple-choice questions covering demographics, clinical use of carrier and NIPT screening, and knowledge and attitudes towards NIPT for 22q11.2 deletion syndrome. The Delphi method was employed to achieve consensus on the final question list. Data collection began on April 23, 2024 and was completed on June 5, 2024.

Results: Thirteen physicians completed the survey: five OB/GYN residents, six OB/GYN generalists, and two Maternal-Fetal Medicine specialists. All non-trainee respondents had at least five years of practice experience. All

physicians reported using NIPT for fetal aneuploidies (Trisomies 21, 18, and 13), and 92% offered carrier screening.

The initial data indicated variability in the use of NIPT based on years in practice. None of the residents reported using NIPT for sex chromosome aneuploidies or microdeletion syndromes, including 22q11.2 deletion. Conversely, all experienced physicians used expanded NIPT panels, with 50% selecting 22q11.2 screening as an add-on. 63% of experienced physicians screened all obstetric patients for 22q11.2 deletion, whereas the other physicians in our sample selected screening only for patients who presented with a detected fetal congenital anomaly or family history of aneuploidy or other genetic disorder. Additionally, 88% of experienced physicians offered multiple NIPT options, compared to 100% of residents who offered a single option which excludes 22q11.2 screening.

Regarding provider knowledge, 15% (two experienced OB/GYN physicians) incorrectly equated screening sensitivities for 22q11.2 deletion and common Trisomies. Only 46% of respondents, including both Maternal-Fetal Medicine specialists, felt adequately informed to counsel patients on 22q11.2 deletion screening. However, 77% indicated confidence in managing positive screening results.

Conclusions: Given the significant morbidity and mortality associated with 22q11.2 deletion syndrome, early intervention via expanded NIPT is clinically beneficial. However, the performance of NIPT for 22q11.2 deletion lags behind that of the common Trisomies, with an 83% sensitivity reported. Insufficient research exists on how clinicians utilize this information for patient counseling. Our study highlights that only trained physicians use NIPT for 22q11.2 deletion, with limited confidence in counseling. These findings underscore the need for enhanced education during residency to ensure comprehensive patient counseling. Continued recruitment aims to expand these initial findings to inform future clinical recommendations and standardize counseling guidelines.

Poster #26

The Effect of an Antepartum Wellness Program on Maternal Mental Health During Prolonged Hospitalization

Danielle Saucier, MD[1], Madison Feeley, MD[2], Kelsey Suffel, BSN, RN[2], Savanna Anderson-Wilson, BSN, RN[2], Hind Moussa, MD, MSHI[2], David Harper, MD[2], James W Van Hook, MD[1]

University of Toledo College of Medicine, Toledo, OH[1], ProMedica Toledo Hospital, Toledo, OH[2]

The prevalence of peripartum depression (PPD) ranges from 11-20%(1,2). PPD has significant long and short term effects on both maternal and infant health. Women hospitalized during pregnancy are at increased risk of developing perinatal depression and anxiety(3-5). Several studies have shown integrative medicine can improve mood symptoms in hospitalized obstetric patients(6,7). Centering Pregnancy (CP), a group prenatal care model, provides patient education and fosters social support between women of similar gestational ages. It has been shown to improve patient perception of social support and decrease preterm birth in some populations(8,9). Toledo Hospital is a tertiary care center with a large antepartum unit. Frequently, pregnant women are admitted for extended periods on the unit. The Antepartum Wellness Program is an initiative inspired by the CP prenatal care model. Dedicated leaders host weekly sessions for hospitalized obstetric patients. Sessions vary to include obstetric education, creative activities, socialization events, and mindful art therapy. Through this program we strive to empower women with education, provide stress relief, and create a community. This poster will describe how the Antepartum Wellness Program was implemented, as well as future directions for the program.

Poster #27

Maternal Pre- and Post- Delivery White Blood Cell Counts as Early Indicators of Chorioamnionitis in Preterm Deliveries

Danielle G Iben, BS[1], Stephanie Rodriguez, MD[2], Danielle McGinnis, BA[3], Daisy Marty, MD[4], Michael Stokas, MD[5], Jonathan K Muraskas, MD[5]

University of California, Davis, Davis, CA[1], Pontificia Universidad Católica Madre y Maestra, Santiago de los Caballeros, DR[2], University of California, Berkeley, Berkeley, CA[3], Universidad Iberoamericana, Ciudad de Mexico, MX[4], Loyola University Stritch School of Medicine, Maywood, IL[5]

Introduction: While leukocytosis is a physiologic response in normal pregnancies, it is also caused by infection, medications, inflammatory conditions, and hematologic disorders. Routine maternal labs, including complete blood count (CBC), are often drawn on admission to rule out anemia or thrombocytopenia in pregnant mothers. Intrapartum leukocytosis is difficult to interpret and rarely noted because maternal leukocytosis is often considered a normal variant of pregnancy. Typically leukocytosis is defined as a white blood cell count (WBC) above 11,000 cells/μL, however this upper limit is raised to 15,000 cells/μL in pregnant women. Chorioamnionitis is a prevalent pregnancy complication that plays a significant role in the onset of preterm labor. It has also been associated with other adverse maternal outcomes such as postpartum hemorrhage, endometritis, increased cesarean delivery, and thromboembolic events. Therefore early diagnosis of chorioamnionitis is critical to improving clinical practice and preventing negative health outcomes for both mother and neonate. However, placental pathology reports are not finalized for days after delivery. We hypothesize that maternal pre- and post-delivery WBC in preterm deliveries can provide valuable information for the maternal and neonatal providers in the initiation and duration of maternal and newborn antimicrobial therapy. The purpose of this study was to identify whether peripartum WBC can predict the degree of maternal chorioamnionitis (CA).

Methods: This retrospective study focused on preterm newborns born at <33 weeks gestational age, excluding term newborns. Neonatal and matched maternal charts were reviewed. Maternal peripartum WBC within 24 hours before and after delivery were evaluated. Chorioamnionitis was evaluated in the maternal record and categorized as clinical CA, histopathological CA (HCA), or CA with funisitis (CAF)

which is inflammation of the umbilical cord and fetal membranes. Gestational age, antenatal steroids, maternal antibiotics, mode of delivery, length of ruptured membranes, and neonatal CBC with differential on admission were also recorded. Neonatal WBC were separated into total WBC, percent neutrophil, and percent bands.

Results: A total of 100 infant-mother records were reviewed. 56 patients were found to have no CA, 15 with clinical features of CA, including fever, uterine tenderness, vaginal discharge, and maternal and fetal tachycardia, 44 with HCA, and 25 with CAF on histology. Of the 15 patients with clinical CA, 0 had no HCA, 33% had HCA, and 66% had CAF. These 100 pregnancies had an average gestational age of 27.6 weeks with mothers at an average maternal age of 30.9 years old. Average length for rupture of membranes was 41 hours, with 93% of the pregnancies given betamethasone and 50% given antibiotics (excluding prophylactic antibiotics for delivery). Of these pregnancies, 22 mothers had preeclampsia, 23 with chronic hypertension, 5 with gestational hypertension, and 6 with gestational diabetes mellitus. Additionally, 76 were cesarean deliveries while the remaining 24 were normal spontaneous vaginal deliveries.

The mean maternal WBC on admission for all mothers was 13.07 K/μL. Any CA, clinical or histopathological, were associated with a significant increase in WBC on admission (14.17±4.48 vs 12.24±3.05, p=.012). However, post-delivery WBC were not statistically significant between CA and no CA (14.64±5.83 vs 14.26±4.27, p=0.71). When assessed by category of CA, mothers with HCA had WBC on admission that were not significantly different from those with CAF (p=0.98). However, there were significantly higher post-delivery WBC for mothers with HCA than those with CAF (16.78±6.06 vs 12.94±5.01, p=0.025).

Multinomial logistic regression further emphasized that higher WBC on admission was a significant predictor for increased likelihood of HCA (coefficient=0.144, p=0.018). When using adjusted predictions, the predicted probability of CA increased with higher maternal WBC on admission. This analysis shows a clear trend that higher WBC on admission are associated with higher probabilities of HCA.

Mean neonatal WBC on admission for no CA, HCA, and CAF were 8.19, 9.51, and 20.32 respectively. Mean neonatal percent neutrophils on admission for no CA, HCA and CAF were 38.67%, 42.4%, and 39.12% respectively. Mean neonatal percent bands on admission for no CA, HCA, and CAF were 4.36%, 6.67% and 7.69% respectively.

Conclusion: This study supports that in preterm deliveries, maternal WBC on admission is a significant predictor of HCA

and CAF, but WBC post-delivery is not. When further separating CA, only post-delivery WBC showed a significant difference: HCA had higher values than CAF. Despite normal physiological increases of WBC throughout the 2nd and 3rd trimester of pregnancy, our data show that maternal leukocytosis can provide early evidence of HCA and CAF, and should be documented and clinically correlated in maternal and neonatal management. Maternal leukocytosis can also guide neonatal providers with valuable information to prevent early onset sepsis in initially asymptomatic neonates.

Poster #28

Do Obstetrical Interventions in Periviable Deliveries Yield Greater Survivability for Twins Compared to Singleton Gestations?

Patrick Kim, MD[1], Antonio Santos Roca, MD[2], Surya Sruthi Bhamidipalli, MPH[2], Bradley Sipe, MD[3], Dalia Feltman, MD, MPH[4], Brownsyne Tucker Edmonds, MD, MPH[5], Tiffany R Tonismae, MD[6]

Orlando Health Bayfront Hospital, St. Petersburg, FL[1], Indiana University Richard M. Fairbanks School of Public Health and School of Medicine, Indianapolis, IN[2], Johns Hopkins All Children's Hospital, St. Petersburg, FL[3], NorthShore University Health System Evanston Hospital, Evanston, IL[4], Indiana University School of Medicine, Indianapolis, IL[5], University of Louisville School of Medicine, Louisville, KY[6]

Objective: To investigate the comparative impact of obstetrical interventions on survival rates in periviable deliveries between singleton and twin gestations.

Study Design: This is a multi-center retrospective study of patients who delivered a singleton or twin gestation between 22 0/7 and 24 6/7 weeks gestation from January 1, 2010 to July 31, 2020. This multi-center study spanned across 16 geographically distinct and diverse institutions. Demographic information and data regarding obstetrical interventions were reviewed and stratified by neonatal survival out of delivery room. Summary statistics described maternal characteristics with interventions used. Groups were analyzed with independent t-tests for continuous variables and chi-squared tests for categoric variables. Statistical analyses were performed with SAS software and SigmaStat software. Probability values of <0.05 were considered significant.

Results: A total of 2,216 women (singleton n=1,839 and twin gestation n=377) were delivered during the study period. Total survival regardless of obstetrical intervention was not different between singleton and twin gestations (91.9% vs. 91.7%, p=0.94), respectively. Overall survival rates for both cohorts were higher when obstetric interventions were received; however, neither cohort benefited significantly more from obstetrical interventions over the other group. Antenatal corticosteroids slightly, but non-significantly, favored singleton gestation survival (97.7% vs. 96.0%, p=0.12). There was no statistically significant difference in survival rates between singleton and twin gestations, respectively, in those who received magnesium sulfate (97.6% vs. 97.7%, p=0.94),

tocolysis (96.5% vs. 97.4%, p=0.61), and group B Streptococcus prophylaxis (97.5% vs. 97.3%, p=0.78). A greater proportion of non-Hispanic white patients received interventions in the singleton group, whereas non-Hispanic black patients were more likely to receive interventions in the twin group ($p<0.05$). In those receiving antenatal steroids, magnesium sulfate, and group B Streptococcus prophylaxis, singleton participants were more likely to be insured by Medicaid while twin patients were more likely to have private insurance ($p<0.05$).

Conclusion: Periviable singleton infant survival rates vary drastically, but has reportedly been as high as 9%, 49%, and 70% for 22, 23, and 24 week deliveries, respectively, across the United States. Periviable twin gestations follow a similar trend, with neonatal risks of mortality (per 1,000) of 874, 590, and 321 among twin infants born at 22, 23, and 24 weeks gestation, respectively. Notably, the overall survival rates were 92% for both the singleton and twin cohorts in this study, markedly higher than what has been reported in the literature. Nevertheless, obstetrical interventions appeared to have a similarly positive effect on survival for both singleton and twin gestations. Neither cohort benefited significantly more over the other cohort from the obstetrical interventions. However, antenatal corticosteroids did slightly favor singleton over twin gestation survival at 97.7% vs. 96.0%.

Poster #29
Pneumomediastinum in the Setting of Hyperemesis Gravidarum: A Case Report

Patrick S Kim, MD[1], Tiffany R Tonismae, MD[3], Tara Taylor, MD[2],

Orlando Health Bayfront Hospital, St. Petersburg, FL[1], Johns Hopkins All Children's Hospital, St. Petersburg, FL[2], University of Louisville, Louisville, KY[3]

Objective: To report and discuss the pregnancy course and delivery of a patient who developed pneumomediastinum as a complication of hyperemesis gravidarum.

Background: A significant amount of women experience nausea during pregnancy. Studies show that approximately 27-30% of women experience only nausea, while vomiting may be seen in 28-52% of all pregnancies. Nausea and vomiting during pregnancy may progress to a condition known as hyperemesis gravidarum. Hyperemesis gravidarum is a condition characterized by intractable vomiting during pregnancy, which may lead to weight loss, volume depletion, ketonuria and even ketonemia. There is no consensus on specific diagnostic criteria for hyperemesis gravidarum. It is primarily a clinical diagnosis applied to the most severe cases of nausea and vomiting during pregnancy. It occurs in approximately 2% of all pregnancies in the United States. The exact cause of hyperemesis gravidarum remains unclear. However, there are several theories for what may contribute to the development of this disease process, including higher concentrations of human chorionic gonadotropin and estrogen, lower esophageal sphincter relaxation due to estrogen and progesterone, and genetic predispositions.

Case Description: A 28-year-old gravida 1 female presented to the emergency department at 13 weeks and 6 days gestation for intractable nausea and vomiting over the past several days. She had been unaware of her pregnancy until it was confirmed that day. Upon admission to the hospital, she was started on an inpatient regimen which included doxylamine and pyridoxine, ondansetron, prochlorperazine, and sucralfate. After a total of four days of treatment, she was discharged home. Her past medical history was significant for gastroesophageal reflux disease and anxiety. Her past surgical history was significant for a Nissen fundoplication six years prior to presentation. Two weeks after her initial admission, she returned to the emergency room despite having acquired an ondansetron pump and taking prochlorperazine every six hours at home. She was ultimately stabilized in the emergency

department with intravenous fluids and doxylamine/pyridoxine and discharged back home. She presented to the emergency room again at 24 weeks, having vomited unremittingly for a full week prior to the visit. Shortly before arriving, she began experiencing chest discomfort that radiated to her back and neck, as well as shortness of breath. Physical exam revealed palpable crepitus in the right subclavicular region and neck. Imaging studies were performed, starting with a chest X-ray that indicated questionable soft tissue gas in the right supraclavicular region. A CT chest confirmed pneumomediastinum extending to the supraclavicular neck regions, particularly surrounding the esophagus and trachea. Subcutaneous emphysema was also observed in the neck and right supraclavicular regions. A CT esophogram reiterated the presence of pneumomediastinum with subcutaneous emphysema. An esophagogastroduoden-oscopy revealed Los Angeles Grade A esophagitis without rupture and chronic gastritis, which was biopsied and showed no malignancy or dysplasia. Once her vomiting was controlled, her neck discomfort subsided within days.

At her detailed anatomy ultrasound at 25 weeks gestation, fetal growth restriction (FGR) was diagnosed with an estimated fetal weight (EFW) in the 5th percentile. Umbilical artery dopplers were normal, and no structural abnormalities were noted. Severe FGR was diagnosed on follow-up ultrasound at 29 weeks. By 31 weeks, the EFW had dropped to less than the 1st percentile. Following several visits to obstetrical triage and the emergency department, and multiple admissions for nausea and vomiting, she was induced at 37 weeks due to severe FGR. At this point, she was on the maximum settings of her ondansetron pump. She delivered at 37 weeks and 2 days via vaginal delivery. The newborn weight was 1.81 kilograms (less than the 1st percentile). At the time of induction, maternal weight was 78.8kg, which was 3.2kg less than her weight at the start of her pregnancy. Her postpartum course was uncomplicated and she recovered well. By her six week postpartum visit, she had regained the weight she had lost and her nausea had completely resolved.

Discussion: Pneumomediastinum is a rare condition characterized by the presence of air in the mediastinum. Diagnosis is typically confirmed via chest X-ray or CT scan of the thorax, with central chest pain being the most common presenting symptom. Pneumomediastinum can also manifest with subcutaneous emphysema, where air collects beneath the skin, affecting the face, neck, and chest. In this case, the patient presented with concomitant pneumomediastinum and subcutaneous emphysema. Notably, unlike most cases of pneumomediastinum which predominantly involve males (up to 76% of recorded cases), this patient was a pregnant female.

Management of pneumomediastinum is largely supportive and targeted towards symptom relief. In this case, the patient's symptoms resolved following supportive care and aggressive treatment of her nausea and vomiting. Pneumomediastinum resulting from intractable vomiting is rarely seen, especially in pregnancy. Fortunately, it is a condition that typically self-resolves and is an overall benign entity.

Poster #30
Worsening Fetal Hydrops in the Setting of Refractory Fetal Supraventricular Tachycardia: A Case Report

David J Rivera, MD[1], Patrick Kim, MD[1], Tiffany R Tonismae, MD[2], Bradley Sipe, MD[3]

Orlando Health Bayfront Hospital, St. Petersburg, FL, University of Louisville, Louisville, KY[2], Johns Hopkins All Children's Hospital, St. Petersburg, FL[3]

Objective: To discuss the treatment, limitations and outcome of a pregnancy complicated by worsening fetal hydrops due to refractory fetal supraventricular tachycardia.

Background: Fetal tachycardia affects 0.4-0.6% of all pregnancies and occurs mostly in the third trimester. Over 90% of cases of fetal tachycardia can be attributed to supraventricular tachycardia (SVT). Transplacental administration of digoxin, flecainide, sotalol, and more rarely amiodarone, are effective treatments to slow fetal heart rate to allow adequate cardiac output. The progression to fetal hydrops is the most significant concern associated with fetal SVT. In the preterm period, treatment is warranted to avoid compounding prematurity with the morbidity of fetal hydrops. Treatment is considered refractory if there is no improvement, or if there is deterioration of fetal status despite therapeutic levels. Before delivery planning, one must consider gestational age, overall fetal survival, and maternal clinical status and wishes.

Case Description: A 35-year-old G5P1031 Cuban female presented at 23w0d with fetal SVT, moderate pericardial effusion and small ascites on fetal echocardiogram (fECHO). Notably, her pregnancy prior to the finding of fetal SVT had been uncomplicated and she had no significant past medical or surgical history. Level 2 anatomical survey, cell-free DNA screening, TORCH and parvovirus B19 screening were all unremarkable. She was diagnosed with gestational diabetes mellitus earlier in the pregnancy.

Digoxin was administered and reached therapeutic levels. After a few days of treatment, follow-up fECHO showed an improvement in pericardial effusion and a normal sinus rhythm 90% of the time of evaluation. However, short interval repeat fECHO redemonstrated persistent fetal SVT/atrial flutter, an increase in the degree of fetal ascites, and re-accumulation of pericardial effusion. She was transferred to a higher-level care facility for multidisciplinary management including Fetal Cardiology, Maternal-Fetal

Medicine, Obstetrics, and Neonatology. Sotalol was added as a second agent for rate control.

Follow-up fECHO showed no improvement in fetal arrhythmia and persistence of hydrops. Flecainide was added and digoxin was stopped. Following dosing modifications, the fetal heart rate was in normal sinus rhythm and fECHO showed occasional ectopy and PACs with short runs of tachycardia. The fetus remained hydropic at this time.

A week later, the fetal hydrops was worsening with increased ascites and scalp edema. A course of antenatal corticosteroids was administered given concern for possible need for delivery. Maternal liver function tests had become acutely abnormal (AST/ALT: 400/589). Due to maternal liver toxicity, sotalol was stopped and digoxin was restarted. Fetal SVT and hydrops remained refractory to all treatments, and treatment options were limited due to maternal toxicity. A recommendation for delivery was made at 26w4d; however, the patient declined. Fetal status continued to deteriorate, and the patient opted to stop all antiarrhythmics and fetal monitoring with a plan for palliative care at delivery if the fetus survived to delivery. A fetal demise was noted at 28w1d and was delivered the next day.

Discussion: Fetal arrhythmias are common and may resolve spontaneously in most cases. Fetal echocardiography is the diagnostic cornerstone in differentiating these etiologies and in evaluating the hemodynamic impact.4 Sustained fetal SVT can lead to complications related to poor cardiac output. These include hydrops fetalis in 20–30% of cases – if untreated fetal demise and/or maternal mirror syndrome can ensue. As there is no clear consensus regarding the choice of antiarrhythmic agent, duration of treatment, or timing of birth if maternal treatment is unsuccessful in achieving cardioversion, clinical management is often individualized. Cardioversion success rates reach 59-90% using digoxin, flecainide, or sotalol in combination. Successful cardioversion to sinus rhythm occurs within one week in 65-95% in the hydropic fetus,5 or within 48 hours in the non-hydropic fetus. Long-term prognosis post-cardioversion is good.6 Refractory cases remain a therapeutic challenge. More guidance will be provided once the Fetal Atrial Flutter and Supraventricular Tachycardia Therapy Randomized Trial (FAST RCT) has concluded. Antiarrhythmic medications can have significant side effects on the mother, such as arrhythmias, hypotension, and gastrointestinal disturbances, which require close inpatient daily monitoring. In this case, fetal and maternal status were deteriorating requiring the need for delivery. In addition to clinical status, maternal wishes were considered when discussing delivery indications.

Poster #31
Management and Delivery of a Patient with a Placental Chorioangioma and Severe Polyhydramnios

Kelsey M Pozerski, DO

Orlando Health Bayfront Hospital, St. Petersburg, FL

Objective: To report and discuss the management and delivery of a patient with a placental chorioangioma and associated severe polyhydramnios in the third trimester of pregnancy.

Background: Chorioangiomas are the most common benign tumors of the placenta, with an incidence of 0.2-0.6%. They are made up of fetal vessels which results in a hyperdynamic circulatory state in the fetus. Large chorioangiomas, those measuring more than 4 cm in diameter, are associated with complications. Fetal thrombocytopenia and microangiopathic hemolytic anemia can occur resulting in cardiac failure and hydrops. Other complications include preterm delivery and intrauterine death. Chorioangiomas are associated with severe polyhydramnios due to transudate from the tumor vessels and increased fetal urinary output due to the hyperdynamic state. Polyhydramnios is defined as a single deepest vertical pocket (DVP) $\geq$ 8 cm or an amniotic fluid index (AFI) $\geq$ 24 cm, while severe polyhydramnios is a DVP of $\geq$ 16 cm or an AFI of $\geq$ 35 cm. Severe polyhydramnios can cause maternal respiratory compromise, preterm labor, and postpartum hemorrhage. Treatment is typically with amnioreductions with the options of intrauterine blood transfusions, alcohol injection, endoscopic laser coagulation, and interstitial laser therapy.

Case Description: A 32-year-old G5P2022 presented at 27 weeks and 1 day gestation with contractions. An ultrasound showed an exophytic hypoechoic vascular placental mass measuring 4.5 x 5.7 x 4.6 cm, likely a placental chorioangioma, AFI of 18 cm. Her obstetrical history included two cesarean sections and two spontaneous miscarriages.

At 29 weeks and 3 days gestation, she was admitted for contractions and severe polyhydramnios, AFI was 54.9 cm. An amnioreduction was performed which yielded 2500 mL of amniotic fluid. She was given twelve hours of magnesium for neuroprotection and a betamethasone course for fetal lung maturity. She had a normal level II anatomy ultrasound, low-risk NIPT, and normal amniotic fluid chromosomal microarray. Weekly biophysical profiles and middle cerebral artery dopplers were ordered.

She was then readmitted at 30 weeks and 4 days gestation for contractions and severe polyhydramnios with an AFI of 39 cm. She was given indomethacin and magnesium for tocolysis and was discharged. At 31 weeks and 6 days gestation, she was admitted for contractions and shortness of breath in the setting of severe polyhydramnios, AFI was 65 cm. An amnioreduction was performed which yielded 3000 mL of amniotic fluid, repeat AFI was 27 cm. She was given nifedipine for tocolysis and discharged. She was readmitted at 33 weeks and 1 day gestation for contractions and worsening shortness of breath, AFI was 58 cm. An amnioreduction was performed which drained 2325 mL of fluid, repeat AFI was 28. She was given nifedipine for tocolysis and discharged.

She then presented again at 33 weeks and 6 days gestation for worsening contractions and shortness of breath. Maternal Fetal Medicine was consulted who recommended pain control and rescue betamethasone course followed by delivery. A repeat cesarean section was performed at 34 weeks and 0 days without complications. A viable female infant with APGAR scores of 8 and 9 was delivered. The 7.0 x 6.5 x 5.2 cm chorioangioma was well-circumscribed and homogenous. Pathology showed multiple benign well-defined proliferations of vascular spaces. She did well in the postpartum period and was discharged on postoperative day three. The patient did not follow-up postpartum.

Discussion: Chorioangiomas are the most common benign placental tumors and are associated with severe polyhydramnios. If severe polyhydramnios is diagnosed, an ultrasound to assess for a chorioangioma should be performed. Once diagnosed, we performed a level II anatomy ultrasound, weekly middle cerebral artery dopplers for fetal anemia surveillance and biophysical profiles. An amnioreduction may be performed if there is maternal discomfort. This patient's polyhydramnios was refractory to three amnioreductions. Overall, there is no consensus on the volume that should be removed and the use of tocolytics for an amnioreduction. In our practice, we performed continuous electronic fetal monitoring for at least one hour (longer if patient was on magnesium), used tocolytics (magnesium, indomethacin, or nifedipine) for 12 hours, optimized pain control (hydroxyzine, morphine, oxycodone, and or robaxin as needed), and gave intravenous fluids (bolus and maintenance) after an amnioreduction. Maternal Fetal Medicine recommended delivery for this patient at 34 weeks and 0 days in the setting of refractory severe polyhydramnios and maternal discomfort. Currently, there are no accepted standards to guide delivery of these patients.

Poster #32
Infant Safe Sleep: Prenatal Provider Knowledge and Practice Patterns in Cincinnati, Ohio

Katy McFarland, MPH[1], Elizabeth Kelly, MD, MS[2]

University of Cincinnati College of Medicine, Cincinnati, OH[1], Department of Obstetrics and Gynecology at University of Cincinnati College of Medicine, Perinatal Institute at Cincinnati Children's Hospital Medical Center, Cincinnati, OH[2]

Objective: Sleep-related infant deaths are a leading contributor to infant deaths nationally. From 2018 – 2022, sleep-related infant death made up 21 % of infant deaths in Hamilton County and the majority of these sleep-related deaths were suffered by Black infants (1). The prenatal period is a critical time during which expecting parents are making decisions for their newborn's sleep environment. Prenatal providers commonly do not discuss the American Academy of Pediatrics (AAP) infant safe sleep guidelines (2) over the course of prenatal care (3). This lack of safe sleep education may be disproportionately affecting Black parents and infants and leading to lower levels of knowledge of safe sleep guidelines in this population.[4] We sought to describe prenatal provider knowledge and practice of AAP safe-sleep guidelines in Cincinnati, Ohio, a region with a marked racial disparity in sleep-related infant death (1).

Study Design: Data were gathered from an anonymous cross-sectional survey of prenatal care providers from the University of Cincinnati, TriHealth, and The Christ hospitals (N=21). Primary outcomes were provider knowledge of AAP safe-sleep guidelines, practice patterns of safe sleep education, and barriers to providing this education. This survey was created in conjunction with Cradle Cincinnati, and descriptive statistics were analyzed using Stata version 15.1.

Results: Our sample (N=21) included 11 Attending OB/GYN physicians, 1 Attending Family Medicine physician, 5 Resident OB/GYN physicians, 3 Nurse Practitioners, and 1 Midwife. Surprisingly, not all of our sample correctly identified AAP recommendations when questioned on sleep position (95.2% alone, 95.2% back), sleep environment (100% crib, 85.7% bassinet), and sleep location (90.5% same room as parent). About half of providers reported discussing infant sleep position (52.4%), infant sleep location (47.6%), or infant sleep environment (57.1%), while all providers reported discussing tobacco cessation and breastfeeding. Only 28.6% of providers reported discussing safe sleep with all

patients and 19.1% report discussing at multiple visits. Of the sample, 85.7% reported they had received infant safe sleep training before yet only 76.2% of respondents felt their previous safe sleep training was sufficient. The most significant barriers to providing infant safe sleep education to prenatal patients included lack of sufficient time (66.7%) and lack of sufficient materials (23.8%).

Conclusions: Providers have knowledge of AAP infant safe sleep guidelines, but a minority of them discuss these guidelines with all prenatal patients or at multiple visits. Increasing the frequency with which Cincinnati prenatal care providers discuss AAP safe sleep guidelines could help combat the difference in parental knowledge that may underlie the regional racial disparity in sleep-related infant death. Providers may feel more able to do so if OB/GYN residency programs and organizations that conduct prenatal care provider training focus on overcoming barriers to discussing safe sleep, such as by provisioning materials and teaching educational techniques conducive to time constraints.

References: Available upon request.

Poster #33
Effectiveness of Office Hysteroscopy on a Patient's Health-Related Quality of Life (HRQoL)

Teresa Tam, MD[1], Yuanyuan Groves, MD[1], Haley Primuth, MD[1], Elliot M Levine, MD[2], Carlos M Fernandez, MD[3]

Ascension Health, Chicago, IL[1], Rosalind Franklin University, North Chicago, IL[2], Advocate Illinois Masonic Medical Center, Chicago, IL[3]

Introduction: An investigation was performed to determine the health-related quality of life (HRQoL) of patients' pre-hysteroscopy, 2-weeks, and 6-8 weeks post-hysteroscopy intervention in pre-menopausal and post-menopausal patients, using the EuroQoL-5 Dimension-5 Level (EQ-5D-5L) health status questionnaires and EuroQol visual analogue scale (EQ-VAS).

Methods: This prospective observational study was done from May 30, 2023, to May 13, 2024 (12-months), with a recruitment target of 120 patients, within a private practice setting.

Women aged 18 and older meeting the inclusion criteria and being scheduled to undergo office hysteroscopy for diagnosis and treatment purposes were enrolled in our study. The inclusion criteria includes the diagnoses of abnormal uterine bleeding, heavy menstrual/postmenopausal bleeding, abnormal pelvic ultrasound (e.g. abnormal endometrial thickening or intrauterine lesions). The exclusion criteria includes pregnancy, active pelvic infection, confirmed cervical and/or endometrial cancer. Women who voluntarily withdrew from the study were also excluded. All enrolled patients completed patient-reported outcomes of EuroQoL-5D-5L health status questionnaires, their overall health rating on EQ-VAS before hysteroscopy, 2-week after hysteroscopy, and 6-8 weeks after hysteroscopy, respectively.

Results: At this time in our study, we have not met our recruitment target of 120. A total of 123 patients were enrolled in our ongoing study, of which only 91 patients have completed the study (N=91), 17 patients were in the time frame to be followed, and 15 patients who could not tolerate office hysteroscopy or did not respond/complete self-reported EQ-5D-5L and EQ-VAS at 6-8 weeks post hysteroscopy, or withdrew voluntarily from the study were excluded from our study.

HRQoL measured by mean EQ-5D-5L scores in the pain/discomfort showed statistically significant differences between pre-menopause group and postmenopausal group

both before hysteroscopy and 2 weeks after hysteroscopy (both $P < 0.05$) (Table 3 and Table 4). However, mean EQ-5D-5L scores in motility, self-care, usual activities, anxiety/depression, and overall health show no statistically significant difference between pre-menopausal group and post-menopause group before hysteroscopy and 2 weeks after hysteroscopy.

Discussion: Office hysteroscopy exerts positive effects on HRQo in patients requiring the procedure, and it improves affected patients' quality of life. It is the intent of the authors to bring attention to the measurement tools utilized in this study, the clinical importance of the quality of life, and the value of outpatient hysteroscopy for diagnosis and treatment purposes.

Poster #34

Designing a Novel Maternal Mortality and Morbidity Pre-Clinical Pathology Teaching Module to Improve Vital Statistic Reporting

Abigail L Pleiss, BS[1], Lauren N Huddle, MD[1], Thomas F Arnold, MD[2], Steffen P Christensen, MD[3], Dennis J Lutz, MD[4]

University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND[1], University of North Dakota School of Medicine and Health Sciences, Dickinson, ND[2], University of North Dakota School of Medicine and Health Sciences, Fargo, ND[3], University of North Dakota School of Medicine and Health Sciences, Minot, ND[4]

Background: In 2021 there were 1205 maternal deaths in the United States, translating to a maternal mortality rate of 32.9 deaths per 100,000 live births. The National Vital Statistics System reports this was nearly double the 17.4 death rate in 2018. With 754 maternal deaths in 2019 and 861 in 2020, it was not until 2022 that maternal deaths unexplainably dropped to 817. The Healthy Woman 2000 Goal projected a steep decline in maternal deaths, yet two decades later maternal mortality was at an all-time high. These rates do not capture the 50,000+ women who face life-endangering pregnancy complications or "near misses" each year. The increasing US maternal mortality rate becomes even more alarming when compared to declining maternal mortality rates in other industrialized countries.

There are a variety of risk factors and system-level barriers which have been proposed as contributing factors to apparent escalation of maternal mortality within the United States. Examples range from racial disparities to conflicting definitions and inaccurate reporting methods. Some argue that the introduction of the pregnancy checkbox to the death certificate has contributed to an overestimate of maternal deaths in recent years. Nevertheless, maternal deaths are occurring at an unacceptable level and the public is demanding change. Actionable steps toward improving maternal mortality and morbidity include ensuring accuracy of data, utilization of Maternal Mortality Review Committees (MMRCs), health policy changes, and the education of medical trainees early in their career.

Educational Problem: Most medical students arrive with limited exposure to the field of maternal health. The typical medical school curriculum provides minimal education on specific maternal death epidemiology and intervention strategies. Pre-clinical education on this topic is typically

limited to abbreviated reproductive pathology or general public health lectures. Specific women's health related education occurs during the clinical phases, either in an OBGYN clerkship or other OBGYN-related elective. Additionally, many medical students do not have an opportunity to learn about their regional MMRC and may not know they exist. Medical students have little to no training in completing death certificates and are not privy to the impact of the pregnancy checkbox.

This gap in knowledge and exposure is problematic because accurate completion of vital statistic records impacts all specialties. Review of maternal mortality data indicates that a significant number of maternal deaths are preventable, providing an opportunity for early education and awareness. Advocating for additional educational content is always challenging with an already full medical curriculum. In a rural state where perhaps less than two maternal deaths occur in a year, it may be even more of a challenge to secure dedicated educational contact hours for this subject. However, the community impact of even one maternal death is devastating, and even more unacceptable if this death was preventable. We propose introducing early maternal mortality and morbidity education to medical students in our rural state. There is virtually no published data on any other US medical schools taking this approach to ensure accuracy of vital statistics.

Intervention: We propose the development of a pathology learning module, centered on maternal morbidity and mortality, that will be integrated into the pre-clerkship phase of medical education. The goal of the module is to educate students on the significance of maternal health vital statistics reporting and emphasize their future role in improving patient outcomes regardless of their eventual chosen specialty. Students will also learn about the role of the MMRC and its impact on maternal health data. This curriculum will be a partnership between the Departments of Pathology and Obstetrics and Gynecology and will be implemented in 2025.

Initial training will take the form of an educational module taught in the Reproductive Unit before clinical rotations begin. Lectures will be led by academic faculty involved in the state-wide MMRC. Information presented will include traditional didactic learning on the epidemiology, etiology, and pathology of maternal mortality, as well as case-based learning. Once aware of the significance of maternal health, students will take on the role of medical certifier and complete death certificates based on fictional cases, as well as discuss whether or not they deem the deaths preventable and potential intervention strategies.

Outcomes of this module will be measured over several curricular periods. Data collection will include student course

evaluation surveys, both quantitative and qualitative responses, and standardized assessment of students' knowledge and perceptions regarding maternal care. Information presented will be eligible material for students' end-of-unit course exams. Outcomes will be compared to the goals of the module annually.

Conclusion: Maternal mortality persists at an unacceptable level in the United States, and novel educational approaches are needed to produce impacts in this area. We propose a pre-clinical pathology training module to educate all medical students on the importance of accurately completing vital statistic forms regardless of their eventual specialty.

Poster #35
Retained Intraabdominal Fetal Parts Following Dilation and Evacuation

Allie D Stover, BS[1], Andrea R Lays, MD[2], Dennis J Lutz, MD[3]

University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND[1], Essentia Health, Duluth, MN[2], University of North Dakota School of Medicine and Health Sciences, Minot, ND[3]

Purpose: (1) Presentation of a case of uterine perforation and resultant abdominal extrusion of fetal parts following an elective second-trimester dilation and evacuation (D&E). (2) Investigation of potential complications of elective terminations and associated patient risk factors. (3) Discussion of early identification and management of uterine perforation with retained intraabdominal fetal parts using similar reported patient cases.

Case: A 24-year-old G2P1011 presented to the emergency department (ED) with suprapubic abdominal pain and vaginal bleeding. This began two days prior, but only a few hours after she underwent an elective 15-week D&E. During evaluation in the ED, she had normal vitals, suprapubic tenderness without rebound or guarding, a moderate amount of dark blood in the vagina, and fingertip cervical dilation with no tissue at the os. Pertinent lab results included hemoglobin 10.6 g/dL and quantitative hcg 3,200 mIU/mL. Pelvic ultrasound revealed uterus 12.6 cm in size with 28 mm heterogenous endometrium. Outside of the uterus there was noted to be fetal spine present. A CT of the abdomen/pelvis showed a 15-week fetus present outside the uterus. She underwent an exploratory laparotomy, removal of fetal tissue, primary repair of a posterior uterine perforation, and suction dilation and curettage (D&C) of remaining placental tissue. According to the surgeon who performed the initial D&E, the only fetal tissue returned was an arm, foot, and amniotic fluid. The procedure was stopped due to difficulty with curettage passage through the cervix, and another dose of misoprostol was given with the plan to return for a second attempt upon further cervical ripening. During observation, however, the patient developed bleeding and cramping and passed a large clot in the bathroom. She was returned to the procedure room and ultrasound revealed an empty uterine cavity, so it was thought she had passed the fetus spontaneously and she was discharged. Following her exploratory laparotomy, the patient returned to the PACU in stable condition and had a routine post-op course with discharge on day 2.

Discussion: According to the Center for Disease Control (CDC), about 600,000 legal induced abortions occurred in the US in 2021. This excludes intrauterine fetal death, early pregnancy loss, ectopic pregnancy, and retained products of conception. The majority of these are completed medically in the first trimester, with only approximately 5-6% occurring beyond the first trimester. First trimester surgical abortion is one of the safest surgical procedures performed in the US, with a total complication rate of around 2%[1,2]. The most common side effects of surgical abortion are pain, post-procedural spotting, and infection. More serious complications include uterine atony and hemorrhage, uterine perforation, injury to adjacent organs, failed abortion, septic abortion, and disseminated intravascular coagulation (DIC). These risks increase with second-trimester surgical abortion, especially septic abortion and DIC[2,3]. Second-trimester surgical abortion is safest when completed with cervical dilation and instrumental uterine evacuation (dilation and evacuation). Conflicting data exists regarding use of intra-operative ultrasound (US) guidance to reduce complication rates[4,5]. Some studies have found that rates of uterine perforation are reduced with US guidance, while others have found that rates of infection and placental morbidity are increased[4,5]. Further, studies suggest that US of the uterus is a poor predictor of retained products of conception[5]. Overall, the rate of uterine perforation with second-trimester D&E is around 2%. The risk of uterine perforation increases with advanced gestational age, multiparity, retroverted uterus, and history of prior abortion or cesarean section[6]. Rates of resulting intraabdominal fetal-part extrusion are 10 times less, around 0.2% (7,8). Still, cases of uterine perforation and extrusion of fetal parts following D&E have been reported[7,8,9]. In general, these patients presented with abdominal pain and otherwise unremarkable physical exam and lab findings a few days following an elective second-trimester D&E. One of which was complicated by intraoperative hemorrhage and another retained products of conception requiring an additional pass[7,9]. All patients initially underwent pelvic US imaging before CT or MRI was done to better characterize the extent of injury followed by exploratory laparotomy to repair the perforation and remove fetal tissue.

Conclusion: Ultimately, uterine perforation and potential extrusion of fetal parts should be suspected in any women presenting a few days after elective abortion with abdominal pain or vaginal bleeding, regardless of physical exam or lab findings. Suspicion should be particularly high in those whose procedures were complicated by hemorrhage or retained products of conception, though it can occur in seemingly

uncomplicated procedures too. Although ultrasound can be a sensitive and efficient initial imaging modality, follow-up imaging with CT or MRI can help better identify the location of retained fetal parts and the extent of uterine injury. Exploratory laparotomy is usually required to remove fetal tissue and repair the uterine defect, while further dilation and curettage may be necessary to remove remaining products of conception within the uterus.

References: Available upon request.

Poster #36
Delayed Diagnosis of Congenital Imperforate Hymen Resulting in Obstructing Hematometrocolpos

Courtney M Hanson, BS[1], Brenna Hanson, BS[1], Megan Miller, MD[1], Parag Kumar, MD[1], Thomas F Arnold, MD[2]

University of North Dakota School of Medicine and Health Sciences, Bismarck, ND, University of North Dakota School of Medicine and Health Sciences, Dickinson, ND

Background: The incidence of imperforate hymen is approximately 0.05-0.1%, making it a rare congenital anomaly of the female genital tract. This condition arises when the hymen completely blocks the vaginal opening, causing a buildup of menstrual blood flow and vaginal secretions known as hematocolpos. Imperforate hymen is commonly diagnosed in newborns or in adolescence with the onset of menses. It typically presents as a vaginal bulge and is often associated with cyclic pelvic pain, abdominal mass, urinary retention, dysuria, constipation, and dyschezia. Early detection and treatment are crucial to limit complications and improve overall patient outcomes. In this case, we present an adolescent female with an imperforate hymen resulting in significant hematometrocolpos, leading to a large abdominal mass and pyelonephritis.

Case Presentation: A 12-year-old female with a recent history of recurrent constipation presented with suprapubic cyclic abdominal pain. Additionally, she reported urinary hesitancy and incontinence. Thelarche and axillary hair growth occurred about two years before her presentation, but she denied any history of menarche. Over the past month, she noticed a bulge near her introitus and an enlarging abdominal mass. During the physical examination, the physician observed a definite lower abdominal mass, significant labial swelling, and a membranous tissue obstructing the vaginal opening. Initial imaging revealed marked fluid distention of the vaginal and uterine cavities, consistent with hydrometrocolpos. A diagnosis of an imperforate hymen was made. Urgent surgical intervention was necessary; thus, an incision of the hymen was made, and 1200ml of chocolate brown blood was drained from the vaginal canal. The hymenal tissue was reapproximated and the cervix was identified prior to the end of the procedure.

Discussion: This case highlights the importance of early gynecologic care and physical examination. Education on normal female anatomy and development is often considered a taboo topic. However, social factors may increase the need

for standardized education in schools. A dual effort between improved female adolescent education and routine gynecologic care are essential for early detection and treatment of female reproductive tract anomalies.

Poster #37
Massive Perivillous Fibrin Deposition with Unexpected Asymmetric IUGR

Danielle R O'Hare, BA[1], Andrea M Eickenbrock, MD[1], Dennis J Lutz, MD[2]

University of North Dakota School of Medicine and Health Sciences, Grand Forks, ND[1], University of North Dakota School of Medicine and Health Sciences, Minot, ND[2]

Case: A previously healthy 21-year-old primigravida patient presented at 36 weeks and 4 days with premature rupture of membranes. Pregnancy was complicated by bacterial vaginosis in the first trimester. Her 19-week ultrasound showed estimated fetal weight in the 92nd percentile and no fetal anomalies. Upon admission, she was 5 cm dilated and had bloody vaginal discharge. The fetus had a category 2 fetal heart rate tracing due to minimal variability, no accelerations, and occasional variable decelerations. Her blood pressure was elevated and continued to be in the severe range, necessitating the use of IV hydralazine and labetalol. Due to continued blood pressures in the severe range, she was given IV magnesium for preeclampsia with severe features. There was an acute onset of copious bloody discharge indicating possible placental abruption. She dilated to 9 cm and had a spontaneous vaginal delivery. The neonate weighed 1.7 kg with obvious evidence of asymmetric intrauterine growth restriction (IUGR), with head circumference in the 14th percentile, height in the 19th percentile, and weight less than the 1st percentile. The infant also had widely split cranial sutures and respiratory distress evidenced by grunting, subcostal retractions, and nasal flaring. The placenta was noted to be abnormally thick and firm with a hematoma covering almost 50% of the surface area confirming likely placental abruption. The baby was admitted to the NICU for treatment of respiratory distress and sepsis observation. Due to unexpected IUGR, TORCH labs were ordered and found to be negative for infection. The placenta was sent to Mayo Clinic where pathology confirmed massive perivillous fibrin deposition (MPFD).

Review: MPFD is a rare condition associated with fetal growth restriction and death as well as increased maternal morbidity and mortality. This condition is characterized by fibrin deposition in the intervillous space leading to decreased placental function. While the incidence of MPFD is low, reported to be from 0.028% to 0.5%, it has a reported recurrence rate of 30% or more in subsequent pregnancies (1). In a case review of 1 woman throughout 10 pregnancies, 8 of

9 subsequent pregnancies were affected by MPFD. There are no known genetic causes of this condition or disorders that increase the risk of developing MPFD.

Suggested etiologies leading to the deposition of fibrin and placental dysfunction in this disorder include clotting and autoimmune disorders, anti-fetal rejection, and an imbalance of angiogenic/antiangiogenic factors. One proposed mechanism suggests that MPFD is related to disorders of maternal thrombophilia or autoimmune illnesses (2). The build-up of products of the clotting cascade has been suggested as a main pathology of MPFD. There are several documented cases of MPFD in women with antiphospholipid antibody syndrome which suggests that this disorder may be due to abnormal hemostasis and clotting. A second proposed mechanism is anti-fetal rejection. Romero et al. found significant differences in antibodies present in patients with MPFD as compared to controls (3). These included an increase in maternal anti-HLA class I seropositivity and specific maternal antibodies against fetal HLA antigen class I or II. The presence of these antibodies in patients with MPFD could explain the etiology of the disorder as well as the high recurrence rate in subsequent pregnancies. A third possible mechanism is an imbalance in angiogenic/antiangiogenic factors, with one study finding that patients with MPFD had a lower PIGF level and a higher mean plasma concentration of sVEGFR-1 and sEng (both $P < .01$) than controls (4).

While the etiology of MFPD is not completely understood, there is a characteristic gross and microscopic pathology. Placental cross sections are firm and diffusely yellow with an "orange rind" appearance.1 Histologic features include massive fibrin deposition with extravillous trophoblast (EVT) proliferation and chorionic villi encased in a netlike pattern. Villi can also show villous fibrosis and karyorrhexis. Pathology of this disorder is defined as perivillous fibrinoid material extending from the maternal surface to fetal surface, encasing $\geq 50\%$ of the villi on at least one slide (5). Fibrinoid material in the intervillous space causes an obstruction in the blood flow which interferes with ability of oxygen and nutrients to cross the placenta, leading to placental dysfunction. Such placental dysfunction produces poor perinatal outcomes such as IUGR and fetal demise.

Summary: In this case of MPFD, there was subsequent placental abruption and IUGR. IUGR is a potential complication of many placental pathologies due to placental dysfunction. One study found the incidence of IUGR to be 31% in cases of MPFD (5). Placental abruption and preeclampsia are further complications that have been reported in patients with MPFD thought to be due to abnormal vasoconstriction in the placenta leading to hypertension and

subsequent dysfunction. The incidence of complications such as IUGR as well as the risk of recurrence in future pregnancies merits further research into the etiology of this disorder. Because of the high recurrence rate of MPFD, all patients need to be counseled regarding subsequent pregnancies.

References: Available upon request.

Poster #38
Phenylalanine Hydroxylase Deficiency (Phenylketonuria) in a Pregnant Patient

Tatiana M Roberts, BS, David A Billings, MD, Dennis J Lutz, MD

University of North Dakota School of Medicine and Health Sciences, Minot, ND

Purpose: (1) To describe a case of a pregnant patient diagnosed at birth with phenylketonuria (PKU). (2) To review literature pertaining to management, treatment options, and outcomes of pregnancy in a patient with PKU.

Methods: A 27-year-old G2P0101 female presented to the clinic for a new obstetrics visit. She has a history of phenylketonuria diagnosed at birth, which is managed with regular laboratory phenylalanine and tyrosine levels. Medications include daily oral tyrosine and pegvaliase-pqpz (Palynziq) 40 mg injected subcutaneously daily. She is also taking a prenatal vitamin and labetalol 600 mg daily for chronic hypertension. She had one previous pregnancy that ended at 36 weeks' gestation via normal spontaneous vaginal delivery and was monitored closely by maternal-fetal medicine. That pregnancy was also complicated by chronic hypertension and preeclampsia. She was followed by an obstetrician, maternal-fetal medicine specialist, and geneticist throughout her first pregnancy.

On initial examination, her blood pressure was within normal limits. A transvaginal ultrasound confirmed an intrauterine pregnancy with a normal-appearing yolk sac with measurements and dating consistent with her last menstrual period. The patient was advised to have phenylalanine and tyrosine levels monitored weekly. Labetalol was changed to 300 mg twice per day. She was prescribed aspirin 81 mg daily due to her previous history of preeclampsia. She was advised to follow up with a maternal-fetal medicine physician regularly due to her phenylalanine hydroxylase deficiency (PAH) and monitoring for possible embryopathy and to continue care with the geneticist. The phenylalanine level at this visit was 3.1185 mg/dL, which is within the current ACOG recommendation of 2-6 mg/dL. At subsequent visits, she remained asymptomatic and adherent to the treatment plan, and her blood pressure was within normal limits. At 10 weeks gestation, the phenylalanine level was 4.026 mg/dL but at 15 weeks the phenylalanine level was 0.0495 mg/dL. The patient transferred obstetrical care to the community where the MFM was located. Her phenylalanine levels remain

highly volatile yet delivery is anticipated to be nonproblematic.

Results: Managing PKU in pregnancy is an uncommon occurrence even though this rare autosomal condition affects 1 in 14,000 to 19,000 people in the United States. The American College of Obstetricians and Gynecologists (ACOG) updated their Committee Opinion in 2020 regarding treatment of pregnant patients with phenylketonuria, stating that pre-pregnancy consultation with maternal-fetal medicine and a geneticist is strongly advised, as well as maintaining phenylalanine levels at less than 6 mg/dL at least three months before delivery. Throughout pregnancy and abnormal phenylalanine level between 2-6 mg/dL decreases the risk of embryopathy, including but not limited to developmental delay, microcephaly, growth delay, seizures, and cardiac deformities. Consultation for pre-pregnancy genetic screening of the partner is recommended as all infants born to woman with diagnosed PKU will be, at a minimum, obligate carriers.

Treatment options include dietary modification with a low-protein diet supplemented with phenylalanine-free medical food. Sapropterin, a synthetic tetrahydrobiopterin which increases conversion of phenylalanine to tyrosine, or pegvaliase, a pegylated phenylalanine ammonia lyase that converts phenylalanine to ammonia and trans-cinnamic acid are currently recommended. There is limited data available on the safety of either sapropterin or pegvaliase use in pregnancy, however, ACOG agrees that sapropterin supplementation may be appropriate in pregnancy and breastfeeding. Other treatment regimens, including pegvaliase, should be considered carefully with the appropriate consultation of a metabolic geneticist or other experienced provider.

Conclusions: This case presents a pregnant patient with known PKU currently being managed on pegvaliase injections. PKU management in pregnancy presents unique challenges as it is rarely encountered and requires management by a provider team of specialists whose goal is to maintain appropriate phenylalanine levels to decrease embryopathy. This patient has been maintained within the recommended tyrosine limits and has not had any known adverse effects nor did her first child.

Poster #39

A Survey-Based Exploration of Fertility, Reproductive Health, and Contraception in Females Considering Bariatric Surgery

Catherine Chen, BS[1], Jessica W Kiley, MD, MPH[2], Ismely Minaya, MD[2]

Northwestern University Feinberg School of Medicine, Chicago, IL[1], Northwestern University Department of Obstetrics & Gynecology, Chicago, IL[2]

Objective: To assess the baseline knowledge of contraception and fertility in reproductive-aged individuals assigned female sex at birth considering bariatric surgery

Methods: The study was a prospective, cross-sectional, survey-based study of individuals before their initial preoperative consultation for weight-loss surgery at an urban academic medical center. A convenience sample of English-speaking females aged 18-49 years was recruited using in-person and virtual methods between July 2023 and April 2024. The survey queried knowledge of fertility, reproductive physiology, and contraception through the Contraception Knowledge Assessment (CKA), a validated, 25-multiple choice question survey. Seven demographic questions and an additional assessment question about obesity and fertility were added to the survey in order to assess study participants' understanding of how obesity can impact fertility. The primary outcome was percent correct of key survey questions and correct response to a question on obesity and fertility. Subgroups were defined by demographic variables of age, sexual activity, number of pregnancies, education level, race/ethnicity, and insurance, and analyses of survey scores were performed.

Results: A total of 41 individuals completed the survey. The majority of the cohort had some high school education, had at least one pregnancy, were sexually active, and had private insurance. The cohort scored an average of 56% (14 of 25 responses correct) on questions related to contraceptive methods and fertility, and 71% answered a question on the potential impact of bariatric surgery on fertility and pregnancy correctly. The survey questions answered incorrectly by more than 60% of participants assessed the temporal window for the administration of emergency contraception, the mechanism of action of the combined hormonal contraceptive ring, the indications and adverse effects of depot medroxyprogesterone acetate, instructions following a missed dose of the birth control pill, and knowledge around

intrauterine device placement. Additionally, respondents commonly erred in understanding the pharmacodynamics of oral contraceptives, the duration of sperm viability within the reproductive tract, and the comparative efficacy of contraceptive modalities in preventing pregnancy. Conversely, questions answered correctly by over 80% of participants predominantly assessed knowledge of hormonal contraceptive formulations, the withdrawal or "pull out" method, barrier methods that mitigate the risk of sexually transmitted infections, and the earliest possibility of pregnancy after discontinuing hormonal birth control. Statistical analysis revealed a significant difference between nulligravid individuals and those with prior pregnancies. Specifically, those with prior pregnancies were more likely to incorrectly answer the question about the effect of bariatric surgery on fertility. There were no other statistically significant associations between demographic variables and survey scores.

Conclusion: Our study reports on baseline family planning knowledge in individuals considering bariatric surgery. Currently, no standard of contraceptive counseling exists across institutions, and the findings from this study will inform future research. Additional data is necessary to develop guidelines for managing fertility and preconception care in individuals undergoing bariatric surgery. The CKA and other measures may help identify knowledge gaps and improve patient decision-making regarding contraceptive use and pregnancy planning in the perioperative period.

Poster #40

Empowering Women's Health: Introducing and Implementing Manual Vacuum Aspiration for Enhanced Family Planning in a Community Hospital Setting

Leah N Delfinado, MD, Ritika Tamirisa, MD, Jacqueline Juna, MD

Advocate Illinois Masonic Medical Center, Chicago, IL

"Empowering Women's Health: Introducing and Implementing Manual Vacuum Aspiration for Enhanced Family Planning in a Community Hospital Setting" presents a comprehensive strategy for the successful implementation of Manual Vacuum Aspiration (MVA), also known as Manual Uterine Aspiration (MUA), for family planning purposes in a community hospital setting. MVA, as a safe and effective method for uterine evacuation, holds immense potential for improving women's health outcomes. However, its integration into healthcare facilities requires careful planning, collaboration, and buy-in from various stakeholders.

The implementation process begins with a thorough needs assessment to identify existing gaps in family planning services and assess the feasibility of introducing MVA. Engaging stakeholders from diverse departments, including obstetrics and gynecology, emergency room, nursing, finance, and hospital leadership, is crucial from the outset. This involvement ensures representation of different perspectives, fosters interdisciplinary collaboration, and facilitates consensus-building.

To garner support from obstetrics and gynecology residents and attending physicians, educational sessions and training workshops are organized to familiarize them with MVA techniques, benefits, and safety protocols. These sessions not only enhance clinical competency but also serve to address any concerns or misconceptions surrounding the procedure.

Involving emergency room staff in the implementation process is essential for streamlining patient referrals and ensuring timely access to MVA services. Collaborative discussions and training sessions with emergency room personnel help clarify referral pathways and establish protocols for seamless patient care transitions.

Nursing staff play a pivotal role in the successful integration of MVA into clinical practice. Comprehensive training programs are designed to equip nurses with the necessary skills to assist during MVA procedures, provide patient education, and ensure post-procedural care and follow-up.

Financial considerations are addressed through cost-benefit analyses and discussions with finance departments to assess

the economic impact of integrating MVA services. Highlighting the potential long-term savings associated with MVA compared to alternative treatment modalities underscores its value as a cost-effective intervention.

Effective leadership and stakeholder engagement are central to overcoming organizational barriers and fostering a culture of support for MVA implementation. Regular communication, feedback mechanisms, and continuous quality improvement initiatives are implemented to address challenges, monitor progress, and sustain momentum.

In conclusion, the successful introduction and implementation of MVA in a community hospital setting require a multi-faceted approach that prioritizes stakeholder engagement, interdisciplinary collaboration, and proactive leadership. By leveraging the expertise and commitment of diverse stakeholders, healthcare facilities can enhance access to safe and comprehensive family planning services, ultimately improving women's health outcomes and promoting reproductive autonomy.

References available upon request.

Poster #41

Utilization of Vaginal Ultrasound Surveillance During the Second Trimester and Postpartum to Detect and Repair Failure of Transabdominal Cerclage and Allow Targeted Avoidance of Failure

James E Sumners, MD[1], Todd Foster, PHD[2], Amberlee Hudson, RT[2]

Cox Medical Center South, Springfield, MO[1], Ascension Health, Indianapolis, IN[2]

Transabdominal cerclage (TAC) is a reliable method to avoid second trimester loss and extreme premature birth in patients selected because of their prior obstetric history, failure of vaginal cerclage in a prior pregnancy and/or other anatomic and clinical findings. Low risk of the TAC surgery placed during early pregnancy by an experienced surgeon has been documented (1). Failure of this surgical approach is rare. Shennan and associates have published the results of a randomized prospective trial documenting the significantly higher pregnancy success with TAC compared to vaginal cerclage (TVC) (2). TAC placement prior to pregnancy by robotic-assisted laparoscopy is also becoming popular (3). However, SMFM recently published their opinion somewhat at odds with surgical and obstetric experts in this procedure, particularly indicating no need for surveillance by ultrasound of the cerclage itself to assure continuing success (4). Three case histories drawn from the author's (JES) surgical experience illustrate appropriate surveillance by vaginal cerclage during and after pregnancy and methods to avoid failure.

1. G3P1111 underwent TAC placement prior to pregnancy #4 via robotic-assisted laparoscopy due to her history of cervical incompetence in her second and third pregnancies and prophylactic vaginal cerclage failure in the third pregnancy. Her pregnancy #4 she delivered at 35 weeks and during her cesarean the TAC was noted to be pulled partially through the cervix wall and was removed. TAC was placed prior to her next pregnancy via robotic-assisted laparoscopy. On vaginal ultrasound surveillance at 20 weeks during the subsequent (5th) pregnancy, membranes were noted to be prolapsed down the cervical canal to the external os. Vaginal cerclage was placed and she delivered by cesarean at 39 weeks.

2. G2P1001 underwent TAC placement at 13 weeks gestation at her request because of her trichorionic triplet pregnancy and our experience with reduction of extreme premature birth in triplets from 13% to less than 2% with TAC placement

prophylactically (5). Vaginal ultrasound surveillance showed prolapse of membranes to the external os at 17 weeks. Vaginal cerclage was placed and she delivered at 36 weeks three healthy babies by cesarean.

3. G4P0220 had delivered at 20 and 22 weeks vaginally with clear histories of cervical incompetence and underwent prepregnancy TAC by robotic-assisted laparoscopy. She delivered her fifth pregnancy at 37 weeks by cesarean. Vaginal ultrasound at 16 weeks in her sixth pregnancy showed the TAC pulled completely through the cervical wall and TAC was removed/replaced at 17 weeks along with TVC placement. This pregnancy delivered by cesarean at 33 weeks a healthy baby.

Serial vaginal ultrasound surveillance during TAC pregnancy between 16 and 24 weeks is appropriate to detect impending TAC failure and TVC can then be used for prevention of such failure. After successful TAC pregnancy, vaginal ultrasound should be utilized to detect and repair TAC displacement which apparently occurred during the latter part of a successful pregnancy in which Tac was in place.

Citations: Available upon request.

Poster #42
Managing Idiopathic Subglottic Stenosis During Pregnancy: A Multidisciplinary Approach

Matthew Kinney, MS, Jenci Hawthorne, MD, Swapna Chandran, MD, James Duffy, MD, Sydney Harmon, MD, Justin Jatczak, MD, Edward Miller, MD

University of Louisville, Louisville, KY

The aim of this case is to provide innovative insight into the multidisciplinary management and outcomes of patients who present with subglottic stenosis during pregnancy.

Methods: This study presents a detailed case report alongside a comprehensive review of existing literature on Subglottic Stenosis in pregnancy. The case revolves around a pregnant patient who experienced sudden onset stridor during physical activity. It delves into the intricate management of this patient, highlighting the successful reduction of grade 3 idiopathic subglottic stenosis, which had been causing 85% airway obstruction. Antineutrophilic cytoplasmic antibody (ANCA) testing was completed and negative. This intervention was performed by Obstetricians, Otolaryngologists, and Anesthesiologists at the University of Louisville when the patient was at 24 weeks and 5 days gestation. We conducted a meticulous search of PubMed, using specific search terms including "Subglottic Stenosis in pregnancy," "Surgical stenosis in pregnancy," "Otolaryngology in Pregnancy," and "ANCA in pregnancy".

Results: The existing literature on Idiopathic subglottic stenosis during pregnancy remains limited. A differential diagnosis for potential causes includes congenital malformations, acquired conditions such as prolonged intubation or inflammatory processes like granulomatosis with polyangiitis. However, it is recognized that effective management necessitates a multidisciplinary approach involving Obstetrics, Otolaryngology, and Anesthesiology[1]. This collaboration is essential as the pregnant patient must be apneic during the procedure, posing potential risks to both the mother and fetus.

In addition to the challenges posed by idiopathic subglottic stenosis during pregnancy, our systematic review sheds light on the management and outcomes of antineutrophil cytoplasmic antibody-associated vasculitides (AAV) in pregnancy. The findings underscore the importance of tailored management strategies for pregnant patients with AAV to optimize maternal and fetal outcomes. Serious maternal complications from ANCA vascultidies include progressive

tracheal/subglottic stenosis, renal disease, preeclampsia, and miscarriages, while fetal anomalies are infrequent[2].

In our case, a 36-year-old G4P2012 patient with an unremarkable medical history presented with stridor and shortness of breath on 4/8/24 at 24 weeks and 2 days gestation by last menstrual period consistent with 8-week ultrasound. The patient first experienced stridor in January 2024 while walking. Upon laryngoscopy, Otolaryngology identified grade 3 idiopathic subglottic stenosis, resulting in 85% airway obstruction. Subsequently, Otolaryngology recommended CO2 laser ablation of the subglottic stenosis, necessitating the patient to be apneic during the procedure. The intervention was determined to be urgent due to the presence of stridor and symptoms; however, it was not considered elective as ideally, intervention should occur at 28 weeks gestation [3].

To ensure the safety of both mother and fetus, continuous fetal monitoring was implemented during the procedure. Delivery indications were established as the presence of worsening fetal status during the procedure with Category III tracing or terminal fetal bradycardia. Prior to the procedure, the patient received steroids to promote fetal lung development and magnesium for fetal neuroprotection.

Furthermore, preparations were made for potential emergent cesarean section, with a cesarean section cart readily available in the operating room. Additionally, the Neonatal Intensive Care Unit (NICU) team was on standby in the event of a preterm birth during the procedure.

The procedure was successful, Otolaryngologists utilized balloon dilations and CO2 laser ablations to reduce the subglottic stenosis. Fetal monitoring indicated no stress, and the patient tolerated the procedure well.

Conclusion: This case offers valuable insights into managing patients with idiopathic subglottic stenosis in pregnancy, emphasizing the critical importance of a multidisciplinary approach. The collaborative efforts of Obstetricians, Otolaryngologists, and Anesthesiologists were paramount in ensuring the safety and well-being of both the mother and fetus throughout the management process. Through multidisciplinary coordination and careful consideration of potential risks, successful reduction of grade 3 idiopathic subglottic stenosis was achieved, alleviating the patient's symptoms, and mitigating the potential for adverse outcomes. Furthermore, the establishment of delivery indications and implementation of precautionary measures, such as fetal monitoring and administration of steroids and magnesium, underscored the comprehensive approach to care in this complex clinical scenario. This case serves as a testament to the effectiveness of multidisciplinary collaboration in addressing the unique challenges posed by subglottic stenosis

during pregnancy and highlights the need for continued research and collaboration to optimize management strategies and improve outcomes for affected patients.

Poster #43
Prenatal Detection and Monitoring of an Intracardiac Teratoma

Margaret E. Finn, MD[1], Jenci Hawthorne, MD[1], Allison K. Black, MD[2], Tiffany R Tonismae, MD[1]

University of Louisville, Louisville, KY[1], Norton Children's Hospital, Louisville, KY[2]

Case Report: This case report outlines the prenatal diagnosis and monitoring of an intracardiac teratoma initially detected during imaging studies in the second trimester. Our patient, a 28-year-old G2P1001 with an unremarkable medical, obstetric, and family history, underwent a routine anatomy ultrasound revealing abnormal cardiac findings including pericardial effusion, a possible double outlet right ventricle, and an enlarged aorta. Subsequent investigation by fetal echocardiogram at 23 weeks and 3 days confirmed the presence of an intracardiac teratoma. The large, heterogenous right atrial teratoma was already inducing structural and hemodynamic alterations throughout the fetal heart at the time of diagnosis. Our multidisciplinary team, in collaboration with Pediatric Cardiologists, determined a surveillance protocol for the patient, comprising weekly fetal echocardiograms, middle cerebral artery (MCA) and ductus venosus (DV) dopplers, and biophysical profile (BPP) assessments. This monitoring aimed to detect signs of decreased fetal cardiac output, fetal hydrops, fetal demise, or the development of maternal mirror syndrome. Our delivery plan was for a primary cesarean section at a specialized pediatric cardiac care facility, with consideration for an ex-utero intrapartum treatment (EXIT) procedure or pericardial drain placement, followed by postnatal cardiac surgery as indicated. Our patient is currently 36 weeks and outcome is pending. While primary cardiac tumors are rare, advancements in imaging technology and standardized screening practices may facilitate earlier detection, as demonstrated in this case, potentially leading to improved outcomes through appropriate management strategies. This case speaks to the success of our surveillance protocol and delivery planning.

Poster #44
Tuberous Sclerosis Presenting with Psychiatric Symptoms in Pregnancy: A Case Report

Ann Kelly Porter, BS[1], Nicolette P Holliday, MD[2], Candice P Holliday, MD, JD[2]

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL[1], Frederick P. Whiddon College of Medicine at the University of South Alabama, Department of Obstetrics and Gynecology, Mobile, AL[2]

Purpose: To report a case of TSC presenting with suicidal ideation in pregnancy.

Methods: Case Report.

Introduction: Tuberous sclerosis complex (TSC) is a multi-organ disorder resulting from an autosomal dominant mutation in either the TSC1 gene or the TSC2 gene leading to dysregulation of cellular growth and differentiation. Clinical manifestations include superficial angiofibromas of the skin, neocortical tubers, subependymal giant cell astrocytomas (SEGAs), subependymal nodules, cardiac rhabdomyomas, angiomyolipomas of the kidneys, and pulmonary lymphangiomyomatosis.

Seizures, neurobehavioral abnormalities, or characteristic dermatologic findings often lead to healthcare presentation and subsequent diagnosis. In recent years, there has been a notable emphasis on the neuropsychiatric aspects of TSC. Formerly these aspects were frequently overlooked despite significant impact on morbidity and mortality. The term "TAND" (TSC-associated neuropsychiatric disorders) was introduced to encompass an umbrella term incorporating behavioral, psychiatric, intellectual, academic, neuro-psychological, and psychosocial difficulties common in TSC.

Currently there are no consensus guidelines for the management of pregnant individuals with TSC. Known risks for both mother and fetus include renal failure, preeclampsia, placental abruption, hemorrhage from ruptured angiomyolipomas, intrauterine growth restriction, perinatal demise, and mental health concerns.

Recommendations include:
-Up to date brain, spine, lung, and renal imaging.
-Genetic counseling as offspring have a 50% risk of being affected.
-Targeted anatomic survey and fetal echocardiogram after 24 weeks gestation as the presence of a cardiac rhabdomyoma is

the most common presenting feature of fetal TSC and is considered diagnostic for fetal TSC.
-Close monitoring for mental health concerns in the postpartum period as patients with TSC have increased risk for postpartum depression and psychosis.

Results: A 24-year-old G2P0010 at 18+0 weeks gestation presented for cerclage evaluation for a history of an 18 week pregnancy loss. Her past medical history was only significant for anxiety and depression, with previous attempted overdose that necessitated a 4-day intensive care unit stay. No outside records were able to be obtained, and patient was adamant regarding cerclage placement. On admission for cerclage placement, patient was noted to be actively suicidal with a plan to overdose on home "seizure" medications. Of note, the patient had no known history of seizures or prescribed seizure medications. She also endorsed self-harm tendencies and reported participating in self-cutting behaviors three days prior. Psychiatry and social work were consulted, and she was placed on one-to-one observation immediately.

Cervical cerclage placement was successful under spinal block alone. Following surgery, a rapid response was called due to an episode of unresponsiveness approximately five minutes after administration of 0.5mg of IV hydromorphone. Vitals remained within normal limits, and fetal heart tones were reassuring. Upon initial evaluation, a pseudo-seizure was suspected but lorazepam was given, and neurology consulted.

The patient told staff that she had a history of tumors in the brain and kidneys. Neurology reviewed previous records from her childhood where a diagnosis of tuberous sclerosis complex (TSC) was mentioned. Magnetic resonance imaging (MRI) was obtained, revealing findings consistent with TSC.

Electroencephalogram (EEG) was slow globally, with no epileptiform abnormalities. Outside records later confirmed a diagnosis of TSC. The patient reported that she had been off anti-epileptic medications (lamotrigine and carbamazepine) for 3 years, citing the pills triggering her suicidal ideations. Neurology initiated her on levetiracetam 500 mg twice daily. Due to her cerclage and pregnancy, she was denied from local inpatient psychiatric facilities. On hospital day three, she stated that her suicidal ideation resolved. Psychiatry cleared her for discharge. She was discharged with outpatient psychiatry and neurology follow up arranged.

Conclusions:
-This case underscores the critical importance of a thorough medical history and chart review along with a nuanced understanding of neurocutaneous disorders such as TSC.

-TSC-neuropsychiatric disorders (TAND) pose significant risks that impact mortality and morbidity. The patient's complex medical background preceding her seizure event, including suicidal ideations and self-harm, could be intricately linked to TAND, thus adding layers of complexity to her care.
-The intersection of TSC and pregnancy significantly increases the risks for both maternal and fetal health. Given the rarity of pregnancy among TSC patients, available literature on this topic is primarily confined to case reports. The absence of established guidelines for managing TSC during pregnancy underscores the pressing need for additional research in this field.
-This case highlights the pivotal role of interdisciplinary collaboration in optimizing outcomes for both maternal and fetal health. The involvement of obstetrics and gynecology, neurology, psychiatry, social work, and anesthesia was indispensable to ensure comprehensive care.
-This case brings to attention the unique challenges posed by psychiatric comorbidities in pregnancy, as evidenced by the patient's difficulties in securing acceptance at local inpatient psychiatric facilities.

Poster #45
Postpartum Intracranial Thrombus and Hemorrhages: Case Report and Literature Review

Claire Chastain, BS, Candice P Holliday, JD, MD, Nicolette P Holliday, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Purpose: To report a rare case of postpartum intracranial thrombus and hemorrhages.

Methods: Case Report.

Introduction: Pregnancy is a state of physiologic hypercoagulability due to multiple factors, including increased estrogen and progesterone resulting in increased fibrinogen, von Willebrand factor, factors VII, VIII, and X, and a decrease in protein S and resistance to protein C. While this hypercoagulability aids the mother by reducing the risk of intrapartum blood loss, it puts the patient at increased risk for venous thromboembolism. Approximately 1 to 2 per 1,000 pregnant women are affected by venous thromboembolic complications.

Case Report: A 20-year-old G3P2012 female presented twenty-four days postpartum from a vaginal delivery with a severe headache. Her past medical history was significant for pulmonary embolism (PTE) and deep vein thrombosis (DVT). Hematology had previously noted that she had low protein S (20%) and factor VIII (1%) levels at that time. The headache was on the left side of her head and radiated down her neck for three to four days. It was associated with sudden onset photophobia, left eye vision loss, and altered mental status. She described this headache as the worst headache of her life. Previously, at her three-week postpartum visit, she reported compliance with her enoxaparin 80 mg BID and had no complaints; however, she would report to the emergency department (ED) only ten days later.

At the ED, a Computed Tomography (CT) scan of her head without contrast and Computed Tomography Angiography (CTA) scan of her head with contrast were obtained which revealed a left parieto-occipital intraparenchymal hemorrhage, left subarachnoid hemorrhage, small subdural hemorrhage overlying the left tentorium, and complete occlusion of the left transverse sinus concerning for thrombus. She was transferred to a higher level of care. Upon arrival at the Neuro intensive care unit (ICU), the patient remained afebrile with a white blood cell count of 13/mm3. A head Magnetic

Resonance Imaging (MRI) without contrast, head Magnetic Resonance Venography (MRV) without contrast, and head CT without contrast were obtained.

She was confirmed to have an occlusive proximal left transverse sinus thrombosis without discernable flow within the left sigmoid sinus or internal jugular vein, so a decision was made for a stat venous thrombectomy and cerebral angiogram. She underwent a successful mechanical thrombectomy and angioplasty of the left transverse sinus, sigmoid sinus, and left jugular vein with a nonocclusive clot still present at the conclusion of the procedure. Following the procedure, she was started on a heparin drip and a hypercoagulable workup was initiated which came back with a protein S activity of 9 IU/dL (lower limit of normal 63 IU/dL). Upon further discussions with the patient's mother, it was also discovered that the patient was not as compliant as previously stated with her enoxaparin postpartum.

Throughout her medical stay, she was monitored for acute neurological changes and her anticoagulation medications were switched from heparin drip to apixaban 5 mg BID. When medically stable, the patient was discharged on hospital day six. She presented back to the ED the following day with concerns for confusion, severe headache, and double vision, resulting in a stroke code. CT head without contrast and CTA head with contrast were unchanged since her previous hospitalization. Neurology was concerned about increased intracranial pressure secondary to her left transverse sinus thrombus, so ophthalmology was consulted. Neurology also performed a lumbar puncture, which was notable for an opening pressure of over 55 cm H2O. She was started on acetazolamide 250 mg BID and later increased to 500 mg BID. Ophthalmology did not appreciate any papilledema on physical exam and recommended she follow up outpatient. Hematology was also consulted during this hospitalization and recommended she switch from apixaban 5 mg BID to enoxaparin 1 mg/kg q12h with plans for outpatient transition to direct oral anticoagulant after four to six weeks of enoxaparin. After six days of medical management following her second admission, she was discharged. At thirty-two days following that discharge, she had outpatient follow-up with hematology and was transitioned to apixaban 10 mg BID for seven days then apixaban 5 mg BID indefinitely. She has since been doing well.

Conclusions: The hypercoagulable state of pregnancy and puerperium increases the risk for venous thromboembolism five-fold compared to non-pregnant women during pregnancy and thirty to sixty-fold postpartum. In the case of our patient, she had additional risk factors, including protein S deficiency and lack of consistent anticoagulation compliance. This case

highlights the importance of evaluating patients for previous personal or family history of blood clots or clotting disorders in order for them to be appropriately managed both throughout pregnancy and puerperium. This case also highlights the importance of close follow-up in the postpartum period, given that approximately half of all pregnancy-associated venous thromboemboli occur postpartum and this risk can remain elevated for up to twelve weeks following delivery.

Poster #46
Balancing Fertility and Treatment of Endometrial Carcinoma in a Young Patient with PCOS

Anna M Shunnarah, BS, Tanvi Joshi, MD, Nicolette P Holliday, MD, Candice P Holliday, JD, MD, Jennifer Young Pierce, MD, MPH

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Polycystic Ovarian Syndrome (PCOS) is a prevalent endocrine condition that affects roughly 10% of women of childbearing age and is marked by polycystic ovarian anatomy, oligo-anovulation and/or hyperandrogenism. While endometrial carcinoma most commonly occurs in the sixth decade of life, younger women with PCOS can have a higher risk of endometrial carcinoma. The association of PCOS and the risk of developing endometrial carcinoma stems from the effects of unopposed estrogen exposure resulting from chronic anovulation. There are no clear, current guidelines specifying routine screening recommendations or indications for endometrial biopsies in women with PCOS; however, a 2022 cross-sectional, retrospective study recommended routine endometrial biopsies following results demonstrating a 30% prevalence of endometrial hyperplasia and/or carcinoma in women aged 18-40 with PCOS. This age disparity combined with pre-existing menstrual abnormalities and the absence of well-studied, clear recommendations for the evaluation of abnormal uterine bleeding in patients with PCOS decreases the likelihood of timely detection of endometrial cancer in young women with PCOS, which can result in metastasis, loss of fertility and diminished quality of life.

A 31-year-old G0 female with a history of PCOS and obesity was referred to the University of South Alabama Gynecologic Oncology department in June 2020 following a D&C and polypectomy with dye study that revealed FIGO Grade 1 endometrial carcinoma. She initially presented to her reproductive endocrinologist in March 2020 with complaints of heavy bleeding at which time a pelvic ultrasound showed a thickened endometrial lining. She had been taking oral contraceptive pills from March 2018 to January 2020. A previous endometrial biopsy in 2018 revealed atypical cells.

An MRI was obtained at the beginning of her workup in June 2020, which confirmed no myometrial invasion. Therefore, due to the patient's desire for future fertility, a Mirena IUD was placed three weeks later. In September 2020, an

endometrial biopsy revealed minimal residual hyperplasia without evidence of carcinoma. A repeat endometrial biopsy in December 2020 revealed persistent focal complex atypical hyperplasia which prompted continuation of the IUD and added supplementation with megestrol eighty milligrams twice daily for three months. Of note, the patient's family history was significant for colonic polyps in her mother and sister and a maternal grandmother with colorectal cancer at the age of 58. The patient was tested for mutations associated with Lynch syndrome and was found to be negative. In April 2021, a repeat endometrial biopsy was negative, and the IUD was removed through consultation with reproductive endocrinology. Pregnancy was achieved in August 2021 through follitropin alfa stimulation and hCG trigger shot with timed intercourse. In December 2021, the patient was referred to the high-risk obstetrics clinic for follow-up of a prenatal ultrasound that revealed choroid plexus cysts and a single umbilical artery. Two weeks later, the patient experienced premature preterm rupture of membranes at 21+6 weeks gestation and delivered in early January of 2022 via spontaneous vaginal delivery at 23+2 weeks gestation. Her pregnancy was complicated by retained products of conception, which required only medical intervention with misoprostol. The infant was discharged from the NICU in October 2022. In June of 2022, the patient underwent a colonoscopy following a five-month history of painless hematochezia that resulted in a polypectomy for a sessile serrated adenomatous polyp of the ascending colon less than one centimeter in size. In February 2023, the patient desired fertility but continued to experience irregular menses. She was placed on metformin three times daily and cyclic progesterone with planned monthly pregnancy tests to minimize teratogenicity. She did not follow up again until March 2024, when a repeat endometrial biopsy was performed that revealed FIGO Grade 2 carcinoma. In May 2024, the patient underwent a curative robot-assisted total laparoscopic hysterectomy, bilateral salpingectomy with right oophorectomy, bilateral pelvic sentinel node and right paraaortic lymphadenectomy. Pathology revealed all lymph nodes to be negative for malignancy and Stage 1A FIGO grade 2 endometrioid adenocarcinoma focally invading the superficial myometrium with formation of squamous morule and without evidence of angiolymphatic invasion.

Endometrial cancer occurs in only 4% of women under the age of 40 while PCOS is among the most common endocrine disorders affecting women of childbearing age. While the standard treatment for endometrial cancer is a hysterectomy with bilateral salpingo-oophorectomy, this plan is not ideal for women of reproductive age who desire fertility. Similarly,

several hormonal therapies used in the process of assisted reproductive technology (ART) are not ideal for women with a history of endometrial cancer as these therapies often promote estrogen. Our case highlights a unique therapeutic dilemma that considers the delicate balance of hormonal therapy required for fertility in the background of PCOS and the necessity of prompt treatment in young patients with endometrial carcinoma.

Poster #47
Melanosis of the Vagina: A Case Report

Regan E. Shaw, BS, Candice P. Holliday, JD, MD, Nicolette P. Holliday, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Purpose: To report a rare case of melanosis of the vagina.

Methods: Case Report

Introduction: Melanosis describes an abnormal deposition or development of melanin pigment in the basal layer of squamous epithelium. Melanosis is relatively common in the oral and gastrointestinal tracts, but it is a relatively uncommon finding in the female genital tract with most reported cases located in the vulvar region. Melanosis of the vagina is a particularly rare, benign pathology. Only a few cases have been reported in the literature. The etiology of vaginal melanosis is unclear; however, one prominent theory explains that this pathogenesis is due to the excessive migration of pigmented cells of neural crest origin. Other theories include pathogenesis occurring in response to chronic irritation or trauma. On gross visual inspection, vaginal melanosis can have a striking resemblance to malignant melanoma. Melanosis typically presents with the classic ABCDE criteria (Asymmetry, irregular Border, non-uniform Color, Diameter > 6mm, and Evolution) associated with melanoma, making the diagnosis difficult to distinguish clinically. Melanosis of the vagina usually presents in women over the age of 40, while vaginal melanoma has a peak incidence in females between the age of 50-60 years old and comprises 1-5% of total vaginal malignancies. Therefore, a biopsy of the lesion is indicated to rule out potential malignancy and formulate an appropriate treatment plan.

Case: A 41-year-old G4P3013 African American woman was referred to the gynecologic clinic after her primary care physician noted hyperpigmented lesions throughout the vaginal canal during an annual examination. She had a history of persistent hyperpigmented vaginal lesions that were biopsied four years prior and reported to be benign, normal mucosa. The patient was being followed with annual examinations, which noted no change in size, color, or contour of the lesions. Her medical history was only significant for obesity. The patient was up-to-date on annual examinations and cervical cancer screening. All previous pap tests had resulted as negative for intraepithelial lesions and

malignancy (NILM) and negative for high-risk HPV. The patient endorsed regular, monthly periods with no abnormal bleeding or vaginal discharge. On gynecological examination, multiple brown-black irregular bordered hyperpigmented lesions were noted on the anterior vagina, right vaginal wall, and posterior vaginal wall. The vaginal lesions were flat without induration or tenderness. The cervix was normal in appearance. After a discussion with the patient, she was referred to the vulvar clinic for biopsy of the lesions. The surgical pathology report revealed squamous mucosa with basal hyperpigmentation. No dysplasia or carcinoma was identified. The patient was informed of the benign biopsy results and was advised to continue to follow up with annual examinations.

Conclusion: Melanosis of the vagina is typically an incidental finding presenting as a macroscopic hyperpigmented lesion on speculum examination. Otherwise, this anomaly is clinically asymptomatic. Due to the close resemblance of vaginal melanosis to malignant melanoma, it is crucial to consider biopsy, as histological analysis can effectively exclude malignancy. While our case presented benign melanotic vaginal lesions, the etiology and evolution of these lesions is not well studied due to the scarcity of reported cases. Although vaginal melanosis is non-invasive, past cases have shown that it carries a potential risk for transformation into malignant melanoma. This highlights the need for a strict follow-up protocol including continued close observation after initial histological confirmation.

References available upon request.

Poster #48
Sigmoid and Cecal Volvulus following Cesarean Twin Delivery

Alicia Dent Agard, BS, BSM, Candice P Holliday, JD, MD, Nicolette P Holliday, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Department of Obstetrics & Gynecology, Mobile, AL

Background: Bowel obstruction in pregnancy occurs in about 1 in 10,000 pregnant women. The most common causes include adhesions (60%), volvulus (25%), intussusception (5%), carcinomas (3.5%) and hernia (1.5%). There are theories regarding pregnancy and how its associated physiologic changes can slightly increase the risk of intestinal volvulus. These include progesterone-induced bowel relaxation, decreased peristalsis, and fecal retention. Additionally, an abnormally mobile colon secondary to the enlarged uterus is believed to be the mechanism by which the colon is pushed out of the pelvis and is more likely to rotate around its mesentery. Intestinal volvulus is a medical emergency and complications include bowel perforation, peritonitis, and sepsis. Given such life-threatening complications, it is imperative to identify volvulus early and treat it accordingly.

Purpose: To report a rare case of sigmoid and cecal volvulus following routine cesarean delivery.

Method: Case Report

Results: A 40-year-old G9P3053 female at 33 weeks and 5 days gestation dichorionic/diamniotic twin gestation with past medical history of hypertension, recurrent pregnancy loss and isthmocele repair presented for chronic hypertension with superimposed preeclampsia with severe features. Initial blood pressure on arrival was 164/94 mmHg which rechecked to 159/95 mmHg. Initial review of systems was significant for bilateral lower extremity edema and recurrent headache. She was treated with magnesium sulfate and a course of betamethasone and remained hospitalized for observation. Over the next two days, her symptoms progressed to a persistent headache minimally responsive to analgesics and persistent mild range blood pressure readings, so the decision was made to proceed to the operating room (OR) for a repeat cesarean delivery. The procedure was complicated by post-partum hemorrhage with an estimated blood loss of 1.5L but was otherwise uncomplicated. Blood products were provided,

and the patient's post-operative hemoglobin and hematocrit were monitored and found to be stable. By post-operative day 2, the patient had developed abdominal distention and reported no flatus or bowel movement since the day prior. By post-operative day 3, her abdominal distention had worsened, and the patient began having notable abdominal pain, prompting an abdominal X-ray. This revealed dilated gas and stool-filled loops of small and large bowel persistent with right-sided bowel distended up to 14 cm. Additionally, the bowel lumen was dilated secondary to sigmoid volvulus at 28cm from the anal verge. General surgery was consulted, and the patient immediately underwent endoscopic decompression of her sigmoid volvulus. The patient reported temporary improvement in her abdominal pain, but the next day remained significantly distended with return of her generalized abdominal pain. A repeat X-ray was ordered, and findings were significant for dilation of the cecum with wall thickening and edema and displaced to the midline anteriorly. These findings were concerning for cecal volvulus, which was confirmed by CT of the abdomen and pelvis. The patient was then taken to the OR for an exploratory laparotomy and ultimately underwent a partial colectomy with ileocolonic anastomosis. She was then transferred to the surgical trauma ICU for post-operative monitoring. Repeat KUB X-ray was negative for any other acute intra-abdominal abnormality, and the patient was transferred to the floor the following day with resolution of her abdominal discomfort and distension. The remainder of her hospitalization was complicated by pulmonary emboli of the right posterior basal segment and left posterior basal arteries as well as bibasilar atelectasis, but she did not have any additional gastrointestinal complications. She was started on Enoxaparin for management of her pulmonary emboli, she recovered well, and was discharged home on post-operative day 3 from her recent exploratory laparotomy.

Conclusion: While intestinal volvulus is a known potential complication of intra-abdominal surgery, it is a rare complication of obstetrical procedures in the absence of prior laparotomy. Although it is unknown what factors contributed to the development of volvulus in our patient, we conclude that patients experiencing abdominal distention, constipation and obstipation in the immediate post-operative period would benefit significantly from abdominal X-ray to assess for possible bowel obstruction secondary to volvulus and treated with operative management should this diagnosis be confirmed.

References available upon request.

Poster #49
Stage IV Malignant Pheochromocytoma and Pregnancy

Madison A. Poiroux, BS, Candice P Holliday, JD, MD, Nicolette P Holliday, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Purpose: To report a rare case of induction of labor with stage IV malignant pheochromocytoma. Pheochromocytomas and paragangliomas are rare neuroendocrine tumors of the adrenal medulla and paraganglia, respectively. They secrete catecholamines and can lead to a deadly hypertensive crisis. Routine presentation may include resistant hypertension, persistent headache, sweating, palpitations, and pallor. In the general population, diagnosis is estimated to be 2-8 per every 1,000,000 people. In pregnancy, the occurrence is even more rare and associated with high rates of maternal and fetal mortality, around 50% reported by an early 1971 study.1

Method: Case Report.

Results: A 21-year-old G1P0 female at 39+0 presented for induction of labor. The pregnancy was uncomplicated, except treatment of gonorrhea in third trimester. Past medical history included stage IV pheochromocytoma with metastasis to the right humeral head, secondary to germline SDHB mutation. She underwent resection ten years prior, followed by ten cycles every 21 days of the following chemotherapy: vincristine, cyclophosphamide, dacarbazine. Evidence of metastasis was found in 2020, and she was lost to follow up with no subsequent treatment. She reestablished with oncology during this pregnancy, and the decision was agreed upon to defer restaging/treatment until postpartum. Upon her arrival to the hospital for induction of labor, her vital signs were stable including her blood pressure of 125/77 mm Hg. She denied any complaints and was feeling well. Hematology/Oncology, anesthesiology, and Maternal Fetal medicine were consulted during her inpatient admission prior to delivery.

Hematology/Oncology recommended continuation of alpha blockage with prazosin 3 mg twice a day, close monitoring by anesthesia, and to obtain plasma and urine catecholamines and their metabolites. Labor progressed with a cervical ripening balloon, oral misoprostol, oxytocin, and artificial rupture of membranes which revealed meconium-stained fluid. Recurrent late decelerations occurred and risks, benefits, alternatives were discussed regarding continued

induction versus operative delivery with known malignant pheochromocytoma. She ultimately had an uncomplicated spontaneous vaginal delivery. Her postpartum course was uncomplicated. Enoxaparin was recommended for her inpatient postpartum stay. Six weeks later, she was seen for an unremarkable postpartum visit without complaints

Conclusions: Early diagnosis of pheochromocytoma greatly improves outcomes. Evaluation includes measurements of urinary fractionated metanephrines or plasma free metanephrines, along with the imaging for tumor localization, preferably magnetic resonance imaging (MRI) Once the diagnosis is made, there are four components to managing pheochromocytomas and paragangliomas in pregnancy: surgical resection, alpha-blockade, obstetric care, and genetic testing for hereditary syndromes associated. Surgical resection is optimally timed late first trimester or early second trimester. Alpha-blockage can be achieved by a variety of non-selective or alpha-1 selective medications. Prazosin is a selective alpha-1 adrenergic receptor antagonist which crosses the placenta at about 10-20% that of maternal concentration. Phenoxybenzamine is a non-selective alpha-antagonist that might be preferred for larger tumors and higher catecholamine levels.2 The main concern with phenoxybenzamine is its ability to cross the placenta and cause hypotension and respiratory depression in newborns. It is very important to initiate an alpha-blockade prior to beta-blockade, in order to avoid unopposed alpha-adrenergic vasoconstriction and propagation of a hypertensive crisis. There are a variety of hereditary syndromes associated with pheochromocytomas including the following: RET, SDHB, SDHC, SDHD, SDHA, VHL, TMEM127 and MAX. About 10% are associated with a known hereditary syndrome. Our patient had a known hereditary syndrome associated and plans to notify affected family members.

Poster #50
Management of Grade IV Astrocytoma Diagnosed During Pregnancy

Shriya Meesala, BS, Candice P Holliday, JD, MD, Nicolette P Holliday, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Purpose: To report a rare case of Grade IV astrocytoma diagnosed during pregnancy

Methods: Case Report

Results: Glioblastoma multiforme (GBM) is a highly malignant brain tumor derived from astrocytes. It is the most common malignant brain tumor, accounting for approximately 16% of all central nervous system neoplasms. Historically GBMs were clinically categorized by the decade of age they affect patients; primary glioblastomas are more frequent in patients in their 6th decade of life while secondary glioblastomas tend to affect patients in their 4th decade of life. However in 2016, the World Health Organization classified glioblastomas mainly on isocitrate dehydrogenase (IDH) mutation status: IDH-wildtype glioblastoma correlates with primary glioblastoma and IDH-mutant glioblastoma corresponds with secondary glioblastoma. Secondary glioblastomas arise from preexisting low-grade tumors such as diffuse or anaplastic astrocytomas and have mutations of IDH, p53 gene, or loss of chromosome 19q. Patients tend to have a short disease course with death occurring within weeks due to rapid tumor growth with symptoms of increased intracranial pressure, seizures, and focal neurologic symptoms. Early diagnosis and treatment are key, and positive prognostic factors include IDH-mutant glioma, lower patient age, and accessibility to surgical intervention.

Patient is a 29-year-old G3P1112 with an intrauterine pregnancy at 21 weeks dated by 10 week ultrasound not consistent by last menstrual period who presented to the emergency department with a three day history of stroke like symptoms. Patient did not have any significant past medical history or family history of BRCA1/2 mutations. Her first pregnancy ended with a surgical abortion at 16 weeks. Her second pregnancy was a full term vaginal delivery without complications. In May 2023, the patient started having unremitting right-sided headaches managed symptomatically for approximately 3 months that started when she was 10 weeks pregnant. A month later at approximately 22 weeks gestation, she developed left-sided weakness which

progressively worsened, and ambulation became difficult. In June 2023 when patient presented to the emergency department, she had a positive left sided pronator drift and flattening of the nasolabial fold on physical exam. Patient also reported episodes of time where she would stare off into space for thirty seconds to a minute. Imaging revealed a heterogeneous mass involving the right frontal lobe with minimal surrounding edema with marked mass effect with a subfalcine herniation and mild obstructive hydrocephalus. At that time, patient was subsequently seen by OB/GYN and neurosurgery. MRI showed a 3.2 x 2.4 x 3.1 cm lesion in the right frontal lobe with a second lesion nearby measuring 2.7 x 1.6 x 2.7 cm. Both lesions were heterogeneous with solid and cystic components associated with vasogenic edema with a leftward midline shift. Two weeks later, the patient had a right frontal craniotomy, and pathology revealed a high-grade glioma consistent with an IDH-1 mutation with a final histological diagnosis of a WHO Grade 4 astrocytoma. Follow-up brain imaging was consistent with a gross total resection. Patient delivered a viable 1740 gram infant via vaginal delivery at 32 weeks with APGARs 7/8. Her postpartum course was uncomplicated. Patient was discharged postpartum day two after meeting adequate milestones. After delivery, plans were made to proceed with definitive chemoradiotherapy in September 2023 with temozolomide and ivermectin per neurosurgery and hematology/oncology teams. Current goals of therapy are palliative with an attempt to approach from a curative intent standpoint with a guarded prognosis.

Conclusion: GBM is a highly malignant neoplasm associated with a short disease course and a poor prognosis. There are variable reasons why GBMs are rarely associated with pregnancy, much less treated. It is pertinent to identify early symptoms of disease to decrease patient mortality, which in this case were simply headaches initially. GBM presenting during pregnancy carries unique challenges to the patient and fetus, and multidisciplinary care management is key. Survival rate was significantly better in patients who underwent chemotherapy plus radiotherapy treatment than patients who were under radiotherapy alone. In this patient, there was a delicate balance aimed to deliver not only a positive fetal outcome but also a positive maternal outcome. In conclusion, advanced GBM in pregnancy is not only a medical predicament but also an ethical one in which the delivery of multidisciplinary patient care is fundamental.

Poster #51
Case Report: Diagnosis and Management of a Suspected Rare Form of Fetal Encephalocele

Leila Yang, BS, Nicolette P Holliday, MD, Candice P Holliday, JD, MD, William Perez, MD

Frederick P. Whiddon College of Medicine at the University of South Alabama, Mobile, AL

Introduction: Encephalocele is a rare congenital brain malformation characterized by protrusion of brain tissue and/or meninges through openings in the cranial fossa. The diagnosis is typically made with alpha fetal protein and ultrasound. Ultrasound reliably detects up to 80% of encephaloceles in the second trimester and can be used in the first trimester as well. Follow up magnetic resonance imaging (MRI) can serve as an adjunct tool for further anatomical assessment. Fetuses diagnosed with encephalocele typically have poor prognoses. Cesarean delivery (CD) is indicated for encephaloceles with larger sizes or locations at risk for sac disruption during delivery. Postnatal outcomes are influenced by the presence and severity of concomitant malformations and whether the encephalocele is isolated or part of a broader syndrome.

Purpose: To report a case of a fetus with suspected encephalocele delivered via spontaneous vaginal delivery.

Methods: Case report.

Results: The Patient was a 20-year-old G1 at 27+0 weeks by last menstrual period consistent with first trimester ultrasound sent for workup for leakage of fluid. She had no significant past medical history, and her course of pregnancy had been uncomplicated. She was vitally stable except for tachycardia at 127 bpm. She was diagnosed with preterm premature rupture of membranes with her cervix appearing 3 cm. She was found to have subclinical hypothyroidism with TSH at 5.29 mcIU/mL and T4 at 0.99 ng/dL. She was admitted for latency antibiotics, magnesium for neuroprotection, and betamethasone for fetal lung maturity. Ultrasound revealed the fetus in vertex presentation, a maximum vertical pocket at 1.78 cm, and an estimated fetal weight of 1202g, which translated to 82th percentile. The ultrasound further showed an irregularly shaped area in the top/central portion of the cranium, which seemed to be consistent with disruption of the cranium. Findings were most consistent with encephalocele, which was protruding into maternal cervix along with left renal pelviectasis and hydroureter. Subsequently, fetal

monitoring now displayed intermittent fetal tachycardia in the 180s with variable decelerations every 10 to 20 minutes. Patient then progressed to 5 cm. Due to concerns for development of encephalitis if the growth on the fetus's head was an encephalocele in the context of developing chorioamnionitis, augmentation of labor with oxytocin as well as treatment of chorioamnionitis with ampicillin and gentamicin were started. At the time, final read on the fetal MRI to delineate encephalocele versus scalp cyst had not resulted. At this early gestation age, CD would not have additional benefit on fetal outcome compared to spontaneous vaginal delivery (SVD), so the plan was to proceed with SVD. Her labor course was uncomplicated, and she delivered at 27 +4 weeks of gestation via SVD without complications. APGAR scores were 8 and 8. The baby was noted to have cranial molding and caput succedaneum, but without obvious encephalocele. He was admitted to the neonatal intensive care unit for prematurity. Her postpartum course was uncomplicated, and she was discharged home on postpartum day 2 in stable condition. The fetal MRI final read resulted after delivery and reported small fluid collection in the scalp vertex without intracranial connection, likely reflecting a cystic lesion without evidence of encephalocele. His cranial ultrasound with doppler reported a grade 2 intracranial hemorrhage on the left with flow in the entire ventricular system and transient periventricular leukomalacia or a periventricular halo. Transcranial doppler was well within normal limits. X-ray babygram was compatible with lung disease of prematurity. Renal ultrasound reported urinary tract dilation classification of A2-3 renal pelvic dilatation bilaterally. Repeat cranial ultrasounds were ordered and were normal by discharge. Repeat renal ultrasounds consistently demonstrated bilateral urinary tract dilation classification P1. He was discharged on day of life 87 with developmental follow-up and early intervention post discharge planned.

Conclusion: Encephaloceles are most commonly caused by a combination of genetic or environmental factors, such as inadequate folic acid supplementation or low nutrition diets. Idiopathic encephalocele is less common. Our case was interesting in that the mother had no major risk factors for a fetus with encephalocele but such was suggested via fetal ultrasound. While the fetal MRI was pending, there was concern for maternal chorioamnionitis, which in the setting of possible encephalocele, complicated the decision of pursuing CD versus SVD. Risks and benefits were weighed for the shared decision of CD versus SVD with SVD being the plan considering early gestation age at the time of chorioamnionitis with concerns of fetal encephalitis. This case demonstrated that while ultrasound often serves as a first-line diagnostic

tool for evaluating fetal central nervous system (CNS), a follow-up MRI is particularly beneficial for diagnosis and management of suspected CNS abnormalities --if the final read can be reviewed in time.

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

2021

"Comparing Newborn Outcomes After Prenatal Exposure to Individual Antidepressants"

Claire E. Marks, MS3

Indiana University School of Medicine

Indianapolis, Indiana

2022

"Factors that Influence the Choice for Neonatal Resuscitation in Periviable Deliveries"

Jessica A. Young, M.D.

Ascension St. Vincent Hospital

Indianapolis, Indiana

2023

"Female Infertility and Obesity Across the United States: A Geographic Cross-Sectional Analysis"

Raegan B. Abadie, MS2

LSU Health Shreveport

Shreveport, Louisiana

2024

"Theoretical vs. Actual Access to Care"

Mark I. Evans, M.D.

Icahn School of Medicine at Mount Sinai

and Fetal Medicine Foundation of America

New York, New York

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

2021
"Long-Term Childhood Outcomes for Babies
Born at Term Who Were Exposed to
Antenatal Corticosteroids"
Samantha J. Osteen, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

2022
"Association of Gabapentin Concentrations with
Opioid UseAfter Cesarean Delivery"
David M. Haas, M.D., M.S.
Indiana University School of Medicine
Indianapolis, Indiana

2023
"Comprehensive Circulating DNA Profiling in
Maternal Plasma Enabled the Identification of a
Molecular Signature for the Detection of Fetal Growth
Disorders at the First Pregnancy Trimester"
Rene G. Cortese, Ph.D.
University Missouri School of Medicine
Columbia, Missouri

2024
"Identification of Molecular Signatures for
the Detection of Fetal Growth Disorders at the
First Gestational Trimester in Circulating DNA
Isolated from Urine Samples"
Rene G. Cortese, Ph.D.
University of Missouri School of Medicine
Columbia, Missouri

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

2021

"Efficacy of a Pilot Program for Obstructive
Sleep Apnea Screening in Pregnancy"
Nicolina Smith, DO
Henry Ford Health System
Detroit, Michigan

2022

"Maternal and Infant Morbidity
and Mortality in Extremely Premature Infants
– A Single Centered Study in Detroit Michigan
Between 23-26 Weeks of Gestation"
Mariam K. Ayyash, M.D., MSCR
Henry Ford Health
Dearborn, Michigan

2023

"Effects of COVID-19 Infection on
Fetal Growth in Pregnancy"
Olaide A. Ashimi Balogun, M.D.
Obstetrix Maternal-Fetal Medicine Specialist Houston
Houston, Texas

2024

"Simulation Improves Ob-Gyn Resident Comfort
Providing Pregnancy Options Counseling"
Emily Lluch, M.D.
Orlando Health Bayfront Hospital
St. Petersburg, Florida

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

2021

"Discontinuation of Oxytocin in the Second Stage of Labor and its Association with Postpartum Hemorrhage"

Caitlin A. MacGregor, M.D.

NorthShore University HealthSystem

Evanston, Illinois

2022

"Optimal Glucose Testing for the Detection and Diagnosis of Prediabetes and Type II Diabetes Mellitus in Reproductive Age Women with Polycystic Ovarian Syndrome"

Wenqi A. Ouyang, M.D.

Southern Illinois University School Medicine

Springfield, Illinois

2023

"Implementation of an Outpatient Cervical Ripening Program: Outcomes and Provider and Patient Perspectives"

Katherine H. Zhu, M.D.

University of Chicago Medical Center

Chicago, Illinois

2024

"A Functional MRI Method to Characterize Uterine Contractility and Menstrual Pain"

Kendra Juliette, B.S.

Wayne State University School of Medicine

Endeavor Health

Detroit, Michigan

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, Mississippi

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

DR. GEORGE W. MORLEY MEMORIAL PAPER

2021

"Prevalence and Outcomes of Positive Cervical Cancer Screening in Female Renal Transplant Waitlist Candidates: A Single Center Experience"

Julia T. Berry, MS4
University of Toledo College of Medicine
Toledo, Ohio

2022

"Evaluation of Socio-Economic and Immune Factors Related to Endometrial Cancer"

Aneesh S. Chawla, M.D.
Southern Illinois University School Medicine
Springfield, Illinois

2023

"Aiming for Zero: Success of the Hysterectomy Surgical Site Infection Prevention Bundle"

Ushma J. Patel, M.D.
University of Wisconsin
Madison, Wisconsin

2024

"Use of Indocyanine Green (ICG) in the Detection of Fibrosis and Inflammatory Changes Related to Endometriosis: A Retrospective Cohort Study"

Christopher-Armand Z. Mabini, D.O.
Ascension Healthcare – St. Francis Hospital
Evanston, Illinois

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

DR. JACK A. PRITCHARD MEMORIAL PAPER

2021

"Association Between Preterm Neonate Endocan Levels and Maternal Obesity"

Emily A. Holthaus, M.D.

Loyola University Medical Center
Maywood, Illinois

2022

"National Chorioamnionitis Trends: Geospatial Analysis of Vulnerable Communities"

Joanne M. Chan, B.S.

Carle Illinois College of Medicine
Champaign, Illinois

and

"Racial Bias in Cesarean Decision Making"

Sara E. Edwards, M.D.

University of Illinois at Chicago
Chicago, Illinois

2023

"An Updated Systematic Review on Prediction Models for Successful External Cephalic Version"

Peggy K. Palsgaard, B.S.

University of Illinois at Urbana-Champaign
Carle Illinois College of Medicine
Urbana, Illinois

2024

"Comparison in Latency Based on Amniotic Fluid Index (AFI) in Patients with Preterm Prelabor Rupture of Membranes (PPROM)"

David M. Greiner, M.D.

University of Nebraska Medical Center
Omaha, Nebraska

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

2021

"Implementation of a Standardized Surgical Site Infection Prevention Bundle to Decrease the Rate of Surgical Site Infections in Open Gynecologic Surgical Cases and Cesarean Sections"

Shruti Vaidyanathan, MS4

LSU Health Sciences Center

Shreveport, Louisiana

2022

"Homeopathic Treatments of Vulvovaginal Candidiasis on Youtube"

Breia L. Reed, M.S.

Meharry Medical College

Nashville, Tennessee

DR. KERMIT E. KRANTZ MEMORIAL PAPER

2023

"Validation of Patient Self-Collection with Evalyn Brush Compared to Provider Collected Sample for HPV Testing"

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

2024

"Clinical Evaluation of Effectiveness and Safety of Amberen® and Smart-B® Complex in Perimenopausal Women"

Lee P. Shulman, M.D.
Feinberg School of Medicine of Northwestern Univ.
Chicago, Illinois

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

2021
No Candidate Research Papers

2022
"Utilization of Enhanced Recovery After Surgery (ERAS) Protocol in Gynecologic Surgery"
Rachel L. Hartman, M.D.
HCA Florida Brandon Hospital
Brandon, Florida

2023
"Development and Evaluation of a Cesarean Hysterectomy Simulation Model"
Geoffrey Chen, M.D.
Adventist Health White Memorial
Los Angeles, California

2024
"First Trimester Herbicide Concentrations and Gestational Diabetes in Nulliparas"
Kevin L. Moss, B.S.
Indiana University School of Medicine
Indianapolis, Indiana

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

Central Poster Awards

2020

"A Novel Approach to Treating Cervical Ectopic Pregnancy with IV Methotrexate"
Fatima Ali, D.O.
Hackensack Meridian Jersey Shore Univ. Med. Center
Neptune, New Jersey

"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

"US-PCG Consumer Involvement and Outreach Efforts"
Nimisha Kumar, BS
Indiana University School of Medicine
Indianapolis, Indiana

"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

Central Poster Awards

2021

"Unexplained Persistently Elevated Quantitative β-hCG in Post-Menopausal Female Remote from Total Laparoscopic Hysterectomy-Bilateral Salpingo-Oophorectomy
David A. Billings, M.D.
UND School of Medicine & Health Sciences
Minot, North Dakota

"Incidence and Characteristics of Women Presenting to the Emergency Department with Abnormal Uterine Bleeding"
Nicolette Codispoti, MS, MPH
Loyola University Chicago Stritch School of Medicine
Chicago, Illinois

"Successful Laparoscopic Management of Type II Cesarean Scar Pregnancy: A Case Series"
Carlos M. Fernandez, M.D.
Advocate Illinois Masonic Medical Center
Chicago, Illinois

"Implementing the Use of Vaginal Preparation Prior to C-Sections to Decrease Postpartum Endometritis"
Camille C. Imbo-Nloga, M.D.
Brandon Regional Hospital
Brandon, Florida

Central Poster Awards

2022

"Twin-Twin Transfusion Syndrome in the Setting of COVID-19 Pneumonia: A Case Report"
Callie J. Hamai, B.A.
University of Missouri
Columbia, Missouri

"The Face of Wellness, Diversity, Equity & Inclusion: A National Review of Obstetrics & Gynecology Programs"
Malik T Mays, B.A.
Univ. of Toledo College of Medicine and Life Sciences
Toledo, Ohio

"Vaginal Cuff Dehiscence with Small Bowel Prolapse 10 Years after Vaginal Hysterectomy"
Brandon K. Morehart, MS4
UND School of Medicine & Health Sciences
Grand Forks, North Dakota

"Sorrows and the Joys of Tomorrow: Analyzing Maternal Events During Delivery and Post-Partum in the COVID-19 Pandemic Through Utilizing the EPDS"
Ala Addin Sid Ahmed, M.S., MS4
Wayne State University School of Medicine
Detroit, Michigan

Central Poster Awards

2023

"Cannabis Hyperemesis Syndrome:
An Underrecognized Cause of
Nausea and Vomiting in Pregnancy"
Elizabeth A. Forsythe Riley, M.D.
University of Missouri – Kansas City
Kansas City, Missouri

"Etiologies of Sex-Discordance in
Monochorionic Diamniotic Gestations"
Dennis J. Lutz, M.D.
UND School of Medicine and Health Sciences
Minot, North Dakota

"Males in Obstetrics and Gynecology:
Then, Now and Tomorrow"
Sharon T. Phelan, M.D.
University of New Mexico
Albuquerque, New Mexico

"Quality Improvement Initiative to Optimize
Management of Pregnancy of Unknown Location"
Megan I. McNitt-Johnson, M.D.
Henry Ford Hospital
Detroit, Michigan

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
Charleston Marriott
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.

2021
Napa, California
The Meritage Resort
J. Coffy Pieternelle, M.D.

*Deceased

2022
Charleston, South Carolina
Charleston Marriott
James W. Van Hook, M.D.

2023
Nashville, Tennessee
Omni
Andrew F. Wagner, M.D.

2024
Indianapolis, Indiana
Hyatt Regency
David M. Haas, M.D., M.S.

*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

2021
"Resistance to Change"
Mark I. Evans, M.D.
Comprehensive Genetics
New York, New York

2022
"Delivery of Medicine in Rural Areas"
Donna D. Johnson, M.D.
Medical University of South Carolina
Charleston, South Carolina

2023
"Do You See Me? Paintings of Postpartum
Trauma and Healing," One Physician's
Approach for Patient Advocacy
S. Abbās Shobeiri, M.D., MBA
Inova Health System
Falls Church, Virginia

2024
"Hope for Maternal-Child Health Across the Globe:
How the U.S. and Global Partners
are Creating a Brighter Future"
Jeanne A. Conry, M.D., Ph.D.
The Environmental Health
Leadership Foundation
Granite City, California

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."

David F. Lewis, M.D.
Awarded 2021

As the last six-year Secreteary-Treasurer and President in 2017 his vision promoted the scholarly protocols currently enjoyed, including the Fellows and Residents (FAR) Research Network available to the specialty.

"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 2024 special supporters.

2024 PTO Fund Contributors

David G. Anderson, M.D.
Thomas F. Arnold, M.D.
Shilpa Babbar, M.D.
Anthony E. Bacevice, Jr., M.D.
Joe E. Belew, M.D.
David A. Billings, M.D.
Paul D. Burstein, M.D.
John W. Calkins, M.D.
Allan G. Charles, M.D.
Robert L. Collins, M.D.
Christine H. Comstock, M.D.
Dwight P. Cruikshank, M.D.
Stephen H. Cruikshank, M.D, MBA
David W. Doty, M.D.
A. Michael Drachler, M.D.
Bruce H. Drukker, M.D.

2024 PTO Fund Contributors (cont.)

Philip N. Eskew, Jr., M.D.
Mark I. Evans, M.D.
Mike G. Flax, M.D.
Stephen J. Fortunato, M.D.
Emanuel P. Gaziano, M.D.
Melvin V. Gerbie, M.D.
William P. Gideon, M.D., MPH
Gita P. Gidwani, M.D.
Jean R. Goodman, M.D.
William E. Graham, M.D.
Peter B. Greenspan, D.O.
Larry P. Griffin, M.D.
Thomas L. Gross, M.D.
David M. Haas, M.D.
Richard S. Hansell, M.D.
Joanie Y. Hare, M.D.
Michael P. Hopkins, M.D.
Richard T. Jennings, M.D.
John C. Jennings, M.D.
Larry H. Johnson, M.D.
Randall T. Kelly, M.D.
John V. Knaus, D.O.
David F. Lewis, M.D.
Robert P. Lorenz, M.D.
Dennis J. Lutz, M.D.
Federico G. Mariona, M.D.
Leland R. Matthews, M.D.
Tacoma A. McKnight, M.D.
Susan M Mou, M.D.
Jacob F. Palomaki, M.D.

2024 PTO Fund Contributors (cont.)

Barbara V. Parilla, M.D.
J. Coffy Pieternelle, M.D.
Thomas F. Purdon, M.D.
Oney C. Raines, III, M.D.
John T. Repke, M.D.
M. Gary Robertson, M.D.
Deborah D. Sherman, M.D.
Roger P. Smith, M.D.
Robert J. Sokol, M.D.
Jerry J. St. Pierre, M.D.
Charles M. Stedman, M.D.
James E. Sumners, M.D.
Paul G. Tomich, M.D.
Tiffany R. Tonismae, M.D.
Craig V. Towers, M.D.
Catherine L. Van Hook, M.D.
Andrew F. Wagner, M.D.
Gilbert R. Wessel, M.D.
J. Harold White, Jr., M.D.
Dani G. Zoorob, M.D., MHA, MBA

2010 - 2024
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

Lester A. Ballard, Jr., M.D.
Huntington, OH

Tom P. Barden, M.D.
Cincinnati, OH

Frederick K. Chapler, M.D.
Gualala, CA

Arthur D. Cromartie, Jr., M.D., MS
Hattiesburg, MS

Peter E. Fehr, M.D.
Brooklyn Center, MN

Hans E. Geisler, M.D.
Indianapolis, IN

Timothy D. Gowder, M.D.
Lenoir City, TN

Robert D. Hilgers, M.D., MA, CAE
Louisville, KY

Neil K. Kochenour, M.D.
Green Valley, AZ

Harry B. Macey, Jr., M.D.
Temple, TX

Jack C. Sanford, M.D.
Memphis, TN

David W. Wetrich, M.D.
Ottumwa, IA

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

CAOG FUTURE MEETINGS

2025

CAESARS PALACE

Las Vegas, Nevada

October 15, 16, 17, 18

Wed., Thurs., Fri. & Sat.

2026

LOCATION TBD

Mid-October

Wed., Thurs., Fri. & Sat.

CENTRAL ASSOCIATION of OBSTETRICIANS & GYNECOLOGISTS

CAOG

"Changing the Face of Women's Health"

UND School of Medicine & Health Sciences

University of North Dakota