To our residents, congratulations on your research!

To our faculty and staff, thank you for your continued guidance and support!

Save the date:

2027 Research Day

June 7, 2026

THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY PRESENTS:

Residency Research Day

KEYNOTE SPEAKER

Patrick Ramsey, MD

Maternal-Fetal Medicine Specialist
Vice Chair for Obstetrics
University of Texas Health Science Center
at San Antonio

Monday, June 1, 2026

Physician's Conference Center

7:30 AM—1:00 PM

Agenda for Research Day 2026

Introduction:

G. Larry Maxwell, MD: 7:30 AM—7:35 AM

Keynote Speaker:

Patrick Ramsey, MD: 7:35 AM—8:30 AM

"Identification and Management of
the Short Cervix In Pregnancy "

Resident Research Presentations:

8:40 AM—10:02 AM

10:02 AM—10:12 AM **Break**

10:12 AM—12:06 PM

Closing Remarks:

12:06 PM—12:10 PM

Lunch:

12:15 PM—1:00 PM

G. Larry Maxwell, MD

President

Samantha Buery-Joyner, MD

Residency Program Director

Homa Ahmadzia, MD

Director of Resident Research / MFM

Rahel Ghenbot, MD, FACOG

Associate Director of Resident Research / Urogynecology

Research Presentations

1	**Madison Avva, MD** 8:40-8:47am	
2	**Catherine Yang, MD*** 8:47-9:02am	
3	**Mark Kassab, DO *** 9:02-09:17am	
4	**Olivia LeBeau, MD *** 9:17-9:32am	
5	**Jamie Geraghty, MD *** 9:32-9:47am	
6	**Gabriela Guerra-Velazquez, MD *** 9:47-10:02am	
7	10:02-10:12am	***Break***
	Alicia Smith, MD 10:12-10:27am	Buccal Mucosal Grafts to Repair Complex Urogenital Conditions in Women: A Case Series
8	**Samantha Leite, MD** 10:27-10:42am	Outcomes of Immediate Postpartum Long-Acting Reversible Contraception.
9	**Brianna Roberts Canales, MD** 10:42-10:49am	Erythromycin versus Azithromycin for Preterm Prelabor Rupture of Membranes: A Cluster Randomized Comparative Effectiveness Trial (PRACET)
10	**Mekenzie Wilson, MD** 10:49-10:56am	Integrated Analysis of Neuroendocrine Cervical Carcinoma and Comparison with Other Cervical Cancer Subtypes.

Postpartum Depression: Advancing Early Detection Through Biomarker Identification

Authors: Kenyone King, MD; Andrea Cubitt, PhD; Zachary Kaminsky, PhD; Jennifer Payne, MD; Scott Sullivan, MD

Objective: This clinical trial aims to validate the Enlighten Device Test which uses third trimester epigenetic biomarkers that when measured in blood during pregnancy can accurately predict if a woman is at an increased risk of postpartum depression (PPD).

Methods: The clinical trial will include 1000 enrolled women screened and enrolled during the third trimester between 27-33 weeks of gestation recruited through the UVA and Inova Health obstetrics clinics. Enrolled women will have their blood and saliva collected at this visit and at 6 weeks postpartum. Participants will also be administered the Edinburgh Postnatal Depression Scale (EPDS) questionnaire along with a Structured Clinician Interview for the DSM-5 (SCID) to determine if they meet criteria for a major depressive episode (MDE) at 2 weeks, 6 weeks, 3 months, and 6 months postpartum.

Next steps/Timeline: This study is projected to be completed in 2 years. Participant recruitment from UVA Health and Inova Health obstetrics clinics and data collection is ongoing.

Impact of a Structured Curriculum on Ob/Gyn Resident Adoption of Abridge

Authors: Hannah Donovan, MD; Heather Wolfe, MD; Jenny Wang, MD; Rolel Mbaidjol-Kabra, MD; Samantha Buery-Joyner, MD

Objective: To evaluate whether participation in a structured educational curriculum increases obstetrics and gynecology resident adoption of Abridge.

Methods: We will conduct a quasi-experimental interrupted time series study evaluating the impact of a structured curriculum on resident use of Abridge, an AI-assisted documentation tool shown to improve efficiency and reduce documentation burden, though its implementation in resident education has not been well described. Participants will include obstetrics and gynecology residents in postgraduate years 1–3 (n=17), excluding graduating postgraduate year 4 residents. Following institution-wide rollout (March 30), residents will have two months of untrained access to the tool. A single-session educational curriculum incorporating didactics and simulation on Abridge functionality and best practices will then be delivered in June.

The primary outcome is weekly adoption, defined as the percentage of clinical notes generated using Abridge, measured across pre- and post-curriculum periods. Segmented regression will be used to assess changes in level and slope of adoption attributable to the curriculum, while accounting for underlying trends in use over time.

Secondary outcomes include resident knowledge and attitudes toward Abridge, assessed via pre- and post-curriculum surveys, as well as informatics metrics including note editing burden and time to note completion.

Next Steps/Timeline: Following IRB approval, retrospective data will be collected from the time of institutional rollout (March 30) through May 31. The educational intervention will occur in June, followed by prospective data collection for at least two months. Data analysis using segmented regression and survey comparison will be completed thereafter, with results anticipated by late summer to early fall.

Research Presentations

11	**Kendall Alsup, MD** 10:56-11:03am	Impact of Early Zygosity Determination via NIPT on Maternal and Neonatal Outcomes in Twin Pregnancies.
12	**Margo Huffman, MD** 11:03-11:10am	
13	**Meghan Nunnally, MD** 11:10-11:17am	
14	**Zoe Silsby, MD** 11:17-11:24am	
15	**Alexa Wolfe, MD** 11:24-11:31am	
16	**Hanan Aghar, MD** 11:31-11:38am	
17	**Sophia Cordes, MD** 11:38-11:45am	Neonatal and Maternal Outcomes of Trial of Labor after Cesarean Delivery in Patients Undergoing Induction of Labor versus Expectant Management.
18	**Stephanie Cox, MD** 11:45-11:52am	Knowledge and Practices Surrounding Peripartum Anemia and Postpartum Hemorrhage Amongst Patients and Providers: A Survey Based Study.
19	**Hannah Donovan, MD** 11:52-11:59am	Impact of a Structured Curriculum on Ob/Gyn Resident Adoption of Abridge
20	**Kenyone King, MD** 11:59-12:06pm	Postpartum Depression: Advancing Early Detection Through Biomarker Identification
	12:06-12:13pm	Concluding Remarks / Lunch

* Presentations with an (*) will be given more time and will be judged.

Decreasing the Uterine Rupture Rate in TOLAC Patients

Authors: Avva, Madison MD, Schechtman, Jessica DO

Objective: Based on data from 2024, the uterine rupture rate in patients undergoing a trial of labor after cesarean section (TOLAC) at Inova Fairfax Hospital (IFH) is 4.59%, compared to the literature rate of 1%. Our SMART (specific-measurable-achievable-relevant-time based) aim is to decrease the uterine rupture rate in TOLAC patients at IFH by 50% in one year's time.

Methods: The baseline rate of uterine ruptures in TOLAC patients was gathered from a retrospective chart review of patients undergoing TOLAC at IFH. We are using the PDSA (plan-do-study-act) framework for this pragmatic quasi-experimental pre-post time series. PDSA cycle one consisted of a brief, targeted educational intervention for providers at IFH focusing on uterine rupture rates and best practices in documentation. Future PDSA cycles and proposed interventions may include changes to color coding of TOLAC patients on the grease board, updating policies around candidates for TOLAC, labor management protocols such as Pitocin limits, and education for nurses about managing a TOLAC patient on the labor floor.

Results: Control chart analysis of monthly uterine rupture rates from January 2024 to March 2026 demonstrated no sustained trend relative to the literature benchmark uterine rupture rate (i.e., never ≥6 consecutive points above or below 1%). Overall rates decreased from 4.59% in 2024 to 2.75% in 2025, with zero ruptures observed among TOLAC patients in the first quarter of 2026.

Conclusion: Uterine rupture rates decreased by approximately 50% from 2024 to 2025 and there have been zero ruptures in the first quarter of 2026. However, the contribution of the brief educational intervention to this decline remains uncertain, as other factors may have influenced management. Ongoing data collection will aim to further evaluate drivers of uterine rupture rates.

Implementation of an Outpatient Cervical Ripening Program Using DILAPAN-S: Early Results from a Multidisciplinary Quality Improvement Initiative

Authors: Stephanie Cox, DO; Ellen Murrin, DO; Jaimee Robinson, RN; Jessica Lawrence RN; Natalie Doudaklian, RN; Beth Freund, RN; Walter J. Hodges, MD; Antonio Saad, MD MBA

Objective: To evaluate the feasibility of implementing an outpatient cervical ripening program using DILAPAN-S and to assess its potential effect on hospital length of stay and cost.

Methods: This ongoing quality improvement project was conducted within a large health system to standardize outpatient cervical ripening with DILAPAN-S for induction of labor. A multidisciplinary task force developed a system-wide policy, patient selection criteria, scheduling algorithm, Epic order sets, procedure notes, billing workflows, patient education flyers, and staff training. Eligible patients underwent outpatient DILAPAN-S placement with planned return for induction of labor 12-24 hours later. The initial pilot cohort includes 20 participants. Data collected include admission-to-delivery time, inpatient length of stay, method of delivery, reimbursement, time in laboring unit, and direct hospital costs.

Results: Implementation infrastructure was successfully completed, including policy approval, Epic build, procedure documentation, billing pathway, patient-facing materials, and training of clinical staff. Enrollment is ongoing; one patient has completed the outpatient DILAPAN-S pathway to date. Early implementation demonstrates the feasibility of integrating outpatient cervical ripening into existing clinical and scheduling workflows. Financial and clinical outcome data collection is in progress and will be analyzed after the pilot cohort is completed.

Conclusion: A multidisciplinary outpatient DILAPAN-S cervical ripening program is feasible to implement within a health system. Completion of the pilot cohort will determine whether this approach reduces inpatient utilization and costs while maintaining efficient induction-of-labor care.

The Value of Universal Ferritin Testing in Pregnancy: Assessing Iron Deficiency in the Absence of Anemia

Authors: Sophia Cordes, MD; Samaneh Ali; Homa Ahmadzia, MD, MPH; Rebecca Chornock, MD.

Objectives: Iron deficiency is a leading cause of anemia in pregnancy and may go undetected because ferritin is not routinely assessed in the absence of anemia. Limited data exists on whether early identification and treatment of iron deficiency prior to the development of anemia improves maternal and neonatal outcomes. This study aims to evaluate the impact of universal ferritin screening on the incidence of third-trimester anemia and associated obstetric outcomes.

Methods: This retrospective cohort study compares obstetric outcomes among patients receiving care at ICCW before (January 2023–December 2023) and after (March 2024–June 2025) implementation of universal ferritin screening. Iron deficiency was defined as a first-trimester ferritin level <30 ng/mL. The primary outcome was third-trimester anemia (hemoglobin <11 mg/dL). Secondary outcomes included postpartum hemorrhage (PPH), quantitative blood loss (QBL), blood transfusion, and neonatal birthweight.

Over 7,700 charts will be reviewed, with an anticipated sample of ~700 patients per group based on annual ICCW volume. Power analysis determined that 80 patients per group are required to detect a reduction in anemia from 30% to 15% with 90% power, indicating the study is adequately powered despite potential loss to follow-up and population-specific risk factors.

Future Results/Conclusion: Retrospective chart review is in progress. Subsequent statistical analyses will be conducted to compare primary and secondary outcomes between cohorts. This study will assess whether universal ferritin screening and early treatment of iron deficiency in pregnancy reduce the incidence of third-trimester anemia and improve maternal and neonatal outcomes, with potential implications for screening and prevention strategies.

Delays in Postpartum Hemorrhage Interventions by Race and Maternal Morbidity

Authors: Catherine Yang, MD, Sydney Seignious, BA, MPH, Sahel Hazrati PhD, MPH, Janeva Dimen, BA, Mohammad Sunoqrot, MD, Ahizechukwu C. Eke, MD, PhD, Jerome J. Federspiel, MD, PhD, Victoria R. Greenberg, MD, Jaclyn M. Phillips, MD, Emily R. Smith, ScD, MPH, Courtney D. Townsel, MD, Arthur J. Vaught, MD, Lisa C. Zuckerwise, MD, Homa K. Ahmadzia, MD, MPH

Objective: Non-White patients experience higher rates of postpartum hemorrhage (PPH) and associated morbidity and mortality compared to White counterparts. This study examined whether delays in intervention beyond first-line uterotonic medications in patients with PPH varied by patient race and whether delays were associated with increased morbidity.

Methods: We conducted a retrospective cohort study of patients with PPH (total blood loss ≥ 1000 mL) during delivery in a large health system between 2019-2024 using electronic medical record data. The primary exposure was patient race and ethnicity. The primary outcome was time to PPH interventions. The secondary outcome was maternal morbidity as a composite of severe PPH, blood product transfusion, ICU transfer, and hysterectomy. Unadjusted analyses of intervention timing were performed using type 2, 2-tailed t-tests. Adjusted analyses of associations between maternal morbidity and time to intervention were computed using binary logistic regression. Kaplan Meier curves were generated to compare the cumulative maternal morbidity between groups.

Results: A total of 4,316 patients were included, of which 13% were Black (n= 587) and 8% were Asian (n= 356. Compared to White patients, Asian patients underwent balloon tamponade (229.8 vs 87.4 minutes, p<0.001) and uterine artery embolization (477.4 vs 257.7 minutes, p=0.005) later and had increased odds of maternal morbidity (aOR 1.66, 95% CI 1.28 – 2.15). Between White, Black, and Asian patients, significant differences were noted in time to medication (p=0.024) and uterine balloon tamponade (p=0.021) but not uterine artery embolization (p=0.141) or hysterectomy (p=0.948). For all patients, those receiving interventions later demonstrated a lower probability of remaining morbidity-free over time.

Conclusion: This study suggests disparities in care may contribute to disparities in PPH outcomes, highlighting the need for standardized PPH protocols and further research on the optimal timing of invasive PPH interventions.

Abstract title: Uterine artery doppler indices and AFP outperform cfDNA in predicting PAS

Authors: Mark Kassab, DO., Maggie Wong, MBA, MD., Ellen Murrin, DO., Sebastian Nasrallah, MD., Helen Havens, MD., Scott Sullivan, MD., George R. Saade, MD., Antonio Saad, MBA, MD

Objective: There has been an increasing incidence in placenta accreta spectrum (PAS) disorders over the past few decades. Identification of low-cost, non-invasive screening tools, such as uterine artery dopplers (UaD), maternal serum alpha fetal protein (msAFP), and cell free fetal DNA (cfDNA), could improve early detection and management of PAS. Our study aims to evaluate the association between non-invasive markers in the late first to early second trimester and their ability to predict later PAS.

Study Design: This was a retrospective case-control study of patients receiving care at Inova Health Systems from January 2010 to December 2024. We identified a total of 265 patients, of whom 175 (66%) had pathology-proven PAS and 90 (34%) had previa with history of one prior cesarean section (CS). Patients with multiple gestation or without delivery data were excluded. Data was interpreted using a receiver operating curve (ROC) analysis.

Result: For UaD pulsatility index (PI), the ROC analysis yielded an area under the curve (AUC) of 0.75 (95% CI, 0.63–0.87). The optimal cutoff for predicting placenta accreta was a PI of <1.073. At this threshold, the sensitivity was 76.67% (95% CI, 59.07–88.21%) and specificity was 68.57% (95% CI, 52.9–81.45%). A stricter threshold of PI <0.8425 improved specificity to 85.71% (95% CI, 70.62–93.74%) but lowered sensitivity to 50.0% (95% CI, 33.15–66.85%), with a corresponding positive likelihood ratio of 3.5.
When examining msAFP, the ROC analysis yielded an area under the curve (AUC) of 0.69 (95% CI, 0.59–0.78). The optimal cutoff for predicting placenta accreta was a MoM of 1.05. At this threshold, the sensitivity was 76.06% (95% CI, 64.68–85.03%) and specificity was 79.25% (95% CI, 66.07–89.04%). A stricter threshold MoM of 2.080 improved specificity to 98.11% (95% CI, 90.06 –99.90%) but lowered sensitivity to 35.21% (95% CI, 25.12–46.82%), with a corresponding positive likelihood ratio of 18.66. In contrast, a higher threshold MoM of 0.94 increased sensitivity to 92.96% (95% CI, 83.56–97.80%) but reduced specificity to 33.96% (95% CI, 22.09–47.92%), with a corresponding positive likelihood ratio of 1.408.

Conclusion: These findings suggest that UaD, particularly PI, as well as msAFP may be helpful screening markers for PAS risk stratification. Further research is needed to determine how these can be integrated into screening algorithms particularly when combined with sonographic and clinical data. In comparison, fetal fraction of cfDNA was a poor predictor of PAS cases.

Subcuticular Absorbable Staples Versus Conventional Skin Closure in Women Undergoing Cesarean Delivery: Baseline Characteristics from an Ongoing Randomized Controlled Trial

Authors: Hanan Aghar, MD ; Maggie Wong, MD, Elle Murrin, DO, Michelle Cassidy, PhD, Brett Goldman, MD, Antonio Saad, MD.

Objectives: To evaluate whether subcuticular absorbable staples improve operative efficiency and wound-related outcomes compared with conventional subcuticular suture closure at cesarean delivery.

Methods: An ongoing open-label randomized controlled trial comparing standard Monocryl subcuticular suture closure with absorbable subcuticular staples using the INSORB skin stapling device for cesarean skin closure. The study was initially implemented at the University of Texas Medical Branch and enrolled 115 participants before completion of study procedures at that site. Baseline data from this completed UTMB cohort will be combined with the ongoing Inova Fairfax Medical Campus trial, which is planned to begin enrollment in summer 2026 and will recruit the remaining participants needed to reach the target evaluable sample size. The planned total sample size is 316 evaluable participants, with up to 352 enrolled to account for loss to follow-up. Outcomes will be analyzed only after completion of enrollment and follow-up across the combined cohort.

Results: Among the 115 participants enrolled at UTMB, 59 were randomized to suture closure and 56 to INSORB closure. Baseline characteristics were similar between groups, including maternal age, gravidity, parity, gestational age at delivery, body mass index, number of prior cesarean deliveries, estimated blood loss, race, and ethnicity. Median maternal age was approximately 29 to 30 years, median gestational age was 39 weeks, and median BMI was in the mid-30s. No statistically significant baseline differences were observed between treatment arms. Outcome data remains unanalyzed until the combined UTMB-Inova sample reaches the prespecified target sample size.

Conclusion: This ongoing trial will combine the completed UTMB cohort with additional participants enrolled at Inova to evaluate whether absorbable subcuticular staples reduce operative time while maintaining comparable wound healing, pain, satisfaction, and cosmetic outcomes compared with conventional suture closure. Current data support baseline comparability between randomized groups; final efficacy and safety outcomes will be reported after completion of enrollment and follow-up.

Knowledge and Practices Surrounding Peripartum Anemia and Postpartum Hemorrhage Amongst Patients and Providers: A Survey Based Study

Authors: Alexa Wolfe MD, Rebecca Chornock MD, Homa Ahmadzia MD

Objectives: To evaluate current practice patterns and both provider and patient perspectives on the prevention and management of postpartum hemorrhage and peripartum anemia.

Methods: This will be a cross-sectional, survey-based study reaching obstetrics providers and obstetrics patients. Data will be collected via two separate, anonymous surveys that will be distributed via QR codes and online links. Survey answers will be a combination of multiple-choice selections and written response format. The QR codes will be displayed on flyers through different health systems and across social media platforms.

Results/Conclusions: Anonymous data from both surveys will be analyzed separately. The provider survey will be analyzed to evaluate the most common screening and diagnostic approaches for anemia in pregnancy as well as treatment regimens that are being used. In regard to postpartum hemorrhage, the provider survey will seek to assess the frequency of use of various management tools as well as identify areas of potential missed opportunities for intervention. The patient survey will be used to assess gaps in patient knowledge regarding the diagnosis of and treatment of anemia. The survey will also evaluate patient experiences with postpartum hemorrhage. Free response questions will allow patients to expand on their personal concerns. Basic descriptive statistical analysis will be performed with survey results.

Chagas Disease Prevalence in a Safety Net Prenatal Clinic in Northern Virginia

Authors: Olivia S. LeBeau, MD[1], Rachel R. Marcus[2], Garima Sharma[3], Olayinka J. Agboola[4], Madelyn S. Hurwitz[5], Rolel Mbaidjol-Kabra, MD[6].
[1]Obstetrics & Gynecology, Inova Fairfax Medical Campus, Falls Church, VA, USA, [2]MedStar Washington Hospital Center, MedStar Health, Washington, DC, USA, [3]Inova Fairfax Medical Campus, Falls Church, VA, USA, [4]Internal Medicine, Inova Fairfax Medical Campus, Falls Church, VA, USA, [5]University of Virginia, Charlottesville, VA, USA, [6]Obstetrics & Gynecology, Inova Fairfax Medical Campus, Arlington, VA, USA.

Objective: Chagas disease is a neglected tropical disease traditionally acquired through vector exposure in rural Latin America. Congenital transmission occurs in 2-4% of pregnancies, infrequently causing premature birth and Torch-like syndrome in the neonate. Long term cardiac consequences can be found in both an infected mother along with the infected child. Routine testing is suggested by the WHO and PAHO, but has not been adopted in the United States, even though studies have demonstrated high prevalence of disease in the immigrant community. In this setting, the INOVA Cares Clinic for Women began testing all pregnant women at 28 weeks or later in pregnancy for T. Cruzi infection

Methods: Beginning in July 2023, all women presenting either at or after their 28th week in pregnancy underwent Hemagen ELISA Trypanosoma Cruzi IgG testing, followed by confirmatory serologic testing at the CDC if positive.

Results: 2100 pregnant women have been tested as of September 2024. Of those 18 (0.9 %) have confirmed positive for T. Cruzi infection. No neonates have been diagnosed at birth, but one 15-year-old child of a seropositive mother was diagnosed.

Conclusions: In this safety net clinic that cares for women at risk for Chagas disease, a higher-than-expected prevalence of T. Cruzi infection was found. Consideration should be given to establishing screening programs in settings in which pregnant women from endemic regions in Latin America get prenatal care.

Obstetrics Resident Intrapartum Learning (OBRIL) Initiative

Authors: Jamie Geraghty, MD; Ellen Murrin, DO; Anne Tilghman, CNM; Sebastian Nasrallah, MD; Antonio Saad, MD; Kelli Daniels, MD; Rebecca Lee, MD; Debra D Swanson, MD; Anna M White, MD; Samantha Buery-Joyner, MD

Background: Teaching on a busy labor and delivery service presents several challenges, as faculty and residents must balance meaningful educational experiences with clinical responsibilities that often require immediate attention.

Objective(s): The primary objective of this study was to evaluate the feasibility of implementing a structured, lecture-based educational curriculum for residents in obstetrics and gynecology during their labor and delivery rotation. Secondary objectives included assessing residents' perceptions of the curriculum and their confidence in the covered topics before and after the educational intervention.

Study Design: We developed a new curriculum consisting of brief, pre-prepared slide-based teaching sessions delivered once per shift to residents on their labor and delivery rotation. Prior to implementation, a baseline needs assessment measured how frequently teaching occurred. Designated teaching topics were then assigned each shift, and residents completed surveys before and after receiving the instructional material. Preceptors completed surveys after each presentation. The primary outcome was the frequency of teaching instances to assess feasibility. Secondary outcomes included residents' pre- and post-session comfort and confidence in their knowledge of the material presented, as well as perceived utility of the lecture. The study was conducted across five high-volume obstetrics and gynecology residency programs within the United States.

Results: Implementation of the structured lecture-based curriculum increased the frequency of teaching on labor and delivery. The baseline needs assessment demonstrated that teaching occurred during 5.6 percent of shifts, compared with 9.9 percent following implementation. Residents reported significant increases in both knowledge and confidence in counseling after receiving the teaching sessions. Knowledge scores increased from a mean pre-session value of 3.03 (confidence interval 2.95 to 3.11) to a post-session value of 3.47 (confidence interval 3.41 to 3.54, $p < 0.001$). Confidence in counseling scores increased from a pre-session mean of 2.15 (confidence interval 2.07 to 2.22) to a post-session mean of 2.50 (confidence interval 2.44 to 2.56, $p < 0.001$).

Conclusion: A structured curriculum of brief, pre-prepared learning modules increased teaching opportunities within busy labor and delivery units. The intervention resulted in more frequent instructional interactions and meaningful improvements in residents' knowledge and confidence in counseling regarding essential clinical topics.

Structural Determinants of Health and Outcomes in Ovarian and Uterine Cancer: A Single-Institution Cohort Study Using the Social Vulnerability Index

Authors: *Zoe Silsby MD, Natalie Ellis MS, Chunqiao Tian PhD, Taylor Deskins MPH, Kelly Ferguson BS, Leslie Randall MD, G. Larry Maxwell MD, Kathleen M. Darcy PhD*

Objectives: Structural determinants of health (SDoH) influence cancer outcomes beyond tumor biology. The CDC Social Vulnerability Index (SVI) captures multidimensional, neighborhood-level risk; however, its association with gynecologic cancer outcomes within an integrated health system remains incompletely defined.

To evaluate associations between SVI metrics and progression-free survival (PFS) and overall survival (OS) in ovarian and uterine cancers.

Methods: We conducted a retrospective cohort study of 700 patients (307 ovarian/primary peritoneal/tubal; 393 uterine) treated surgically at Inova Health System (2012-2025) within the Tissue and Data Acquisition Network. Residential zip codes were linked to the CDC SVI domains and composite scores. Multivariable Cox models assessed associations between SVI (per 0.1-unit increase) and PFS/OS, adjusting for age, stage, histology, surgical outcome, and diagnosis year. Virginia-specific SVI metrics and interaction by enrollment cohort (<2017 vs ≥2017) were evaluated.

Results: Ovarian cancers more often presented with advanced stage (80.2% stage III-IV), serous histology (78.0%), and chemotherapy use (83.5%), while uterine cancers were predominantly early stage (58.0% stage I), endometrioid (54.2%), and more frequently treated with radiation-based therapy (41.6% combined modality). Median follow-up was 60 months, with 326 PFS and 223 OS events.

Across cohorts, most SVI domains were not associated with PFS or OS (HRs ~1.00). In ovarian cancer, no meaningful associations were observed. In uterine cancer, higher vulnerability in the racial/ethnic minority domain was associated with improved PFS (aHR 0.83, 95% CI 0.73-0.95) and OS (aHR 0.83, 95% CI 0.72-0.96). Findings were attenuated using Virginia-specific metrics. Nonlinear modeling showed no threshold effects. A significant interaction between socioeconomic status and PFS in ovarian cancer (p=0.04) suggested attenuation in more recent cohorts.

Conclusions: SVI was not consistently associated with survival after adjustment, suggesting integrated care may mitigate structural disparities. Domain-specific and temporal findings underscore the complexity of SDoH-outcome relationships and the need for multilevel investigation.

Brush for Baby – A Prenatal Oral Health Quality Improvement Initiative

Authors: Nunnally, Meghan, Schechtman, Jessica, Wolfe, Heather and Schneider, Allison

Objective: Our primary objective is to evaluate patient reported compliance rates of healthy oral health habits (brushing their teeth two times a day most days and attendance of at least one dental visit during pregnancy) based on exposure to three different interventions. Our secondary objective is to improve provider perceptions of the importance of oral health in pregnancy.

Methods: Study Design - Prospective, pragmatic, quasi-experimental pre-post time series using comparative groups. We plan to use the Plan-Do-Study-Act (PDSA) framework to implement our project.

Major eligibility criteria:

- Patient eligibility: Any patient establishing prenatal care at the Inova Cares Clinic for Women in Falls Church, Mount Vernon, Herndon or Alexandria.

Provider eligibility: Attending physicians, resident physicians, and advanced practice providers that conduct prenatal visits.

Intervention assignments *(based on the location of the ICCW practice in which patients receive their prenatal care):*

- Intervention 1: Standard of Care Group – No change in current practice. The current standard of practice amongst our clinics is to provide a list of local dental offices that accept Medicaid at the initial prenatal visit.

- Intervention 2: Provide a physician-signed dental letter in addition to a list of local dental offices that accept Medicaid at the initial prenatal visit.

Intervention 3: Explicit oral health counseling by a provider at the second prenatal visit along with the standard list of dental providers and a signed dental referral letter

Outcome measures:

% of patients that answer "yes" to brushing their teeth two times a day most days and attendance of at least one dental visit during pregnancy across each office (evaluated via surveys given in the third trimester and at 6-week postpartum visit)

Provider perception of importance of oral health counseling in pregnancy before and after provider educational session (evaluated via surveys given prior to start of study and 6 months into study)

Rate of administration of dental lists/dental letters at initial prenatal visit

Rate of provider counseling at Falls Church office

Next Steps: Project is ongoing and data collection in process. Plan to complete data collection and data analysis across all sites by August 2026

The Eclampsia Escape Room: An Innovative Educational Experience for the ObGyn Clerkship

Authors: Gabriela Guerra, MD; Heather Wolfe, MD; Shreya Venkat, BS; Carolyn Davis, MD; Amanda Slater, BA; Erick Garcia, BS

Objective: To evaluate the effectiveness of an escape room–based learning activity in reinforcing obstetrics knowledge and improving learner satisfaction among medical students.

Methods: Escape rooms have been increasingly utilized in medical education as interactive teaching strategies associated with improved learner engagement, knowledge application, and satisfaction. To provide a novel, active-learning experience for third year medical students, we implemented a single center educational intervention during the obstetrics and gynecology clerkship. Following a standard didactic session on hypertensive disorders of pregnancy, students participated in an eclampsia-themed escape room focused on the identification, management, and broader clinical considerations of eclampsia. The activity incorporated case-based problem solving tasks with structured pre-activity learning objectives and post-activity debriefing. Outcomes were assessed using a voluntary post-activity survey evaluating learner satisfaction, perceived educational value, and achievement of learning objectives. Descriptive statistics were used to summarize responses.

Results: A total of 15 of 58 students (25.9%) completed the post-activity survey. Among respondents, 100% (15/15) reported being satisfied or very satisfied with the activity, 100% (15/15) reported that the escape room provided value or significant value to their learning experience, and 100% (15/15) indicated that the stated learning objectives were successfully met. Interpretation of findings is limited by the low survey response rate and reliance on self-reported outcomes.

Conclusion: An eclampsia themed escape room is a feasible and well received adjunct to traditional obstetrics education, with high learner satisfaction and perceived educational benefit among respondents.

Interactive, case-based educational strategies may enhance engagement with complex clinical topics in undergraduate medical education. Future directions include broader implementation, evaluation across diverse educational settings, and incorporation of objective measures of knowledge acquisition and retention.

Buccal mucosal grafts to repair complex urogenital conditions in women: a case series

Authors: Alicia Smith, MD; Elizabeth Gill, MD; Eva K. Welch, Maj, USAF, MC; Katherine L. Dengler, LTC (P), MC, USA, Joy Wheat, Lt Col, USAF, MC; Felicia Balzano, MAJ, MC, USA

Opportunities for Initiation of Prenatal Care Among Pregnant Patients with Opioid Use Disorder Within an Integrated Health System in Virginia

Authors: Margo Huffman, MD; Zeina Saliba, MD

Objective: This project aims to quantify the number of contacts made within the health system during pregnancy among patients with opioid use disorder and inadequate prenatal care who deliver within the system. It also aims to evaluate the types of these encounters by classifying them as inpatient versus outpatient versus emergency department and by defining the subspecialty of the encounter if applicable.

Methods: This study will be completed using a retrospective cross-sectional design. Individuals who have delivered within the health system and who have a diagnosis of opioid use disorder will be identified using the Slicer Dicer reporting tool in the Epic electronic medical record system. Inadequate prenatal care is defined as prenatal care beginning after 20 weeks, gestational age or receiving less than 50% of expected visits based on the schedule of PNC visits recommended by ACOG. The frequency of inadequate prenatal care among patients with OUD who deliver within the health system will be measured. Among those individuals, the number of encounters within the health system outside of prenatal care during pregnancy will also be measured. Finally, these encounters will be classified by type.

Results/Conclusions: The goal of this study is to contribute to the existing literature that notes a high prevalence of inadequate prenatal care among pregnant patients with OUD by investigating whether there are significant opportunities to integrate individuals with OUD into prenatal care by effectively utilizing other contacts with these individuals within the health system during pregnancy.

Point-Of-Care Hemoglobin Testing in Pregnant Patients – A Prospective Observational Study

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Objective: This project is a prospective observational study aimed to assess and validate the use of point of-care hemoglobin testing in an ambulatory obstetric population using three devices. The objective of the preliminary analysis is to compare HemoCue and Masimo noninvasive hemoglobin measurements with CBC hemoglobin values and to quantify agreement, regression performance, and subgroup behavior across hemoglobin ranges.

Methods: Correlation of hemoglobin testing will be determined using the Masimo Root Radical-7®, Anemocheck mobile application, and the HemoCue® Hb 201 System Analyzer compared to the gold standard: venipuncture. Outcomes will include need for allogeneic transfusion, post-delivery hemoglobin, change in pre- and post-delivery hemoglobin, length of stay, need for ICU care, readmission to ER or postpartum unit, and frequency of symptomatic anemia.

Results: Preliminary paired-method comparison was performed using manually transcribed values from the dataset. There were 22 CBC-HemoCue pairs and 21 CBC-Masimo pairs; 1 extreme Masimo outlier was excluded, leaving 20 Masimo pairs. HemoCue showed a bias of -0.56 g/dL. Masimo showed a larger positive bias of 2.71 g/dL. Subgroup analysis showed modest HemoCue bias across CBC ranges and persistently elevated positive Masimo bias in low and normal hemoglobin ranges.

Conclusion: We hypothesize that these POC testing devices are reliable and feasible alternatives to phlebotomy for routine anemia screening in the ambulatory pregnant population. In this preliminary cohort, HemoCue tracked CBC more closely than Masimo across all primary agreement metrics. Masimo showed persistent positive bias despite outlier removal, which raises concern for overestimation of hemoglobin in clinically relevant low-hemoglobin states. Improving identification of anemic women will ultimately facilitate diagnosis and management of iron deficiency anemia.

Adjuvant Chemotherapy Is Not Associated with Improved Survival After Complete Surgical Resection of Low-Grade, Stage I Endometrioid Ovarian, Tubal, and Peritoneal Carcinoma

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Objective: To evaluate whether adjuvant chemotherapy improves overall survival compared with postoperative observation in low-grade stage I endometrioid ovarian, tubal or primary peritoneal carcinoma after complete surgical resection.

Methods: We conducted a retrospective cohort study using the National Cancer Database in patients diagnosed between 2004-2017 with FIGO stage I, grade 1-2 endometrioid ovarian, tubal or primary peritoneal carcinoma. Eligible patients had complete surgical resection followed by adjuvant chemotherapy or observation. Inverse probability of treatment weighting (IPTW) balanced age, stage, grade, comorbidities, facility type, and surgical stage between groups. Weighted Kaplan-Meier and Cox models assessed overall survival differences. Prespecified subgroup analyses evaluated outcomes by age, stage and grade.

Results: Among 4,137 patients, 47.7% received adjuvant chemotherapy. Chemotherapy use was more common in younger, privately insured patients with grade 2 tumors, FIGO stage IC disease, and lymph node evaluation. IPTW achieved excellent covariate balance. Five-year survival exceeded 94% in both groups. Chemotherapy did not improve survival in the IPTW cohort (HR 1.03; 95% CI 0.88–1.21, p=0.72). No survival benefit was observed in any subgroup, including patients <50 years old, with stage IC disease or grade 2 tumors. Sensitivity analyses restricted to those with lymph node evaluation and landmark analyses yielded similar results.

Conclusion: Adjuvant chemotherapy did not improve overall survival in low-grade stage I endometrioid ovarian carcinoma after complete tumor resection. All-cause survival was excellent across all subgroups, including those traditionally considered high risk supporting postoperative observation as a safe de-escalation strategy and evidence-based approaches to adjuvant therapy in early-stage disease.

Erythromycin versus Azithromycin for Preterm Pre-labor Rupture of Membranes: A Cluster Randomized Comparative Effectiveness Trial (PRACET)

Authors: **Brianna Canales MD;** Ellen Murrin DO; Antonio Saad, MD

Background: Preterm premature rupture of membranes (PPROM) complicates about 2-3% of pregnancies and is a significant contributor to the preterm birth rate in the United States. Treatment with antibiotics to prolong pregnancy, reduce prematurity-related morbidity, and reduce the risk of maternal and neonatal infections is crucial. The American College of Obstetrics and Gynecology (ACOG) suggests a 7-day course of antibiotics, which includes IV Ampicillin and IV Erythromycin for 2 days followed by an oral regimen of Amoxicillin and Erythromycin for 5 days. Azithromycin has been used as a substitute for Erythromycin in some institutions due to ease of administration, better side effect profile, and decreased cost of Azithromycin regimen as compared with erythromycin. Previous observational studies have shown no difference in time from rupture of membranes to delivery (latency period) or maternal or neonatal outcomes between the two regimens. However, no randomized controlled trials have compared the two.

Objective: To examine the difference in time between the two regimens from PPROM to delivery in days. Secondary outcomes include maternal complications like chorioamnionitis, abruption, fetal growth restriction, total blood loss at delivery, rates of postpartum hemorrhage and transfusion, postpartum endometritis, and neonatal outcomes like birth weight, APGAR scores, sepsis, respiratory distress syndrome, and necrotizing enterocolitis.

Methods: In this multiple-site cluster-randomized comparative effectiveness trial, we aim to enroll 140 women with singleton pregnancies between 22w0d and 32w6d gestation who have confirmed rupture of membranes and are eligible for expectant management. . Each hospital will be randomized to one of two macrolide antibiotic regimens that will change on a monthly basis. In addition to ampicillin and amoxicillin and their usual care, one arm of participants will receive Erythromycin 250 mg IV every 6 hours for 48 hours, followed by 250 mg every 8 hours for 5 days (or 500 mg PO every 8 hours). The other arm of participants will receive Azithromycin 1000 mg by mouth once (or available oral equivalent). Both intention-to-treat and per-protocol analysis will be performed.

Results/Conclusions: At the conclusion of this trial, we anticipate demonstrating Level 1 evidence that both antibiotic regimens, involving either Erythromycin or Azithromycin, are noninferior to each other in the management of PPROM. Through this study, we hope to provide clear, evidence-based guidance on the optimal antibiotic treatment for prolonging pregnancy and minimizing complications associated with PPROM, thereby influencing future guidelines and practices.

Management of postoperative pain after cesarean delivery using non-pharmacological analgesic device, NeuroCuple™

Authors: Mekenzie L. Wilson, MD; Maggy Wong, MD; Ellen M. Murrin, DO; Antonio F. Saad, MD

Objective: This study aims to evaluate the efficacy of the NeuroCuple™ device in reducing opioid use and managing postoperative pain in women undergoing cesarean delivery.

Methods: This is a single-center, sham-controlled, 3-arm, randomized, prospective study in 180 women undergoing cesarean delivery. Subjects will be screened and consented preoperatively before the scheduled case. Enrolled subjects will be randomized using a computer-generated randomization scheme in a 1:1:1 group allocation to the device, sham device, or standard-of-care arms. Upon arrival to the PACU, subjects in the standard-of-care arm will receive standard postoperative orders at the discretion of the primary OB/GYN. For subjects in the active and sham device arms, the device will be placed by trained research staff as soon as feasible, and prior to transfer to the postpartum floor. Both the patient and clinical team will be blinded to the group assignment for the active and sham devices. Pain scores will be collected from the study participants per nursing protocols while inpatient, and daily after discharge until postoperative day 4, using the Pain Numeric Rating Scale. For breakthrough pain, patients may use oral or IV opioids in the inpatient setting and oral opioids in the outpatient setting. Upon discharge, patients are prescribed opioid medication at the discretion of the primary OB/GYN. In this study, the investigators will examine total milligram morphine equivalent (MME) opioid intake by postoperative day 4 or before discharge as the primary endpoint, reduction (percentage change) in numeric pain scale as the secondary endpoint and change in quality of recovery as the exploratory endpoint.

Results and Conclusion: The study is currently ongoing and actively enrolling patients at Inova Fairfax Hospital.