This section of the Journal of Obstetrics and Gynaecology Canada contains the oral, poster, video, and virtual abstracts that will be presented at the SOGC's 78th Annual Clinical and Scientific Conference (ACSC). The 78th ACSC will be held in person in Québec City, Québec from June 7 to 10, 2022, with a parallel virtual scientific program, which will host live broadcasts and recordings of plenary sessions as well as on-demand content. We invite you to join us in person, or virtually, in June to participate in the 2022 Abstract Program and to learn about the exciting research being conducted and innovations emerging in the field of obstetrics and gynaecology. I would like to thank the entire Abstract Program Committee, the reviewers, and the participants, without whom the ACSC Abstract Program would not be possible.

Dr. Alain Gagnon
Chair, Abstract Program Committee

■ O-OBS-MD-125 ....

Progesterone for the Prevention of Miscarriage and Preterm Birth in Women with First-Trimester Bleeding: PREEMPT Trial

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Objectives: First trimester bleeding is associated with miscarriage and preterm birth for which progesterone has been suggested to improve outcomes. Our study objective was to evaluate the effect of progesterone treatment throughout pregnancy on preventing miscarriage and preterm birth in pregnancies with first trimester bleeding.

Methods: Multicentre double-blind placebo-controlled randomized-trial comparing vaginally administered 200 mg micronized progesterone nightly from presentation to 34weeks with an identically appearing placebo. Subjects with vaginal bleeding and live intrauterine pregnancy <14 weeks were eligible. Multifetal gestations, cervical insufficiency, recurrent pregnancy loss, or bleeding unrelated to placentation were excluded. Primary outcome was occurrence of live term pregnancy. Secondary outcomes included adverse maternal/newborn events and time to miscarriage/birth. Chi-square analyses compared proportions and Mann-Whitney tests compared time-to-event outcomes.

Results: 549 subjects were randomized, of which 16 withdrew or were lost to follow-up leaving 264 subjects in the progesterone group and 269 subjects in the placebo group. Baseline characteristics were comparable in both groups. As compared to the placebo group, the number of subjects having a live term birth among those in the progesterone group was 197 (74.6%) vs. 190 (70.6%), $P = 0.30$, respectively. As compared to the placebo group, those in the progesterone group had comparable risks of abortion <20 weeks, 38 (14.4%) vs. 43 (16.0%), $P = 0.94$, preterm birth, 27 (10.2%) vs. 33 (12.3%), $P = 0.46$, and stillbirth 2 (0.9%) vs. 3 (1.3%), $P = 0.65$, respectively. There were no differences in adverse maternal or newborn outcomes, or in time-to-event for miscarriage or birth between the groups.

Conclusions: Progesterone prescribed throughout pregnancy is not effective in preventing miscarriage or prematurity in subjects presenting with first trimester vaginal bleeding in context of a live intrauterine pregnancy.

Keywords: progesterone; vaginal bleeding; preterm birth; miscarriage; trial

■ O-OBS-MFM-MD-126 ....

Labour Induction at 39 Weeks in Low-Risk Term Pregnancies and Risk of Perinatal Death

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Objectives: Induction of labour (IOL) at 39-weeks has been associated with decreased risk of cesarean delivery. The study objective was to evaluate the effect of IOL at 39-weeks on perinatal death in low-risk pregnancies.

Methods: We used the National Center for Health Statistics Linked Birth/Infant Deaths data from 2013 to 2017 to carry out a propensity score matched cohort study to test the influence of IOL at 39-weeks on risk of stillbirth and infant death. Low-risk singleton pregnancies with a live fetus at 39-weeks with no known congenital malformations who underwent an IOL were matched with comparable pregnancies that were not induced at 39-weeks that delivered no later than 42-weeks.

Results: From >20 million births, 825 323 (4%) low-risk pregnancies were induced at 39 weeks and propensity score matched (5:1 ratio) to a comparable group of pregnancies. As compared to pregnancies that were not induced at 39-weeks, IOL at 39 weeks was associated with increased risk of perinatal death,10.8 vs. 5.8/10,000, OR 3.8 (3.5−4.2), $P < 0.0001$, which consisted of a decreased risk of stillbirth, 0 vs. 0.7/10,000, and an increased risk of infant death,10.8 vs. 5.1/10,000, 4.2 (3.8−4.6), $P < 0.0001$. Among live birth infants, the risk of sudden infant death syndrome was more common among pregnancies induced at 39-weeks,4.3(3.6−5.2), $P < 0.0001$.

Conclusions: IOL at 39-weeks in low-risk singleton pregnancies is associated with an increased risk of perinatal death. While this may not have a material effect on risk to an individual patient, adoption of widespread practices of inducing low-risk pregnancies at 39-weeks may lead to increases in perinatal deaths on a population level.

Keywords: induction of labour; infant death; stillbirth; sudden infant death syndrome

■ P-OBS/GYN-EDU-161 ....

The M.I.L.K Survey Study: Evaluation of a Breast Milk Hand Expression Toolkit

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Objectives: Breastmilk hand expression (BMHE) is recommended to promote lactation, relieve breast engorgement, and collect milk for future infant feedings. Resources to teach this skill are limited and infrequently developed in partnership with the obstetrical population. In collaboration with an expert working group, a one-page toolkit that illustrates step-by-step the process of BMHE was developed. The objective of this study was to evaluate the readability, clarity of content, layout, and informational value of this BMHE toolkit.

Methods: Individuals with intentions to breastfeed or recent breastfeeding experience completed a 2-part survey that consisted of radio, multi-select, Likert scale, and open-ended questions. Part 1 captured sociodemographic factors, obstetrical history, and breastfeeding practices. Part 2 collected feedback on the BMHE toolkit. Participant characteristics and feedback were summarized using descriptive statistics.

Results: Of the 123 participants, 117 (95.1%) had heard of hand expression prior to reviewing the toolkit and 99 (80.5%) had hand expressed before. When asked about the toolkit, 118 (95.9%) participants said it was informative, 115 (93.5%) said it was easy to understand, and 114 (92.7%) said it was well laid-out. When asked about information seeking behaviours, participants indicated a preference for online resources (58.5%) and video resources (22.0%).

Conclusions: Overall, the BMHE toolkit was well received by participants. The survey feedback has been incorporated into a revised version of the toolkit. Future research should focus on identifying implementation strategies to optimize the use of the toolkit and increase its effectiveness as an educational resource to correctly teach participants BMHE.

Keywords: breastfeeding; breastmilk; hand expression; patient education

■ P-OBS/GYN-164 ....

Universal SARS-CoV-2 Testing Among Obstetrical Patients (UNIVERSE-OB) in Ottawa, Canada

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Objectives: Universal testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) within birthing units is an effective strategy to contain infection and estimate community prevalence. Given the high-prevalence of COVID-19 cases in Ontario, the objective of this study was to determine the prevalence of active and recovered SARS-CoV-2 infection among pregnant individuals in Ottawa through universal SARS-CoV-2 and serology testing.

Methods: From October 19th to November 27th, 2020, pregnant individuals admitted to triage assessment units at The Ottawa Hospital (TOH) were consented for SARS-CoV-2 testing. Swab and serology samples were analyzed using digital droplet polymerase chain reaction (ddPCR) and enzyme-linked immunosorbent assays, respectively. SARS-CoV-2 seropositivity was defined as a positive result for immunoglobulin (Ig) G, either alone or in combination with IgM and/or IgA.

Results: From the 395 enrolled participants, 284 swab and 353 serology samples were collected. We found that 18 of 395 (4.6%) participants had evidence of SARS-CoV-2 exposure: 2/284 (0.70%) were positive for SARS-CoV-2 and 16/353 (4.5%) were positive for anti−SARS-CoV-2 IgG. Seropositive participants were similar to seronegative participants in terms of demographics, clinical characteristics, and pregnancy outcomes.

Conclusions: The prevalence of SARS-CoV-2 ddPCR positivity and seropositivity in the obstetrical population at TOH was 0.70% and 4.5%, respectively in the fall of 2020. According to local public health data, the infection rate peaked at 0.6% during the study time period. Universal SARS-CoV-2 testing programs may help approximate community prevalence, however, justification of this strategy depends on testing capabilities and the local context of COVID-19 infection.

Keywords: pregnancy; COVID-19; SARS-CoV-2; universal testing; seroprevalence

■ R-OBS-MFM-MD-025 ....

Lethal Fetal Skeletal Dysplasia Determined by Fetal Lung Weight—Which Ultrasound Measurement/Ratio Has the Highest Detection Rate?

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Objectives: To determine which ultrasound parameters correlate with lung weight in skeletal dysplasia.

Methods: This retrospective cohort study included all pregnancies with antenatal diagnosis of skeletal dysplasia between the years 2012−2018. The study population consisted of terminated pregnancies as well as stillborn and liveborn neonates who succumb shortly after birth. We included only cases for which information on fetal biometry was available within 2 weeks before delivery, and had an autopsy and skeletal X-rays, and molecular analysis using extracted fetal DNA, to determine the etiology. We compared the predictive accuracy of fetal sonographic body-proportional ratios measured on the last ultrasound exam performed before birth, including: (1) thoracic circumference-to-abdominal circumference (TC/AC) ratio, (2) the femur length-to-abdominal circumference (FL/AC) ratio, (3) head circumference-to-abdominal circumference (HC/AC) ratio, and (4) foot length-to-femur length ratio. Lethality was defined as total lung weight lower than −2SD from the expected mean for gestational age.

Results: 53 pregnancies with antenatal diagnosis of skeletal dysplasia underwent formal autopsy. Lethality based on the total lung weight was determined in 34 (64.1%). Gestational age at the last sonographic assessment was 21.3 (19.9−24.9)weeks. Femur length-to-abdominal circumference ratio demonstrated the highest AUC of 0.817 (95% CI 0.685−0.949) ($P < 0.0001$). FL/AC ratio ≤0.1550 demonstrated the highest detection rate of 88.2% along with the highest negative predictive value (NPV) of 75%.

Conclusions: Using a novel, more practical approach to predict lethality in skeletal dysplasia, femur length-to-abdominal circumference ratio demonstrates the highest detection rate of lethality. These findings should be considered when counseling families about the possible lethality in cases with skeletal dysplasias.

Keywords: skeletal dysplasia; prediction; ultrasound; lethality; fetal biometry

■ R-OBS-MFM-MD-026 ....

The Accuracy of Fetoplacental Doppler in Distinguishing between Growth Restricted and Constitutionally Small Fetuses

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Objectives: To determine the diagnostic accuracy of fetoplacental Doppler for specific placental diseases.

Methods: A retrospective cohort study of all women with a singleton pregnancy and an antenatal diagnosis of SGA fetus (estimated fetal weight <10th centile for gestational age), who underwent fetoplacental Doppler assessment within 2 weeks before birth. The primary exposure was any abnormal Doppler result, defined as an abnormal umbilical artery (UA) Doppler, middle cerebral artery (MCA) Doppler, cerebroplacental-ratio (CPR), or umbilico-cerebral ratio (UCR). Study outcomes were abnormal placental pathology: maternal vascular malperfusion (MVM), villitis of unknown etiology (VUE), or fetal vascular malperfusion (FVM).

Results: A total of 558 women with a singleton SGA fetus were included, of whom 239(42.8%) had abnormal fetoplacental Doppler findings. UA Doppler had the lowest detection rate for abnormal placental pathology. MCA Doppler exhibited a significantly higher detection rate for all types of pathology. CPR and UCR exhibited the highest detection rates for all types of placental pathology, however, were also associated with the highest false-positive rate. The combination of fetoplacental Doppler with the severity of SGA and maternal hypertensive status achieved a high negative predictive value MVM lesions (97%). In contrast, fetoplacental Doppler did not improve the negative predictive value for non-MVM pathology (VUE or FVM).

Conclusions: Among SGA fetuses, the combination of UA and MCA Doppler is highly accurate in ruling out FGR due to MVM placental pathology but is of limited value in excluding FGR due to underlying non-MVM pathologies.

Keywords: placental insufficiency; growth restriction; maternal vascular malperfusion; villitis of unknown etiology; fetal vascular malperfusion; placental pathology

■ R-OBS-MFM-MD-038 ....

Second-Trimester Circulating Maternal Placenta Growth Factor as a Contingent Screening Tool for Placental Mediated Complications in Women with Abnormal First-Trimester Serum Analytes

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Objectives: First-trimester analytes are thought to reflect in part on placental function, and therefore, are associated with an increased risk of placental-mediated complications. At present, no specific management protocol is available. We aimed to assess the role of placental growth factor (PlGF) in patients with unexplained abnormal first-trimester markers.

Methods: This was a retrospective cohort study including singleton pregnancies referred to our centre following abnormal first-trimester markers (2017–2020). Pregnancies complicated by vanishing twin/

chromosomal/structural anomalies were excluded. Sonographic characteristics,perinatal outcomes,and placental histopathology were compared between pregnancies with normal and low PlGF (<10th percentile for gestational age). Diagnostic accuracy of PlGF for prediction specific placental-mediated complications, as well as for maternal-vascular-malperfusion (MVM) pathology was calculated.

Results: Of the71 eligible pregnancies,35 (49.3%) had low PlGF. Median gestational age at assessment was 23 weeks (interquartile range 22–25). Maternal age, ethnicity, pre-pregnancy BMI, nulliparity, chronic hypertension, smoking,and aspirin consumption were comparable between the groups. Low PlGF was associated with higher rates of early-onset fetal growth restriction, hypertensive disorders, preterm preeclampsia, pre-term birth,and MVM pathology. Adjusting for uterine artery Doppler and fetal biometry status, low PlGF remained significantly associated with these placental-mediated complications. The predictive capacity of PlGF significantly outperformed sonographic parameters (uterine artery Doppler/fetal biometry) with minimal diagnostic improvement when PlGF was combined with ultrasound.

Conclusions: In pregnancies with unexplained abnormal first-trimester markers, PlGF may outperform ultrasound to identify a subset of women who need higher-level care to mitigate against the adverse clinical consequences of placental dysfunction. Our findings have practical importance for clinicians and their patients as they navigate the implications of abnormal first-trimester screening data.

Keywords: PlGF; preeclampsia; first-trimester screening

■ R-OBS-MFM-MD-156 ....

Induction of Labour in Women with Class III Obesity (Body Mass Index ≥40 kg/m²)—Maternal and Neonatal Outcomes

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Objectives: To evaluate birth outcomes in women with class III obesity (body mass index[BMI] ≥40kg/m²), and assess the factor associated with an intrapartum cesarean birth.

Methods: In this retrospective cohort study, we identified all pregnant individuals with class III obesity who delivered a live singleton at our tertiary centre (2014–2019) via induction of labour at 37–41 weeks. Patients with onset of labour or those with elective cesarean birth were excluded. Maternal and neonatal outcomes were compared between those who delivered vaginally to those had an intrapartum cesarean birth. Multivariate logistic regression analysis was used to evaluate the factors associated with an intrapartum cesarean birth. Analysis was further stratified by parity and the first induction agent.

Results: A total of 190 individuals were eligible, of them 73 (38.4%), 104 (54.8%), and 13 (6.8%) were with pre-pregnancy BMI of 40–49.9, 50–59.9, and ≥60 kg/m², respectively. Overall, 98 (51.6%) had a successful vaginal birth, and 190 (48.4%) had an intrapartum cesarean birth. Patients who underwent cesarean birth were older and nulliparous(82.6 vs. 49%, $P < 0.001$). Maternal comorbidities, perinatal complications, and induction indications were comparable. Gestational age at delivery, neonatal birth weight, and large-for-gestational-age neonate were similar. First agent used for induction did not impact mode of delivery. Maternal and neonatal adverse outcomes did not differ between the groups. After controlling for confounders, nulliparity was significantly associated with intrapartum cesarean birth (adjusted OR 7.07; 95% CI 2.77–18.05).

Conclusions: In term pregnant individuals with class III obesity, labour induction is associated with increased rates of intrapartum cesarean birth, however, maternal and neonatal adverse outcomes were not affected by mode of delivery.

Keywords: obesity; labour induction; labour and delivery

■ O-OBS-EDU-MD-043 ....

When Do Residents Say "I Don't Know"? Expressions of Uncertainty in an Interdisciplinary Cardio-Obstetrical Simulation

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Objectives: Helping residents manage their uncertainty is a priority for educators, yet little is known about how residents express uncertainty during complex clinical situations. In a training culture that values confidence, often conflated with clinical certainty, educators need to understand how trainees communicate their uncertainty and whether there are contextual factors that may impact this. Without this knowledge, educators lack guidance on how to equip residents with the skills required to navigate uncertainty productively. We explored how trainees expressed uncertainty in the context of interdisciplinary teams during complex Cardio-Obstetrics simulations.

Methods: Thirteen Obstetrics (OB) and Cardiology residents worked in teams with nurses and attending physicians to manage pregnant patients with heart disease in a high-fidelity simulation designed to evoke clinical uncertainty. Video recordings were independently analyzed for expressions of management and/or diagnostic uncertainty. Indirect expressions were defined as evasive responses to specific questions. Proportions of indirect and direct expressions were compared using chi-square tests.

Results: There were 122 indirect and 28 direct expressions of uncertainty. The words "concern" or "worry" were used in 24% of indirect expressions. While diagnostic uncertainty was most frequently expressed indirectly (67%), management uncertainty was most frequently expressed directly (58%) ($P = 0.016$). Uncertainty was expressed similarly by OB and cardiology trainees ($P = 0.438$).

Conclusions: Residents expressed uncertainty differently depending on whether the uncertainty was related to diagnosis or management. Residents and educators need to be attuned to the subtle, indirect methods of expressing uncertainty, both to optimize patient care and to understand the communication strategies employed in complex interdisciplinary clinical situations.

Keywords: simulation; clinical uncertainty; cardio-obstetrics; medical education; interdisciplinary

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■ O-OBS-S-127 ....

Type of Delivery in Women with Vulvodynia and Vaginismus: A Systematic Review

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Objectives: Vulvodynia and/or vaginismus (VV) have been associated with adverse pregnancy outcomes. The few studies that have enumerated these outcomes have consisted of few subjects; hence, the purpose of our study was to perform the first systematic review examining the type of delivery in women with vulvodynia and/or vaginismus.

Methods: We conducted a systematic review searching PubMed, EMBASE, Cochrane Library and SCOPUS until June 2021 for observational studies reporting maternal and/or neonatal outcomes of VV in pregnancy. Data on delivery characteristics were independently extracted from the included studies by 2 reviewers and then summarized between those with and without VV.

Results: The search strategy yielded 360 citations, of which 6 were included. A total of 1117 patients with a diagnosis of VV prior to pregnancy were identified over a 23-year study period. Compared with women without VV, women with VV were more likely to deliver by cesarean section (27.7% vs. 15.75%, $P < 0.0001$). Cesarean sections were performed in greater frequency in response to maternal request (21.9% vs. 5.15%, $P < 0.0001$) in women with VV, and about equally for emergency reasons (31.5% vs. 29.8%, $P = 0.5$) in the 2 groups. Of those who delivered vaginally, instrumental deliveries were more common among women with VV (20.0% vs. 9.0%, $P < 0.0001$), as was perineal trauma (7.5% vs. 0.01%, $P < 0.0001$).

Conclusions: Vaginismus/vulvodynia are high-risk conditions during pregnancy with increased rates of cesarean sections performed for elective reasons, including maternal request. Offering support, education and treatment of these conditions prior to pregnancy is important in order to reduce the rate of avoidable cesarean sections.

Keywords: vaginismus; vulvodynia; delivery, cesarean

■ V-GYN-MD-136 ....

Management of Vaginal Vault Dehiscence After Laparoscopic Hysterectomy

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Video abstract summary: Vaginal vault dehiscence is a rare but serious complication of laparoscopic hysterectomy. Here we review the epidemiology, diagnosis, and management of vaginal vault dehiscence, and illustrate a 5-step surgical approach to laparoscopic vault repair. At a tertiary care centre, surgical footage was obtained from a 34-year-old female presenting 8 weeks after total laparoscopic hysterectomy with complete vault dehiscence following intercourse. Vaginal vault dehiscence complicates 0.64%−1.35% of laparoscopic hysterectomies, and can be categorized as complete cuff dehiscence, partial cuff dehiscence, or partial thickness cuff dehiscence. Protective factors include use of barbed sutures compared to non-barbed sutures and laparoscopic closure compared to vaginal closure. Smoking and low BMI have been associated with increased risk of dehiscence. The surgical approach to a laparoscopic repair of cuff dehiscence can be standardized in 5 reproducible steps: abdominal survey, bladder and/or rectal dissection, vault debridement, vault closure, and cystoscopy. Vaginal vault dehiscence is an infrequently encountered complication of laparoscopic hysterectomy. This video reviews the clinical management and reproducible surgical repair of vaginal vault dehiscence.

■ P-GYN-MD-172 ....

Pooled Phase-3 Analysis of Efficacy and Safety of Estetrol/Drospirenone Combined Oral Contraceptive

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Objectives: To examine efficacy and safety of a combined oral contraceptive pill containing the estetrol (E4) and drospirenone (DRSP) in a 24/4-day oral regimen.

Methods: Two parallel, multicentre, open-label, phase-3 trials (United States/Canada and Europe/Russia) enrolled healthy participants 16−50 years to use estetrol 15 mg/drospirenone 3 mg (E4/DRSP) for up to 13 cycles. Data of participants 16−35 years at screening were pooled to assess the Pearl Index (PI) in at-risk cycles (confirmed intercourse and no other contraceptive use). In addition, PI was stratified by previous hormonal contraceptive use and body mass index (BMI). Groups were compared using chi-square testing. Adverse events (AEs) were evaluated for all participants.

Results: 3417 participants were enrolled (3027 of whom were 16−35 years), and treated with E4/DRSP. Reported treatment compliance was ≥99%., The PI among participants age 16−35 years was 1.52 (95% CI 1.04−2.16). For starters (n = 1368) and switchers (n = 1469), PI was 1.88 (95% CI 1.09−3.00) and 1.24 (95% CI 0.68−2.08), respectively (P = 0.25). For BMI <25.0 kg/m^2 (n = 1771), 25−30 kg/m^2 (n = 656) and ≥30 kg/m^2 (n = 410), PIs were 1.14 (95% CI 0.64−1.88), 2.19 (95% CI 1.05−4.03) and 2.27 (95% CI 0.83−4.94), respectively (P = 0.17). There were no on-treatment pregnancies reported among 147 Canadian participants. Most frequently reported treatment-related adverse events were metrorrhagia (4.7%), acne (3.3%) and headache (3.2%). Three treatment-related AEs (0.1%) were considered serious: worsening depression (continued treatment), ectopic pregnancy (discontinued) and venous thromboembolism (discontinued).

Conclusions: Overall, and in subgroups stratified by contraceptive history and BMI, E4/DRSP demonstrated contraceptive efficacy and adverse events occurred at low rates.

Keywords: estetrol; drospirenone; oral contraceptive

■ O-GYN-EDU-MD-173 ....

Hands-on Training in a Virtual World: Novel Simulation-based Virtual Training for Subdermal Contraceptive Implant Placement and Removal

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Objectives: The COVID-19 pandemic necessitated a shift from traditional face-to-face instruction for new technical skills to virtual delivery of medical education training. Our objectives were to develop and validate a virtual simulation training program for Canadian healthcare professionals (HCPs) on the insertion, localization, and removal of the etonogestrel subdermal contraceptive implant.

Methods: A scientific committee of Canadian family planning experts developed a two-part virtual training program during the COVID-19 pandemic. In Part 1, core educational content was provided in an asynchronous, self-directed, on-line format. Part 2 consisted of synchronous, simulation-based training using web conferencing. HCPs were provided with model arms and training placebo applicators, trainers demonstrated implant insertion/removal techniques, and trainees received individual feedback on technical performance. All trainees were asked to complete an on-line evaluation upon program completion.

Results: Between March 2020 and June 30, 2021, 2130 Canadian HCPs had completed Parts 1 and 2 of the training program and 1275 participants completed the program evaluation (response rate 60%). Participants reported high levels of satisfaction with virtual simulation-based training. Ninety-seven percent (1229/1275) of participants agreed the virtual format was effective. Four percent (51/1275) requested additional training prior to inserting the implant in clinical practice.

Conclusions: Virtual simulation-based learning provides effective education and technique training for etonogestrel implant insertion and removal. Online delivery of implant training can be scaled to use as needed to reach professionals in remote or underserved locations and for training provision of other technical or surgical procedures.

Keywords: simulation-based training; contraceptives; virtual learning

■ O-GYN-MD-046..

Bleeding Patterns with Use of an Oral Contraceptive Containing Estetrol and Drospirenone: Pooled Analysis of Phase-3 Clinical Trials

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Objectives: To evaluate bleeding patterns with use of a 24/4-day novel combined oral contraceptive regimen containing estetrol, a natural estrogen, and drospirenone.

Methods: Bleeding data from two parallel, multicentre, open-label, phase-3 trials (United States/Canada and Europe/Russia) were pooled. Healthy participants aged 16−50 years with body mass index of ≤35.0 kg/m^2 used estetrol 15 mg/drospirenone 3 mg for up to 13 cycles. Participants reported vaginal bleeding (blood loss requiring use of sanitary protection) or spotting (minimal blood loss, requiring no new use of sanitary protection) on daily diaries. Bleeding outcomes were evaluated in participants that started treatment and had at least 1 evaluable cycle. Mean frequency of scheduled and unscheduled bleeding and/or spotting and median duration of bleeding and/or spotting episodes were calculated.

Results: Of 3417 participants starting treatment, 3265 were included in the bleeding analysis. Mean reported treatment compliance was ≥99%. Across cycles, 87.2−90.4% of participants reported scheduled bleeding/spotting, with a median duration of 4−5 days/cycle. Unscheduled bleeding/spotting frequency decreased from 27.1% in Cycle 1 to <17.5% from Cycle 5 onwards, with a median duration of 3−4 days/cycle and most episodes (62.7%) were spotting-only. Of 2234 women completing 13 cycles, 754 (34%) reported unscheduled bleeding/spotting in only 1 or 2 cycles and 911 (41%) did not report any unscheduled bleeding/spotting. The most common bleeding adverse events (AEs) considered treatment-related were 'metrorrhagia' (159 [4.7%]) and 'vaginal hemorrhage' (101 [3.0%]). One hundred four (3.0%) participants discontinued for a bleeding-related AE.

Conclusions: Most users of estetrol/drospirenone oral contraceptive experienced a predictable bleeding pattern and limited unscheduled bleeding.

Keywords: estetrol; oral contraceptive; bleeding profile; drospirenone

■ O-GYN-MD-024..

Impact of a 10-Minute Educational Video Prior to Initial Consultation in a Mature Women's Health and Menopause Clinic

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Objectives: Assess acceptability of a 10-minute educational video before menopause clinic consultation and evaluate its impact on knowledge and treatment certainty.

Methods: This was a pre-post intervention study among new patients referred to a menopause clinic with vasomotor symptoms (VMS) in Toronto, Canada. Participants completed electronic questionnaires before and after viewing a 10-minute online video covering menopause facts and VMS treatments. Participants' demographic information and referring provider type were recorded. A 19-item true/false knowledge quiz and validated Decision Conflict Scale (DCS) were administered before and after viewing the video along with a validated Acceptability questionnaire after the video. Demographic information and acceptability were summarized descriptively and independent samples *t*-tests compared knowledge and DCS total and sub-scores before and after viewing the education module.

Results: Seventy-one participants completed pre- and post-intervention questionnaires. Mean age was 51.4 years ± 6.0 years and most were Caucasian (58/71, 81.7%), had a university degree (24/71, 63.3%) and household income > $90,000 (53/71, 74.6%). After the video, there was significant increase in knowledge score (12.7 ± 2.1 vs. 16.9 ± 1.8, $P < 0.001$) and decrease in all DCS scores (total and 5 sub-scores) compared to pre-intervention scores ($P < 0.001$). Acceptability was high with 62/71 (87.3%) respondents indicating the tool was useful. Findings were independent of level of education, household income and referring physician type.

Conclusions: A 10-minute education module on menopause and VMS treatment was acceptable among patients, improved knowledge and decision certainty about VMS treatment.

Keywords: menopause; quality improvement; patient education

■ P-OBS-PS-PhD-116 ....

Primary Cesarean Deliveries of Term Singletons Prior to or in Labour and Risks of Severe Maternal Morbidity: A Comparison of Canadian Tiers of Obstetric Services

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Objectives: To estimate the rates of severe maternal morbidity/mortality associated with primary cesarean sections (PCS) in different tiers of obstetrics services (ToS) in Canada.

Methods: We conducted a retrospective cohort study of pregnant persons who delivered a term singleton by PCS in Canada (excluding Québec) from April 2013 to March 2019. Cesarean-related severe maternal morbidity/mortality (CS-SMM) included obstetric surgery and procedures, evacuation of hematoma with blood transfusion, repair of urethra, bladder or intestine, reclosure of cesarean wound with blood transfusion, sepsis, pulmonary, cardiac or central nervous system complications of anesthesia and maternal death. Standardized morbidity ratios (SMR) were calculated using a multilevel logistic regression model adjusted for maternal age, parity and OCI scores. Outliers were identified by SMR >1.1. PCS were stratified according to the presence/absence of labour indicators.

Results: The rates of CS-SMM among individuals with PCS during labour did not change significantly over the study period, while there was a significant decrease in CS-SMM among individuals with PCS prior to labour (crude $P = 0.01$; adjusted $P = 0.02$). The highest ToS in Alberta and Ontario had outlier rates of SMM for PCS prior to labour, while the highest ToS in British Columbia,

Manitoba and Ontario had outlier rates for PCS during labour. There was no discernable pattern between ToS and rates of CS-SMM.

Conclusions: There are substantial variations between ToS in rates of CS-SMM in the context of PCS. The rates of cesarean-related SMM are not higher in hospitals with lower ToS, both in the context of both PCS prior to labour and during labour.

Keywords: primary cesarean section; severe maternal morbidity; maternal mortality; safety; tiers of services

■ O-OBS/GYN-031 ....

Contraception Patterns Among Immigrant and Non-Immigrant Females in Canada: Findings from a National, Cross-Sectional Survey

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Objectives: To examine associations of immigrant status for females living in Canada with contraception use, methods of contraception, and reasons for not using barrier contraception.

Methods: Cross-sectional data from the 2015–2016 Canadian Community Health Survey was analyzed for 30,947 heterosexual females not trying to conceive or already pregnant (14% identified as immigrants). Self-reported immigration status was the exposure. Poisson regression quantified prevalence ratios (PR) and 95% confidence intervals (CI) for outcomes of contraception use, method of contraception, and reasons for not using barrier contraception. Models adjusted for age, race, education, employment, income, province, drug-coverage, marital-status, and having a regular healthcare provider.

Results: Immigrant females were more likely to report using no contraception (PR: 1.09, 95% CI 1.02–1.16). Among contraception users, immigrant females were more likely to use condoms (PR: 1.29, 95% CI 1.10–1.46) and withdrawal (PR: 2.54, 95% CI 1.73–3.74), and less likely to use OCP (PR: 0.71, 95% CI 0.59–0.86) and IUDs (PR: 1.47, 95% CI 1.08–2.00). For those not using barrier contraception, immigrant women were more likely to explain this due to not liking condoms (PR: 1.64, 95% CI 1.23–2.19), and less likely to explain it due to not having a condom available (PR: 0.57, 95% CI 0.35–0.93) or being in a monogamous relationship (PR: 0.89, 95% CI 0.84–0.94).

Conclusions: Immigrant females are 10% more likely not to use contraception. When using contraception, they rely on condoms and withdrawal more often than non-immigrants. Results from this study identify different contraceptive patterns in immigrant populations and a need for more research investigating accessibility and beliefs that shape immigrant peoples' contraceptive use.

Keywords: contraception; immigration; health survey; epidemiology; sexual health

■ P-OBS/GYN-049 ....

Spin in Randomized Controlled Trials in Obstetrics and Gynaecology: A Systematic Review

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Objectives: The objective of this study was to evaluate the extent, type, and severity of spin, a type of reporting bias, in randomized controlled trials (RCTs) in obstetrics and gynaecology.

Methods: The top 5 highest impact journals in obstetrics and gynaecology were systematically searched for RCTs with non-significant primary outcomes published between January 1, 2019, and December 31, 2020. Study selection and data extraction assessment were conducted independently and in duplicate. The extent, type, and severity of spin were identified and reported with previously established methodology, and risk of bias was assessed with the Cochrane Risk of Bias 2 Tool independently and in duplicate (Boutron et al., JAMA). Fisher exact tests were used to evaluate the association between study characteristics, risk of bias, and spin.

Results: We identified 1475 publications, of which 59 met our inclusion criteria. Articles evaluated interventions in obstetrics (n $=$ 37, 63%) and gynaecology (n $=$ 22, 37%). Spin was not detected in 28 (47%) of articles; 3 (5%) had 1, 10 (17%) had 2, and 18 (31%) had greater than 2 occurrences of spin. Compared with articles where no spin was detected, spin was associated with the Cochrane Risk of Bias domain pertaining to missing data ($P < 0.05$). No association was observed with the journal, funding source, number of authors, types of interventions, and whether the study involved gynaecology or obstetrics.

Conclusions: The occurrence of spin was detected in nearly half of RCTs in obstetrics and gynaecology, highlighting the need for caution in the interpretation of RCT findings.

Keywords: interpretive bias; obstetrics; gynaecology; randomized controlled trials; methodology; reporting

■ P-OBS-JM-034 ....

Assessment of Abnormal Serum Analytes in Low-Risk Patients for the Prevention of Adverse Pregnancy Outcomes

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Objectives: To determine the occurrence rate of adverse pregnancy outcomes in patients with abnormal serum analytes who screen low-risk for trisomy 21 and 18 on first trimester screening for fetal aneuploidy.

Methods: A chart review identified pregnant women who completed first trimester screening in Regina, SK between January 1, 2010 and December 31, 2019. Data was collected for patients who screened low-risk for trisomy 21 and 18, had normal karyotype and/or cell free DNA result and serum analytes matching PAPP-A <0.3 MoM and fßhCG <0.5 MoM or >2.5 MoM. Individual and composite rates of adverse pregnancy outcomes including preterm birth, small for gestational age, preeclampsia and stillbirth were determined, as well as any potential adverse neonatal outcomes.

Results: A total of 103 charts were available and reviewed. Patient's average age was 28.6 ±5.2 years and average BMI was 28.5 ± 7.1. Spontaneous abortion occurred in 23.3% (95% CI 15.1−31.5). Composite adverse pregnancy outcome occurrence was 36.4% (95% CI 25.6−47.1); preterm birth: 18.2% (95% CI 9.6−26.8), small for gestational age: 16.9% (95% CI 8.5−25.3), preeclampsia: 3.9% (95% CI N/A), and stillbirth: 2.6% (95% CI N/A). A composite adverse neonatal rate was 26.6% (95% CI 16.7−36.7).

Conclusions: This study identifies a significant increased risk of individual and composite adverse pregnancy and neonatal outcomes. Appropriate obstetrical care, monitoring and timely delivery is imperative to decrease morbidity and mortality. Initial review of first-trimester aneuploidy screening results may provide an opportunity to identify a low-risk patient at higher risk of adverse pregnancy and/or neonatal outcomes and guide management according to risk.

Keywords: serum analytes; pregnancy outcomes; neonatal outcomes; aneuploidy; morbidity; mortality

■ P-OBS-JM-059 ....

Single-Centre Retrospective Cohort Study of Demographic Characteristics and Perinatal Outcomes in Pregnant Refugee Patients in Toronto, Canada

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Objectives: (1) Describe the pregnant refugee population in Toronto, Canada (2) Identify risk factors associated with adverse pregnancy outcomes (3) Compare the obstetric and perinatal outcomes of this refugee population with the non-refugee pregnant population.

Methods: A retrospective cohort study was conducted of obstetrical refugee patients at a tertiary care hospital in Toronto, Ontario between January, 2013 and January, 2019. Administrative data for patients who met the same criteria and who were not covered under the IFHP were collected as a non-refugee comparator group.

Results: One hundred ninety-six refugee pregnant patients were identified. Most (57%) were from Sub-Saharan Africa. Only 48% were fluent English-speaking, 57% had poor social support, and 42% lived in a shelter. Sixteen percent experienced family violence, which was associated with poor fetal aggregate outcomes ($P = 0.03$). Eighty-seven percent had their first antenatal appointment during their second or third trimester, with later presentation to care associated with delivering large for gestational age infants ($P = 0.043$). On multivariate analysis, advanced maternal age, fewer living children, and hypertension or preeclampsia were risk factors for delivery by emergency Cesarean section ($P < 0.05$). The refugee group had significantly higher rates of preeclampsia, induction of labour, and Cesarean sections than non-refugee patients ($P < 0.05$).

Conclusions: This study found a high prevalence of psychosocial challenges in the pregnant refugee population and identified several risk factors associated with poor perinatal outcomes. Pregnant refugee patients in Toronto had significantly worse perinatal outcomes compared to non-refugee patients. These patients would benefit from domestic violence screening, language-inclusive care, and increased access to first-trimester antenatal care.

Keywords: refugee; prenatal care; quality improvement; social support; pregnancy

■ O-GYN-PE/AD-093 ....

Critical Appraisal of the Content, Quality, and Readability of Online Health Information for Adolescents with Dysmenorrhea

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Objectives: Dysmenorrhea is common in adolescents and has a significant impact on their quality of life. This population uses the Internet as their primary source of health information. We aimed to

critically appraise the content, quality, and readability of online health information on adolescent dysmenorrhea.

Methods: A search was conducted on 3 Canadian search engines using keywords relevant to the disease (dysmenorrhea, period pain, menstrual pain) and population (adolescent, teen, youth). Included websites were patient- or parent-facing and focused on the topic of primary or secondary dysmenorrhea. Two clinical experts assessed website content comprehensiveness and validity. Quality was evaluated using the DISCERN and QUEST validated tools. Reading level was assessed using the Simplified Measure of Gobbledygook.

Results: Seven-hundred websites were screened, and 55 websites were included in analyses. Overall, information on management of dysmenorrhea was accurate, with 46 (83.6%) websites agreeing with current guidelines on treatment. Incorrect information was reported in 42 (76.4%) of the websites. Content on etiology, evaluation of dysmenorrhea, and diagnostic investigations contained the most misinformation. Mean quality tool scores were in the poor-to-fair range and only 4 (7.3%) websites had recognized quality certifications. Fifty-two (94.5%) websites scored above the recommended reading level for patient education materials.

Conclusions: Websites on adolescent dysmenorrhea feature poor-to-fair quality information, advanced reading levels, and variability in comprehensiveness and validity of content. There is an identified need to develop age-appropriate evidence-based resources. Clinicians may consider assessing Internet health information-seeking behaviours and counsel patients about the potential inaccuracies of dysmenorrhea online content.

Keywords: dysmenorrhea; endometriosis; adolescent; eHealth; internet; consumer health information

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■ O-OBS-JM-021 ....

Identification of Latent Safety Threats in an Interprofessional Training Involving On-Site Simulation in a Birthing Unit in Response to the COVID-19 Pandemic

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Objectives: We aimed to detect different types of latent safety threats (LSTs) in the setting of suspected or positive COVID-19 pregnant patients in the Birthing Unit using a training program involving on-site simulations. We hypothesized that providing simulation-based training in the actual care areas would greatly help identify high risk events that could affect staff and patient safety.

Methods: We conducted a prospective observational study between April 15 and May 06 2020 involving 65 interprofessional health care workers (eg. obstetricians, residents, nurses, midwives) over the course of 8 training sessions. Training scenarios involved presentation of suspected COVID-19 patient to the Birthing Unit, donning & doffing with observer and lastly, transportation of a suspected COVID-19 patient to the operating room for non-urgent cesarean section. LSTs were recorded by two facilitators and further subcategorized into themes; Gaps in Knowledge & Training, Maintenance & Equipment and System & Processes. Areas of improvement and proposed solutions were documented after each simulation and post-simulation surveys were sent to participants.

Results: The number of participants involved in on-site simulations was 65. Eighty-one LSTs were observed across all the 3 scenarios

amongst any theme: scenario 1 (n = 42, 51.8%), scenario 2 (n = 14, 17.2%) and scenario 3 (n = 25, 30.9%). Amongst the different themes of LSTs, Gaps in Training & Knowledge comprised (n = 29, 35.8%), Maintenance & Equipment comprised (n = 46, 56.8%) and Systems & Processes comprised (n = 6, 7.4%) of total LSTs. There were 80 Areas of Improvement and Proposed Solutions drawn from these recorded LSTs. Fifty participants completed post-simulation surveys. Pre-simulation surveys revealed only 10% of participants felt very prepared to care for a suspected or positive COVID-19 patient in the birthing unit, while 92% responded in the same way post-simulation.

Conclusions: Pregnant women with suspected or confirmed COVID-19 presenting to birthing units pose numerous infection control issues. Simulation-based exercises may greatly help units prepare by identifying LSTs. Post-simulation surveys further allowed us to see the benefits.

Keywords: COVID-19; simulation; latent safety threats

■ R-OBS-MFM-S-077 ....

Pregnancy, Delivery, and Neonatal Outcomes Among Women with Incarcerated Uterus: A Population-Based Study

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Objectives: Incarcerated uterus (IU) occurs at a rate of 1:3000 pregnancies. Previous studies have focused on risk factors and management options, providing limited information about pregnancy outcomes. We aimed to evaluate the effect of IU on pregnancy, delivery, and neonatal outcomes using a large population-based database.

Methods: Retrospective cohort study using the Healthcare Cost and Utilization Project Nationwide Inpatient Sample from 2004 to 2014. Incarcerated uterus was identified using ICD-9 code 654.3X. Multivariate logistic regression analysis was used to compare maternal and neonatal outcomes among women with IU and women without IU, while adjusting for confounders.

Results: Incarcerated uterus was identified in 370 pregnancies, and 9 096 418 pregnancies were control cases. Compared to controls, women with IU were more likely to be Caucasian, have had a previous cesarean section (CS), have smoked during pregnancy, have thyroid disease, endometriosis, fibroids, pelvic inflammatory disease and adhesion, and an ovarian cyst ($P < 0.05$ all). Women with IU were more likely to have a placenta previa (aOR 3.05, 95% CI 1.26−7.40), deliver by CS (aOR 2.37, 95% CI 1.81−3.10), have a postpartum hemorrhage (aOR 2.79, 95% CI 1.78−4.35), require blood transfusion (aOR 5.23, 95% CI 3.10−8.82). Moreover, they were more likely to have infants with congenital anomalies (aOR 3.96, 95% CI 1.47−10.63). Rates of preeclampsia, preterm birth, and small for gestational age were similar between the 2 groups ($P > 0.05$ all).

Conclusions: Women with IU were more likely to encounter delivery and neonatal adverse outcomes compared to the general population. These findings may help guide prenatal counseling and surveillance.

Keywords: incarcerated uterus; placenta previa; postpartum hemorrhage; blood transfusion; congenital anomalies; pregnancy outcomes

Cardiopulmonary Resuscitation in Term Infants: Trends, Risk Factors, and Outcomes: A Population-Based Study

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Objectives: Cardiopulmonary resuscitation (CPR) can increase the venous pressure within the cerebral vasculature, and may lead to brain injury and death. We aimed to estimate trends, risk factors, and outcomes among term neonates undergoing CPR.

Methods: A retrospective cohort study was conducted using the United States' Healthcare Cost and Utilization Project-Nationwide Inpatient Sample from 2015 to 2018. Term infants without congenital anomalies having undergone CPR were identified using ICD-10 codes. Multivariate logistic regression models, adjusted for confounding, were used to evaluate outcomes.

Results: A total of 2 122 245 term births were included. 1699 term infants received CPR. The death rate was 12.5% and 0.1%, respectively, among infants who had and did not have CPR. There was no association between the type of hospital (rural, urban non-teaching, urban teaching) and death. Infants who died had higher odds of intraventricular hemorrhage (IVH; OR 3.14, 95% CI 1.85−5.35), hypoxic-ischemic encephalopathy (HIE; OR 2.30, 95% CI 1.53−3.44), and sepsis (OR 1.63, 95% CI 1.07−2.47); pulmonary hemorrhage (PH) was the greatest predictor of death (OR 18.32, 95% CI 7.50−44.73). Compared to infants not undergoing CPR, infants who had CPR and survived had higher odds of adverse events: IVH (OR 64.41, 95% CI 48.30−85.90), HIE (OR 128.97, 95% CI 106.35−156.40), sepsis (OR 13.00, 95% CI 10.92−15.47), and PH (OR 57.64, 95% CI 27.03−122.92).

Conclusions: Term infants undergoing CPR have significantly higher mortality rates compared to infants who did not undergo CPR. CPR survivors are at higher risk of neurological sequelae and could benefit from early postnatal neuroprotective interventions.

Keywords: cardiopulmonary resuscitation; term infant; brain injury; population-based; CPR; intraventricular hemorrhage; hypoxic-ischemic encephalopathy; pulmonary hemorrhage

Minimizing Fluid Absorption at time of Hysteroscopy: A Systematic Review and Meta-Analysis

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Objectives: To determine which interventions are effective in reducing fluid absorption at time of hysteroscopy.

Methods: Online databases were searched from inception to June 2021 for observational and randomized-control trials (RCTs) reporting interventions aimed at reducing hysteroscopic fluid absorption. Following PRISMA guidelines, all English-language, full-text articles reporting fluid balance, with an intervention and comparator arm were included. Risk of bias was assessed using the Cochrane Risk of Bias Tool for RCTs and Newcastle-Ottawa Scale for observational studies.

Results: The search identified 785 studies, 25 of which were eligible for inclusion, examining the following interventions: GnRH agonist (GnRH-a), uliprital acetate, vasopressin, danazol, and local, general, and regional anesthesia. Pooled data for pharmacological interventions showed a significant reduction in mean fluid absorption compared to controls (mean −178.3 mL; 95% CI −222.9, −133.8, $P < 0.05$). These results were primarily driven by pre-operative treatment with danazol (−175.7 mL; 95% CI −325.4, −26.0, $P < 0.05$) and GnRH-a (−162.0 mL; 95% CI −198.0, −127.3, $P < 0.05$). Uliprital acetate and type of anesthesia showed no difference. Data on type of anesthesia and vasopressin use were not amenable to meta-analysis, however 3 studies favoured vasopressin over control regarding fluid absorption. Mean operative time was reduced following pre-operative treatment with uliprital acetate (−8 min; 95% CI −11.6, −4.4, $P < 0.05$), danazol (−7.5 min; 95% CI −8.7, −6.3, $P < 0.05$), and GnRH agonist (−3.7 min; 95% CI −5.8, −1.5, $P < 0.05$).

Conclusions: Pre-operative treatment with GnRH-a and danazol was effective in reducing fluid absorption and operative time during hysteroscopic procedure.

Keywords: hysteroscopy; fluid balance; glycine

Peripartum Outcomes Following COVID-19 Vaccination in Late Pregnancy: Findings from a Population-Based Retrospective Cohort Study in Ontario, Canada

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Objectives: Evaluate peripartum outcomes following COVID-19 vaccination during pregnancy.

Methods: Ontario population-based retrospective cohort between December 14, 2020 and September 30, 2021 using linkage of provincial birth registry and COVID-19 immunization databases. Poisson regression was used to generate risk ratios (RR) and 95% confidence intervals (CI), adjusted for temporal, socio-demographic, and clinical factors using propensity scores. Obstetric (postpartum hemorrhage, chorioamnionitis, cesarean birth) and newborn (NICU admission and 5-minute Apgar<7) outcomes were compared for those who received ≥1 dose of COVID-19 vaccine during pregnancy with 2 unexposed groups—Group 1: individuals vaccinated postpartum, Group 2: never vaccinated.

Results: Among 97 590 individuals, 22 660 (23%) received ≥1 dose of vaccine during pregnancy (64% received dose 1 in 3rd trimester). Compared with those vaccinated postpartum, we found no increased risks of postpartum hemorrhage (aRR 0.91, 95% CI 0.82−1.02); chorioamnionitis (aRR 0.92, 95% CI 0.70−1.21); or cesarean (aRR 0.92, 95% CI 0.89−0.95) following COVID-19 vaccination, nor any increased risk of NICU admission or 5-minute Apgar <7. All findings were similar when compared with individuals who did not receive COVID-19 vaccination at any point. We did not observe any difference according to vaccine product, number of doses received during pregnancy, or trimester of dose 1.

Conclusions: As of late 2021, there is limited evidence from comparative studies in large populations on outcomes following COVID-19 vaccination during pregnancy. Our study of births up to

September 30, 2021 did not identify any increased adverse peripartum outcomes associated with later pregnancy COVID-19 vaccination. Once more individuals vaccinated earlier in pregnancy deliver, we will report on other important obstetric and perinatal outcomes.

Keywords: COVID-19 vaccine; pregnancy; epidemiology

■ O-OBS/GYN-083 ....

Attention Deficit Hyperactivity Disorder in Children Born to Patients with Infertility: A Population-Based Cohort Study

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Objectives: Long-term neurodevelopmental outcomes in children conceived to mothers requiring infertility treatment are unknown. We investigated the association between infertility, infertility treatment, and risk of childhood attention deficit disorder (ADHD).

Methods: This population-based cohort study included infants born at $\geq$ 24 weeks' gestation across all of Ontario, 2006–2014. The study exposure was conception type: i) unassisted conception (referent), ii) subfertility (an infertility consult < 2 years prior to conception without subsequent infertility treatment), iii) ovulation induction or intrauterine insemination (OI/IUI), and iv) in vitro fertilization or intracytoplasmic sperm injection (IVF/ICSI). Cox proportional-hazards models generated hazard ratios (HR) for the association between each exposure category and the risk of ADHD diagnosed at age 6 years or later, adjusting for maternal demographics, substance use, and pre-existing conditions including mental illness.

Results: 922 383 children were born to 661 072 mothers: 87.0% following unassisted conception; 10.2% with subfertility, 1.3% OI/IUI, and 1.5% IVF/ICSI. Starting at age 6 years, children were followed for a median of 4 years (IQR 2–6) thereafter. Relative to the offspring in the unassisted conception group (5.9%), the risk of ADHD was highest in the subfertility group (6.1% – an adjusted HR of 1.16 [95% CI 1.13–1.19]). OI/IUI was not associated with ADHD (5.5%; HR 1.07 [95% CI 0.99–1.17]), or IVF/ICSI (4.5%; HR 0.99 [95% CI 0.91–1.08]).

Conclusions: In the absence of receiving infertility treatment, maternal subfertility alone may be an unrealized risk factor for ADHD in the offspring. The reason for why this is so warrants further study.

Keywords: ADHD; infertility treatment; subfertility; IVF; pregnancy

■ P-GYN-JM-087..

Mobile HEALTH Tool to Support People Experiencing Early Pregnancy Loss (MHEALTH-EPL)

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Objectives: Early pregnancy loss (EPL) occurs in 1 in 4 clinically recognized pregnancies. Despite the staggering frequency, people who experience EPL often do not receive patient-centred supportive care. This study aims to determine if a mobile health (mHealth) tool is feasible and acceptable to support care during and/or after EPL by: 1) understanding the experiences of people who miscarry, 2) how they access health information, and 3) determine their preferences in content and design of a mHealth tool.

Methods: This is a mixed-methods study. Individuals (aged 18–45 y) residing in Canada who self-reported to have experienced EPL up to 12^6 weeks gestation in the preceding 2 years of the study were recruited using social media and hospital posters. Eligible participants completed an online survey and optional follow-up interview. Preliminary survey responses were analyzed using descriptive statistics. Qualitative interviews will be analyzed with NVivo using thematic analysis. Local ethics approval was obtained.

Results: Preliminary results from 144 survey respondents revealed that 28% are somewhat or very dissatisfied with the overall healthcare they received for their miscarriage. 41% are somewhat or very dissatisfied with how their mental/emotional health was addressed by their provider. 80% support the idea of a mHealth tool to assist in follow-up care after EPL.

Conclusions: Initial findings support existing research that many individuals are dissatisfied with their care following EPL. The vast majority are interested in a mHealth tool to better support their care. These findings will assist in the development and testing of the desired mHealth tool.

Keywords: early pregnancy loss; miscarriage; mobile health; digital health; pregnancy support; user-centred design

■ W-OBS/GYN-EDU-079 ....

Learning to Lead: An Exploration of Leadership Development in Obstetrics and Gynaecology

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Objectives: Physicians' leadership skills are essential to their ability to achieve high quality patient care and establish well-functioning, cost-effective healthcare systems. Research shows that effective physician leadership can improve clinical outcomes, including decreasing mortality rates and length of hospital stay. Despite its clear value, leadership training in residency and beyond is predominantly informal, and there is limited research regarding how leadership skills develop from training into independent practice. A recent United States survey of obstetrics & gynaecology faculty and trainees identified that 77% of faculty and 88% of trainees felt there was a need for formal leadership training, and only 45% were satisfied with their leadership skills (Ellington et al., 2019). Our study aims to describe physician leadership development in obstetrics & gynaecology in Canada for the first time, with the ultimate goal of learning ways to improve leadership training in residency and beyond.

Methods: In this mixed-methods study, we will administer a national survey using RedCap to obstetrics and gynaecology residents, fellows, and staff, and conduct a smaller number of interviews to research the current perceptions and experiences of leadership in obstetrics and gynaecology from residency through to independent practice. The survey and interview guide contain groups of questions that capture respondents' leadership backgrounds including skill level and previous training, exposure to leadership curricula, aims for future leadership training, and desired ways to improve leadership training in the future. We will also investigate barriers to and facilitators of effective leadership training.

Results: This is a work-in-progress study with ethics approval.

Conclusions: N/A

Keywords: obstetrics; gynaecology; education, medical; education, continuing; leadership; residency

Pertussis Vaccination in Canadian Pregnant Women, 2018-2019

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Objectives: This study was undertaken to measure the uptake of pertussis vaccination during pregnancy in Canada and to identify sociodemographic factors associated with non-vaccination.

Methods: We analyzed data from the Survey of Vaccination during Pregnancy conducted by the Public Health Agency of Canada and Statistics Canada, in which 5091 biological mothers of children born between September 2, 2018 and March 1, 2019 were interviewed about pertussis vaccination during their pregnancy.

Results: Among 4607 mothers who recalled whether they had been vaccinated for pertussis, 43% had been vaccinated and 57% had not. The main reason given by mothers for not having been vaccinated was not being aware that pertussis vaccination was recommended. Factors independently associated with non-vaccination were: being born outside Canada, lower household income, living in a province or territory where pertussis vaccination was not provided free of charge, having had previous live births and having received maternity care from a midwife.

Conclusions: Significant socioeconomic inequalities were observed for the uptake of pertussis vaccination during pregnancy. There is a need to increase awareness of public health recommendations on pertussis vaccination during pregnancy.

Keywords: pertussis; vaccination; socioeconomic factors; pregnancy, Canada

Introduction of a Postpartum Contraception Decision Aid: Prospective Pre- and Post-Intervention Study

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Objectives: Develop a postpartum contraception decision aid and evaluate its acceptability and impact on postpartum contraception choices when distributed antenatally at a tertiary care hospital.

Methods: This was a prospective pre- and post-intervention study of postpartum patients in 2 obstetrical practices. During baseline (January−February, 2021) and intervention phases (March−April, 2021), patients' contraceptive choices were recorded at the start and end of their postpartum visit. Intervention phase participants had received a novel contraception decision tool at 36 weeks' gestation. Baseline participants were asked whether a hypothetical decision tool would have been helpful in making contraceptive choices, while intervention phase participants completed a validated acceptability questionnaire regarding the previously distributed tool. Data were analyzed using the Wilcoxon rank-sum test for continuous variables and Fisher exact test for categorical data.

Results: Baseline and intervention phases had 63 and 53 participants, respectively, whose demographics were similar, with difference in parity. Compared to baseline participants, intervention participants were less likely to be undecided at both the start (13/53 [24.5%] vs. 35/63 [55.6%], $P = 0.001$) and the conclusion (4/53 [7.5%] vs.

16/63 [25.4%], $P = 0.01$) of their postpartum visit. Of those who had chosen postpartum contraception by the start of their postpartum appointment, fewer people in the intervention phase changed their choice compared to baseline phase (2/40 [5%] vs. 6/28 [21.4%], $P = 0.06$). Most baseline respondents would have found a decision tool helpful (48/63 [76.2%]) and most intervention participants found the tool helpful (48/53 [85.7%]).

Conclusions: Our decision aid was acceptable to patients and decreased rate of contraception indecision among postpartum people.

Keywords: postpartum; contraception; quality improvement; decision aid

TXA Use in the Postpartum Period Since the WOMAN Trial

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Objectives: To analyze the use of tranexamic acid (TXA) in postpartum patients since the WOMAN trial.

Methods: A retrospective chart review was conducted from May 2017 to March 2020 at a tertiary care centre to identify all patients who received TXA for postpartum bleeding. The primary outcome was to identify the proportion of patients who received TXA as per WHO guidelines created using results of the WOMAN trial.

Results: 231 patients were included. TXA use increased over time with 18 in 2017, 51 in 2018 and 134 in 2019. 203 (87.9%) patients received TXA within recommended guidelines, were less likely to require surgery/interventional radiology (12.3% vs. 42.9%, $P < 0.001$), blood transfusion (23.6% vs. 42.9%, $P = 0.030$) and had a lower likelihood of overall adverse events (LR 1.62 (1.6) vs. 2.60 (2.0), $P = 0.024$). TXA was commonly used as the first line agent for postpartum bleeding (48.9% patients), often at cesarean section (77.0%) and when estimated blood loss did not meet criteria for "true" postpartum hemorrhage (41.6% patients). Use of TXA as the first medication was associated with less overall adverse outcomes than misoprostol ($P = 0.035$). A shorter time to administration of the first medication was associated with shorter postpartum admission time ($P = 0.042$).

Conclusions: The majority of patients received TXA within guidelines and had reduced adverse outcomes. Further study is needed to identify the best order of TXA use with additional uterotonics and whether TXA should be used prophylactically in some groups for postpartum bleeding.

Keywords: tranexamic acid; postpartum hemorrhage

Diagnostic Error in Surgery: Analysis of a Comprehensive National Database of Closed Medicolegal Cases

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Objectives: We sought to describe the characteristics of diagnostic error and its impact on patient harm in surgical settings.

Methods: A retrospective analysis of closed medicolegal cases from 2014 to 2018 at the Canadian Medical Protective Association (CMPA).

Results: We identified 387 surgical cases involving diagnostic error. The most common specialties involved were general surgery (37.8% of cases), obstetrics and gynaecology (16.2%), orthopedic surgery (11.9%), urology (9.7%), and plastic surgery (7.0%). Errors were classified as diagnoses that were missed (54.4% of cases), delayed (34.1%), and wrong (17.6%). One-third of cases occurred in the pre-operative phase, with errors most commonly involving neoplasms. Cases occurring in the intra-operative phase made up 31.0% of cases, with errors involving lack of injury recognition during surgery. Almost 45% of cases occurred in the post-operative phase, with errors involving delayed identification of complications related to surgical injury, including failure to recognize subsequent clinical deterioration. cases), health care team (50.3%), and system (11.9%). At the provider level (82.1% of cases), deficiencies in clinical decision making, failure to follow-up on complications, and loss of situational awareness were the most common contributing factors. At the health care team level (50.3%of cases), communication breakdown and documentation issues were the most common contributing factors. At the system level (11.9% of cases), resource issues, protocol, policy, and procedure issues, and office issues were the most common contributing factors.

Conclusions: Diagnostic error involves most surgical disciplines and occurs across all phases of surgical care. Additional research is needed to characterize epidemiology and explore potential solutions specific to surgical disciplines.

Keywords: diagnostic error; surgery

■ O-OBS-JM-140 ....

Optimal Plan for Delivery in Women with Obesity: A Large Population-Based Retrospective Study Using the Better Outcomes Registry and Network (BORN) Database

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Objectives: To discern the optimal plan for delivery in nulliparous women with obesity at term gestation.

Methods: This study included 27 472 nulliparous women with obesity (BMI >30) with a live, singleton, uncomplicated term gestation ($37^0−41^6$ weeks) between April 1st, 2012 and March 31st, 2019 at all maternity hospitals in Ontario, Canada. Women were divided by plan for delivery (expectant management, induction of labour and no-labour cesarean section). The Adverse Outcome Index (AOI) was our primary outcome. It is a binary composite outcome of 10 maternal and neonatal adverse events. The Weighted Adverse Outcome Score (WAOS) was used as a secondary outcome. It is a continuous variable which sums a weighted score, based on severity, of each adverse event included in the AOI. Analyses were conducted using multivariable regression models. Analyses were stratified by each week of gestational age and by obesity class.

Results: No-labour cesarean section reduced the risk of adverse delivery outcome by 41% (aRR 0.59, 95% CI 0.50, 0.70) compared to expectant management at term gestation. There was no statistically significant difference in adverse birth outcomes when comparing induction of labour to expectant management (aRR 1.03, 95% CI 0.96, 1.10). The greatest benefit to no-labour cesarean section was observed in the reduction of adverse neonatal events (aRR 0.70, 95% CI 0.57, 0.87) particularly at 39 weeks gestation.

Conclusions: In women with obesity, no-labour cesarean section reduces overall adverse birth outcomes.

Keywords: plan for delivery; induction of labour; cesarean section; obesity

■ P-GYN-JM-141 ....

Standard Versus Extended Neoadjuvant Chemotherapy: A Canadian Tertiary Centre Cohort Study of Ovarian Cancer Care Amidst the COVID-19 Pandemic

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Objectives: To compare treatment response in patients with ovarian cancers treated with extended neoadjuvant chemotherapy compared to standard chemotherapy, a strategy adopted during the COVID-19 operating room closures.

Methods: This retrospective cohort study included patients with ovarian cancers treated with neoadjuvant chemotherapy before interval debulking surgery at a Canadian tertiary care centre during the COVID-19 pandemic. Patients with extended neoadjuvant chemotherapy consisting of 6 cycles of chemotherapy prior to surgery were compared to patients receiving the standard 3 cycles of neoadjuvant chemotherapy followed by 3 cycles after surgery. The primary outcome was disease response to treatment measured by percent change in the biomarker CA-125. Secondary outcomes were disease extent at time of surgery, chemotherapy response scores, perioperative morbidity, and chemotherapy adverse events. Binary outcomes were ascertained by chi-square or Fischer exact tests and continuous outcomes were obtained by the Wilcoxon-rank sum test.

Results: A total of 9 patients received extended neoadjuvant chemotherapy and 18 patients received standard chemotherapy. Percent change in CA-125 levels between cycles 0−3 were similar between the extended neoadjuvant cohort (median 88.0%, IQR 52.4, 92.1) and the standard chemotherapy cohort (median 91.7%, IQR 79.8, 96.2), $P = 0.38$. The 6-cycle group had statistically significant less change in CA-125 between cycles 3−6 (median 31.9%, IQR 25.0, 46.7) compared to the standard group (median 90.7, IQR 76.9, 95.3), $P = 0.001$. The extent of disease at the time of surgery, chemotherapy response scores, perioperative outcomes and chemotherapy adverse events were similar between groups.

Conclusions: Biochemical disease response to neoadjuvant chemotherapy slows after 3 cycles of chemotherapy.

Keywords: ovarian cancer; neoadjuvant chemotherapy; disease response; CA-125; COVID-19

■ P-OBS-PE/AD-Masters-149 ....

National Sudden Infant Death Syndrome Trends in the United States: 2000-2019

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Objectives: The study objective was to examine recent trends in sudden infant death syndrome (SIDS) in the United States, both over time and by sex and race.

Methods: A population-based cohort study was conducted on 80 710 348 live births using data from the Centers for Disease Control and

Prevention's "Birth Data" and "Mortality Multiple Cause" data files from 2000 to 2019. Incidence rates of SIDS per 10,000 livebirths were calculated across genders and racial groups over the 20-year period. Logistic regression models estimated the effects of gender and race on the risk of SIDS and examined the temporal changes in risk across gender and race over the study period.

Results: 39 591 SIDS cases occurred over the 20-year study period, for an overall incidence of 4.9/10 000 births. The incidence decreased from 6.3 to 3.4/10 000 births over the study period. Male infants, compared to females, were at greater risk of SIDS (OR 1.36, 95% CI 1.33−1.39) as were Black (2.25, 2.20−2.30) and American Indian infants (2.21, 2.06−2.37), compared with White infants. Although temporal trends decreased over time throughout the study period for all subsets, the 20-year decline in rates was not as large among Black and American Indian infants.

Conclusions: Between 2000 and 2019, the incidence of SIDS in the US declined, overall and by gender and race. However, the incidence is still significantly higher among male, Black, and American Indian infants. Novel campaigns to reduce the risk of SIDS should be implemented and should especially target mothers of Black and American Indian infants.

Keywords: sudden infant death syndrome; Infant death; race

■ O-GYN-ONCOL-MD-047 ....

Predictive Value of Perioperative CA-125 and Ultrasound in Early Ovarian and Fallopian Tube Cancers

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Objectives: Hereditary ovarian cancer syndromes confer an elevated risk of high grade serous carcinoma (HGSC) up to 40-times population risk. Evidence based screening techniques remain elusive, but many patients are still offered CA-125 and pelvic ultrasounds for reassurance. This paper seeks to confirm that even among highest risk women, CA-125 and ultrasound are neither predictive of early serous carcinoma, nor should a negative test result be considered reassuring.

Methods: A retrospective chart review was performed on all _BRCA1/2_ pathologic-mutation carriers with preinvasive lesions or HGSC histologically diagnosed after preventive surgery. Preoperative CA-125 and ultrasound results within 4 months of surgery were evaluated qualitatively where CA-125 above 35 and any sonographic findings describing potential malignancy or complex mass were considered abnormal.

Results: Over 526 cases, twenty serous tubal intraepithelial lesion/carcinoma (STIL/STIC) and HGSC of the fallopian tube or ovary were identified on final pathology. All CA-125 results but 1 were normal (<35). In the case where CA-125 was 38, diffuse endometriosis was reported in the operative report. No sonographic findings were predictive of the associated pathology. In 1 result a small complex ovarian mass was found, but only STIC was identified; ovarian pathology was negative for malignancy. Negative likelihood ratio of CA-125/ultrasound respectively was 1.89/1.02.

Conclusions: CA-125 and pelvic ultrasound are commonly offered to women at high and/or average risk of HGSC. Our results indicate that these practices are inaccurate in identifying early stage disease in women with HGSC.

Keywords: BRCA; STIC; high-grade serous carcinoma; screening

■ P-OBS-EDU-PhD-135 ....

SmartMom: Teaching by Texting

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Objectives: Prevalence studies of depression in pregnancy have reported rates of 6%−12% and for fear of childbirth 10%−30%. As present most prenatal care visits with providers are conducted on line. Women are currently at increased risk for missed diagnosis of mental health concerns and for reduced access to treatment. Our objective was to develop and evaluate a mobile health innovation to educate expectant parents about self-care and healthy choices in pregnancy.

Methods: We have created "SmartMom," Canada's first prenatal education program delivered by SMS text messaging. Women receive 3 evidence-based messages each week about mental health, prenatal screening, and a variety of other topics. Messages are timed to be salient to gestational age and contain links to online information and resources. Women completed the Fear of Childbirth Scale, and the Edinburgh Postnatal Depression Scale (EPDS) and a knowledge test. We compared responses at enrollment to those at 38 weeks using paired _t_-tests.

Results: Among 500 participants, scores improved 8% on average, $P < 0.001$, on the knowledge test during the period of enrollment on SmartMom. We observed statistically significant decreases on the Fear of Childbirth scale (29.4 + 7.4 to 27.6 + 7.6), $P < 0.001$. Scores on the EPDS decreased on average from 6.8 + 4.5 to 5.8 + 4.5), $P < 0.001$.

Conclusions: With 99% of the Canadian population within cellular coverage, a texting program is an effective means of reaching pregnant women. SmartMom has the potential to improve health literacy and decrease fear of childbirth and prenatal depression among parturient women.

Keywords: prenatal education; pregnancy; depression; health literacy; fear of childbirth; mobile health; texting; evaluation, cohort

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■ O-OBS-PhD-110 ....

Regionalized Perinatal Care in Canada: Can Small Hospitals Safely Deliver Women with a Previous Cesarean Delivery?

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Objectives: Despite recognition regarding the need to balance medical and social risk, there is little evidence in the literature regarding the appropriate delivery hospital for women with a previous cesarean delivery (PCD). We compared severe maternal morbidity/mortality (SMM) and serious neonatal morbidity/mortality (NMM) among deliveries to women with a PCD by hospital in Canada.

Methods: The study was based on all term, singleton, hospital deliveries to women with a PCD in Canada (excluding Québec) between April 2013 and March 2019, with data obtained from the Canadian Institute for Health Information. SMM included severe hemorrhage, surgical complications, severe uterine rupture, etc., while NMM included assisted ventilation, seizures and neonatal death. Outlier hospitals with significantly higher rates of SMM/NMM were identified through within-tier analyses, and multilevel models for comparing stabilized and adjusted hospital rates with the national/reference rate.

Results: The study included 278 hospitals and 235 442 women with a PCD; overall SMM and NMM rates were 14.6/1000 deliveries and 4.6/1000 livebirths, respectively. Within-tier analyses identified 24 hospitals as outliers with regard to SMM rates and 14 hospitals with regard to NMM rates. Comparisons with the national/reference rate identified these same hospitals as outliers, and also identified other hospitals with significantly higher rates. There was no pattern in SMM and NMM rates by hospital size/tier of obstetric service.

Conclusions: Most hospitals, irrespective of size/tier of obstetric service, can safely deliver women with a previous cesarean delivery. Hospitals with high complication rates would benefit from measures to improve maternal and newborn safety.

Keywords: previous cesarean delivery; severe maternal morbidity; serious neonatal morbidity; neonatal mortality; hospital; tier of service; safety

■ O-OBS-MD-099 ....

Reducing Routine Post-Operative Day 1 CBC Ordering for Low-risk Elective Cesarean Sections

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Objectives: Routine post-operative hemoglobin (Hb) measurement after uncomplicated, elective cesarean-section (CS) is a practice that varies between hospitals. There is no evidence to recommend routine CBC ordering after CS. At Sunnybrook, 98% of elective CS have routine post-operative day 1 (POD1) CBC, but only 10% will have anemia-related intervention (PO/IV iron or blood transfusion). We aim to reduce routine POD1 CBC ordering for elective, uncomplicated CS in low-risk patients from 98% to 50% in April 2021 and maintain a reduction in July 2021.

Methods: Our intervention included establishing criteria for CBC ordering: pre-operative Hb $\leq$100 g/L, operative blood loss $\geq$1000 mL, peri-operative anticoagulation, maternal bleeding disorder, additional major surgical intervention/complication. Reminders were attached to order sets and the initiative was reviewed with all Labour and Delivery staff. Our primary outcome was the rate of routine CBC draw on POD1. Charts were monitored for 2 weeks post-operatively for anemia-related visits. Rates of anemia-related intervention were recorded.

Results: One hundred twenty-eight elective CS were done in April and July 2021. Thirty-four had an indication for CBC and excluded. Of the 94 included, 13/45 (29%) in April and 8/49 (16%) in July had a routine POD1 CBC. The lowest post-operative Hb was 92 g/L and none received anemia-related intervention. Seventy-one patients (76%) had no CBC done: 1 patient had anemia symptoms and CBC was drawn. None presented within 2 weeks after discharge with anemia symptoms.

Conclusions: Routine ordering of CBC after elective CS can be effectively reduced without impact on patient safety.

Keywords: cesarean section; hemoglobin

■ P-OBS-JM-122 ....

Evaluating the Impact of a Teaching Video on Knowledge of Induction of Labour Among Medical Students in Clerkship: A Pilot Project in Undergraduate Obstetrics Education

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Objectives: To assess the impact of a teaching video (available at: https://pie.med.utoronto.ca/TVASurg/project/ioltechniques/) on medical students' knowledge of the induction of labour process.

Methods: An educational teaching video on induction of labour was developed by obstetricians and biomedical communication specialists. Medical students were recruited, during their obstetrics and gynaecology clerkship rotation, between October 2019 and October 2021. A pre- and post- intervention study design was employed to assess knowledge related to induction of labour. The pre-intervention group responded to a questionnaire after participating in a typical clerkship rotation at an academic centre. The post-intervention group responded to the same questionnaire after watching the teaching video at least once during their clerkship rotation.

Results: A total of 73 students participated in the study (pre-intervention group: 35/47 and post-intervention group: 38/51). Independent sample *t*-test was used to compare test scores between the pre- and post- intervention groups. Covariates were controlled for by using multiple regression analysis. Participants in the post-intervention group had significantly higher knowledge scores (M = 6.42, SD = 1.73) compared to participants in the pre-intervention group (M = 4.86, SD = 1.50). This corresponded to a difference in knowledge score of 1.56 units between the 2 groups ($P < 0.001$).

Conclusions: Educational videos are effective tools for teaching medical students obstetrical concepts. Videos can standardize learning and improve medical students' knowledge during obstetrics and gynaecology rotations.

Keywords: education; Induction; teaching; videos; clerkship

■ O-OBS-PE/AD-S-081 ....

The Effect of the COVID-19 Pandemic on Monthly Trends in Adolescent Conception in Kingston, Ontario

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Objectives: Knowledge of trends in adolescent conception rates can aid in delivery of targeted contraceptive and prenatal resources. Conception rates during the COVID-19 pandemic years (2020−2021) are compared to pre-pandemic years (2016−2019) in Kingston, ON.

Methods: Patients aged $\leq$19 at estimated date of conception between 2016−2021 who were seen for a pregnancy related visit at Kingston Health Sciences Centre were included. Pregnancies that ended <20 weeks gestational age (GA) were captured using ICD-10 procedure codes for pregnancy loss or termination. Data for births that occurred $\geq$20 weeks GA were obtained from the BORN database. Month and year of conception were calculated using chart review based on diagnostic imaging reports or provider estimates of GA.

Results: To date, 728 adolescent conceptions have been captured between January 1st, 2016, and July 31st, 2020, with 53.7% of these pregnancies ending <20 weeks GA. Overall, there has been a decline in adolescent conception rates between January 2016−April 2020 (test for trend $P < 0.001$). Contrary to published trends of peak adolescent conceptions in March 2004−2008, mean conceptions were highest in January (mean 13.5 ± 2.4) during 2016−2019.

Conclusions: Conception rates in Kingston's adolescent population are decreasing. Further, current monthly conception rates differ from previously established trends and provide opportunity to deliver targeted contraceptive and prenatal resources. Data collection will

continue until September 2022 and will be correlated with governmental COVID-19 lockdowns to determine if conception rates were affected by public health measures during the pandemic.

Keywords: adolescent conception; Kingston, Ontario; COVID-19; trends

■ P-OBS-JM-102 ....

Task Shifting Cesarean Sections in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis

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Objectives: Cesarean section (CS) is the most commonly performed operation worldwide, however providing timely and safe access remains a significant challenge in low and middle-income countries (LMIC). This systematic review investigates maternal and perinatal outcomes of CS performed by non-physician clinicians (NPCs) versus physicians in LMIC.

Methods: A comprehensive search of online databases from inception to August 2021 was performed for observational and randomized controlled trials reporting on maternal or perinatal mortality and morbidity of CS performed by NPCs with or without comparators. Screening and analysis was performed following PRISMA guidelines.

Results: The initial search yielded a total of 694 articles, which led to a final 11 studies (27,329 CS total) all originating from 7 African countries eligible for inclusion. Eleven studies included a physician cohort for comparison. There was no significant difference in maternal mortality for CS performed by NPCs versus physicians (OR 0.69, 95% CI 0.24−1.97, $I^2 = 88\%$, $P = 0.47$, 7 studies, 18 395). One study found increased wound disruption with NPCs (OR 2.2, 95% CI 1.3−3.9) and another increased readmission to hospital in the NPC-cohort, without other sequelae (OR 2.17, 95% CI 1.08−4.42). Perinatal outcomes were overall similar between the 2 groups, however 1 study reported significantly lower stillbirth rates in the NPC-group (62/487 vs. 146/889, OR 0.74, 95% CI 0.56−0.98).

Conclusions: NPCs have comparable maternal and neonatal outcomes for CS compared to standard providers; task-shifting to NPCs has the potential to significantly improve access to timely, safe delivery by CS in LMIC.

Keywords: cesarean section; task-shifting; clinical officer; low-income country; middle income country; maternal mortality; maternal morbidity; perinatal mortality

■ W-OBS-MD-073 ....

Development and Validation of the Family Medicine Obstetrics Assessment Tool

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Objectives: Timely and informative assessments during postgraduate family medicine identify gaps and strengths for residents, and help programs in identifying residents in difficulty. In our program, family medicine obstetrics (FMOB) clinical teachers faced challenges accurately assessing residents using existing tools. In this study, 1) we describe the evidence-guided process taken to develop a context-specific workplace-based assessment (WBA) tool, and 2) outline plans to collect validity evidence during the pilot.

Methods: Multimethod. FMOB assessment tool containing domain-specific language and explicit expectations regarding expected competency of learners, designed through a modified consensus development panel methodology. Subjects: FMOB clinical teachers (n = 30). Evidence collected along facets of Messick's unified concept of validity as follows: 1) content: comparison with similar tools, debriefs with teachers and learners; 2) substantive: analysis of the consistency in how teachers used the tool; 3) generalizability: analysis of assessment information from multiple settings and teachers; 4) consequential: timeliness of assessment completion, amount of written commentary provided, and anonymous surveys with residents and teachers to identify benefits and challenges of the tool.

Results: The tool development process resulted in a useful WBA that meets teachers' stated needs. Preliminary data shows evidence for content and substantive validity.

Conclusions: Following a defined process for design of a context-specific WBA tool for FMOB resulted in a user-friendly tool that answered a need for teachers in a specific context. Preliminary validity evidence indicates that the WBA tool is working well, which suggests that the design process could be applied in other clinical contexts to meet teacher needs.

Keywords: assessment; obstetrics; faculty development

■ V-OBS/GYN-UROGYN-152 ....

The Intra-Operative Crede Maneuver to Detect Latent Stress Urinary Incontinence—Technique and Outcomes

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Video abstract summary: Women undergoing prolapse repair can develop de novo stress urinary incontinence (SUI) postoperatively. We describe the intraoperative Crede maneuver to detect latent SUI (unmasking incontinence when prolapse reduced). After the prolapse repair is completed, the bladder is filled with 300 mL of sterile water. The surgeon applies brief forceful pressure suprapubically with 4 fingers. The test is positive if brisk leakage is observed. We use the Crede maneuver to determine need for concomitant mid-urethral sling (MUS) placement at the time of prolapse repair. We performed a retrospective chart review of women without preoperative SUI who underwent prolapse repair and the Crede maneuver between January 2012 and June 2019. Seventy-seven women were included. Crede was negative in 52 (67.5%) women, and positive in 25 (32.5%) (MUS placed in 21 women). Rate of postoperative de novo SUI (symptoms or retreatment) at 1.9 years was 19.0% when the Crede maneuver was used to determine MUS placement.

■ O-GYN-JM-069 ....

A Cost-Effectiveness Analysis of the Etonogestrel Implant in British Columbia, Canada

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Objectives: We aim to explore the cost-effectiveness of the etonogestrel implant compared to other contraceptive options to prevent unintended pregnancy (UIP) in British Columbia (BC).

Methods: A Markov analytic decision model was developed to determine the costs and outcomes of contraceptive care of the implant compared to other contraceptive options available in BC. A systematic literature review was performed to inform the model parameters including method-specific prevalence, continuation, discontinuation and failure rates. BC-specific costs were included. A hypothetical willingness-to-pay (WTP) threshold was calculated by using the weighted average of the costs associated with each pregnancy outcome in BC. Deterministic and probabilistic sensitivity analyses with a Monte Carlo simulation were conducted to evaluate the uncertainty in the model. The perspective of the Government of British Columbia as single-payer of the publicly funded health care system was employed. A cycle length of 12 months with a time horizon of 5 years were used.

Results: Among 1000 biological females, the model estimated direct medical costs to be CAD $813 258 with 107 UIP by the implant. At a WTP threshold of 5362 CAD/UIP averted, the implant had a 70% probability of being cost-effective compared to the intrauterine device with progestogen, and a greater than 99% probability of being cost-effective compared to the copper intrauterine device, the medroxyprogesterone acetate injection and the combined hormonal contraceptive pill.

Conclusions: The etonogestrel implant is the most cost-effective strategy to prevent unintended pregnancy in British Columbia and should be considered for inclusion in the provincial publicly funded PharmaCare Formulary.

Keywords: economic evaluation; contraception; etonogestrel implant

■ O-OBS-JM-072 ....

Oxytocin Use in Trial of Labour After Cesarean Section in a Canadian Tertiary Hospital: A Retrospective Cohort Analysis

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Objectives: Induction of labour and oxytocin use have been associated with an increased risk of uterine rupture (UR) in patients undergoing trial of labour after cesarean (TOLAC). We aimed to quantify the risk of UR among a Canadian cohort of patients undergoing TOLAC.

Methods: A retrospective cohort analysis in a tertiary centre in British Columbia was performed between April 2017 and March 2019. Inclusion criteria were prior cesarean and term cephalic singleton pregnancy. Patients were divided into 2 groups: induction or augmentation of labour and further stratified by oxytocin use. The risk of UR and other maternal and neonatal adverse events were compared and odds ratios calculated with 95% CIs.

Results: 234 pregnancies met inclusion criteria. Overall, the rate of vaginal birth after cesarean (VBAC) and UR was 74% and 0.85% respectively. The spontaneous labour group had an increased chance of successful VBAC (OR 1.26; 95% CI 0.79−1.99) and decreased chance of UR (OR 0.28; 95% CI 0.02−4.58) compared to the induction of labour group. The chance of VBAC with oxytocin use was decreased compared to no oxytocin (OR 0.55; 95% CI 0.30−0.99). A total of 2 UR were documented, both with oxytocin use. There was no statistically significant difference in maternal and neonatal adverse outcomes in those that received oxytocin versus no oxytocin.

Conclusions: In our setting, the risk of uterine rupture associated with oxytocin use in TOLAC appears to be small and comparable to existing literature. Oxytocin use in this setting remains a reasonable option after an informed discussion of potential risks.

Keywords: trial of labour after cesarean; vaginal birth after cesarean; uterine rupture; oxytocin

■ P-OBS-JM-071 ....

Cost-Effectiveness of Placental Growth Factor in the Evaluation of Suspected Preeclampsia in British Columbia, Canada

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Objectives: To estimate the cost-effectiveness of implementing placental growth factor (PIGF) testing in the clinical assessment of suspected preeclampsia (PET) in British Columbia (BC).

Methods: Clinical data was obtained from the PARROT stepped-wedge cluster-randomised control trial in the UK. This trial compared PIGF testing with a combined management algorithm to usual care in people with suspected PET. A decision tree was developed to model the costs and adverse outcomes associated with each management approach using cost estimates from the BC setting. The perspective of the Government of British Columbia as a single payer was used. The main outcomes measured were incremental costs per patient and adverse outcomes prevented. Deterministic and probabilistic sensitivity analyses with a Monte Carlo simulation were conducted to evaluate the uncertainty in the model.

Results: When comparing PIGF testing to usual care, the incremental cost of PIGF testing was CAD 409 less per patient while leading to 2 less adverse outcomes per 1000 pregnancies. Inpatient antepartum care was more costly while outpatient care and newborn care (routine and neonatal intensive care) were less costly. This represents potential yearly cost-savings of CAD $1.3 million in BC, assuming a similar proportion of people would develop PET as in the UK setting. PIGF was cost-saving and cost-effective in 51% and 28% of iterations modeled, respectively.

Conclusions: PIGF testing in the antenatal assessment of PET was associated with potential cost-savings compared to usual care. This economic evaluation supports the implementation of PIGF testing for suspected PET in British Columbia.

Keywords: economic evaluation; preeclampsia; placental growth factor

■ P-GYN-JM-070 ....

Cost-Effectiveness of Universal Contraceptive Subsidy in British Columbia, Canada

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Objectives: Many countries have demonstrated universal contraceptive subsidy (UCS) policies to be cost-saving. We aim to evaluate the cost-effectiveness of a UCS policy compared to the status quo in preventing unintended pregnancy (UIP) in British Columbia (BC).

Methods: A Markov model was developed and a systematic literature review was performed to inform the model parameters. Contraceptive prevalence rates originated from BC's 2015 Sexual Health Indicators for the status quo and from NATSAL-3 in the UK for a UCS policy, where similar contraceptive options are offered and UCS is available for all. BC-specific costs were included, with contraceptive costs originating from the BC Pharmacare Formulary. An incremental cost-effectiveness ratio (ICER) was calculated. A hypothetical willingness-to-pay (WTP) threshold was estimated by using the weighted average of the costs associated with each pregnancy outcome in BC. A Monte Carlo simulation was conducted to evaluate the uncertainty in the model. The perspective of the Government of British Columbia as a single-payer was employed.

Results: Among 721 926 people at risk of an UIP in BC in 2020, the model estimated the status quo to cost CAD $773 472 545 over 5 years with a total of 132 871 UIP. UCS would lead to 34 525 fewer UIP and would cost CAD $7 609 549 more with an ICER of 220 CAD/UIP averted. UCS had a 60% probability of being cost-effective compared to the status quo at a WTP threshold of 5362 CAD/UIP averted.

Conclusions: Using the best available evidence, universal contraceptive subsidy is a cost-effective strategy to prevent unintended pregnancy in British Columbia.

Keywords: Economic evaluation, contraception, universal contraceptive subsidy

■ O-GYN-MD-130...

Reoperation and Pain-Related Health Services Utilization After Hysterectomy for Endometriosis with Bilateral, Unilateral or No Oophorectomy

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Objectives: To evaluate pain-related health services use after hysterectomy for endometriosis with or without unilateral salpingo-oophorectomy (USO) or bilateral salpingo-oophorectomy (BSO), with respect to rates and types of reoperation, physician visits, and subsequent opioid and hormone prescriptions.

Methods: A population-based retrospective cohort study of people aged 19—50 in British Columbia, Canada, undergoing hysterectomy for endometriosis between 2001 and 2016. Patients' pain-related health services were examined at 3—12 months and 1—5 years after hysterectomy, including rates and types of reoperation, physician visits for endometriosis and pelvic pain, prescriptions filled for opioids, hormonal suppression medications and hormone replacement therapy (HRT).

Results: Reoperation rates were low across all groups, with 89.5% of all patients remaining reoperation free by the end of follow-up. Patients undergoing hysterectomy alone were more likely to undergo at least 1 reoperation compared to those with hysterectomy with BSO (13% vs. 5%, $P < 0.0001$), most commonly oophorectomy and adhesiolysis. A sensitivity analysis removing oophorectomy as a reoperation attenuated the difference between the groups. Moreover, the groups were similar with respect to postoperative rates of physician visits for endometriosis or pelvic pain and number of days of opioid prescriptions filled. Similarly, usage of hormonal suppression medications were similar between the groups. Rates of prescriptions filled for HRT after hysterectomy with BSO was low.

Conclusions: Strong consideration should be given to ovarian conservation at the time of hysterectomy for endometriosis, as concurrent BSO was not clearly associated with reduced use of pain-related health services, and HRT use for surgical menopause was low.

Keywords: endometriosis; hysterectomy; oophorectomy; reoperation; outcomes

■ O-GYN-JM-094...

Reproductive Health Needs in Female Adolescent and Young Adult Survivors of Hodgkin's Lymphoma Cancer

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Objectives: To examine the effects of cancer treatment on reproductive health in female adolescent and young adult (AYA) Hodgkin's Lymphoma cancer survivors, using a population-based approach in Ontario, Canada from 1995 to 2014.

Methods: We conducted a retrospective, population-based, matched-cohort study of female patients with Hodgkin's Lymphoma diagnosed at 15—39 years of age. Three female individuals with no history of cancer were matched by birth year and census subdivision. Treatment exposures were considered as chemotherapy, radiation, and combined modality. Reproductive health outcomes were infertility, childbirth, primary ovarian insufficiency (POI) and early menopause at ≥12 months of cancer diagnosis. Relative risks (aRR) were calculated using modified Poisson regression adjusted for income quintile, immigration status, and parity.

Results: 1443 exposed and 4329 unexposed patients formed our cohort. Hodgkin's Lymphoma patients were at an increased risk of infertility (aRR 1.86; 95% CI 1.57—2.20). When considering treatment exposure, all groups experienced increased risk of infertility. No differences in childbirth rates were observed, overall or by treatment exposure. Hodgkin's Lymphoma patients were at an increased risk of POI (aRR 2.81; 95% CI 2.16—3.65) and early menopause (aRR 2.47; 95% CI 1.98—3.08). All groups experienced similar increased risks of POI and early menopause, independent of treatment exposure.

Conclusions: All young Hodgkin's Lymphoma survivors face an increased risk of infertility, POI and early menopause relative to women without cancer. These results emphasize the importance of pre-treatment fertility counselling and reproductive health surveillance for AYAs diagnosed with Hodgkin's Lymphoma.

Keywords: Hodgkin's lymphoma; infertility; adolescent and young adult; menopause; primary ovarian insufficiency

■ P-OBS-JM-158 ....

Adverse Pregnancy Outcomes Across Different Advanced Maternal Ages: A Retrospective Cohort Study

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Objectives: We aimed to characterize adverse pregnancy outcome risks among different advanced maternal ages (AMA).

Methods: This population-based retrospective cohort study used the Healthcare Cost and Utilization Project-Nationwide Inpatient Sample database to characterize adverse pregnancy outcome risks among AMA groups from 2004 to 2014. Outcomes in patients aged 44–45 (n = 19 476), 46–49 (n = 7528), 50–54 (n = 1100) and 55–59 (n = 236) years were compared to patients aged 38–43 years (n = 499 655). Multivariate logistic analysis adjusted for statistically significant confounding effects.

Results: In adjusted analyses, the risk of preeclampsia increased across the 44–45 (aOR 1.33, 95% CI 1.23–1.45), 46–49 (aOR 1.78, 95% CI 1.59–1.98) and 50–54 years groups (aOR 1.93, 95% CI 1.54–2.42). The risk of transfusion increased across all groups (aOR 1.24, 95% CI 1.08–1.42; aOR 1.58, 95% CI 1.33–1.89; aOR 3.06, 95% CI 2.31–4.05; aOR 9.24, 95% CI 5.38–15.85, respectively). The risk of hysterectomy at delivery increased across the 44–45(aOR 1.23, 95% CI 0.92–1.66), 46–49 (aOR 2.62, 95% CI 1.89–3.63), 50–54 (aOR 4.75, 95% CI, 2.76–8.19) and 55–59 (aOR 8.91, 95% CI, 2.79–28.45) years groups. The risk of maternal death increased in the 44–45 (aOR 2.68, 95% CI, 1.06–6.79), 46–49 (aOR 4.03, 95% CI, 1.23–13.17) and 55–59 (aOR 32.32, 95% CI, 3.85–271.23) years groups, but was insignificant in the 50–54 years group. The risk of congenital anomalies was significantly increased only in the 55–59 years group (aOR 3.82, 95% CI, 1.20–12.11), in spite of likely using donor oocytes. Most other risks demonstrated only a mild increase without clear trends.

Conclusions: Certain adverse pregnancy outcomes increased across AMA groups as compared to the traditional definition of AMA, demonstrating clear and concerning trends particularly related to risk of maternal mortality, hysterectomy, transfusion and congenital anomalies. Women aged 55–59 years should be warned of the 3200% increased risk of death in pregnancy.

Keywords: advanced maternal age, pregnancy, risk

■ O-GYN-JM-095..

Health Care Providers' Education, Awareness, and Attitudes Toward Female Genital Mutilation/Cutting: A Canadian Survey

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Objectives: Assess health care providers' awareness, knowledge, clinical experience, and attitudes towards medicalization and ethical/legal obligations surrounding female genital mutilation (FGM).

Methods: Am anonymous, validated, self-referral survey was electronically circulated to Society of Obstetricians and Gynaecologists of Canada members and responses were collected through SurveyMonkey. Data was described using univariate analysis and subgroup analyses was performed to assess response difference between individuals with and without prior FGM-related education.

Results: Preliminary data is presented from 109 respondents. Most (80.8%) providers agreed that FGM affects Canadian girls/women. Those without prior education (39.5%) were more likely to believe that FGM is not a problem facing Canadians ($P = 0.005$). The mean knowledge score was 50.1%, with a significant increase in scores among the 60.5% with prior education ($P = 0.014$), and among the 43.1% of providers who had previously cared for an individual affected by FGM ($P = 0.0001$). Only 31.2% of providers reported that they know how to identify an individual at risk and only 27.5% reported that they know how to report FGM. Providers cited lack of knowledge and fear of insulting their patient/patient's family as

barriers to providing care. Finally, 93.5% agreed that FGM training should be implemented in medical education.

Conclusions: This study has provided indirect evidence of FGM in Canada, which may encourage enforcement of prohibitive legislation. Identifying deficiencies in understanding of FGM will enable the development of targeted training materials. This study is a necessary first step in establishing a health care system that intervenes to prevent FGM and provides complete care for individuals with FGM.

Keywords: female genital mutilation; survey; medical education

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■ O-OBS-MD-166...

Multicentre Prospective Study of SNP-Based cfDNA Screening for Aneuploidy with Genetic Confirmation in 18 497 Pregnancies

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Objectives: We evaluated performance of single-nucleotide polymorphism (SNP)-based cell-free DNA (cfDNA) screening for trisomies 13, 18, and 21 in a large unselected prospective cohort with genetic confirmation. We hypothesized equivalent performance to published studies without genetic confirmation.

Methods: Women who had SNP-based cfDNA for T13, T18 and T21 were recruited at 21 centres in 6 countries. Genetic confirmation was obtained for all pregnancies. Sensitivity, specificity, PPV and test failure rates were calculated. Performance of an updated algorithm was assessed.

Results: Of 20 887 women enrolled, 18 497 (88.5%) had genetic confirmation. 133 (0.72%) cases of trisomy were identified: n = 102 T21, n = 22 T18 and n = 14 T13. 98.43% of women received a cfDNA result. Screen positive rate was lower in low- vs. high-risk cases (0.26% vs. 2.1%, $P < 0.0001$). Sensitivity and specificity were similar between risk groups. PPV for all trisomies combined was lower in low-risk women (74.3% vs. 94.1%, $P = 0.003$). Performance of the updated algorithm was not different than in the prospective cohort but had lower test failure rate after both first (1.46% vs. 3.3%, $P < 0.0001$) and second draws (0.60% vs. 1.57%, $P < 0.0001$).

Conclusions: In a large unselected cohort with genetic confirmation, high sensitivity and specificity for the common trisomies was corroborated in all risk groups. PPVs were >50% for all trisomies in women that are low-risk for aneuploidy. An updated algorithm decreased the no-call rate while maintaining performance.

Keywords: cell free DNA screening; trisomy; pregnancy

■ P-OBS-MFM-S-076...

Maternal and Neonatal Outcomes in People who Acquired a Spinal Cord Injury During Pregnancy

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Objectives: The objectives of this study were to determine the pregnancy and neonatal outcomes of people who acquired spinal cord injuries (SCI) during pregnancy.

Methods: This is part of an international observational questionnaire examining pregnancy outcomes of people with SCI. The outcome measures included participant demographics (e.g. level of injury, ASIA scores), prenatal and postnatal complications, and neonatal outcomes.

Results: Of 644 survey responses, 10 (1.55%) participants reported acquiring a spinal cord injury while pregnant. Eight of these injuries were due to motor vehicle accidents (MVA), 1 was caused by cauda equina syndrome and another by autoimmune disease. Of these 10 pregnancies, 1 miscarried, 6 resulted in live births and 3 pregnancies were terminated. Three participants delivered vaginally, 2 delivered via cesarean sections and 1 was unreported. The rate of preterm birth was 66.7% (4/6). The average birth weight reported was 2430 (453−3490) g. 33.3% (2/6) of newborns were admitted to the NICU and 33.3% (2/6) of participants reported experiencing postpartum blues or depression. 50% (3/6) of participants reported breastfeeding for at least 2 weeks, 1participant breastfed for 9−12 months.

Conclusions: This is the largest known cohort to date of individuals acquiring SCI during pregnancy. The most common cause of SCI was MVA. Complications included preterm birth, NICU admission, and low birth weight. People who have a spinal cord injury during pregnancy will likely require monitoring for complications, however some positive pregnancy and neonatal outcomes are possible. Absolute small numbers of this rare event limit the ability to assess incidence of outcomes.

Keywords: spinal cord injury, pregnancy outcomes, prenatal complications, postnatal complications, neonatal outcomes

■ O-GYN-JM-115...

"We Didn't Always Think or Feel This Way About Ourselves": How the Surgical Work and Learning Environment Lead to Impostor Phenomenon and the Ways in which Female Surgeons Negotiate It

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Objectives: To characterize Impostor Phenomenon (IP) among female surgeons, explore the manifestations of IP on their practices, and learn how they manage or resolve IP.

Methods: Female-identified people in Canada who have completed a surgical residency were invited to complete an anonymous online survey from September 2020 to February 2021. The Mixed Methods design using constant comparative analysis on the open-ended questions provided thematic results.

Results: 387 persons completed the survey. Regarding the nature and impact of IP: 1) the work and learning environment have a major influence over the development of IP, 2) setbacks, transitions, and steppingstones are common triggers for IP, and 3) IP has an impact on career development, health, and home life requiring concerted effort to negotiate its effects. Surgeons identified that IP can be negotiated in the following ways: 1) strong, supportive leadership and female representation are key to changing the dynamic of the workplace, 2) female surgeons are resilient and, with time, often find ways to co-exist with or overcome IP, and 3) well-constructed feedback is a critical element to the effacement of IP, especially

self-feedback and objective measures if the surgeon can integrate these successes into their sense of self and achievement.

Conclusions: IP has lasting impacts on surgeon well-being. The surgical work environment has a major influence over the development of IP and should be a target for focused efforts for improvement. Training is a time of high risk for onset of IP and well-constructed feedback can strongly mitigate this potential trigger.

Keywords: impostor phenomenon; resilience; feedback

■ W-OBS-MFM-MD-153 ....

Single Dose of Antenatal Corticosteroids (SNACS) Non-Inferiority Randomized Controlled Trial for Pregnancies at Risk of Preterm Delivery

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Objectives: Antenatal corticosteroids (ACS) given to infants born preterm, are associated with a decrease in infant mortality and morbidity. However, these neonatal benefits decrease with increasing gestational age. Importantly, recent long term studies suggest that ACS may be associated with long term neurodevelopmental harm. Research suggests that a single dose of ACS matures preterm lungs similar to double doses. This CIHR funded RCT will test this question. Our research Question: In pregnancies at risk of preterm birth, between 22+0 to 34+6 weeks, is 12 mg vs. 24 mg Betamethasone: non-inferior for the primary neonatal composite outcome of 1) perinatal mortality (fetal or neonatal), 2) severe respiratory morbidity (need for surfactant within 48 hours of life), 3) grade 3−4 intraventricular hemorrhage or 4) stage 2−3 necrotizing enterocolitis (and superior for secondary neurosensory and developmental long-term outcome assessed at 24 months corrected age).

Methods: International, multicentre, double blind, non-inferiority randomized controlled trial. Stratification will be by centre and by gestational age at randomization (early <28 vs. late >28 weeks). Planned sample size is 3254 patients. The analysis will be conducted using both per protocol & intention to treat. Parents will be contacted for infant follow-up at 24 months to complete neuro/development questionnaires (Ages and Stages-3 and Child Behavior Checklist).

Results: Recruitment will begin March 2022.

Conclusions: This collaboration involves our 5 parent partners, high-risk obstetrics centres in Canada and in Australia. Come hear more about SNACS and see how you can be involved!

Keywords: antenatal corticosteroids; preterm birth; randomized controlled trial; neurodevelopment

■ O-OBS/GYN-IWH-052 ....

The Impact of Conflict on Antenatal Care Utilization: A Systematic Review of 37 Fragile and Conflict-Affected Situations

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Objectives: Over 7 million people live in fragile and conflict-affected situations (FCAS) worldwide and navigate numerous health inequities. Women are disproportionally affected and face barriers when accessing sexual and reproductive services, including antenatal care (ANC). This review aims to identify the factors impacting ANC usage in the 37 regions classified as FCAS in 2020.

Methods: CINAHL, EMBASE, PubMed, SCOPUS, and Web of Science were systematically searched for human studies, written in English and published between January 2002 and February 2020. Studies that identified factors affecting utilization of ANC or maternal health services were included for review and critically appraised.

Results: The search yielded 18 399 studies. After review and exclusion of duplicates, 99 studies remained, which represented 26 of the 37 FCAS. Results showed that women in FCAS' are not meeting the World Health Organization's 2002 ANC recommendations. The most cited factors impacting ANC were socioeconomic status, education, and distance to healthcare facilities. Although all studies took place in FCAS, only 6 studies (6.06%) identified conflict as a direct barrier to ANC utilization.

Conclusions: There remains a paucity in literature regarding the impact of conflict on ANC utilization. Future research should be conducted in the 11 FCAS that are not currently represented in the literature. To mitigate the barriers that prevent utilization of maternal health services identified in this review, policy makers, women utilizing ANC, and global organizations should attempt to collaborate to enact policy change at the local level.

Keywords: antenatal care; maternal health; maternal mortality; global health

■ V-GYN-UROGYN-MD-091 ....

Tips and Tricks for Vaginal Hysterectomy

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Video abstract summary: Vaginal hysterectomy is the preferred route of hysterectomy for benign gynaecological disease. Unfortunately, rates of vaginal hysterectomy are declining due to decreasing training opportunities and provider comfort. This video reviews important steps of vaginal hysterectomy and provides tips to improve surgeon confidence. It discusses how to select candidates for vaginal hysterectomy including commonly misquoted contraindications. An approach, using the physical exam as guidance, is given for the anterior and posterior colpotomy and video footage is used to review how to troubleshoot the anterior entry. Steps to improve visualization for vaginal salpingectomy are discussed. Finally, laparoscopically assisted vaginal hysterectomy and how to divide the case between laparoscopic and vaginal approaches is reviewed. This video serves as an educational resource for trainees and surgeons to improve their knowledge and comfort in performing vaginal hysterectomy.

■ P-OBS-JM-041 ....

Can Non-Invasive Hemoglobin Testing Be Used to Detect Postpartum Anemia?

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Objectives: Noninvasive hemoglobin analyzers measure hemoglobin percutaneously and offer the benefit of a one-time spot check without phlebotomy. The objective of this study was to determine the validity of non-invasive hemoglobin testing for detection of postpartum anemia (hemoglobin <10g/dL).

Methods: A convenience sample of 584 women aged 18 and over were recruited on postpartum day 1 following a singleton delivery were recruited. Two non-invasive hemoglobin monitors, Masimo Pronto Pulse CO-Oximeter (Pronto) and Masimo Rad-67 Pulse CO-Oximeter (Rad-67) were evaluated compared to the postpartum phlebotomy hemoglobin value.

Results: 31% (181/584) of participants had postpartum anemia by phlebotomy hemoglobin measurement. Bland-Altman plots determined a positive bias of 2.4 ± 1.2 g/dL with the Pronto and 2.2 ± 1.1 g/dL with the Rad-67. Low sensitivity was observed, 15% (Pronto), 16% (Rad-67). Adjusting for the fixed positive bias, the Pronto demonstrated a sensitivity of 68% and specificity of 84%, while the Rad-67 demonstrated a sensitivity of 78% and specificity of 88%.

Conclusions: A consistent overestimation of hemoglobin by the non-invasive monitors compared to phlebotomy hemoglobin result was observed. Even after adjusting for the fixed positive bias, the sensitivity for detecting postpartum anemia was low. Detection of postpartum anemia should not be based on these devices alone.

Keywords: postpartum anemia; noninvasive hemoglobin analyzers; validity testing

■ P-OBS-MD-157 ....

Moving Towards Decolonizing Perinatal Care: Progress in Culturally Safe Housing for Women Using Substances in a Northern Setting

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Objectives: To utilize Indigenous methodology, a decolonizing approach and participatory evaluation to develop outcome indicators that reflect goal achievement as defined by residents of Harmony House (HH), a culturally safe perinatal housing program for women struggling with substance-use in rural/northern British Columbia.

Methods: Key stakeholders, including project coordinator, an Elder and HH residents were consulted for program evaluation development. Semi-structured key-informant interviews with residents explored experiences with HH to date. Residents identified personal and programmatic outcomes based on their definition of 'success'. Interviews were recorded and transcribed, with accuracy verified by resident interviewee. Data was inductively analyzed by 2 researchers, identifying code definitions and overarching themes.

Results: Thematic analysis identified 3 themes of strengths, supports, and struggles of the program. HH was noted to provide an increase to self-esteem, support with sobriety, safety, custody of infant and a gateway to community resources. Challenges included interpersonal conflict between residents and separation from partners after visiting hours. Preliminary findings show a total of 110 women served and 89% have been able maintain sobriety and have either regained custody of their babies or apprehension has been prevented.

Conclusions: This program is timely and directly addresses the Truth and Reconciliation Commission's Call to Action in reducing the gap in health outcomes between Indigenous and non-Indigenous communities. As the only existing culturally safe comprehensive housing intervention for women struggling with perinatal substance-use in rural/northern geographies, we hope to share these findings to ensure that this approach can be applied to similar geographies and populations globally.

Keywords: cultural safety; perinatal substance-use

■ O-GYN-ONCOL-MD-048 ....

Adequacy of Endocervical Sampling Using Brush versus Curette: A Single Centre Experience

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Objectives: Endocervical sampling in colposcopy is performed traditionally with an endocervical curette (ECC). The objective of this study is to describe the histopathological performance of the endocervical brush (ECB) in the same context.

Methods: A retrospective review of medical records was performed at a single tertiary care centre during a 2-month period in 2020. The patients included underwent endocervical sampling using either ECB or ECC technique.

Results: During the study period there were 127 samples obtained with ECC and 98 obtained with ECB. The techniques were able to provide a histopathologic diagnosis in 124 (97.6%) of ECC samples and 94 (95.9%) of ECB samples ($P = 0.46$). The incidence of benign results was similar between ECC and ECB (117 [92.1%] vs. 88 [89.8%], respectively [$P = 0.28$]). When combining information obtained from endocervical sampling with cervical biopsies, the incidence of high-grade pathologies (high-grade intra-epithelial lesion, adenocarcinoma in situ, carcinoma) was similar between the 2 groups with 14 cases (17.7%) for ECC and 8 cases (17.0%) for ECB ($P = 0.43$). None of the patients with a discrepancy between abnormal Pap and the combination of cervical biopsy and endocervical sampling was found to have a significant pathology during the 12-month follow-up period.

Conclusions: ECB and ECC perform similarly in terms of providing a histopathological diagnosis on endocervical samples.

Keywords: colposcopy; endocervical curettage; endocervical brush; endocervix; diagnostic techniques

■ O-OBS-MFM-PhD-120 ....

Experiences of Stigma and Harassment Among Canadian Abortion Providers: Results of the National CAPS Survey

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Objectives: We conducted a national survey to assess the impact of updated SOGC medical abortion clinical practice guidelines on the abortion workforce and service delivery. We assessed experiences of stigma and harassment among abortion providers in Canada, including those providing second and third trimester medical abortions (STTMA).

Methods: We conducted a cross-sectional, national, anonymized, online survey between July and December 2020. In a subsection, physicians, nurse practitioners, and administrators completed the 35-item Revised Abortion Providers Stigma Scale and provided open-ended responses. We used R Statistical Software to generate descriptive statistics and employed a reflexive thematic analysis to interpret open-ended responses.

Results: Among 500 included respondents, 12% of clinicians and 46% of administrators reported experiencing harassment at their facilities, most commonly picketing. The mean stigma score was 67.8 (SD 17.2) out of 175, indicating relatively low perceptions of stigma. Among the 115 STTMA providers who participated in the survey and completed the stigma and harassment sub-section (n = 64), 14 (22%) experienced harassment and their mean stigma score was 73.2 (SD 17.6). Our analysis of qualitative data identified 5 themes characterizing perceptions of stigma and harassment: experiencing picketing and protestors at work; needing protestor 'bubble zones'; anticipating consequences if 'outed' as a provider; not providing an abortion service to avoid stigma and harassment; feeling 'it's better now' than in the past.

Conclusions: Abortion providers in Canada reported relatively low perceptions of abortion-related stigma, but those who did expressed strong concerns. Protest bubble zones are a key policy intervention to support the abortion workforce.

Keywords: abortion; induced abortion; stigma; harassment; health workforce; survey methods

■ P-OBS-JM-168 ....

Can Planning a Pregnancy Impact Maternal and Neonatal Outcomes in People with Myasthenia Gravis?

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Objectives: The course of Myasthenia Gravis (MG) in pregnancy and its implication on pregnancy outcomes are controversial. This study aims to assess if planning a pregnancy impacts maternal and neonatal outcomes in people with MG.

Methods: This study utilized input from people with MG via an online, international survey entitled " A patient Centered study on Pregnancy in People with MG," which included pregnancies that occurred after the diagnoses of MG and happened in the last ten years. Key maternal and neonatal outcomes were compared between planned and unplanned pregnancies.

Results: 96 pregnancies to 49 people were included in this analysis. The planned pregnancy group included 60 (62.5%) pregnancies, vs. 36 (37.5%) pregnancies in the unplanned group. Basic demographic data did not differ between the groups. People in the planned pregnancy group had significantly more pregnancy consultations than the unplanned pregnancy group. Individuals in the unplanned pregnancy group were more likely to be hospitalized and admitted to intensive care units (ICU) than those in the planned group ($P < 0.05$). There were no other significant differences in pregnancy outcome, the impact of pregnancy on MG course, and neonatal outcome (including neonatal MG) between the groups.

Conclusions: Planned pregnancy in people with MG may reduce the risk for admission to ICU for MG complications. Further research with more significant numbers will improve our understanding of this risk. Patient and clinician education encouraging planning pregnancies may be a modifiable risk factor to reduce the risk of considerable morbidity in people with MG.

Keywords: pregnancy; myasthenia gravis; adverse maternal and neonatal outcomes

■ O-OBS-PhD-118 ....

Variation in Episiotomy Use by Maternity Care Provider and Associated Rates of Obstetric Anal Sphincter Injury

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Objectives: To quantify variation in the association between episiotomy and obstetric anal sphincter injury (OASI) by maternity care provider in spontaneous and operative vaginal deliveries (SVDs, OVDs).

Methods: We conducted a population-based cohort study of all vaginal, term deliveries in Alberta, Manitoba, Ontario, and Saskatchewan (2004−2015) with data obtained from the Canadian Institute for Health Information. Adjusted rate ratios (ARRs) and 95% confidence intervals (CIs) were estimated using log-binomial regression to quantify the associations between episiotomy and OASI, stratified by care provider (obstetrician, family physician, or midwife), while adjusting for potential confounders (e.g., maternal age, induction, prolonged second stage, birth weight).

Results: The study included 1 476 634 deliveries; 66.3% with obstetricians, 27.2% with family physicians and 6.4% with midwives. The rate of OASI among SVDs with and without episiotomy was 5.8% and 4.6%, respectively, and among OVDs was 15.3% and 16.7%, respectively. Multivariable regression analyses among nulliparous women showed no differences in the association between episiotomy and OASI by provider except among women delivering by vacuum (ARR with episiotomy vs. without, obstetrician: ARR 0.88, 95% CI 0.84−0.92; family physician: ARR 0.89, 95% CI 0.83−0.96, midwife: 1.22, 95% CI 1.02−1.48). In parous women without a previous CD, the association between episiotomy and OASI among SVDs was significantly stronger in the midwifery group (obstetrician: ARR 2.58, 95% CI 2.40−2.77; family physician: ARR 2.66, 95% CI 2.33−3.03; midwife: ARR 4.42, 95% CI 3.28−5.95).

Conclusions: The association between episiotomy and OASI is modified by maternity care provider and other factors including parity, obstetric history, and mode of delivery (SVD/OVD).

Keywords: episiotomy; obstetric anal sphincter injury; operative vaginal delivery; forceps delivery; vacuum delivery; midwifery; maternity care providers

■ O-OBS-PhD-106 ....

Temporal Trends in Cesarean Delivery in Sweden and British Columbia Using the Robson Classification: The Role of Confounding

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Objectives: To contrast temporal trends in cesarean delivery (CD) in Sweden and British Columbia (BC), Canada, by Robson group and to quantify the effect of changes in maternal, fetal, and obstetric practice factors on temporal variations in CD rates.

Methods: Population-based cohort study including all births in Sweden and BC, 2004−2016. We quantified the temporal trend in CD rates by year and also by period. The change in CD rates over time was estimated using rate ratios (RRs) and 95% confidence intervals (CIs) in each Robson group. We used sequential log-binomial models to estimate the effect of adjustment for maternal (e.g., age), fetal (e.g., macrosomia), and obstetric practice factors (e.g., epidural) on the relationship between year/period and CD.

Results: The study included 1 392 779 deliveries in Sweden and 559,205 in BC. In Sweden, the CD rate remained stable at 17%, while the rates in BC increased from 29.4% in 2004 to 33.9% in 2016. Confounding by factors outside the Robson criteria accounted for a substantial fraction of the temporal change in CD rates in Group 1 in BC (2016 vs. 2004: crude RR 1.12, 95% CI 1.09−1.16 and adjusted RR 1.01, 95% CI 0.99−1.04) and Group 2a in BC (2016 vs. 2004 RR 1.18, 95% CI 1.15−1.21 and adjusted RR 1.09, 95% CI 1.07−1.13). Adjustment had little impact on temporal changes in CD rates in Sweden.

Conclusions: As population characteristics may change over time, variations in temporal trends in CD rates can be misattributed to practice differences if factors extraneous to the Robson classification are not considered.

Keywords: cesarean delivery; Robson classification system; ten group classification system; temporal trends

■ P-OBS-PS-PhD-104 ....

Outcome-Based Cesarean Delivery Rate Targets by Robson Group: Population-Based Analysis of Deliveries from Canada and Sweden

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Objectives: To assess the relationships between cesarean delivery (CD) rates and severe maternal and perinatal morbidity and mortality within each Robson group.

Methods: We carried out a population-based, cohort study of deliveries in British Columbia (BC) and Sweden (2004−2016), with institution-year serving as the unit of analysis. The main independent variable was the CD rate and the outcomes were severe maternal morbidity (SMM) and severe perinatal morbidity/mortality (SPMM). Associations between the CD rate and rates of SMM and SPMM were quantified using ecological Poisson regression with restricted cubic splines, while controlling for confounders.

Results: A total of 2 226 584 deliveries were included among 1372 institution-year units. The overall SMM and SPMM rates were 12.5 and 10.3 per 1000 deliveries/total births. In Robson group 1 (nulliparas with a singleton, term, cephalic fetus with spontaneous labour) the average CD rate was 10.8% and the SMM and SPMM rates were 13.2 and 7.6 per 1000, respectively. The predicted probability of SMM in group 1 declined as the CD rate increased from 10% to 20% and remained stable afterwards. Group 5 (multipara, singleton, term, cephalic with a previous CD) had a mean CD rate of 60.4% and SMM and SPMM rates of 14.8 and 6.9 per 1000 deliveries/total births, respectively. An inverse, linear relationship was observed between the CD rate and both the SMM and SPMM rate, with morbidity rates decreasing as CD rates increased.

Conclusions: Outcome-based CD rate targets vary among subpopulations of pregnant individuals. Lower CD rates are not universally associated with better maternal/perinatal outcomes.

Keywords: cesarean delivery; severe maternal morbidity; severe perinatal morbidity and mortality; Robson classification system; ten group classification system

■ P-OBS-PhD-105 ....

Adjusted Comparisons of Cesarean Delivery Rates Between Populations Using the Robson Classification: A Population-Based Cohort Study in Canada and Sweden

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Objectives: To estimate the contribution of maternal (e.g., age), fetal (e.g., position), and obstetric practice (e.g., epidural) factors to variations in cesarean delivery (CD) rates between Sweden and British Columbia (BC), Canada.

Methods: We carried out a population-based, retrospective, cohort study including all deliveries in Sweden and BC (2004−2016). Modified Poisson regression was used to estimate the effect of maternal, fetal and obstetric practice factors on the differences between CD rates between BC vs. Sweden, stratified by the Robson Groups.

Results: The study included 1 392 779 deliveries in Sweden and 559 205 deliveries in BC. The overall CD rate was 17.3% in Sweden and 31.2% in BC. The largest between-country differences in the CD rates were in Robson Group 5 (previous CD and a single, cephalic, term birth; odds ratio [OR] 4.09, 95% CI 4.00−4.18 in BC vs. Sweden), and in Group 1 (nulliparas with a single, cephalic, term birth and spontaneous labour onset; OR 2.91, 95% CI 2.87−2.96). Controlling for maternal, fetal and obstetric factors ranged from no effect (e.g., in Groups 6 and 7 - breech deliveries) to a 61% contribution to the variation in CD rates (e.g., Group 2 - nullipara, term, cephalic, with induced labour/CD without labour). Nonetheless, large differences in CD rates between BC and Sweden persisted despite adjustment, particularly in Robson Groups 1 and 5.

Conclusions: Comparisons of CD rates between populations using the Robson classification may be misleading due to residual confounding by maternal, fetal and obstetric practice factors not included in Robson criteria.

Keywords: cesarean delivery; Robson classification system; ten group classification system; regression

■ P-OBS-PS-PhD-103 ....

Associations Between Maternal Trauma Rates in Spontaneous Vaginal, Attempted Forceps, and Attempted Vacuum Deliveries in Canadian Hospitals

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Objectives: Comparative statistics routinely published by the Organization for Economic Cooperation and Development have regularly characterized Canadian rates of maternal trauma as being the highest among member countries both among spontaneous vaginal deliveries (SVDs) and among operative vaginal deliveries (OVDs). We sought to quantify the associations between hospital-level rates of maternal trauma among SVDs and OVDs.

Methods: We carried out a cohort study of all singleton, term, hospital deliveries in Canada, excluding Québec (2013−2019) with hospital-year as the unit of analysis. The rate of composite maternal trauma (e.g., severe perineal/cervical laceration) in each hospital-year served as the outcome. Pearson correlation coefficients were used to quantify associations between the hospital rates of maternal trauma in women who delivered by SVD, attempted forceps and attempted vacuum.

Results: We included 1 326 191 deliveries among 1853 hospital-years; 938 664 SVDs, 38 500 attempted forceps, and 110 987 attempted vacuum deliveries. Maternal trauma rates among pregnant individuals delivered by SVD, forceps, and vacuum were 3.5%, 25.3%, and 13.2%, respectively. Per hospital rates of maternal trauma in forceps and vacuum delivery had a moderate, positive, linear relationship (r = 0.417, $P < 0.0001$). Hospitals with higher rates of trauma among SVDs tended to have higher rates of maternal trauma in deliveries with forceps (r = 0.401, $P < 0.0001$) and with vacuum (r = 0.391, $P < 0.0001$).

Conclusions: Maternal trauma rates in Canada are high. Institutions with high rates of trauma following SVDs tend to have higher rates of trauma following OVDs and vice versa. Further study is required to determine whether these associations are due to patient characteristics and/or institution-specific practice/documentation factors.

Keywords: obstetric trauma; forceps delivery; forceps extraction; vacuum delivery; ventouse delivery; operative vaginal delivery; instrumental vaginal delivery; maternal trauma; severe perineal lacerations; obstetric anal sphincter injury

■ P-OBS-IWH-S-111 ....

Prevalence of Cannabis Use During Pregnancy: A Systematic Review of Observational Studies

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Objectives: Cannabis may be harmful to the developing fetus, however, the prevalence of cannabis use during pregnancy is uncertain. We conducted a systematic review to inform this issue.

Methods: We searched MEDLINE, EMBASE, PsycInfo, SINAHL and PubMed from inception to December 10, 2020, for observational studies reporting the prevalence of cannabis use among pregnant women. Pairs of reviewers screened records, full texts, and extracted data independently and in duplicate. We used random-effects meta-analysis to pool prevalence data.

Results: We included 166 studies involving 5 803 687 pregnant women. The prevalence of cannabis use during pregnancy ranged from 0.2% to 46.8%; the pooled overall prevalence was 8.0% (95% confidence interval [CI] 6.5%−9.8%) but was associated with considerable heterogeneity. Between study subgroup analyses found higher rates of cannabis use among tobacco users (25.0% [95% CI 21.4%−28.7%]) compared to non-tobacco users (5.3% [95% CI 4.2%−6.5%]; test of interaction $P < 0.001$), and among women that reported alcohol consumption during pregnancy (21.9% [95% CI 16.4%−28.1%]) compared to non-alcohol users (8.2% [95% CI 6.6%−10.0%]; test of interaction $P = 0.001$). Within-study subgroup analysis found a higher prevalence of cannabis use during pregnancy in jurisdictions where cannabis was legal for recreational use (7.2% [95% CI 5.9%−8.6%]) versus illegal (4.2% [95% CI 3.3%−5.2%]; test of interaction $P < 0.001$).

Conclusions: Cannabis use was common during pregnancy among women in our sample, particularly among those who endorsed use of tobacco or alcohol during pregnancy. We also found an association between legalization of recreational cannabis and greater use among pregnant women.

Keywords: cannabis; pregnancy; prenatal care; systematic review

■ P-OBS-JM-065 ....

How Does High Socioeconomic Status Affect Maternal and Neonatal Pregnancy Outcomes? A Population-Based Study

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Objectives: Socio-economic status (SES) is considered an important determinant of health. Our purpose was to evaluate the effect of high SES on pregnancy outcomes.

Methods: We conducted a retrospective cohort study consisting of women from different median household income quartiles using the Healthcare Cost and Utilization Project Nationwide Inpatient Sample from 2004 to 2014. Multivariate logistic regression, adjusting for statistically significant confounding variables, was used to compare pregnancy outcomes among women from the highest income quartile (median income $\geq$\$63 000) to those in all lower income quartiles combined.

Results: During this period, 1 218 989 (22%) deliveries were to women from the wealthiest income quartile. They were more likely to be older, Caucasian and have private insurance ($P < 0.0001$ all), and less likely to be smokers, have chronic hypertension, pre-gestational diabetes, and use illicit drugs ($P < 0.0001$ all). They were less likely to develop pregnancy complications such as gestational hypertension (aOR 0.87; 95% CI 0.85—0.88), preeclampsia (aOR 0.88 95% CI 0.86—0.89), and gestational diabetes (aOR 0.91; 95% CI 0.89—0.92). They were also less likely to develop delivery complications such as PPROM (aOR 0.92; 95% CI 0.88—0.96), preterm birth (aOR 0.90; 95% CI 0.89—0.92), and abruption (aOR 0.89; 95% CI 0.85—0.93). They were less likely to have an IUFD (aOR 0.80; 95% CI 0.74—0.86), but more likely to deliver neonates with congenital anomalies (aOR 1.10; 95% CI 1.04—1.20).

Conclusions: Greater SES predisposes to better pregnancy outcomes, even when controlled for confounding factors. More research and changes in health care provision are required to improve health care for all regardless of SES.

Keywords: socioeconomic status; pregnancy outcomes

■ P-OBS-MFM-MD-040 ....

Clinical Risk Factors for Placenta Accreta or Placenta Percreta: A Case-Control Study

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Objectives: Recent literature suggests that a previous cesarean performed before labour is a risk factor for both uterine scar defect and uterine rupture. Our goal is to determine whether there is an association between an elective cesarean performed before labour and the risk of placenta accreta in subsequent pregnancy.

Methods: We performed a case control study where each case of severe placenta accreta/percreta that required a postpartum hysterectomy and that was confirmed at pathology was matched to all women who delivered after a previous cesarean in the 7 days before the delivery of each case. Information as to maternal characteristics, obstetrical history, the interdelivery interval, the reason and timing of previous cesarean, gestational age and type of uterus closure at previous cesarean were collected. Univariate and multivariate logistic regression analyses were performed to report risk factors related to severe placenta accreta/percreta.

Results: We compared 13 cases of severe accreta/percreta that required hysterectomy to 90 controls. When specifically considering women with a single previous cesarean, a previous cesarean before labour or an interdelivery interval of less than 18 months remain significant risk factors for a severe placenta accreta/percreta (OR: 6.0; 95% CI 1.02—35.3, $P < 0.05$).

Conclusions: Our results suggest that a previous elective cesarean delivery before labour, and potentially a short interdelivery interval after a cesarean, are both significant risk factors for future severe placenta accreta/percreta requiring postpartum hysterectomy.

Keywords: placenta percreta; placenta accreta; elective cesarean

■ P-GYN-MD-112..

Mifepristone's Effect on the Abortion Workforce and Rural Services in Ontario

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Objectives: Mifepristone became available January 2017, when abortions were provided only by physicians and >96% were surgical. By November restrictive regulations were removed so that mifepristone could be prescribed normally by physicians and nurse-practitioners (NPs). We investigated abortion workforce trends, examining all most-responsible-professionals (MRP) providing abortion in Ontario.

Methods: We defined all abortion events from January 1, 2012 to March 15, 2020 through government linked health administrative records. For each we identified 1 MRP.

Results: Among all 315 447 abortions we identified a MRP for 311 742 (98.3%). Before mifepristone the number of abortion providers was stable and under 330, among whom a maximum of 20.6% provided only medication abortion ('medication-only'). The number of providers rapidly tripled (1104) when mifepristone was available as a normal prescription, including 877 (79.5%) providing 'medication-only'. Providers by 2020 were predominantly family physicians (66.5%) and obstetrician gynaecologists (23.2%), while 9.1% were NPs. Abortion providers working in rural areas rose from 9 to 111 after restrictions were lifted, representing a 12-fold increase, while the proportion of all physicians and NPs working in rural areas remained stable. Provider's mean age fell 6.9 years. Female providers rose from 39.5% to 63.4% overall, increasing among 'medication-only'(53.5%—65.2%) and 'surgical-only'(27.1%—42.6%) providers.

Conclusions: Mifepristone availability without restrictions was associated with a twelve-fold increase in rural service provision in Ontario, and a tripling of the overall number of most-responsible-professionals offering abortion care, predominantly attracting younger female primary care providers.

Keywords: abortion; health professionals; workforce; physicians; family physicians; obstetrician gynaecologists; nurse practitioners; rural; Ontario

■ P-OBS/GYN-075 ....

Barriers and Enablers to Nurse Practitioner Provision of Medication Abortion in Canada: Results from a National Survey

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Objectives: To identify the context-specific barriers and enablers to nurse practitioner (NP) provision of mifepristone/misoprostol for medication abortion (MA) in Canada.

Methods: This study utilized a cross-sectional survey to understand NP implementation of MA in Canada. Respondents were recruited from August 2020 to February 2021 and included MA providers and non-providers. The survey instrument allowed for comparison of NPs in different provinces and territories, practice settings, rural and urban areas, and demographics of patients served. Data analysis included descriptive statistics and bivariate analyses to compare the experiences of providers and non-providers.

Results: A total of 181 NP respondents completed the survey: 36% (n = 65) provided MA and 64% (n = 116) did not provide MA. 27% of all respondents practiced in Ontario, 25% in the Prairies. The majority of MA providers were in Ontario (54%). No respondents from Québec (n = 17) provided MA. Respondents who participated in MA training most commonly took the SOGC training program. Interestingly, 17% of non-providing respondents had completed MA training. Significant barriers impacted non-providers, including limited access to a pharmacy that stocked mifepristone/misoprostol, procedural restrictions in places of employment, and no access to a surgical management option for a failed MA.

Conclusions: Barriers to NP provision of MA exist despite the removal of legislative restrictions in most provinces and territories. These findings inform the ongoing development of implementation strategies in consultation with knowledge user partners to improve the accessibility of MA across Canada.

Keywords: Medical abortion, mifepristone, nurse practitioners, health access, health equity

■ O-GYN-JM-028...

Applying the Fragility Index to Statistically Significant Results in Gynaecologic Surgery: A Systematic Review

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Objectives: To evaluate the stability of statistically significant results within gynaecologic surgery randomized controlled trials (RCTs) using the fragility index (FI). The FI defines the minimum number of patients who must have an alternative outcome to alter statistical significance.

Methods: We searched Medline, Web of Science, Embase and ClinicalTrials.gov from 2011 to 2021 to identify RCTs in benign gynaecologic surgery. Two-arm RCTs with statistically significant dichotomous primary outcomes were included. A total of 4775 trials were screened for eligibility. Data including sample size, loss to follow-up, and number of outcome events were recorded. The FI of each study was calculated using a predefined technique.

Results: Ninety-three RCTs were analyzed. Among this cohort, the median FI was 3 (interquartile range 1−7). In 42% (n = 39) of trials, the number of patients lost to follow-up was greater than the FI. The median FI within clinical subspecialty groups (general gynaecology, anesthesia, urogynaecology and fertility) did not differ ($P = 0.122$). Seventeen percent of trials were published within high-impact journals (impact factor >4.0) and the median FI within these studies was also 3.

Conclusions: Statistically significant results of RCTs in gynaecologic surgery are often fragile, suggesting that clinicians should interpret results with caution. This is particularly true when the number of patients lost to follow-up is greater than the FI. The FI serves as a quality metric that can be used to evaluate robustness of results, when applying the outcomes of RCTs to clinical practice or guideline development.

Keywords: gynaecologic surgical procedures; randomized controlled trials as topic; systematic review, quality of health care

■ O-GYN-ONCOL-MD-097...

Feasibility and Safety of Inguinofemoral Sentinel Lymph Node Biopsy for Previously Excised Vulvar Cancer

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Objectives: Performing inguinofemoral sentinel lymph node biopsy (IFSLNB) for vulvar cancer following a previous vulvar excision, often referred to as 'scar injection', is currently debated. Our study aimed to assess the feasibility and safety of IFSLNB following scar injection.

Methods: We conducted a retrospective observational study of patients with vulvar cancer, who underwent IFSLNB following radiotracer injection around a tumour or around a scar following previous vulvar excision. IFSLN detection rates are described per patient and per groin and are compared using chi-square analysis. We perform a cox regression analysis to assess the association of recurrence and survival with vulvar injection site and recognized pathological variables.

Results: Data was analyzed for 173 groins in 97 patients. At least 1 IFSLN was detected in 94% of groins examined, and IFSLN detection rate did not differ whether the groin was assessed following tumour injection (n = 122, 94%) or scar injection (n = 40, 93%; $P = 0.85$). Patients in the scar injection group had less frequent IFLN metastases ($P = 0.019$), smaller tumours ($P < 0.001$) and more superficial invasion ($P < 0.02$). Median overall follow-up from surgery to death or censoring was 34.7 (range 0−108) months. Cox regression analysis demonstrated that scar injection was not an independent predictor of recurrence or death, and depth of invasion was the only independent predictor of disease recurrence (HR 1.14, $P = 0.029$).

Conclusions: Our observations support the feasibility and safety of scar injection as an alternative to full lymphadenectomy and should be validated in a prospective study with a more robust sample size.

Keywords: vulvar cancer; sentinel lymph node biopsy; scar injection

■ P-OBS-JM-032..

Rapid Cycle Deliberate Practice Versus Traditional Simulation to Improve Resident Performance in Obstetrical Emergencies

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Objectives: Rapid Cycle Deliberate Practice (RCDP) is a novel simulation strategy wherein participants cycle between deliberate practice and feedback within the simulation scenario to achieve skill acquisition. Our aim was to assess the effectiveness and feasibility of RCDP in improving obstetrics and gynaecology residents' performance and skill retention compared to traditional debriefing in a forceps assisted vaginal delivery (FAVD) simulation.

Methods: Residents were randomly assigned to a high-fidelity FAVD simulation using either RCDP or traditional debriefing. Performance was evaluated using an Objective Structured Assessment of Technical Skills (OSATS) tool. Residents repeated the simulation 3–6 months later in a low fidelity setting to assess skill/knowledge retention. Independent and paired *t*-tests were used for statistical analysis. Residents provided qualitative feedback via an anonymous survey and these responses were analyzed thematically.

Results: Thirty-three residents were assigned to either the traditional or RCDP groups. There was no significant difference in the immediate total performance ($P = 0.082$) or task specific scores ($P = 0.164$) between groups, although the traditional group demonstrated higher global performance scores ($P = 0.021$). At 3–6 months, both groups demonstrated significantly improved total performance scores (traditional $P = 0.001$, RCDP $P = 0.001$). The duration of simulations and debriefing was comparable. Seventy-six percent of residents in the RCDP group indicated that the "real-time" feedback style was advantageous. Two senior residents suggested that this method is less realistic and beneficial at a senior level.

Conclusions: Both traditional and RCDP simulation methods are effective in facilitating skill and knowledge retention in a FAVD simulation. The RCDP style of debriefing may be preferred by junior residents.

Keywords: simulation; postgraduate medical education; obstetrical emergencies; obstetrical forceps; curriculum development

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■ O-OBS/GYN-143 ....

Perinatal Outcomes in Pregnancies Complicated by Peripartum Hysterectomy: A Population-Based Study

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Objectives: Peripartum hysterectomy (PH) is associated with adverse obstetrical outcomes. We estimated trends, risk factors, and severe maternal morbidity (SMM) and mortality associated with PH.

Methods: Retrospective cohort study querying the United States' Healthcare Cost and Utilization Project-Nationwide Inpatient Sample from 2016 to 2018. Our cohort entailed subjects admitted for delivery and during which a PH occurred, identified using ICD-10 codes. We used descriptive statistics to compare baseline characteristics and multivariate logistic regression models to evaluate risk factors for PH in the total population and estimate the effect of risk factors on SMM and mortality among pregnancies complicated by PH.

Results: Among 2 207 678 births in our cohort, 2,605 underwent a PH for an overall incidence of 11.8 per 10 000 births, increasing over time ($P < 0.05$). PH was more common in pregnancies complicated by obesity, preterm labour, previous cesarean section (CS), multiple gestation, hypertensive disorders, chorioamnionitis, previa, post-partum haemorrhage (PPH), and placenta accreta spectrum (PAS). The predominant PH indications were PAS (48%) and PPH (34%). The PH group was associated with a composite of SMM 89.9 (83.2–97.2) and mortality 168.9 (104.4–273.3) relative to the no-PH group. Within the PH group, SMM and mortality were more common among subjects who were Black, Hispanic, lower-income, had multifetal gestations, PAS, previa, or PPH ($P < 0.5$), with PPH as the greatest predictor (OR 6.11; CI 4.59–8.15).

Conclusions: Birthrates complicated by PH are rare but increasing. PH is associated with an increased risk of SMM and mortality. These findings may improve perinatal management and subjects at elevated risk of adverse outcomes should deliver in well-appointed tertiary centres.

Keywords: peripartum hysterectomy; perinatal epidemiology; obstetrical outcomes, severe maternal morbidity and mortality

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■ P-OBS/GYN-142 ....

National Trends, Risk Factors, and Obstetrical Outcomes of Uterine Prolapse: A Population-Based Study

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Objectives: The uterus can prolapse acutely during pregnancy. We report national trends, characteristics, and obstetrical outcomes of women with uterine prolapse (UP).

Methods: Retrospective cohort study using the HCUP-NIS database. Our study cohort included women admitted for delivery between 2004 to 2014 inclusively and had a diagnosis of UP. Multivariate logistic regression analyses compared obstetrical outcomes among pregnancies complicated by UP versus those without, whilst adjusting for confounding variables.

Results: Among the 9 096 788 deliveries during our study period, 713 received a diagnosis of UP. The incidence of UP increased over time ($P \leq 0.0001$). Women with UP were likelier to be older, multigravida, smokers, have endometriosis, or fibroids ($P \leq 0.002$, all). They were less likely to have had a previous cesarean section (CS) ($P < 0.0001$), or multiple gestation ($P = 0.03$). Women with UP had lower odds of pregnancy-induced hypertension (aOR 0.38, 95% CI 0.25–0.58), preeclampsia (aOR 0.27, 95% CI 0.13–0.57), operative vaginal delivery (aOR 0.41, 95% CI 0.26–0.64), and CS (aOR 0.30, 95% CI 0.23–0.39). They had higher odds of having a spontaneous vaginal delivery (aOR 3.46, 95% CI 2.73–4.39), para-delivery hysterectomy (aOR 21.5, 95% CI 11.78–29.25), postpartum haemorrhage (aOR 2.12, 95% CI 1.56–2.87), wound complications (aOR 2.72, 95% CI 1.22–6.09), blood transfusion (aOR 2.39, 95% CI 1.43–3.10) or birth of neonates with major congenital abnormalities (aOR 2.48, 95% CI 1.18–5.22).

Conclusions: Women with UP are at higher risk of obstetrical complications and neonatal morbidity. These findings elucidate risk factors that may improve prenatal counselling, perinatal surgical management, and clinical practice and policy guidelines.

Keywords: uterine prolapse; uterine inversion; obstetrical outcomes; morbidity, trend

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■ P-OBS-JM-054 ....

Maternal Health Experiences of Federally Sentenced Women in Canada

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Objectives: The number of people incarcerated in federal prisons for women in Canada increases every year. Incarcerated women experience barriers to sexual and reproductive health care and experience poorer health outcomes such as increased rates of unplanned pregnancy, unmet contraceptive needs, and higher rates of sexually transmitted infections and gynaecological cancers.

The aim of the study was to understand how pregnant people and new parents experience health and health services while incarcerated in federal prisons for women with respect to participation in the institutional Mother Child Program (MCP).

Methods: The study uses a qualitative case study design. Semi-structured interviews were conducted in person or by phone with 23 participants. Participants including people who experienced federal incarceration during pregnancy or the early parenting years and community advocates. The sample included people who did and did not participate in the institutional MCP and from each of the 6 federal prisons for women.

Results: The major themes in the analysis include: 1) Reasons why- and why not- to participate in the MCP; 2) Mothering from inside; 3) Health care experiences; and 4) Strategies and survival. This study is the first to explore the health experiences of federally incarcerated mothers with respect to the Mother Child Program. Participants experience separation as traumatic and are denied postpartum care. Reproductive mental health concerns were met with punishment and prioritization of pharmacological treatment over counselling. Study participants navigated challenges through self-advocacy.

Conclusions: MCP fails to address the health harms of maternal incarceration. Alternatives to incarceration are recommended.

Keywords: prison; maternal health; qualitative research; reproductive justice

■ O-GYN-JM-144...

Detection of SARS-CoV-2 Contamination in the Operating Room and Birthing Room Setting: Risks to Attending Health Care Workers

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Objectives: The exposure risks to front-line health care workers (HCWs) who are in close proximity for prolonged periods of time, caring for COVID-19 patients undergoing surgery or obstetrical delivery, is unclear. Understanding of sample types that may harbour virus is important for evaluating risk. The objectives are as follows: to determine if SARS-CoV-2 viral RNA from patients with COVID-19 undergoing surgery or obstetrical delivery is present in: 1) the peritoneal cavity of males and females 2) the female reproductive tract, 3) the environment of the surgery or delivery suite (surgical instruments, equipment used, air or floors) and 4) inside the masks of the attending health care workers.

Methods: In this cross-sectional study, conducted at 2 Toronto hospitals, 32 patients with COVID-19 underwent urgent surgery or obstetrical delivery and the presence of SARS-CoV-2 viral RNA in patient, environmental and air samples was identified by real time reverse transcriptase polymerase chain reaction. Air samples were collected using both active and passive sampling techniques. The primary outcome was the proportion of HCW masks positive for SARS-CoV-2 RNA.

Results: SARS-CoV-2 RNA was detected in 20/332 (6%) patient and environmental samples collected: 4/24 (16.7%) patient, 5/60 (8.3%) floor, 1/5 (1.9%) air, 10/23 (43.5%) surgical instruments/equipment, 0/24 cautery filters and 0/143 (95% CI 0−0.026) inner surface of mask samples.

Conclusions: While there is evidence of SARS-CoV-2 RNA in the surgical and obstetrical operative environment, the finding of no detectable virus inside the masks worn by the medical teams would suggest a low risk of infection for our health care workers using appropriate personal protective equipment.

Keywords: SARS-CoV-2 viral RNA; PPE; exposure risk; health care workers; real time RT-PCR; environmental and air sampling; operating room exposure; delivery room exposure

■ P-OBS-MD-162...

How Common are Uterine Doppler Abnormalities for Pregnant Patients with Elevated Maternal Serum Alpha-Fetoprotein (MS-AFP)?

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Objectives: To determine the frequency and perinatal factors associated with abnormal uterine Dopplers after unexplained elevations in MS-AFP.

Methods: This was a historical cohort study of singleton pregnancies with elevated MS-AFP (2012−2019). All pregnant patients with elevated MS-AFP levels referred to prenatal genetics during the study period were eligible for inclusion and identified using a clinical database. Post-processing review of stored ultrasound images from mid-pregnancy were performed by 2 blinded and independent observers to record outcomes of uterine Doppler studies (presence/absence of notching and mean pulsatility indices) and linked to information about maternal demographics, pregnancy complications, and MS-AFP levels in the genetics database. Descriptive and inferential statistics were then used to compare outcomes between groups (explained vs. unexplained MS-AFP; normal vs. abnormal uterine Dopplers).

Results: From 2203 referrals, 872 singleton pregnancies were included in the final analysis (440 Explained and 432 Unexplained MS-AFP elevations). There were no obvious differences in maternal characteristics between groups. In the Unexplained MS-AFP group, 56.2% had normal uterine Dopplers compared to 43.8% with abnormal uterine Dopplers. Interestingly, there was no difference in MS-AFP level between those with normal versus abnormal uterine Dopplers. Multiparous patients were more likely to have normal uterine Dopplers, but there were no other differences in maternal or pregnancy characteristics.

Conclusions: There was no difference in MS-AFP level between the normal and abnormal uterine Doppler groups, and future work is needed to evaluate the clinically utility of uterine Dopplers in risk-stratification of this potentially high-risk group.

Keywords: prenatal diagnosis; maternal serum screening; uterine Doppler

■ P-GYN-JM-055...

The Effect of Pelvic Inflammatory Disease on Risk of Endometriosis: A Systematic Review and Meta-Analysis

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Objectives: To systematically review the evidence for the association between previous pelvic inflammatory disease (PID) and endometriosis.

Methods: The electronic databases Ovid Medline, EMBASE, and Cochrane libraries as well as grey literature was searched. We

searched using terms relating to PID combined with terms relating to endometriosis. All RCT and observational studies addressing the association between PID and endometriosis were screened. Case studies and series were excluded. Studies were combined in the Review Manager 5.4 software using a random effects model. The Newcastle-Ottawa risk of bias scale was used to assess methodological quality.

Results: The search returned 2584 studies, 27 were screened in full text. Eleven studies addressed the research question and were included in the final review. Six of the included studies did not have control groups or utilized already included data sets thus were not included in the meta-analysis. Five studies with 252 616 total participants with case-control or retrospective cohort study designs were included in the meta-analysis. The average quality of studies was good. Previous diagnosis of PID was found to be associated with an increased odds of endometriosis (OR 3.47 [2.02−5.97]; $I^2 =$ 99%). Subgroup analysis showed that previous diagnosis of endometritis specifically is associated with endometriosis however the relationship is less pronounced than that of PID defined broadly (OR 1.68 [1.58−1.80]; $I^2 = 78\%$).

Conclusions: Previous PID is associated with a significantly increased odds of endometriosis. However, current data is heterogeneous and primarily derived from a small selection of studies.

Keywords: endometriosis; pelvic inflammatory disease

■ P-OBS-JM-159 ....

Feeding Profile of Preterm Neonates Born <29 Weeks: Can We Predict Early Discontinuation of Breastfeeding?

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Objectives: To determine the quantity of mother's-own-milk feeds and perinatal characteristics associated with continuation of breastfeeding to NICU discharge amongst neonates born <29 weeks.

Methods: This was a retrospective cohort study (2010−2019). Using stored nutrition profiles and delivery records, information about daily feeding patterns (volumes and sources), maternal demographics, birth data, and postnatal complications were collected. Descriptive and inferential statistics were used to compare outcomes between groups (breastfeeding continuation to discharge versus early discontinuation).

Results: Of 215 eligible neonates, approximately 89% initiated breastfeeding but only 59% continued breastfeeding until discharge. Younger maternal age, multiparity, smoking, northern/remote residence, and multiples were significantly associated with discontinuation of breastfeeding early. There was no difference in gestational age, birth weight, newborn sex, or maternal medical complications between groups. Interestingly, 5-minute Apgars <7 and congenital anomalies were more common in those continuing breastfeeding to discharge. Continuation of breastfeeding was significantly more common when volumes of mother's-own-milk reached >45% of total feeds by day 3 of life and >85% from days 7 to 28 ($P < 0.0001$). Further, those that continued breastfeeding to discharge were significantly more likely to have received formula in the first 14 days, compared to those that discontinued breastfeeding early (24% vs. 5%; $P < 0.001$).

Conclusions: The early postnatal period represents a critical time to establish breastfeeding, and there are key volume thresholds and perinatal characteristics that could be targeted to improve breastfeeding continuation for these highest-risk newborns.

Keywords: breastfeeding; mother's-own-milk; human milk; prematurity

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■ O-OBS/GYN-160 ....

Barriers to Telemedicine for First-Trimester Medical Abortion Provision in Canada in 2019

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Objectives: In 2017, mifepristone became available for first trimester medical abortion (FTMA) in Canada. Shortly after, regulations permitted pharmacies to dispense mifepristone to patients, facilitating telemedicine provision. Our objective was to explore the barriers to providing FTMA using telemedicine in Canada in 2019.

Methods: We conducted a cross-sectional, national, self-administered, anonymized survey of physicians and nurse practitioners who provided abortion care in Canada in 2019. Online invitations were sent through professional health organizations using a modified Dillman technique to optimize recruitment. Questions elicited provider demographics and perceived barriers to offering telemedicine FTMA. We used R software for descriptive statistics.

Results: Four hundred sixty-five clinicians were included for analyses, of which 388 reported providing FTMA. Among those, 44.0% reported using telemedicine (for consultations, while often obtaining testing) for FTMA. British Columbia respondents reported the highest proportion of telemedicine use at 63.8%; the lowest was in Québec (10.7%). The majority of FTMA respondents (77.7%) reported barriers to telemedicine. The most common barriers were inability to confirm gestational age with ultrasound (43.0%), and lack of provincial fee code to pay practitioners (30.2%), timely access to serum hCG testing (24.6%), and nearby emergency services (23.3%). Few reported facility regulations (8.9%) and provincial regulations (4.9%) as barriers to providing telemedicine-based care; provincial regulation barriers were most common in Québec (16.1%).

Conclusions: Less than half of respondents reported providing some abortion care via telemedicine and the majority perceived barriers. Low-test medical abortion protocols developed during COVID-19 have the potential to overcome some barriers.

Keywords: telemedicine; abortion, induced; surveys and questionnaires; Canada; delivery of health care; mifepristone

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■ P-OBS/GYN-082 ....

Provision of Surgical Abortion Care in Canada

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Objectives: In 2018 the Society of Obstetricians and Gynaecologists of Canada (SOGC) published an updated guideline on first and second trimester surgical abortion (FTSA, STSA). Our objective was to explore the workforce and clinical care of surgical abortion providers after these guideline changes.

Methods: We conducted a cross-sectional, national, online survey of physicians who provided abortion care in 2019. This anonymized, self-administered survey collected participant demographics,

types and volume of abortion services, and characteristics of FTSA and STSA clinical care. We recruited July–December 2020 through health care organizations using a modified Dillman technique. Descriptive statistics were generated by R Statistical Software.

Results: Of 465 medical or surgical abortion provider respondents included for analysis, we present the data of surgical providers: 219 provided FTSA, 109 provided STSA, and 106 both. Respondents represented every Canadian province and territory. Most were obstetrician-gynaecologists (56.8%) and family physicians (36.0%), women (85.1%), and had a median age of 43 years. More than 1 in 4 respondents reported <5 years' experience with surgical abortion care. SOGC guidelines were followed by 86.5%. The majority of FTSA and STSA respondents were located in urban settings, 64.8% and 79.8% respectively. Most provided care in a hospital setting, both for FTSA (77.3%) and STSA (79.4%). Less than 5% of STSA respondents used mifepristone to prepare the cervix.

Conclusions: The surgical abortion workforce is multidisciplinary and rejuvenating. While guidelines overall were followed, mifepristone implementation has been limited. Our survey will inform knowledge translation activities directed at health policy, system and service leaders.

Keywords: induced abortion; surgical abortion; Canada; workforce; mifepristone

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■ P-GYN-JM-169...

Recurrent Hemorrhagic Ascites in Endometriosis: A Case Series and Systematic Review

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Objectives: To synthesize existing literature and contribute to a growing area of knowledge on endometriosis-related ascites, a rare complication of ascites that is poorly understood in gynaecology. This is achieved through a description of 2 cases seen at Mount Sinai Hospital, and a systematic review of the literature.

Methods: The case series was conducted as a retrospective review of patients seen in the Gynecology Clinic referred for endometriosis-related ascites (n = 2). The systematic review was conducted by searching CENTRAL, MEDLINE and EMBASE from 1950 to 2021. All publications based on the keywords were acquired. A total of 127 cases were included.

Results: In Case 1, the patient underwent paracentesis and diagnostic laparoscopy. She was treated with elagolix. In Case 2, the patient was treated with leuprolide acetate and norethindrone acetate. For the systematic review, data regarding the patient's demographics, presenting symptoms, physical findings, management, and recurrence status was obtained. Preliminary results showed that most patients with endometriosis and ascites were black (84.8%), nulliparous (78.2%) females of reproductive age. The majority presented with bloating (62.1%). The most common physical exam finding was a distended abdomen (54.4%), and investigations often revealed elevated CA-125 (41.2%). Most patients received both medical (85.9%) and surgical management (85.7%); however, most surgeries were performed for diagnostic purposes.

Conclusions: Ascites is a rare complication of endometriosis most commonly occurring in black, nulliparous patients. It presents similarly to ascites of other causes, which can lead to diagnostic uncertainty. Although many patients undergo diagnostic surgery, medical management with hormone analogues may sufficiently treat this condition.

Keywords: hemorrhagic ascites; endometriosis; premenopausal complications

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■ O-OBS/GYN-IWH-108...

A Phase-3, Randomized, Placebo-Controlled, 12-Week, Double-Blind Study to Assess Efficacy and Safety of Fezolinetant, a Neurokinin-3 Receptor Antagonist, in Women with Moderate-to-Severe Vasomotor Symptoms Associated with Menopause

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Objectives: Evaluate efficacy and safety of fezolinetant vs. placebo on frequency and severity of vasomotor symptoms (VMS) associated with menopause.

Methods: Double-blind Phase 3 study (NCT04003142) in women 40–65 years with moderate-to-severe VMS (minimum average 7 hot flashes/day) randomized to placebo; fezolinetant 30mg, or 45mg once daily. Co-primary efficacy endpoints: mean change from baseline to week 4 and 12 in frequency and severity of moderate-to-severe VMS. Secondary endpoints: week 12 change in Patient-reported Outcomes Measurement Information System Sleep Disturbance–Short Form 8b (PROMIS) total score; weekly mean change in frequency and severity of moderate and severe VMS; treatment-emergent adverse events (TEAEs).

Results: 500 women took ≥1 dose (placebo n = 167; fezolinetant 30 mg n = 166, 45 mg n = 167). Both fezolinetant doses statistically significantly reduced VMS frequency/severity at weeks 4 and 12 vs. placebo. VMS frequency, least squares (LS) mean reductions vs. placebo (SE): week 4, fezolinetant 30mg −1.82 (0.46); 45mg −2.55 (0.46); week 12, 30mg −1.86 (0.55); 45mg −2.53 (0.55) [all $P < 0.001$]. VMS severity: week 4, 30 mg, −0.15 (0.06), $P = 0.021$; 45 mg −0.29 (0.06), $P < 0.001$; week 12, 30 mg −0.16 (0.08), $P = 0.049$; 45 mg −0.29 (0.08), $P < 0.001$. Fezolinetant 45mg significantly reduced PROMIS total score vs. placebo at week 12: LS mean difference (SE) −2.0 (0.7), $P = 0.007$. Efficacy was evident by week 1 and maintained over 12 weeks. TEAEs were reported by 40% (fezolinetant 30 mg), 36% (45 mg), 32% (placebo). There were no drug-related serious TEAEs.

Conclusions: Fezolinetant 30mg and 45mg were efficacious for treatment of moderate-to-severe VMS. No safety signals of concern were apparent for either dose.

Keywords: menopause; neurokinin-3 receptor antagonist; vasomotor symptoms

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■ O-OBS-JM-090 ....

Documentation of Consent Practices for Assisted Vaginal Births (AVB) at Two Tertiary Care Hospitals: A Retrospective Review of Physician Documentation

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Objectives: Determine whether documentation of AVB consent, a surrogate for in vivo consent, aligns with existing national clinical practice guidelines at 2 tertiary care hospitals.

Methods: Retrospective review of 6 months of AVBs (vacuum and forceps) (July–December 2019) at 2 tertiary hospitals with either dictation- or template-based delivery documentation. Physician notes including, preceding and subsequent to delivery note were reviewed along with neonatal documentation. Data extracted included AVB type, documenter type (Resident, Fellow, Obstetrician), complications, and consent elements based on a predetermined checklist. Data was summarized descriptively and comparisons were made using t-tests, chi-square and Fisher exact tests.

Results: We reviewed 551 AVBs (156 forceps, 395 vacuum) documented mostly by obstetricians (286/551, 51.9%) and residents (203/551, 36.8%). Maternal complications occurred in 95/395 (24.1%) vacuum deliveries and 65/156 (41.7%) forceps deliveries. Neonatal complications occurred in 102/395 (25.8%) and 65/156 (29.5%) of vacuum and forceps deliveries, respectively. Most vacuum deliveries lacked documentation of specific maternal (366/395, 92.7%) or neonatal risk (364/395, 92.2%) in the consent discussion. Similarly, 107/156 (68.6%) and 106/156 (67.9%) forceps deliveries lacked specific documentation of maternal and neonatal risk, respectively. In vacuum deliveries, risk of postpartum hemorrhage was more commonly documented at the site with dictated documentation (6/90 (6.7%) vs. 2/395 (0.7%), $P = 0.002$). With template-based documentation, mention of at least 1 neonatal risk was more frequent in forceps documentation (50/133 (37.6%) vs. 0/23 (0%), $P < 0.001$) as was risk of obstetrical anal sphincter injury (43/133 (32.3%) vs. 0/23 (0%), $P = 0.001$).

Conclusions: Documentation of consent for AVB was poor at 2 tertiary care hospitals.

Keywords: assisted vaginal birth; documentation; quality improvement

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■ V-GYN-JM-089 ....

Laser-Assisted Appendectomy

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Video abstract summary: Endometriosis is a common gynaecologic condition affecting 10% of people with uteruses and up to 70% of those with chronic pelvic pain. Appendiceal endometriosis is common and pre-operative diagnosis is challenging. This video reviews prevalence of appendiceal endometriosis, highlights important anatomical landmarks for appendectomy and demonstrates a novel technique for laparoscopic appendectomy using a CO_2 Laser at the time of surgical management of endometriosis. The laser appendectomy approach is reviewed in 4 steps, addressing preoperative and intraoperative considerations. This video can be used as a reference for gynaecologists when performing appendectomy at the time of hysterectomy or diagnostic laparoscopy for chronic pelvic pain.

■ O-OBS/GYN-IWH-061 ....

The Newcomer Well Woman Clinic: A Cross-Sectional Evaluation of an Innovative Care Model to Support the Sexual and Reproductive Health Needs of Refugee Women

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Objectives: The Newcomer Well Woman Clinic (NWWC) was developed as a partnership between primary care physicians and obstetrics and gynaecology residents to ensure timely provision of sexual and reproductive healthcare for refugee patients. Since 2015, NWWC has provided monthly clinics offering contraceptive counselling, cervical cancer screening, and intrauterine device insertions with accompanying education sessions. This study aimed to evaluate women's experiences at the clinic and with interpretation services.

Methods: A sample of patients who attended appointments at the NWWC between January 2015 to December 2020 were invited to participate in a telephone survey facilitated by a translator to evaluate their clinic experience. The survey was adapted from 2 validated survey measures: the PSQ-18 and CAHPS. Survey results were reported using descriptive statistics. Clinic audit data was used to summarize patient demographics and service delivery during this period.

Results: Since 2015, 288 patients attended the clinic. Despite the pandemic, the number of appointments increased annually. 76% (50/66) of eligible invitees consented to participate. Most patients were satisfied (10%) or highly satisfied (74%) with their care and found the education sessions helpful (80%). Frequently requested education topics included cervical cancer prevention (54%) and contraception (36%). 80% of patients used an interpreter at the clinic and 78% felt that their concerns were always or usually conveyed appropriately to the physician.

Conclusions: Refugee patients were highly satisfied by the sexual and reproductive healthcare provided by the NWWC and with interpretation services. To meet the needs of refugees, innovative care models such as the NWWC could be adopted by healthcare providers.

Keywords: displaced populations/refugees; health systems; women's health/empowerment/equity

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■ O-GYN-MD-154..

Impact of Health Literacy on Patient-Reported Outcomes in Benign Gynaecology: A Systematic Review

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Objectives: Health literacy (HL) is a person's capacity to obtain, process and understand the basic health information needed to make appropriate health decisions. Poor HL has been linked to several negative patient outcomes: inferior disease-specific knowledge, reduced self-reported health, higher mortality and increased hospitalizations. Managing benign gynaecologic disorders requires advanced HL skills, which includes understanding relevant anatomy and clinical presentations, recognizing symptom severity, managing medications, and comprehending treatment options. The objective is to evaluate the relationship between low HL and patient-reported outcomes (PROs) in patients with benign gynaecologic conditions. In this specific population, we also seek to determine the current reported prevalence of low HL; examine demographic characteristics that may be related to

low HL; and collate any HL interventions described in the literature.

Methods: Articles from search in MEDLINE, EMBASE, The Cochrane Library, Web of Science, PubMed, and clinicaltrials.gov were independently screened by 2 reviewers. Inclusion required primary literature to report associations between HL and PROs, using validated tools to quantitatively measure each, in adult women with benign gynaecologic conditions.

Results: Of 18560 articles returned using our search strategy, 25 studies were selected for full text review. Of these, no studies met inclusion criteria and reported an association between HK and PROs.

Conclusions: This study identified a large gap in the literature. Future work should be directed at evaluating the association between HL and PROs in benign gynaecology to inform patient-centred interventions and care provision.

Keywords: health literacy; patient-reported outcomes; benign gynaecology

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■ P-OBS/GYN-MFM-092 ....

Barrières et facilitateurs à la participation en recherche des femmes ayant eu un trouble hypertensif de la grossesse

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Objectifs : La prééclampsie,un trouble hypertensif de la grossesse (THG),figure parmi les principales causes de prématurité induite médicalement.L'élaboration d'études cliniques sur les THG doit considérer les barrières et facilitateurs perçus par ces femmes quant à la participation en recherche.

Méthodologie : Entre 2017 et 2019,des groupes de discussion ont été menés auprès de 9 femmes ayant eu un THG et de 4 femmes ayant eu une grossesse normale.Les discussions ont abordé les barrières et facilitateurs à la participation à une étude.Une analyse qualitative a été effectuée à partir de la transcription verbatim des enregistrements et le logiciel NVivo a été utilisé pour émerger les thèmes.

Résultats : Concernant les barrières,les femmes ne voulaient mettre à risque leur santé ou celle du fœtus par la prise d'un médicament non testé ou une procédure invasive.Elles ont mentionné que la distance de déplacement jouait un rôle majeur dans leur décision de participer, qui allait de pair avec la complexité de devoir organiser leur vie familiale.Finalement, la fréquence de prise d'échantillons importait et les tests ponctuels étaient grandement préférés.Un échantillon ponctuel d'urine l'emportait sur une prise de sang ponctuel et sur une collecte d'urine de 24 heures.Quant aux facilitateurs,les participantes ont souligné une approche empathique et chaleureuse de l'équipe de recherche ainsi qu'une flexibilité d'horaire.

Conclusions : Les barrières et facilitateurs perçus doivent être considérés lors de l'élaboration d'études cliniques pour favoriser le recrutement et leur bon déroulement.Il faut prioriser la coordination des visites de recherche avec le suivi médical,de minimiser la collecte d'échantillons et de favoriser une approche humaine et professionnelle.

Mots clés : preeclampsie, barrières, facilitateurs

■ O-OBS-MD-023 ....

"Maybe I'm Not That Approachable": Using Simulation to Disrupt and Explore Problematic Team Hierarchy Behaviours in Obstetrics and Gynaecology

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Objectives: Simulation research that seeks to solve the problem of silence within interprofessional teams has focused exclusively on teaching subordinate team members to be brave and speak up, despite great interpersonal cost. Yet, these simulation-based interventions overlook the influence and responsibility of the team leader. This study moves beyond existing "speaking up" dogma to explore whether simulation can support faculty in learning how to listen when team members are unable or unwilling to risk speaking up explicitly in maternity care.

Methods: Obstetricians (OB) at 1 academic centre participated in an interprofessional simulation as a partial confederate. Five challenge moments (CM) were scripted for the OB faculty involving deliberate clinical judgement errors or professionalism infractions. Other participants were unaware of the OB confederate role. Thirteen iterations were completed with 39 participants (13-OB, 11-residents, 2- Family Medicine OB, 5-midwives, 8-nurses). 11 OB faculty completed a subsequent semi-structured interview. Scenarios were videotaped; debriefs and interviews were audio-recorded and transcribed verbatim.

Results: Across the 13 scenarios, few direct challenges were made by subordinates. Faculty members described the experience as "eye-opening" and questioned how often they were missing subtle cues or challenges from team members outside the simulated setting. Faculty members ultimately demonstrated an awareness that their verbal and non-verbal communication patterns shape team members' perceptions of their approachability before and during critical incidents.

Conclusions: Through a carefully designed, unconventional, simulation exercise, faculty gained a new appreciation that they create the conditions for speaking up to occur before a critical incident through their verbal and non-verbal communication.

Keywords: teamwork; obstetrics; simulation; hierarchy; interprofessional education

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■ O-OBS/GYN-EDU-030 ....

"Everything New is Happening All At Once": A Qualitative Study Exploring Early Career Obstetrician/Gynaecologists' Preparedness for the Transition to Practice

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Objectives: The transition from residency training into practice is associated with an increasing risk of litigation, burnout, and stress. Yet, we know very little about how best to prepare graduates for the full scope of independent practice, beyond ensuring clinical competence. Thus, we explored the transition to practice (TTP) experiences of recent obstetrics and gynaecology graduates to understand potential gaps in their perceived readiness for practice.

Methods: Using constructivist grounded theory, we conducted semi-structured interviews with 20 obstetrician/gynaecologists who graduated from 9 Canadian residency programs within the last 5

years. Iterative data collection and analysis led to the development of key concepts and themes.

Results: Three inter-related themes encompassed our participants' descriptions of their TTP experience and preparedness. "Existing practice gaps" included areas of unpreparedness highlighted by new graduates. These fit within 5 domains: clinical experiences, such as managing unfamiliar low-risk ambulatory presentations; logistics, such as triaging referrals; administration, such as hiring or firing support staff; professional identity, such as navigating patient complaints; and personhood, such as boundary-setting between work and home. "External modifiers" represented various factors that either mitigated or exacerbated the identified practice gaps. Finally, the theme "Retrospective clarity" captured a shared sense among participants that they had underestimated many challenging realities of practice.

Conclusions: Existing practice gaps are multi-dimensional and perhaps not realistically addressed during residency. Instead, TTP mentorship and training opportunities must extend beyond residency to ensure that new graduates are equipped for the full breadth of independent practice.

Keywords: transition to practice; qualitative; competence

■ O-OBS/GYN-EDU-098 ....

The Struggle is Real: Understanding Helping Behaviours in Obstetrical Teams Using Interprofessional Simulation

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Objectives: Interprofessional (IP) healthcare team members frequently encounter challenges that require them to seek help; yet we understand little about how team members enact such helping behaviours. Given that IP simulation mimics the complexities health care teams experience in clinical practice whilst attending to educational goals, our study seeks to explore helping behaviours in IP teams in an obstetrical simulation context.

Methods: Anesthesia and OB/GYN residents and nurses participated in IP obstetrical emergency scenarios designed to reinforce crisis resource management principles. Informed by constructivist grounded theory, this study utilized 14 observations, 11 focus groups and 3 expert interviews from simulations. Transcripts were analyzed iteratively using a constant comparative method, identifying, and refining themes.

Results: Helping engagement was a "struggle" that was influenced by individuals' shifting perceptions of leadership/followership responsibilities and by their ability to speak up. Team members made assumptions about professional roles and the availability of human/ material resources. Therefore, participants frequently assumed that others would take responsibility for key tasks, rather than explicitly reassessing the leader/follower dynamic or speaking up to request help.

Conclusions: IP simulation provides an opportunity to expose and challenge assumptions that may interfere with helping engagement within IP teams. Simulation has been heralded within the literature as a space where participants can work at their limits of expertise. Our work demonstrates that when these limits are reached, teams struggle with how to request and actualize help.

Keywords: interprofessional; simulation; qualitative

■ O-GYN-MD-022..

Retrograde Bladder Filling After Outpatient Gynaecologic Surgery: A Systematic Review and Meta-Analysis

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Objectives: To systematically review and meta-analyze randomized controlled trials (RCTs) comparing postoperative bladder retrofilling to passive filling after outpatient gynaecologic surgery to evaluate effects on postoperative outcomes.

Methods: We searched MEDLINE, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, and ClinicalTrials. gov from 1947 to August 2020. Two reviewers screened 1465 articles. We included RCTs that compared postoperative bladder retrofilling to passive filling in patients who underwent outpatient gynaecologic surgery by any approach. The primary outcome was the time to first void. Secondary outcomes included time to discharge, postoperative urinary retention, urinary tract infection, and patient satisfaction. Mean differences and relative risks (RRs) were calculated for the meta-analysis.

Results: We included 8 studies with 1173 patients. Bladder retrofilling in the operating room resulted in a significant decrease in time to first void (mean difference (MD) −33.5 minutes; 95% confidence interval (CI): −49.1 to −17.9) and time to discharge (MD −32.0 minutes; 95% CI −51.5 to −12.6). Bladder retrofilling did not shorten time to discharge when performed in the post-anesthetic care unit (MD −14.8 min; 95% CI −62.6 to 32.9) or after laparoscopic hysterectomy (MD −26.0 min; 95% CI −56.5 to 4.5). Patient satisfaction was comparable between groups, and there were no differences in postoperative urinary retention or risk of urinary tract infection.

Conclusions: Retrofilling the bladder in the operating room after outpatient gynaecologic surgery reduces the time to first void and discharge by over 30 minutes with no increase in adverse events.

Keywords: gynaecology; surgery, ERAS

■ R-OBS-PS-MD-170..

Using the Calgary Audit and Feedback Framework to Address Operative Vaginal Delivery Rates at Four Community Hospitals

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Objectives: To determine rates of operative vaginal deliveries (OVD) at 4 local hospitals and identify areas for improvement.

Methods: Between November 20, 2020 and September 21, 2021 a group audit and feedback session was hosted by the Physician Learning Program at 4 local hospitals. Physicians accessed a dashboard that summarized their individual OVD rates. Rates for forceps and vacuum deliveries, third and fourth degree lacerations and episiotomies were also included. Physician leads shared their own data and coached the groups through their reactions, discussions, and commitments to changing their practice.

Results: 55 (90%) of the department members attended the sessions. In Dec 2018 the highest OVD rate at 1 site was 43%. After the initial November 20, 2020 audit and feedback session the OVD rate at that site had dropped to 34% (relative reduction = 20%) in

December 2020. Data from the remaining sites is still being analyzed. The statement "The comparison to peers was valuable" received an average score of 4.75 (5 point Likert scale). We also received consistent feedback that physicians wanted to continue to receive practice data on other topics in the future.

Conclusions: Audit and feedback was successful at helping physicians familiarize and understand practice variation, identify barriers and facilitators, and plan for change to improve OVD rates. It also encouraged an enthusiasm to continue using data to review obstetric practices.

Keywords: operative vaginal delivery; audit and feedback

■ O-OBS-MFM-S-114...

External Validation of Algorithms for the Early Prediction of Preterm Preeclampsia

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Objectives: We conducted an external validation of a model predicting preterm preeclampsia (PTPE) previously developed by our team, and based on the mean arterial blood pressure (MAP), mean uterine artery pulsatility index (UtA-PI), placental growth factor (PlGF) and alpha-fetoprotein (AFP).

Methods: We used data from a prospective cohort study of nulliparous women with singletons recruited at 11^3 to 13^6 weeks of gestation from 4 Canadian hospitals. Pregnancies with fetal anomalies were excluded from the analysis. The MAP, UtA-PI and maternal serum biomarkers such as PlGF were measured in all participants, as well as AFP in a subset of participants. An algorithm including the 4 variables was used to calculate the risk of PTPE of each woman, as well as a simplified algorithm excluding AFP. The risk cutoff used for both algorithms was 1/75 and ROC curves were calculated.

Results: A total of 6775 women were eligible and 2157 had AFP measurements. The detection rate of the first algorithm was 67% with a false positive rate of 22%, and an area under the curve (AUC) of 0.83 (95% CI 0.76−0.90). The detection rate of the second simplified algorithm was 54% with a false-positive rate of 17%, and an AUC of 0.80 (95% CI 0.75−0.86).

Conclusions: The AUC was similar to the one previously obtained in our development sample, with no significant changes after removal of AFP from the algorithm. However, both models (original and simplified) had higher false positive rate than the development sample for similar detection rates.

Keywords: preterm preeclampsia; first-trimester; predictive model; external validation

■ P-OBS-MFM-MD-133 ....

Thrombotic Thrombocytopenic Purpura and Pregnancy Outcomes: A Cohort Study

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Objectives: Thrombotic thrombocytopenic purpura (TTP) is a rare microangiopathy. As little is known of its impact on pregnancy, our study objective was to evaluate the association between maternal TTP and pregnancy and neonatal outcomes.

Methods: A retrospective cohort study was conducted using the United States' Healthcare Cost and Utilization Project, Nationwide Inpatient Sample. A cohort of women who delivered between 1999 and 2015 was created. Then ICD-9 code 446.6 was used to identify women with a diagnosis of TTP, with the remaining women without a TTP diagnosis being the comparison group. Multivariate logistic regression estimated the effect of TTP on maternal and neonatal outcomes, while adjusting for maternal baseline variables.

Results: A total 13 792 544 women delivered between 1999 and 2015, of which 280 had a TTP diagnosis (2/100 000). Women with a TTP diagnosis, compared to those without, had more pre-existing health conditions: diabetes, hypertension, and obesity. TTP was associated with several adverse outcomes: maternal death, OR 215.50, 95% CI 121.19−383.22, preeclampsia, 18.63, 14.57−23.82, eclampsia, 27.80, 13.08−59.11, placental abruption, 5.20, 3.18−8.50, disseminated intravascular coagulation, 139.11, 81.97−236.09, venous thromboembolism, 10.69, 5.25−21.73, sepsis, 118.42, 63.62−220.42, myocardial infarction, 268.60, 84.30−855.81, postpartum hemorrhage, 15.00, 11.66−19.29, requiring a blood transfusion, 59.77, 46.54−76.76, and cesarean delivery, 3.52, 2.74−4.53. Neonates born to women with a TTP diagnosis were at increased risk for preterm birth, 3.40, 2.58−4.49, intrauterine growth restriction, 2.73, 1.68−4.41, and stillbirth, 9.41, 5.95−14.88.

Conclusions: TTP increases the risk of adverse maternal and neonatal outcomes, including maternal and fetal death. Women with TTP in the past or present should be followed closely within a multidisciplinary team.

Keywords: thrombotic thrombocytopenic purpura; pregnancy; maternal outcomes

■ O-OBS-JM-066 ....

Utilizing Clinical Risk Factors to Screen for Postpartum Anemia

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Objectives: Postpartum anemia (Hb <100 g/L) is common and associated with poor maternal and neonatal outcomes. Detecting postpartum anemia may occur by universal phlebotomy for all patients or selective phlebotomy based on clinical risk factors. The objective of this study was to evaluate whether commonly used clinical risk factors are adequate screening tools for postpartum anemia.

Methods: A convenience sample of 301 women aged 18 and over were recruited on postpartum day 1 following a singleton delivery. Patient demographics and clinical risk factors (antepartum anemia Hb <110 g/L, bleeding disorder, postpartum hemorrhage defined as >500 mL for vaginal delivery and >1000 mL for cesarean delivery) were recorded. If any one of the clinical risk factors were present, the patient was considered to screen positive. Logistic regression was used to evaluate the predictive potential of each clinical risk factor.

Results: 30% (91/301) had postpartum anemia. Utilizing any of the clinical risk factors as a positive screen for postpartum anemia, the sensitivity of this approach was 69%, the specificity was 59%, the positive predictive value was 42%, and the negative predictive value was 81%. Logistic regression analysis determined that antepartum anemia ($P < 0.001$; OR 2.58, 95% CI 1.52−4.40) and postpartum hemorrhage ($P < 0.001$; OR 5.27, 95% CI 2.74−10.13) were significant predictors of postpartum anemia.

Conclusions: While antepartum anemia and postpartum hemorrhage are significantly associated with postpartum anemia, screening for postpartum anemia utilizing the evaluated clinical risk factors failed to correctly categorize 31% of cases of postpartum anemia.

Keywords: postpartum anemia; screening; risk factors; postpartum hemorrhage

■ O-OBS-PS-Masters-107..

PROTECT Study—PReterm OuTborn Education CollaboraTive: An Outreach Education Program to Improve Care of Unavoidable Preterm Birth

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Objectives: To understand the barriers that exist regionally with respect to high-risk maternal transport and preterm delivery (PTD). To develop and implement an educational care bundle for staff in non-tertiary maternities focusing on the emergency management of high-risk obstetric patients and at-risk newborn when preterm birth is unavoidable.

Methods: Root-cause analysis was performed via exploratory focus groups to process map components of care and barriers to transport. Centres volunteered their participation. Case reviews were conducted by community partners within both Level 1 and Level 2 facilities to identify the strengths and weaknesses in the process of transferring patients at high risk of PTD to a tertiary centre.

Results: Fishbone diagrams identified 5 system and resource areas for improvement:
1-Policies: Confusion regarding timing of steroids and/or MgSO4 administration to optimize lung maturation and neuroprotection. Discomfort with performing delayed cord clamping for preterm newborns.
2-Patient: Demographics and geographic factors. Poor documentation of transportation data.
3-People: Staffing crisis. Low confidence when managing patients with threatened preterm labour.
4-Places and Equipment: MgSO4 administration restrictions based on level of care and mode of transportation. Outdated resuscitation equipment.
5-Procedures: Difficulty communicating through provincial referral system with tertiary centre, substantially delaying care.

Conclusions: We identified 5 key areas for improvement when transporting a patient at risk of PTD to tertiary centre, with emerging themes fed back to the relevant stakeholders. Based on the root cause analysis, perinatal best practice measures care bundles were developed to optimize maternal and neonatal outcomes when preterm delivery is suspected.

Keywords: maternal transport; preterm birth; threatened preterm labour; patient safety; bundles of care

■ P-OBS-PS-Masters-035..

Patient Experience Survey: Antepartum Care During the First and Second Waves of the COVID-19 Pandemic

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Objectives: To assess 5 domains of patient satisfaction with the novel format of antenatal care delivered during the first and second waves of COVID-19 pandemic.

Methods: We distributed an anonymous online survey to assess patients experience with antenatal care delivered at The Ottawa Hospital between April 2020 and April 2021. Multiple choice and Likert-scale questions evaluated 5 distinct quality of care domains: access to care, satisfaction with telemedicine, communication, overall patient satisfaction, and perception of safety. Data were analyzed with descriptive statistics and ANOVA.

Results: A total of 101 patients completed the survey (37% first wave and 63% second wave). Demographics were equivalent between 2 samples. The majority were patients at the maternal–fetal medicine clinic (62%) and were seen at low-risk (38%). Overall, respondents considered new policies affecting access to care a positive change. Aproximately 58% of respondents indicated to be satisfied with telemedicine. Communication of new policies was considered effective by 90% of high-risk and 71% of low-risk patients ($P = 0.02$). When assessing their perception of safety, overall 81% affirmed to feel protected by the new policies, and there was no significant difference between groups during first and second waves of the pandemic (87% vs. 78%, $P = 0.25$). Of the 38% that answered new policies negatively affected their antenatal care, 76% felt safe and protected by new policies ($P = 0.02$).

Conclusions: Despite new strategies that strongly impacted patients experience, our survey showed that overall, patients felt protected and safe during their antenatal care. These results were consistent during first and second waves of the pandemic.

Keywords: patient safety; quality initiative; antenatal care; COVID-19 pandemic

■ P-OBS-PS-Masters-036..

Sonographic Estimation of Fetal Weight in a Tertiary Care Centre: How Accurate Is It?

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Objectives: To verify the accuracy estimation of fetal weight by ultrasound in a tertiary care centre. Secondly, we investigate if different maternal body mass index impacts the accuracy of estimations.

Methods: We conducted a retrospective study from January to December 2020 at both sites of a tertiary hospital. Estimated fetal weight (EFW) was compared to the actual birth weight (ABW) in grams obtained by chart review. Hadlock 3 was used to calculate EFW. Absolute error was calculated as (ABW-EFW) and percentage error (%err) as ((ABW-EFW)/ABW)x100. We stratified results by BMI class. Based on the literature, a percentage error less or equal 10% was considered acceptable. Descriptive statistics and one-way ANOVA were used. Statistical significance was set at $P < 0.05$.

Results: From a total of 6019 patients, a sample size of 493 was obtained after exclusion criteria. Patients were distributed by BMI as per the WHO classification: normal (11.6%), overweight (28.6%), obesity classes I (28.4%), II (15.6%), III (12%), and IV (4%). Overall, mean absolute error was 61±268g and mean %err 1.77 ± 7.79% for all patients. When comparing normal BMI vs. obesity, mean absolute and %err were not statistically different for neither BMI class ($P = 0.56$ and $P = 0.48$, respectively). The mean %err for normal BMI was

0.5 vs. 1.93 for BMI >25 ($P = 0.19$). Almost 21% of cases reported %err above the acceptable (−21.5% to 23.2% variation).

Conclusions: The %err was comparable among all BMI categories and no statistically significant difference was found when comparing patients with normal and high BMI. This is aligned with previously reported studies.

Keywords: quality improvement; ultrasound estimated fetal weight; fetal biometry; third trimester

■ P-OBS/GYN-085 ....

A Systematic Review of the Indications and Outcomes of Elective Cesarean Hysterectomy

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Objectives: Planned hysterectomy at the time of cesarean section is seldom performed, but may be necessary in certain situations. Our objective was to synthesize the published literature on indications for elective cesarean hysterectomy, beyond that for invasive placentation.

Methods: We performed a systematic review of the published literature from the following databases from inception (1946) to June 2021: MEDLINE, PubMed, EMBASE, Cochrane CENTRAL and DARE. All study designs where subjects underwent elective cesarean hysterectomy were included. Emergency procedures and those performed for placenta accreta spectrum disorder were excluded. The primary outcome was the surgical indication. Additional surgical outcomes were evaluated when data permitted. Quantitative analysis was limited to studies published in 1990 or later.

Results: Thirty-nine studies (805 patients) were included. The most common indications for elective cesarean hysterectomy were malignancy (24.1%), desire for permanent contraception (20.5%), uterine fibroids (18.4%), and menstrual disorders (16.8%). Mean operative time was 149 minutes (95% CI 118−194). Mean estimated blood loss was 1313 mL (95% CI 803−1840). The incidence of blood transfusion was 30.0% (95% CI 17.6−48.8) with an average of 2.2 units used per procedure requiring transfusion (95% CI 1.0−4.4). The most commonly reported complications were infection (19.9%), bleeding (14.8%), and ileus (7.8%).

Conclusions: Elective cesarean hysterectomy has been described to treat concurrent reproductive malignancy and for a variety of benign indications. Although the data suggests it can be safely performed, there is significant publication bias and further systematic study of the procedure is necessary.

Keywords: hysterectomy, cesarean section; peripartum

■ O-OBS/GYN-117 ....

Prevalence of Musculoskeletal Pain Among Gynaecologic Surgeons Performing Laparoscopic Procedures: A Systematic Review and Meta-Analysis

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Objectives: Work-related musculoskeletal (MSK) pain or injury is associated with repetitive movements, constrained body positions, and high cognitive loads. This review aimed to assess the prevalence of musculoskeletal pain and discomfort among gynaecologic surgeons performing laparoscopic procedures.

Methods: Electronic databases (Embase, Medline, PubMed, CINAHL, Web of Science Core Collection, and Cochrane Central Register of Clinical Trials) were searched from 1980 to 2021. Reference lists of eligible studies, Google Scholar, and relevant conference proceedings of the last 5 years were hand-searched. Meta-analyses of prevalence data were performed for studies that specifically looked at gynaecologic laparoscopic surgeons and for studies that looked at gynaecologic surgeons in general. Prevalence estimates with 95% confidence intervals are reported. All analyses were performed using R, with the package 'meta.'

Results: After removing duplicates, 5483 studies were screened. In total, 24 studies are included in this review. The estimated prevalence of MSK disorders or symptoms in gynaecologic laparoscopic surgeons is 82% [95% CI 70%−89%; $I^2 = 92$%], based on 12 studies that represent a combined sample size of 1617 surgeons. Among gynaecologic surgeons, the estimated prevalence is 72% [95% CI, 62%−81%; $I^2 = 95$%], based on 14 studies that represent a combined sample size of 2940 surgeons.

Conclusions: This review revealed a high prevalence of MSK symptoms among gynaecologic laparoscopic surgeons and gynaecologic surgeons in general. These results highlight the need for greater efforts at the institutional level to make improvements in the ergonomic environment for surgeons.

Keywords: ergonomics; laparoscopy; surgery; pain; discomfort

■ P-OBS/GYN-IWH-146 ....

Obstetrics and Gynaecology in Rwanda: A Retrospective Review of Surgical Output and Geographical Variation

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Objectives: In this retrospective review, we describe the surgical output for obstetrics and gynaecology from the largest referral hospital in Rwanda, and evaluate geographical variations in access to care.

Methods: Prospectively collected obstetrics and gynaecology cases performed at the Centre Hospitalier Universitaire de Kigali in Rwanda between June 1st and December 1st 2011 were reviewed. Information relating to patient demographics, diagnoses, and operative procedures was obtained. Comparisons between cases originating from within Kigali and transfers from other provinces were made using Pearson's χ^2 test and Fisher exact test. Geospatial analyses were completed to further describe transfer patterns.

Results: Of the 2758 operative procedures performed by all surgical subspecialties at CHUK during the 6-month study period, 40.5% (1117/2758) were related to obstetrics and gynaecology. A total of 367 patients (36.3%) were transferred from other provinces or neighboring countries, and 74.5% (754/1012) of procedures qualified as urgent, requiring direct transfer to the operating room from either the ward or emergency room. Cesarean section was the most commonly performed procedure and accounted for 62.4%

(631/1012) of all cases, over 20% of which were performed on transferred patients. Specific operative indications and surgical procedures varied substantially between patients from Kigali and patients from other provinces.

Conclusions: Obstetric and gynaecological surgeries represent an important proportion of the surgical care provided at the largest referral centre in Rwanda, the majority of which were urgent procedures. Better understanding the surgical needs at this high-volume referral centre is crucial to direct future studies and areas of improvement.

Keywords: global health; gynaecology; obstetrics; rural; surgery

■ V-GYN-MD-101 ....

vNOTES Hysterectomy, BSO, and Uterosacral Ligament Suspension: A Walk-Through Guide

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Video abstract summary: Although vaginal surgery is on the decline in Canada, vNOTES is increasingly becoming mainstream worldwide due to its numerous reported benefits over conventional laparoscopy such as decreased pain, length of stay, and improved cosmesis. We demonstrate a technique for vNOTES hysterectomy and adnexectomy/vault suspension using 2 methods of achieving pneumoperitoneum. At a single tertiary-care academic centre, we illustrate vNOTES using a glove or a specially-designed Gel-POINT® (Applied Medical, Rancho Santa Margarita, CA, USA) access platform, to perform vaginal hysterectomy, adnexectomy, and uterosacral ligament suspension. After standard posterior colpotomy, an anterior entry is performed and the uterosacral ligaments on either side suture-ligated in the usual fashion. A circular Alexis® (Applied Medical, Rancho Santa Margarita, CA, USA) wound-retractor is seated in the peritoneal cavity with the cervix in the centre. In 1 instance a glove with trocars is fixed to the outer ring, whereas in another, the GelPOINT® is used. The hysterectomy proceeds in the standard sequence for vaginal surgery but using laparoscopic instruments. The adnexa are easily identified after disconnection from the uterus, as are the ureters bilaterally, and the adnexa safely removed. Identification of the uterosacral ligaments is also easily performed, and stitches placed cephalad, medial to the ureters. The vaginal vault is closed in the standard fashion and final cystoscopy is normal.This video demonstrates an approach to vNOTES hysterectomy, adnexectomy and uterosacral ligament suspension. vNOTES offers scar-free surgery, improved access to high pedicles and surgical fields, and a favourable recovery profile, making it an attractive surgical route in appropriate candidates.

■ O-GYN-148 ....

Prevalence, Predictors, and Hospital- and Surgeon-Level Variation of Preoperative Anemia: A Multicentre Retrospective Study

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Objectives: Evaluate prevalence, predictors, and hospital- and surgeon-level variation of preoperative anemia, a quality metric, prior to elective hysterectomy.

Methods: This was a multicentre, retrospective study of all patients undergoing elective hysterectomy at 9 hospitals between July 2016 and December 2020. Patients with a preoperative diagnosis of malignancy or pregnancy-related complications were excluded. Preoperative anemia was defined as hemoglobin <120 g/L. Patient, case and surgeon characteristics for patients with and without anemia were reported descriptively and bivariate comparisons between groups were completed. Multivariable regression analysis of baseline covariates was conducted and adjusted odds ratios (aOR) were reported. A multilevel model was created to calculate median odds ratios (MOR) to assess surgeon- and hospital-level variability in preoperative anemia rates.

Results: A total of 4557 hysterectomies by 113 surgeons at 9 hospitals were completed with 909 patients (19.9%) having preoperative anemia. Several patient, case and surgeon characteristics were associated with preoperative anemia: preoperative diagnosis of abnormal uterine bleeding (aOR 1.48, 95% CI 1.20−1.81, $P <$ 0.001); uterine weight in the 2 uppermost quartiles (aOR 2.41, 95% CI 1.71−3.38, $P <$ 0.001 and aOR 3.52, 95% CI 2.34−4.50, $P <$ 0.001, respectively); surgeon length of practice >11 years (aOR 1.66, 95% CI 1.29−2.12, $P <$ 0.001); and community practice (aOR 2.05, 95% CI 1.44−2.93, $P <$ 0.001). There was considerable variability in preoperative anemia rates among surgeons (MOR 1.29) and hospitals (MOR 1.54).

Conclusions: Several factors are associated with preoperative anemia among hysterectomy patients and variation in preoperative anemia exists at the hospital- and surgeon-level. Quality improvement initiatives aimed at surgeons with longer duration of practice and those at community hospitals may reduce variability.

Keywords: anemia; hysterectomy; quality improvement

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Fillion, Alexandre O-OBS-MFM-S-114

Fine, Alexa O-OBS/GYN-083

Flynn, Breanna P-GYN-JM-087

Foidart, Jean-Michel P-GYN-MD-172

Francoeur, Camille P-OBS/GYN-MFM-092

Franklin, Catherine O-OBS/GYN-IWH-108

Fraser, William O-OBS-MD-125

Friedman, Catherine W-OBS/GYN-EDU-079

Fu, Sarah P-OBS/GYN-049

Gagnon, Louise-Helene O-GYN-JM-144

Gagnon, Robert O-OBS-MD-125

Galipeau, Yannick P-OBS/GYN-164

Garber, Adam W-OBS/GYN-EDU-079

Gaudet, Laura O-OBS-JM-140

Gersh, Richard O-GYN-EDU-MD-173

Gervais, Nicole O-OBS-JM-020

Gilbert, Nicolas O-OBS-Masters-033

Gill, Roopan P-GYN-JM-087

Girard, Isabelle O-OBS-MD-125

Gladstone, Rachel O-OBS-JM-129

Gomes, Megan P-GYN-JM-087

Gotlieb, Walter O-GYN-ONCOL-MD-048

Grattan, Kimberly P-OBS/GYN-164

Gravel, Christopher O-OBS-MD-113

Gravelle, Anne O-OBS-JM-021

Groen, Reinou P-OBS/GYN-IWH-146

Grondin, Melanie O-GYN-JM-095

Guay, Mireille O-OBS-Masters-033

Gudmundson, Bryarre P-OBS-JM-159

Guerby, Paul P-OBS-MFM-MD-040

Guilbert, Edith P-OBS/GYN-082, O-OBS/GYN-160

Guo, Yanfang O-OBS-JM-140

Haberg, Siri O-OBS-MD-113

Haeri, Sina O-OBS-MD-166

Hakonarson, Hakon O-OBS-MD-166

Hanley, Gillian O-GYN-MD-130

Harris, Lisa O-OBS-MFM-PhD-120

Helpman, Limor O-GYN-ONCOL-MD-097

Hemani, Mehdiya O-OBS-JM-020

Hines Duncliffe, Trevor O-OBS-MD-023

Hobson, Sebastian R-OBS-MFM-MD-038, P-OBS/GYN-085, O-OBS-JM-090

Hojabri, Sara O-OBS-JM-129

Honey, Liisa P-GYN-PS-MD-128

Horvey, Samantha W-OBS-MD-073

Horwood, Genevieve O-OBS-JM-140, P-GYN-JM-141

Huang, Eileen P-OBS/GYN-049

Huang, Ryan P-OBS-PE/AD-Masters-149

Hunt, Andrea O-OBS/GYN-EDU-030

Hutcheon, Jennifer P-OBS-JM-071

Hutchison, Zoe O-GYN-JM-115

Hyett, Jon O-OBS-MD-166

Jacobson, Michelle O-GYN-ONCOL-MD-047

Jacobsson, Bo O-OBS-MD-166

Janssen, Patricia P-OBS-EDU-PhD-135

Jarvi, Stephanie O-GYN-JM-144

Jenkinson, Richard O-GYN-JM-144

Jensen, Jeffrey P-GYN-MD-172

Jia, Jian-Jun P-OBS/GYN-164

John, Mabelline P-OBS-MD-157

John, Sid P-OBS-PS-PhD-103, O-OBS-PhD-110, P-OBS-PS-PhD-116

Jomy, Jane P-OBS-IWH-S-111

Jonathan, Sgro R-OBS-MFM-MD-025

Jones, Griffith P-OBS-PS-Masters-036

Joseph, K.S. O-OBS-PhD-110, P-OBS-PS-PhD-103, P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-106, P-OBS-PS-PhD-116, O-OBS-PhD-118, W-OBS-MFM-MD-153

Joseph, Meera R-OBS/GYN-EDU-050

Jost, Maud P-GYN-MD-172

Kaczorowski, Janusz P-GYN-MD-112

Kanee, Allan V-GYN-UROGYN-MD-091

Karol, Dalia O-OBS-JM-129

Karreman, Erwin P-OBS-JM-034, P-OBS-JM-041, O-OBS-JM-066

Kaunitz, Andrew P-GYN-MD-172

Kaur, Paramdeep O-GYN-MD-130

Kean, Lauren O-OBS-MFM-PhD-120

Keely, Erin P-OBS/GYN-EDU-161

Kellow, Zina O-OBS-MD-125

Keunen, Johannes R-OBS-MFM-MD-038

Khaikin, Yannay O-OBS-MD-099

Khalil, Asma O-OBS-MD-166

Khan, Haniya P-OBS-JM-122

Khoja, Wafa O-OBS-PE/AD-S-081

Khwaja, Kosar P-OBS/GYN-IWH-146

Kim, Eileen P-OBS/GYN-049

Kingdom, John R-OBS-MFM-MD-026, R-OBS-MFM-MD-038, P-OBS/GYN-085

Kives, Sari V-GYN-UROGYN-MD-091

Klam, Stephanie O-OBS-MD-125

Kligun, Gilit O-GYN-ONCOL-MD-048

Kokaua, Jackie O-OBS-Masters-033

Konci, Rea P-OBS-JM-102

Kostov, Sanja W-OBS-MD-073

Kozak, Robert O-GYN-JM-144

Krishnamurthy, Srinivasan O-GYN-JM-062, V-GYN-MD-101, P-OBS-JM-102, V-GYN-MD-136

Kung, Rose O-GYN-JM-144

Kushner, Adam P-OBS/GYN-IWH-146

Kwan, Janice P-GYN-PS-MD-128

Kwon, Janice O-GYN-MD-130

Kwong, Jeffrey O-OBS-MD-113

Kyamanywa, Patrick P-OBS/GYN-IWH-146

Kyeremeh, Ama O-OBS/GYN-160

Labre, Katerina P-GYN-JM-141

Lacaze-Masmonteil, Thierry W-OBS-MFM-MD-153

Lachance, Caroline V-OBS/GYN-UROGYN-152

Ladfors, Linnea P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-106

Ladhani, Noor Niyar O-GYN-JM-144

Lakabi, Rosa O-GYN-ONCOL-MD-048

Langlois, Marc-André P-OBS/GYN-164

LaRose, Rosemary P-OBS/GYN-164

Larouche, Maryse V-OBS/GYN-UROGYN-152

Lau, Chloe R-OBS-MFM-MD-156

Lau, Susie O-GYN-ONCOL-MD-048

Law, Michael P-GYN-MD-112

Le, Tien P-GYN-JM-141

Lee, Misun O-OBS/GYN-IWH-108

Lee, Patricia O-GYN-JM-144

Leroux, Nathalie O-OBS-MD-125

Lett, Christine P-OBS-JM-041, O-OBS-JM-066

Lévesque, Isabelle O-OBS-Masters-033

Li, Sophie P-OBS/GYN-049

Liauw, Jessica P-OBS-JM-071, O-OBS-JM-072

Liberman, Alexander Sender P-OBS/GYN-IWH-146

Lin, Lauren O-GYN-JM-028

Lipworth, Hayley P-OBS-MFM-S-076

Lisonkova, Sarka P-OBS-PS-PhD-103, P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-106, O-OBS-PhD-110, P-OBS-PS-PhD-116, O-OBS-PhD-118

Little, Darby P-OBS-JM-059

Litwin, Charles O-GYN-JM-069, P-GYN-JM-070, P-OBS-JM-071, O-OBS-JM-072

Liu, George P-OBS/GYN-164

Liu, Grace O-GYN-JM-144

Liu, Marina O-GYN-JM-028

Lommen, Jonathan O-OBS/GYN-117

Long, Alicia O-GYN-MD-130

Louridas, Marisa V-GYN-JM-089

Luginaah, Isaac O-OBS/GYN-IWH-052

Luketic, Lea O-GYN-JM-028

Lukey, Alexandra O-GYN-MD-130

Luong, Susan O-GYN-JM-094

Lyons, Janet O-OBS-JM-072

MacDonald, Shannon O-OBS-MD-113

MacGregor, Brittany P-GYN-JM-055

Machado-Gédéon, Alexandre P-OBS-JM-158

MacIntyre, Anna P-GYN-PS-MD-128

MacPherson, Cora O-OBS-MD-166

Madankumar, Rajeevi O-OBS-MD-166

Maheux-Lacroix, Sarah P-OBS-MFM-MD-040

Malic, Claudia O-GYN-JM-095

Malone, Fergal O-OBS-MD-166

Mansour, Fady O-GYN-JM-062, V-GYN-MD-101, P-OBS-JM-102, V-GYN-MD-136

Marion, Andréanne O-OBS-S-127

Market, Marisa O-GYN-JM-095

Martin, Kimberly O-OBS-MD-166

Martin, Lisa O-OBS-MFM-PhD-120

Matanes, Emad O-GYN-ONCOL-MD-048

Matelski, John O-GYN-MD-022, P-OBS/GYN-085, O-GYN-148

Mathur, Siddhi P-GYN-JM-169

Matthews, Stephen W-OBS-MFM-MD-153

Maxwell, Cynthia R-OBS-MFM-MD-156

Mazzia, Claire P-OBS-MFM-S-076

Mbareche, Hamza O-GYN-JM-144

McCaffrey, Carmen V-GYN-JM-089

McCall, Jennifer O-GYN-JM-115

McClintock, Chad O-GYN-JM-094

McCoubrey, David O-OBS-JM-021

McDonald, Sarah W-OBS-MFM-MD-153

McGrail, Kimberlyn P-GYN-MD-112

Meddings, Louise O-OBS/GYN-IWH-052

Mehwish, Afra O-GYN-JM-115

Mei-Dan, Elad R-OBS-MFM-MD-026, O-OBS-MD-125

Melamed, Nir R-OBS-MFM-MD-026, W-OBS-MFM-MD-153

Memon, Suman P-OBS-MD-162

Miazga, Elizabeth V-GYN-UROGYN-MD-091, O-GYN-MD-154

Mills, Kienna P-OBS-JM-041

Mimeault, Richard P-GYN-PS-MD-128

Mitchell-Foster, Sheona P-OBS-MD-157

Mitric, Cristina O-GYN-ONCOL-MD-048

Morais, Michelle O-OBS-JM-020, P-OBS-JM-032

Moreau, Julie P-OBS/GYN-MFM-092

Moretti, Felipe P-OBS-PS-Masters-035, P-OBS-PS-Masters-036

Mueller, Valerie P-OBS-JM-032, W-OBS/GYN-EDU-079

Mukerji, Amit W-OBS-MFM-MD-153

Munro, Sarah O-OBS-MFM-PhD-120

Mura Anabusi, Saja P-OBS-JM-168

Muraca, Giulia P-OBS-PS-PhD-103, P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-106, O-OBS-PhD-118, O-OBS-PhD-110, P-OBS-PS-PhD-116

Murji, Ally O-GYN-MD-022, P-OBS/GYN-085, P-GYN-JM-169

Murphy, Kellie O-GYN-JM-144, W-OBS-MFM-MD-153

Murphy, Malia P-OBS/GYN-EDU-161, P-OBS/GYN-164

Murtaza, Fahmeeda O-GYN-MD-024

Nappi, Rossella O-OBS/GYN-IWH-108

Nasr-Esfahani, Maryam R-OBS-PS-MD-170

Nayakarathna, Ransimala O-OBS/GYN-031

Neal-Perry, Genevieve O-OBS/GYN-IWH-108

Nensi, Alysha V-GYN-UROGYN-MD-091, O-GYN-MD-154

Neumark, Samuel P-OBS-IWH-S-111

Nguyen, Dong Bach O-GYN-JM-062, P-OBS-JM-102, V-GYN-MD-136

Nicholls-Dempsey, Laura P-OBS-JM-065

Nijjar, Preety P-OBS-MD-157

Nitsch, Romy O-GYN-JM-115

Noel, Ingrid P-OBS-MFM-MD-040

Norman, Wendy P-OBS/GYN-075, P-GYN-MD-112, O-GYN-JM-069, P-GYN-JM-070, P-OBS/GYN-082, O-OBS/GYN-160

Norton, Mary O-OBS-MD-166

Ntakiyiruta, Georges P-OBS/GYN-IWH-146

Okun, Nannette O-OBS-MD-113

Olure, Bimbola O-OBS-MFM-PhD-120

O'Meara, Paloma P-OBS/GYN-EDU-161

Papalia, Nicholas P-OBS/GYN-085

Papillon-Smith, Jessica O-GYN-JM-062, V-GYN-MD-101, P-OBS-JM-102, V-GYN-MD-136

Parihar, Kavita O-OBS-JM-020

Pascoal, Erica O-GYN-JM-028, P-OBS-JM-032, O-GYN-ONCOL-MD-097

Pasquier, Jean-Charles O-OBS-MD-125

Paterson, David P-OBS/GYN-142, O-OBS/GYN-143, R-OBS-MFM-S-077

Paynter, Martha P-OBS-JM-054

Pechlivanoglou, Petros W-OBS-MFM-MD-153

Pelland, Lucie O-OBS/GYN-117

Perruzza, Darian O-GYN-JM-144

Platt, Robert O-OBS-MD-125

Pokoradi, Alida O-GYN-ONCOL-MD-097

Poliquin, Vanessa O-OBS-Masters-033

Pudwell, Jessica P-GYN-JM-055, O-OBS-PE/AD-S-081, O-OBS/GYN-083, O-GYN-PE/AD-093, O-GYN-JM-094, O-GYN-JM-115, O-OBS/GYN-117

Pylypjuk, Christy P-OBS-MD-162, P-OBS-JM-159

Pymar, Helen P-OBS/GYN-082, O-OBS/GYN-160

Pyper, Jamie O-GYN-JM-115

Raabis, Ayla P-GYN-JM-055

Rabinowitz, Matt O-OBS-MD-166

Ravi Chandran, Anjana R-OBS-MFM-MD-038

Ray, Joel O-OBS/GYN-083

Raymond, Meg P-OBS-JM-159

Razaz, Neda P-OBS-PS-PhD-103, P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-110, P-OBS-PS-PhD-116, O-OBS-PhD-118

Razek, Tarek P-OBS/GYN-IWH-146

Regan, Annette O-OBS-MD-113

Renner, Regina P-OBS/GYN-082, O-OBS/GYN-160, P-OBS/GYN-075, O-OBS-MFM-PhD-120

Rennicks White, Ruth P-OBS/GYN-164

Richard, Marie-Nöelle P-OBS/GYN-MFM-092

Roman, Ashley O-OBS-MD-166

Rousseau, Mathieu P-OBS/GYN-IWH-146

Ruhungande, Landouald P-OBS/GYN-IWH-146

Rulisa, Stephen P-OBS/GYN-IWH-146

Salvador, Shannon O-GYN-ONCOL-MD-048

Salvant, Elsa O-GYN-JM-144

Santoro, Nanette O-OBS/GYN-IWH-108

Schmidt, Louis W-OBS-MFM-MD-153

Schummers, Laura P-GYN-MD-112

Searle, Karlee P-GYN-JM-169

Seshia, Molly P-OBS-JM-159

Shah, Prakesh O-OBS-MD-113, W-OBS-MFM-MD-153

Shah, Rajiv O-OBS-JM-090

Shaltout, Ola O-GYN-MD-024

Shapiro, Jodi O-OBS-JM-090, O-GYN-148

Shapiro, Marla O-OBS/GYN-IWH-108

Sheinis, Michal O-OBS-JM-090

Sherman, Christopher R-OBS-MFM-MD-026

Shir-Mohammadi, Khatereh P-OBS/GYN-164

Shirreff, Lindsay O-GYN-MD-024, O-OBS-JM-090, O-OBS-JM-129, O-GYN-148

Shishkina, Anna V-GYN-JM-089

Shore, Eliane V-GYN-UROGYN-MD-091, P-OBS-JM-122

Silver, Robert O-OBS-MD-166

Simpson, Andrea V-GYN-UROGYN-MD-091

Singh, Hardeep P-GYN-PS-MD-128

Singh, Priyanka O-OBS-MD-023

Sivakumar, Aditi O-OBS/GYN-IWH-061

Skinner, Jamila P-OBS-EDU-MD-043

Skolnik, Emma O-GYN-MD-154, V-GYN-UROGYN-MD-091

Smith, Graeme W-OBS-MFM-MD-153

So, Sophy V-OBS/GYN-UROGYN-152

Sobel, Mara O-GYN-ONCOL-MD-047, P-GYN-JM-169

Sodhi, Jasmine P-OBS/GYN-049

Soroka, Dana V-GYN-UROGYN-MD-091

Spence, Andrea O-OBS-MD-125, O-OBS-MFM-MD-126

Sprague, Ann O-OBS-MD-113

Stephansson, Olof P-OBS-PS-PhD-104, P-OBS-PhD-105, O-OBS-PhD-106

Storey, Alicia P-OBS/GYN-164

Stute, Petra O-OBS/GYN-IWH-108

Svoboda, Elizabeth P-OBS/GYN-MFM-092

Talhouk, Aline O-GYN-MD-130

Tam, Genevieve P-GYN-JM-087

Taylor, Taryn O-OBS-MD-023, O-OBS/GYN-EDU-030, O-OBS/GYN-EDU-098

Tesfaye, Maclite R-OBS-MFM-MD-156

Thiel, Peter O-GYN-MD-022

Thurston, Jackie R-OBS-PS-MD-170

Thurston, Rebecca O-OBS/GYN-IWH-108

Todd, Nicole O-GYN-JM-069, P-GYN-JM-070

Tomlinson, George W-OBS-MFM-MD-153

Torok, Eszter O-OBS-MD-113

Tremblay, Stéphanie O-OBS-MFM-S-114

Tulandi, Togas P-OBS/GYN-049

Turki, Faisal P-OBS/GYN-142

Tzur, Ayellet P-OBS-MFM-MD-133

Velez, Maria O-OBS/GYN-083, O-GYN-JM-094

Vermeer, Julie O-OBS-JM-066, P-OBS-JM-041

Vigod, Simone O-OBS/GYN-083

Vohra, Nidhi O-OBS-MD-166

Walker, Mark O-OBS-MD-113, W-OBS-MFM-MD-153, P-OBS/GYN-164

Walsh, Chris O-GYN-MD-022, P-OBS/GYN-085

Walter, Jens-Erik V-OBS/GYN-UROGYN-152

Wapner, Ron O-OBS-MD-166

Watling, Chris O-OBS/GYN-EDU-098

Werlang, Ana P-OBS-PS-Masters-035, P-OBS-PS-Masters-036, O-OBS-PS-Masters-107

Wilkins, Katie P-OBS/GYN-085

Wilson, Kumanan O-OBS-MD-113

Wilson, Marnie P-OBS/GYN-IWH-146

Wilson, Sarah O-OBS-MD-113

Windrim, Roy R-OBS-MFM-MD-038

Wolfman, Wendy O-GYN-MD-024, O-OBS/GYN-IWH-108

Wu, Lily O-OBS/GYN-117

Yee, Albert O-GYN-JM-144

Yong, Paul O-GYN-MD-130

Young, Carmen O-OBS-PhD-110

Yu, Ziwa P-OBS/GYN-075

Yudin, Mark P-OBS-JM-059

Yusuf, Salim W-OBS-MFM-MD-153

Zakhari, Andrew V-GYN-MD-101, P-OBS/GYN-IWH-146, O-GYN-JM-062, P-OBS-JM-102, V-GYN-MD-136

Zaltz, Arthur R-OBS-MFM-MD-026

Zhou, Grace Xiaoxi O-GYN-148