POSTER OBS

■ P-OBS-Masters-001 ..... BEST OF FOUR

CARBETOCIN VS OXYTOCIN FOR THE PREVENTION OF UTERINE ATONY AFTER CESAREAN SECTION DELIVERY: A META-ANALYSIS AND ECONOMIC EVALUATION

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Objectives: (1) Conduct a systematic review and meta-analysis to assess the efficacy of carbetocin vs oxytocin for the prevention of uterine atony in cesarean section deliveries. (2) Conduct a cost-minimization analysis to evaluate the average cost per patient for carbetocin vs oxytocin for the prevention of uterine atony in cesarean section deliveries.

Study Methods: (1) A systematic literature review was conducted. Data were combined in a fixed-effects meta-analytic model. Statistical analysis was performed using Review Manager 5.1. Relative risk (RR) with 95% confidence interval (CI) was used to provide a pooled estimate of treatment effect. (2) A decision tree was constructed using TreeAge to model treatment outcomes and health services resource use, for both teaching and community hospitals, from the perspective of the Ontario Ministry of Health. The model's efficacy inputs were derived from the meta-analysis. All hospital costs, drug expenses and professional fees were included. Indirect costs to patients (i.e., patient expenses and time off work) were excluded. The time horizon was the length of postpartum hospital stay. Deterministic and probabilistic sensitivity analyses were performed to address model and parameter uncertainty.

Results: (1) Patients receiving carbetocin required significantly fewer additional uterotonic interventions than patients receiving oxytocin (RR 0.65, 95% CI 0.53 to 0.80). (2) Using carbetocin saves $28.71 per cesarean section patient in teaching hospitals and $24.99 per cesarean section patient in community hospitals.

Conclusions: The use of carbetocin for all cesarean section deliveries could represent savings of $1.1 million for the Ontario Ministry of Health.

■ P-OBS-MD-002 .....

GESTATIONAL DIABETES AND POST PARTUM DEPRESSION

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Objectives: To examine the association between gestational diabetes and postpartum depression.

Study Methods: A prospective study was conducted using Edinburgh Postnatal Depression Scale (EPDS) for all women with GDM and a control sample (women who gave birth in the same period without GDM) over the period (January 1st, 2010, to March 31st, 2010)

Results: In this study I found that the possible diagnosis of postpartum depression was found in 20, 35% of those with GDM compared with 18.58% in those without GDM, which was not statistically significant. The overall possible postpartum depression in both groups was 44 out of 113 patients (38.9%).

Conclusions: A similar and a high rate of postpartum depression was found in women with GDM and those without GDM.

■ P-OBS-MD-003 ..... BEST OF FOUR

EXCLUSIVE BREASTFEEDING: A POPULATION-BASED COHORT STUDY

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Objectives: Exclusive breastfeeding without supplementation is the optimal infant nourishment. Our objective was to determine the population-based prevalence and predictors of exclusive breastfeeding at hospital discharge in term infants.

Study Methods: A retrospective population-based cohort study of all live, term singletons and twins without anomalies born in Ontario, Canada from April 1, 2009, to March 31, 2010.

Results: Our study population consisted of 92,364 infants, of whom 56,865 (61.6%) were exclusively breastfed. Women with higher odds of exclusively breastfeeding tended to be older, non-smoking, with higher incomes, and without pregnancy complications or reproductive assistance. Women who did not attend prenatal classes were less likely to exclusively breastfeed (aOR, 0.80 [0.76 to 0.83]). Infants born at 39, 38 and 37 weeks (compared to 41 weeks) were increasingly less likely to be exclusively breastfeed (aOR 0.93, [0.89 to 0.98], aOR 0.84, [0.80 to 0.88] and aOR 0.71, [0.67 to 0.76], respectively). Exclusive breastfeeding was lower after a planned or unplanned caesarean section than after vaginal delivery (aOR 0.56, [0.52 to 0.60] and aOR 0.48, [0.44 to 0.51], respectively). Compared to women cared for by obstetricians, midwifery (aOR 4.49, [4.16 to 4.85]) and family medicine patients (aOR 1.54, [1.47 to 1.61]) were more likely to exclusively breastfeed.

Conclusions: In this first large population-based study, less than two thirds of term infants were exclusively breastfed at hospital discharge, substantially lower than previously reported. There is an urgent need for organizations and care providers to support breastfeeding.

■ P-OBS-MD-004 .....

UMBILICAL CORD BLOOD LACTATE MEASURED AT THE POINT OF CARE AS A SURROGATE SCREEN FOR ACIDEMIA IN NEONATES IMMEDIATELY POST-PARTUM

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Objectives: To evaluate the clinical utility of measuring umbilical cord blood lactate to identify potential neonatal acidemia immediately post-partum.

Study Methods: Lactate concentrations were measured in umbilical cord blood sampled from randomly selected neonates immediately post-partum on two hand-held POC devices – Lactate Pro (KDK) and StatStrip Lactate (Nova Biomedical). Sample comparisons were made with lactate and pH measured by blood gas analyzer (Radiometer 825) on 192 samples. Based on the pH measurements, patients were categorized as either having acidemia (pH < 7.20) or not having acidemia (pH > 7.20). Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were then determined at a lactate cutoff of > 4.5 mmol/L.

Results: Lactate measured on the StatStrip POC device demonstrated a stronger level of agreement with blood gas analyzer than the Lactate Pro device. Umbilical cord blood lactate was found to have an inverse relationship with pH across all

methods. At a lactate cutoff of > 4.5 mmol/L clinical sensitivity for the Radiometer, Lactate Pro, and StatStrip Lactate was found to be 82%, 71%, and 88%, respectively. Specificity was found to be 79%, 85%, and 79% for the Radiometer, Lactate Pro, and StatStrip Lactate, respectively. All methods demonstrated a NPV = 97% and PPV = 32%.

Conclusions: Umbilical cord blood lactate measurement after birth may identify neonatal acidemia similar to umbilical cord blood pH analysis. Hand held POC lactate measuring devices provide results that correlate well with standard blood gas analyzers and may substitute routine umbilical cord blood pH analysis after birth.

■ P-OBS-MD-006

EFFECT OF LONG AND SHORT UMBILICAL CORD ON PERINATAL OUTCOME

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Objectives: To determine the association between abnormal umbilical cord length and perinatal outcome.

Study Methods: A retrospective cohort study, conducted at McGill University Health Center in Montreal, using the computerized MOND database. All Term singleton deliveries between 2001 and 2007 were included. We based our population according to the length of the umbilical cord following delivery: Normal cord length (measured length 35–80 cm), short cord (< 35 cm) and long cord (> 80 cm). Admission to the Neonatal Intensive Care Unit (NICU) was compared to the normal cord group. Elective caesarean sections were excluded. Student t test was used for continuous variables and Fisher test for parametric. $P < 0.05$ indicated statistical significance.

Results: Among 14,873 deliveries that were included, 13,518 (90.9%) had normal length cord, 980 (6.6%) had short cord and 375 (2.5%) long cord. Maternal age, gravidity, birth weights and rate of male gender babies were all increased in the long cord group and decreased in the short cord group (all $P < 0.05$). NICU admissions were more common in the short cord group (OR 1.9, 95% CI 1.4–2.6) but not in the long cord group. Babies in both the short and long cord groups had higher rates of Apgar score < 7 (OR 1.3, 95% CI 1.1–1.7 and OR 1.7, 95% CI 1.2–2.3, respectively) with no significant difference in cord Ph. Logistic regression found both Gravidity and abnormal cord length to be independent predictors of NICU admission.

Conclusions: Short umbilical cord is associated with higher rates of NICU admissions and low Apgar scores.

■ P-OBS-MD-007

PREDICTIVE VALUE OF CERVICAL LENGTH IN PATIENTS WITH THREATENED PRETERM LABOUR AND A NEGATIVE FETAL FIBRONECTIN (FFN)

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Objectives: To assess the risk of preterm delivery (PTD) in patients with a negative FFN test, closed cervix on examination and an ultrasound-based short cervical length (CL). Secondary objectives: incidence of short cervix in negative FFN patients with threatened preterm labour (TPTL), proportion of patients with TPTL and negative FFN who had an ultrasound-based CL assessment.

Study Methods: A retrospective chart review with a search of AHS-Royal Alexandra Hospital (RAH) Database was completed. Inclusion criteria: gestational age at admission < 34 weeks and a diagnosis of TPTL. Exclusion criteria: multiple gestation or cervical cerclage. Descriptive statistics were used for the demographic and baseline characteristics. ANOVA was used for continuous variables and Fischer's exact for dichotomous outcomes. Power was 80% with $P < 0.05$ deemed to be significant.

Results: 94.4% (0.73–0.99) of patients with negative FFN and short cervix (< 15 mm) had PTD (< 37 weeks). In contrast 82.9% (0.72–0.91) with negative FFN and cervix > 15 mm delivered < 37 weeks. For delivery < 34 weeks the incidence was 55.5% (0.31–0.78) and 44.3% (0.32–0.78) respectively. No differences were statistically significant. The incidence of short cervix in negative FFN patients with TPTL was 15.2%. The proportion of patients with TPTL and negative FFN who had an ultrasound-based CL assessment was 92.9.

Conclusions: This study indicates that ultrasound-based CL does not predict PTD in FFN patients. The minority of FFN negative women had CL < 15 mm. Healthcare savings could be achieved if non-predictive ultrasound-based CL assessments were discontinued in FFN negative patients.

■ P-OBS-MD-008

SINGLETON BREECH AT TERM: IMPACT OF A PROTOCOL IMPLEMENTATION

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Objectives: Since July 2008, we apply a protocol allowing vaginal breech delivery as supported by the SOGC recommendations. The primary objective of this study was to evaluate the level of adhesion to the protocol in its two first year of application. The secondary objective was to compare neonatal and maternal morbidity before and after the implementation of the protocol.

Study Methods: This is an observational study based on files review from July 1st, 2006, to June 30th, 2010.

Results: During the first two years of the protocol application, 170 patients presented with term breech presentation, 12.4% with a planned vaginal delivery of which 52.4% had a vaginal delivery. The respect of the protocol was good in the selection of the patients. Only a minority of patients had a pelvimetry (38%). The rate of labor induction was low (9.5%). Slow progression of labor was frequent (41.1%), with a good probability of vaginal delivery with oxytocin stimulation. Second stage of labor was longer than recommended (44 minutes). After the implementation of the protocol, one minute Apgar score and arterial cord blood pH were higher, but there was no significant difference in the 5 and 10 minutes Apgar score, neonatal intensive care unit admission and average hospital stay. There was a diminution in neonatal complication rate. Maternal morbidity was stable.

Conclusions: In conclusion, the application of the protocol was fair to good and it leads to a lower neonatal morbidity. Maternal morbidity was rare.

■ P-OBS-MFM-MD-003 ..... BEST OF FOUR

NEONATAL AND MATERNAL OUTCOMES OF INFANTS BORN AT 23 WEEKS' GESTATION

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Objectives: To evaluate the maternal and neonatal outcomes of infants born 23+0 to 23+6 weeks' gestation.

Study Methods: This prospective cohort study included infants born 23+0 to 23+6 weeks' gestation to women in the Canadian Perinatal Database, admitted Aug 1st, 2005–Dec 31st, 2009, to one of 14 Canadian tertiary perinatal units. Women were included if they were admitted with preterm labor, short cervix, prolapsing membranes, PPRM, IUGR, gestational hypertension or APH. Perinatal outcomes were mortality and serious morbidity (severe brain injury, ROP, chronic lung disease, NEC or sepsis). Maternal outcomes included Cesarean delivery, abruption and serious complication (chorioamnionitis, blood transfusion, ICU admission or severe maternal morbidity).

Results: 154 women and 152 infants were included. Gestational age at admission was 23.2±0.4 weeks, and at delivery was 23.5±0.3 weeks. The rate of Cesarean delivery was 9.7% (15/154) with 36.4% (56/154) of women having a serious complication, the most common being chorioamnionitis (49/154, 31.8%). Corticosteroids for lung maturation were given to 37.7% (58/154) of women. Perinatal mortality was 88.8% (135/152) (stillbirth 45/152 [29.6%] and neonatal death 90/107 [84.1%]). Of live births (n = 107), 36.5% (39/107) were admitted to NICU. Of those admitted to NICU, neonatal death occurred in 56.4% (22/39). Among survivors at discharge, the rate of serious neonatal morbidity was 94.1% (16/17) and of neurologic morbidity (severe brain injury or ROP) was 52.9% (9/17).

Conclusions: Infants born at 23 weeks' gestation have a high rate of serious morbidity and mortality. Mothers of these infants are also at risk of morbidity. This information can be used to counsel women who present at risk of preterm delivery at 23 weeks' gestation, so they can make informed decisions regarding management.

■ P-OBS-MFM-MD-004

ASSESSMENT OF FETAL LUNG MATURITY BY CANADIAN MATERNAL FETAL MEDICINE SPECIALISTS

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Objectives: To determine the practice patterns of Canadian Maternal Fetal Medicine(MFM) specialists of fetal lung maturity (FLM) assessment before non-urgent delivery prior to 39 weeks' gestation.

Study Methods: A validated survey was sent June 2011 to Canadian MFM specialists currently in clinical practice. The anonymous survey assessed the use for FLM testing, indications, gestational age of testing, methods used and any change in practice of FLM testing.

Results: A total of 58/116 (50.0%) MFM specialists responded, from 9 provinces, including 20 cities and 24 hospitals. A total of 32.8% never use FLM testing, with 27.6% rarely using, 36.2% occasionally or frequently using, and 3.4% always using. Among those using FLM testing, there was a wide variety of indications, the more common being placenta previa/accrete (59.0%), previous classical Cesarean section or rupture (56.4%), maternal medical indication (48.7%) and previous still birth (46.2%). The earliest gestational age at testing was 35 to 36 weeks' gestation for 61.5% of respondents. A variety of testing methods were used including TDx FLM II (33.3%), LS ratio (28.2%), PG (thin layer chromatography) (20.5%), PG amniostat (17.9%), foam stability (5.0%) and tandem mass spectrometry (2.6%). Of those performing testing, 1/3 reported a decrease in testing frequency over the past 5 years. There was geographic variation in the use of FLM testing, with Western (80.0%) and Atlantic (85.7%) regions reporting higher testing rates than Ontario (21.1%), British Columbia (15.4%) or Quebec (42.9%) ($P < 0.001$).

Conclusions: There is wide variation is assessment of fetal lung maturity by Canadian MFM specialists. It is therefore important that this practice be reevaluated to determine if its use impacts neonatal and maternal outcomes.

■ P-OBS-MFM-MD-005

SINGLE UMBILICAL ARTERY (SUA): CORRELATION BETWEEN PRENATAL ULTRASOUND DIAGNOSIS AND PLACENTAL HISTOPATHOLOGICAL EXAMINATION

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Objectives: Our purpose was to determine whether there is a discrepancy in prenatal sonographic diagnosis of single umbilical artery (SUA) and post natal histopathological examination of the placenta

Study Methods: A consecutive retrospective review was carried out of all singleton and twin placentas submitted for pathology at our institution over a two month interval yielding a total of 248 cases (294 fetuses). Routine ultrasound scans taken from 16–41 weeks of gestation, when available, were reviewed for the number of umbilical arteries. The number of vessels assessed both at the fetal bladder and within a free loop of cord were recorded as available. Pathology data was correlated with the ultrasound data

Results: Ultrasound images were available for 234 fetuses (80%). Assuming pathology is the gold standard, the sensitivity of ultrasound for SUA was 50% (3/6) and the specificity greater than 99% (227/228). The positive predictive value was 75% (3/4); and the negative predictive value 99% (27/230).

Conclusions: In our study ultrasound was specific in diagnosing SUA but was only 50% sensitive. The specificity is partially attributable to the low pretest probability (1.3%). The cases where the ultrasound underestimated the number of vessels were noted to have a conspicuous discrepancy between artery diameters on histology. Our study suggests that definitive enumeration of vessels should be done correlatively. Ultrasound accuracy may be increased by assessing vessels at the bladder and in a free loop

■ P-OBS-MFM-MD-006 ..... BEST OF FOUR

QUANTIFICATION OF LOCAL CONNECTED FRACTAL DIMENSION (LCFD) IN HUMAN PLACENTAL SPECIMENS

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Objectives: Our purpose was to describe a methodology for the quantification and analysis of local connected fractal dimensions (LCFD) in human placental specimens. LCFD distributions represent the local variation in complexity within an image.

Study Methods: Quantification of LCFD distributions from 7 human placental specimens was undertaken with the FracLac digital image analysis suite for ImageJ (image analysis software). The placental ages ranged from 17–40 weeks gestation and were all developmentally normal. Immunoperoxidase for cytokeratin which marks trophoblast was used to mark villous outlines and enhance signal/ noise ratio. Photo-micrographs of 2 discreet foci per placenta were analysed by FracLac. Graphical depiction of frequency distribution by a box and whisker plot, and of probability densities of LCFD measurements by violin plots, was done using R, an open-source, command-line statistics package.

Results: The box and whisker plot revealed a clustering of the means of the distribution around LCFD = 1.41±0.08, $P = 1.00$. The violin plots demonstrated an almost super-imposable similarity between the probability distributions of LCFD measurements of different gestational ages.

Conclusions: Our study results demonstrate that the LCFD distribution profile remains unchanged throughout placental development. Our results suggest that the inherent distribution of the complexity in a placenta is a constant during normal development. Future studies will assess whether the LCFD distribution is altered in conditions such as maternal insufficiency or maternal diabetes that are subjectively considered to alter villous morphology.

■ P-OBS-PhD-001

BEING INVOLVED IN PROVIDING RICHER CARE: THE EXPERIENCE OF GROUP PRENATAL CARE FOR PHYSICIANS

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Objectives: This study sought to understand the central meaning of the experience of group prenatal care for physicians who were involved in providing CenteringPregnancy through a maternity clinic in Calgary, Canada.

Study Methods: The study followed the phenomenological qualitative tradition. Three physicians involved in group prenatal care participated in a one-on-one interview between November and December 2009. One physician participated in a validation session. Interviews followed an open ended general guide and were audio taped and transcribed. The purpose of the analysis was to identify meaning themes and the core phenomenon experienced by the physicians.

Results: Six themes emerged: (1) 'having more time,' (2) 'having a greater exchange of information,' (3) 'sharing ownership of care,' (4) 'getting to knowing,' (5) 'watching women get to know and support each other,' and (6) 'experiencing enjoyment, satisfaction, and fulfillment in providing care.' These themes contributed to the core phenomenon of physicians 'being involved in providing richer care.'

Conclusions: Although other studies have explored the experience of group prenatal care for physicians, this is the first which sought to understand the central meaning of the experience. In group prenatal care, physicians had the sense that they were contributing to a better care experience for women. This parallels the experience of women who found group prenatal care offered more than they realized they needed. In group prenatal care, physicians had a better professional experience in providing richer care to women. Health care systems may want to consider how to support physicians in offering group prenatal care.

■ P-OBS-PhD-002

EXAMINING CESAREAN SECTION RATES IN CANADA USING THE ROBSON CLASSIFICATION

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Objectives: To determine the groupings within the obstetric population contributing most substantially to the cesarean section (CS) rate in five Canadian provinces.

Study Methods: Hospital births from five participating provinces were grouped into Robson's ten mutually exclusive and totally inclusive classification categories. The relative contribution of each group to the overall CS rate, relative size of group and CS rate were calculated for BC, AB*, ON, NS and NL** for 2007/08 through 2010/11.

Results: In all five provinces (accounting for approximately 64% of births in Canada), and for all years examined, the largest relative contribution to the CS rate was term women with singleton cephalic pregnancies who had a previous CS. This group accounted for 10.3–11.2% of all deliveries with a CS rate ranging from 75.0% in AB to 93.6% in NL in 2009/10. Overall the rate of CS in this group has decreased slightly, other than in ON. The next largest contributing groups were term nulliparous women with a singleton, cephalic gestation. Those with induced labour or cesarean section before labour accounted for 12.0–21.3% of all deliveries (CS rates 35.0–41.5%) compared to those with spontaneous onset of labour, who accounted for 21.3–27.5% of all deliveries (CS rates 13.8–20.4%) in 2009/10.

Conclusions: All hospitals and health authorities can use this standardized classification system as part of a quality improvement initiative to monitor cesarean rates. This system provides information on the most important areas to target interventions for reduction of cesarean deliveries.

*2010/11 data not available **Eastern Health population only

■ P-OBS-PhD-003

GETTING MORE THAN THEY REALIZED THEY NEEDED: WOMEN'S EXPERIENCE OF GROUP PRENATAL CARE

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Objectives: This study sought to understand the central meaning of the experience of group prenatal care for women who participated in CenteringPregnancy through a maternity clinic in Calgary, Canada.

Study Methods: The study followed the phenomenological qualitative tradition. Twelve women participated in a postpartum one-on-one interview and/or a group validation session between June 2009 and July 2010. Interviews followed an open ended general guide and were audio taped and transcribed. The purpose of the analysis was to identify meaning themes and the core phenomenon experienced by the women.

Results: Six themes emerged: (1) 'getting more in one place at one time,' (2) 'feeling supported,' (3) 'learning and gaining meaningful information,' (4) 'not feeling alone in the experience,' (5) 'connecting,' and (6) 'actively participating and taking on ownership of care.' These themes contributed to the core phenomenon of women 'getting more than they realized they needed.' Active sharing among those in the group allowed women to have both their known and unidentified needs met.

Conclusions: Although other qualitative studies have described the experience of group prenatal care, this is the first which describes the central meaning of the experience. Women's experiences reflected strong elements of benefit from social support and the group experience. The results of this study indicate that women benefit from group prenatal care in terms of empowerment, efficiency, social support, and education in ways not routinely available in individual care. This model of care could play a key role in providing for women's needs and improving health outcomes.

■ P-OBS-PS-MD-001

A REGIONAL QUALITY IMPROVEMENT PROJECT TO REDUCE ELECTIVE EARLY TERM REPEAT CESAREAN SECTIONS (ERCS < 39 WEEKS)

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Objectives: Elective early term (< 39 weeks gestation) delivery is associated with increased risks to the neonate, including respiratory morbidity, NICU admission, and lengthier hospital stays when compared with deliveries at 39–40 weeks gestation. The objective of this study was to establish a quality improvement process to reduce the high rates of ERCS < 39 weeks in the Champlain LHIN.

Study Methods: All hospitals within the Champlain LHIN were encouraged to participate in the quality improvement initiative. Each site received a letter describing this developmental indicator project, site specific and regional/provincial rates for this indicator, and knowledge translation resources to assist with the project. Each site was encouraged to run custom query reports using the Niday Perinatal Database to monitor their progress. The rates for ERCS < 39 weeks were calculated for fiscal years 2009–2010 and 2010–2011. The relative risk calculation was used to calculate the difference and confidence limits. A benchmark of 30% was set.

Results: There were 10 hospitals that participated. Prior to the start of the project, the rate of ERCS < 39 weeks ranged from 32% to 75%. There was a statistically significant 21% decrease in the overall rate of ERCS < 39 weeks across the Champlain LHIN in FY 2010–2011 (n = 199/499; 39.9%) compared to FY 2009–2010 (n = 234/464; 50.4%). 7 out of the 10 hospitals had lower rates of ERCS < 39 weeks in 2010–2011 compared to the previous year.

Conclusions: This quality improvement process was successful in reducing the rates of ERCS < 39 weeks for the region.

■ P-OBS-PS-MD-002

EMBEDDED EVIDENCE IN ELECTRONIC ORDER SETS TO PROMOTE BEST PRACTICE IN REGIONAL PERINATAL CARE

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Objectives: 1.To use standardized electronic order sets to promote: best practice, enhanced learning for partners, and seamless regional care irrespective of point of entry into the healthcare system 2.To measure the adoption and utilization of the order sets.

Study Methods: 1. Created the SW Ontario Maternal Newborn Child and Youth Network (MNCYN) 2. Established working groups to develop the content of the order sets. 3. Used an interactive software program as a platform to link Clinical Decision Support Systems to make best evidence accessible. 4. Developed a local and regional implementation plan for order sets on: Threatened Preterm Labour, Preterm Premature Rupture of Membranes, Group B Strep prophylaxis, Fetal Fibronectin, Tocolysis, Corticosteroids, Postpartum Hemorrhage, and Neonatal Therapeutic Hypothermia. 5. Developed methodology to allow MNCYN partners access to order sets and embedded evidence links. 6. Measurement of adoption and utilization of order sets.

Results: 1. Created 8 Perinatal Order Sets. 2. Using informatics principles obtained consensus between Information Management, interprofessional stakeholders and point of care providers to allow utilization of order sets within active clinical settings. 3. This vetted content was hosted on both local and regional servers to give all providers access at point of care.

Conclusions: 1. All 17 hospitals in SW Ontario have access to 8 standardized evidence-based perinatal order sets using a web-based server which supports best practice and enhanced learning. 2. We are now able to measure utilization of regional perinatal order sets irrespective of point of entry into the healthcare system. 3. This methodology has potential to support seamless best practice across healthcare settings.

POSTER GYN

■ P-GYN-IWH-PhD-001 ..... BEST OF FOUR

SAFETY AND TOLERABILITY OF BAZEDOXIFENE/ CONJUGATED ESTROGENS IN POSTMENOPAUSAL WOMEN: FINDINGS FROM A 1-YEAR, RANDOMIZED, PLACEBO- AND ACTIVE-CONTROLLED, PHASE 3 TRIAL

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Objectives: Bazedoxifene/conjugated estrogens (BZA/CE) has shown demonstrated efficacy in treating vasomotor and vulvar/vaginal atrophy symptoms in postmenopausal women. This study evaluated the endometrial safety and overall safety/tolerability of BZA/CE over 1 year.

Study Methods: The Selective estrogens, Menopause, And Response to Therapy (SMART)-5 trial was a randomized, double-blind, placebo- and active-controlled, phase 3 study in non-hysterectomized, postmenopausal women (aged 40–65 years). Subjects received BZA 20 mg/CE 0.45 or 0.625 mg (n = 445 and n = 474, respectively), BZA 20 mg (n = 230), CE 0.45 mg/medroxyprogesterone acetate (MPA) 1.5 mg (n = 220), or placebo (n = 474). Incidence of endometrial hyperplasia was evaluated by endometrial biopsy. Adverse events (AEs) were recorded, and bleeding and breast tenderness were assessed using daily diaries.

Results: At 1 year, BZA 20 mg/CE 0.45 and 0.625 mg showed low endometrial hyperplasia rates (< 1%), similar to those with BZA, CE/MPA, and placebo. Incidences of AEs, treatment-emergent AEs, and serious AEs were similar among groups. CE/MPA showed higher rates of AE-related discontinuations than other treatments (overall $P = 0.012$). There was 1 cerebrovascular event with BZA 20 mg/CE 0.625 mg and 1 venous thromboembolic event with CE/MPA. Incidences of cardiac AEs were similar among groups. Both BZA/CE doses showed cumulative amenorrhea rates and incidences of breast tenderness similar to those with placebo and significantly improved versus CE/MPA ($P < 0.01$ and $P < 0.001$, respectively).

Conclusions: BZA 20 mg/CE 0.45 and 0.625 mg were associated with a favorable endometrial and overall safety profile and showed improved tolerability compared with CE/MPA in postmenopausal women.

■ P-GYN-MD-001 ..... BEST OF FOUR

ILIOINGUINAL/ILIOHYPOGASTRIC NERVE INJURY POST-GYNECOLOGIC LAPAROSCOPY: TWO CASES AND REVIEW

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Objectives: Our objective is to review two cases of ilioinguinal/iliohypogastric nerve injury that arose post-laparoscopic surgery and to review the recent literature regarding this topic, including mechanism of injury, clinical presentation, and therapeutic options.

Study Methods: Two clinical case studies were outlined, along with a review of the scientific literature in the gynecologic and general surgery fields and a review of the anatomy and pathophysiology of ilionguinal and iliohypogatric nerve injury.

Results: There is a relative paucity of information in the gynecologic literature surrounding abdominal wall nerve injury during laparoscopy; however, there exists more data in the general surgery field. Treatment options for ilioinguinal/iliohypogastric neuropathy include conservative and surgical management.

The two cases we outline resulted in effective persistent relief of symptoms after regional nerve block using a combination of marcaine and xylocaine local anesthetics.

Conclusions: Postoperative neuropathy following gynecologic surgery is a known yet infrequent complication that presents the gynecologist with a diagnostic and therapeutic challenge when it does arise. Anterior abdominal wall nerve injury has been reported in the literature to occur at a rate of 0.1–1.1%. Neuropathies may result in symptoms ranging from temporary pain to severe persistent disability. Regional nerve block may be used as a conservative treatment for post-laparoscopic ilioinguinal/iliohypogastric neuropathy.

■ P-GYN-MD-002

LONG-TERM GNRH-A AND ADD-BACK THERAPY WHEN SURGERY IS INAPPROPRIATE OR INADEQUATE FOR EXTREME ENDOMETRIOSIS – ASSOCIATED PAIN

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Objectives: To study efficacy of GnRH-a+add-back in extreme endometriosis-associated pain.

Study Methods: Regimen: 1) leuprolide acetate 3.75mg monthly; 2) micronized17β-estradiol 1mg daily; 3) pulsed norethinedrone 0.35 mg, 2-days-on-2-off; 4) letrozole 2.5mg first 5 days of first GnRH-a injection.

Results: Residual Ovary Syndrome; 30y-old, BMI 51 kg/m^2, CPP/dyspareunia had 12 laparoscopies/LAVH. 33y-old, with left residual left adnexal/rectosigmoid endometriosis-pain following LAVH+RSO. Ovarian Remnant Syndrome; 50y-old, multiple surgeries/TAH+BSO, right sided pain/hydro-uretero-nephrosis. MRI-right (4.5 × 3.4 × 2.4cm-cyst). Treated with GnRH-a /ureteral-stent. Cyst/pain/hydro-uretero-nephrosis resolved after 12 months. 45y-old, multiple surgeries/TAH + BSO, LLQP. Ultrasound-left cyst & hydronephrosis. Cyst/pain/hydronephrosis resolved after 3 months. Mullerian Anomaly/Endometriosis; 15y-old, BMI 21kg/m^2, pelvic pain and irregular/scanty/non-painful periods. U/S-absent right kidney, uterus didelphys, right (9.8 × 6.8cm) multiloculated cyst. MR-uterus didelphys, right hematometra communicating with 6 × 6cm cyst, retro-uterine cyst (6cm). CA 125 = 83IU/mL. Iliostomy/Endometriosis; 38y-old, BMI 38kg/m^2, multiple surgeries, ureteral and bowel injury (iliostomy). 3 years pain free with GnRH-a+tibolone Pulmonary/Endometriosis; 29y-old, infertility /CPP, catamenial hemoptysis. Imaging/bronchoscopy/ confirmed lung endometriosis. Asymptomatic at 7-yr treatment.

Conclusions: GnRH-a+add-back is effective long-term therapy for endometriosis-pain when surgery is ineffective, inappropriate, contraindicated, refused or difficult to perform. BMD remained normal.

■ P-GYN-ONCOL-MD-002 BEST OF FOUR

LOOP ELECTROSURGICAL EXCISION PROCEDURE (LEEP) FOR THE TREATMENT OF CERVICAL DYSPLASIA: HOW MUCH EXCISION IS ENOUGH?

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Objectives: To compare the recurrence rate for patients with cervical dysplasia treated by loop electrosurgical excision procedure (LEEP) with combined ectocervical/endocervical resection versus ectocervical resection alone.

Study Methods: A retrospective study was carried out to identify all LEEPs performed between 1997 and 2009. Relevant patient demographics, history of prior cytologic abnormalities, type of resection, and follow up after LEEP were abstracted from a prospectively maintained colposcopic electronic database at the Riverside Hospital. Descriptive statistics were used to summarize demographic variables. Chi-square tests were used to check for significant associations between categorical variables. Cox regression was built to model time to first detection of cytologic or histologic abnormality during follow up.

Results: 697 LEEP procedures were reviewed. The most common indications for the procedure were HGSIL (54%). 307 patients (44%) had ectocervical excision only with the remainder having an additional endocervical resection. Final pathology showed positive margins in 22% of patients. There was no significant association between the type of resection and margin status (P = 0.40). Recurrent cytologic dysplasia was observed in 30% of patients. In the multivariate Cox model for time to recurrence, positive margin was the only significant predictor (HR = 1.44, 95% CI = 1.04–2, P = 0.028). The type of excision was not significantly predictive of time to recurrences (HR = 1.14, 95% CI = .85–1.99, P = 0.38).

Conclusions: Additional endocervical resection during LEEP did not significantly lower the risk of subsequent dysplasia recurrence compared to ectocervical resection alone.

■ P-GYN-ONCOL-MD-003

OVARIAN CANCER CANADA: SUPPORTING RESEARCH AND DEVELOPMENT THAT ENABLES LEADING AND NEW PHYSICIAN RESEARCHERS TO IMPROVE EARLY DETECTION AND PATIENT OUTCOMES

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Objectives: To describe some of the research and development (R&D) initiatives funded by Ovarian Cancer Canada (OCC) and to increase awareness of key researchers in Canada and current and potential impact of research on patient care.

Study Methods: A systematic review and synthesis of OCC's R&D initiatives: awards/grants available; successful researchers; research findings; and current/potential impact on patient care.

Results: Since 1997, OCC has dedicated almost 4 million dollars to ovarian cancer research. Funding has been provided to leading and new researchers and to medical and health professional students. For instance, in 2010/11, OCC partnered with the Canadian Institutes of Health Research (CIHR), Institute of Cancer Research to fund Dr. Jim Petrik, University of Guelph and Dr. Barbara Vanderhyden, Ottawa Hospital Research Institute. The organization provides grants to residents who choose gynecologic oncology as a study elective. It also supports various initiatives, such as the Ovarian Cancer Research Program of BC, as well as a network of tissue banks.

Conclusions: The findings of ovarian cancer research, especially from studies which focus on early detection, can have significant outcomes on patients and survival rates. OCC's research strategy has been to focus on where its support can make the most difference; by increasing the number of researchers working in this field and increasing funds available to them.

■ P-GYN-UROGYN-MD-001 BEST OF FOUR

VAGINAL PESSARY EROSIONS IN WOMEN WITH PELVIC ORGAN PROLAPSE: PREVALENCE, RISK FACTORS AND MANAGEMENT

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Objectives: Pessary usage has been shown to be a successful conservative option in managing patients with POP. However, some patients develop complications, such as erosions. Currently, the Royal Alexandra Urogynecology and Urotherapy Clinic fits hundreds of pessaries per year and approximately 5% of women develop erosions. However, there is little data on the complications of pessary use and the management of erosions. In this study, we will investigate the prevalence and risk factors contributing to pessary erosion as well as erosion management and time for erosion healing.

Study Methods: We did a retrospective chart review on pessary patient charts from April 2010 – April 2011 at the Royal Alexandra Urogynecology and Urotherapy Clinic. This timeline was picked for convenience sampling and will allow determination of whether a prospective study is warranted. Charts were reviewed for all demographic, clinical and physical examination data. We recorded information such as smoking history, hormone use in menopausal patients, obesity, diabetes, previous surgeries, and other comorbidities to determine whether these factors may contribute to pessary erosions. We also looked at those who have successfully been treated conservatively with estrogen and antibiotic cream against those who had to have surgery.

Results: From the 218 charts recorded, 16 (7.34%) had pessary erosion during this time frame. Data is still currently being statistically analyzed.

Conclusions: These results will then hopefully provide urogynecologists information that may aid in pessary use to better manage women with POP in their clinical practices.

■ P-GYN-UROGYN-MD-002

A STUDY OF SYMPTOMS AND QUALITY OF LIFE OUTCOMES FOLLOWING TREATMENT IN A TERTIARY CARE UROGYNECOLOGY CLINIC

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Objectives: To review outcomes following treatment of pelvic floor dysfunction in a tertiary care urogynecology clinic.

Study Methods: Consecutive new patients attending appointments in the summer of 2009 at the urogynecology clinic were given bladder diaries, and validated symptom (Pelvic Floor Distress Inventory – PFDI 20) and quality of life (Pelvic Floor Impact Questionnaire – PFIQ 7) questionnaires. 1–2 yrs post-treatment, the same patients were asked to complete the same diary and validated questionnaires. They were separated into groups by treatment modality.

Results: 402 patients were initially surveyed. 113 patients completed follow-up questionnaires after treatment. Average patient age was 60yrs; 90% of the women had urinary incontinence. Just under half of the women had pelvic organ prolapse. Women with sensation of prolapse, or previous prolapse surgeries had significantly higher scores on the PFDI 20. Women with sensation of prolapse also had higher scores on the PFIQ 7. Women with incontinence had higher PFDI 20 and PFIQ 7 scores. Analysis of questionnaire scores post-treatment is in process.

Conclusions: Pelvic floor symptoms are very prevalent in women and have significant impact on quality of life. Multidisciplinary treatment programs can help to manage these problems in women. Outcome data on specific treatment modalities will help to guide program development for the treatment of pelvic floor dysfunction.

POSTER OBS-JM

■ P-OBS-JM-001

PLACENTA PERCETA IN A PREGNANCY FOLLOWING TWO ENDOMETRIAL ABLATIONS

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Objectives: To report a case of placenta percreta and uterine rupture at 30 weeks gestation in a pregnancy following endometrial ablation.

Study Methods: Case report.

Results: A 44 year old gravida 6, para 4 with a history of two previous endometrial ablations, presented at 30+1 weeks gestation, with severe abdominal pain. The patient's pregnancy had been complicated by a suspected placenta increta or percreta. An ultrasound performed at 27+5 weeks' gestation revealed a fundal placenta. The myometrium was described as being completely replaced by placental tissue throughout most of the placenta bed, and in some areas there appeared to be no myometrium at all. This was an unplanned pregnancy that was conceived approximately 6 years after the patient's second endometrial ablation. At time of presentation, the patient was hemodynamically stable. The patient was taken to the operating room for an emergency cesarean section for abnormal fetal heart rate. A hemoperitoneum of approximately 2000 mL was noted on entry into the abdomen. The placenta had ruptured through the serosa at the fundus and was actively bleeding. A hysterectomy was then performed without complications.

Conclusions: Pregnancy after endometrial ablation has been associated with numerous adverse obstetrical outcomes such as preterm birth, PPROM, and abnormal placentation. This is the first reported case of pregnancy after ablation to be complicated by an antenatal diagnosis of placenta percreta with subsequent uterine rupture. Patients should receive contraceptive counselling prior to ablation, and be informed of the possible obstetrical risks.

■ P-OBS-JM-002 BEST OF FOUR

THE EFFECT OF INITIAL MODE OF DELIVERY ON STILLBIRTH RISK IN A SUBSEQUENT PREGNANCY

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Objectives: To determine the effect of initial mode of delivery (MOD) on subsequent stillbirth risk.

Study Methods: Data for all paired first (nulliparous) and second (primiparous) pregnancies between 1980 and 2007 was derived from the Nova Scotia Atlee Perinatal Database. Primiparous women were assessed for unexplained stillbirth risk by previous MOD. Second pregnancy multifetal gestation, major fetal anomalies or first pregnancy stillbirth cases were excluded. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) controlling for age, obesity, pre-existing hypertension or diabetes, previous severe pre-eclampsia, socioeconomic status, and smoking were estimated using logistic regression. Subanalyses of stillbirth risk by previous MOD were performed for gestational age (GA) at stillbirth, GA at initial delivery, and type of previous Caesarean delivery (CS).

Results: 55,116 paired eligible pregnancies were identified. There were 83 unexplained stillbirths in second pregnancies (0.15% prevalence). There was no difference in unexplained stillbirth risk

between CS and vaginal delivery (OR 1.08, 95%CI 0.65–1.80). Subanalysis by GA of stillbirth showed no difference in stillbirth risk (aOR 0.86, 95%CI 0.12–6.11 < 28 weeks, aOR 1.04, 95%CI 0.60–1.81 < 28 weeks). Subanalyses by GA of first pregnancy delivery and by type of CS showed no difference in stillbirth risk (aOR 2.53, 95%CI 0.16–40.8 < 34 weeks, aOR 1.05, 95%CI 0.62–1.78 > 34 weeks, and aOR 1.09, 95%CI 0.65–1.81 for low transverse uterine incisions vs. vaginal delivery, respectively).

Conclusions: This large population-based study demonstrated no increase in risk of unexplained stillbirth with caesarean delivery in the initial delivery.

■ P-OBS-JM-003 ..... BEST OF FOUR

PREECLAMPSIA AND THE RISK OF BRONCHOPULMONARY DYSPLASIA IN INFANTS LESS THAN 32 WEEKS GESTATION

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Objectives: To determine if pre-eclampsia (PE) is a risk factor for developing bronchopulmonary dysplasia (BPD).

Study Methods: A case-controlled study of infants born between January 2007 and June 2010, and admitted to the NICU in Calgary, Alberta. Infants < 32 weeks gestational age (GA) with a maternal history of PE were defined as cases (PE/exposed group). The next two infants within one week GA difference but with a normotensive mother served as controls (normotensive/unexposed group). Exclusion criteria included congenital malformations, chromosomal anomalies, maternal essential hypertension and maternal renal, cardiovascular, endocrine and autoimmune disease. BPD was defined as oxygen dependency at 36 weeks post menstrual age. Pearson chi-square test was used for categorical variables and Mann-Whitney test for continuous variables. Multivariate logistic regression was done to estimate the odds ratio (OR) for development of BPD. Statistical significance was set at $P < 0.05$.

Results: Antenatal steroid use was similar in both groups. Chorioamnionitis was significantly higher in the normotensive group. Twenty-two (21%) infants in the PE group and 54 (23%) in the mormotensive group dveloped BPD. On logistic regression, PE (OR 1.1, 95% CI 0.3–3) and chorioamnionitis (OR 1.64, 95% CI 0.4–5.6) were not risk factors for BPD. Blood transfusion (OR 6.9, 95% CI 3–16), gestational age (OR 0.6, 95% CI 0.5–0.74) and SGA (OR 5.7, 95% CI 1.8–17.4) were significant risk factors for development of BPD.

Conclusions: In our study, pre-eclampsia was not a risk factor for developing bronchopulmonary dysplasia.

■ P-OBS-JM-004 .....

GESTATIONAL AGE AT DELIVERY IS THE ONLY PREDICTOR OF NEONATAL OUTCOMES IN TRIPLETS

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Objectives: To explore short term neonatal outcomes in triplets according to gestational age (GA) and to maternal/fetal conditions.

Study Methods: A historical cohort of 52 sets of triplets, born in a tertiary Australian centre between 1999–2010, was analysed, using logistic regression model analyses. Triplets delivered < 20 wks were excluded; 145 liveborns were included. Regression models including maternal/neonatal demographics and antenatal factors as covariates were compared to a simple model with GA as independent predictor for the following outcomes: neonatal death (NND), respiratory distress syndrome requiring continuous positive airway pressure (RDS-CPAP), RDS requiring surfactant (RDS-S), intubation/ventilation, bronchopulmonary dysplasia (BPD), patent ductus arteriosus (PDA), necrotizing enterocolitis (NEC), intraventricular hemorrhage (IVH), retinopathy of prematurity (ROP), sepsis and a composite neonatal outcome.

Results: Mean GA at birth of viable triplets was 31.9 wks (SD±3.1; range 24.1 to 38). One set of triplets born at 22.6 wks was not resuscitated but was included in the eight (5.5%) NND. Crude odds ratios (ORc) were calculated per one week decrement in GA at birth. The ORc for NND was 1.8 (95% CI 1.3–2.4). The ORc for RDS-CPAP was 1.7 (1.4–2.1), for RDS-S 2.0 (1.6–2.6), for intubation 2.2 (1.7–2.8) and for sepsis 2.2 (1.6–3.0). The ORc for a composite outcome of BPD, NEC, ROP and IVH was 2.1 (1.6–2.9). Models weren't affected by these covariates: low birthweight, gender, year of birth, preterm rupture of membranes, chorioamnionitis, antenatal corticosteroids, chorionicity, ART conception, parity and maternal age.

Conclusions: Gestational age is the single most important predictor of short-term neonatal outcomes in triplets.

■ P-OBS-JM-005 .....

ACCURACY OF PRENATAL ULTRASOUND PREDICTION OF LOW BIRTH WEIGHT IN HIGH-ORDER MULTIPLE PREGNANCIES

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Objectives: To evaluate the accuracy of prenatal ultrasound (US) in high-order multiple pregnancies to predict low birth weight.

Study Methods: An Australian cohort of 52 triplet pregnancies was searched to evaluate the accuracy of serial prenatal US in predicting small for gestational age (SGA) babies. Using the 10th percentile (%) for gestational age (GA) from singleton growth charts, SGA fetuses were identified using the most recent US, then compared to neonates' birth weight. Selective terminations and stillbirths were excluded.

Results: According to birth weight, 26 (50.0%) sets of triplets had no SGA babies, 15 (28.8%) had one, 6 (11.5%) had two and 5 (9.6%) had three. The sensitivity and specificity of prenatal US to predict SGA in at least one baby were 50.0% and 80.8%, respectively. The positive and negative predictive values were 72.2% and 61.8% respectively. When SGA was suspected in only one fetus from a triplet set, it was confirmed postnatally in the same proportion in 5/11 (45.5%); when suspected in two fetuses, it was confirmed in 3/4 (75%); when suspected in three fetuses, it was confirmed in 1/3 (33.3%). When no SGA was suspected, 13/34 (38.2%) sets had at least one newborn with birth weight < 10th% and 3/34 (8.8%) sets had one or more newborns with birth weight < 3rd%. Prenatal US performed better at predicting the presence/absence of SGA if triplets had low (0–9.9%) weight discordance ($P = 0.029$).

Conclusions: Prediction of low birth weight in high-order multiple pregnancies on the basis of regular tertiary level ultrasound is challenging and often inaccurate.

■ P-OBS-JM-006 .....

ATTITUDES AND EXPECTATIONS OF CANADIAN WOMEN IN LABOUR TOWARDS POINT OF CARE HIV TESTING ON THE LABOUR AND DELIVERY UNIT

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Objectives: To assess attitudes towards rapid HIV testing among Canadian women, and to determine predictors for acceptance of testing.

Study Methods: A survey assessing acceptability and attitudes towards rapid HIV testing was distributed on the Labour and Delivery unit in an academic hospital in Toronto, Canada during the summer of 2011. Information collected included demographics, health and pregnancy history, willingness to undergo rapid HIV testing while in labour, and barriers to testing. HIV testing was not performed.

Results: Responses for 92 completed questionnaires were analyzed. The average age of respondents was 32 years and all were HIV-negative. 12% of patients reported having at least 1 risk factor for HIV transmission. 59% of women were willing to be tested at the time of survey completion, and these women stated that they would accept any of saliva, urine, or serum testing. If found to be positive, 98% would accept antiretroviral treatment and 96% would formula feed their infants. Of the women who were not willing to be tested (41% of respondents), their reasons for refusal include "don't want to know" (39%) and being in "too much labour pain" (29%). Regardless of willingness to be tested, social stigma and reaction from partners were the most frequently cited barriers to testing (64% and 69% respectively).

Conclusions: Canadian women in labour are willing to undergo rapid HIV testing via urine, saliva or serum. If found to be positive, women are willing to undergo treatment as well as formula feed in order to prevent mother to child transmission of HIV.

■ P-OBS-JM-008

A TWELVE YEAR EXPERIENCE IN CARING FOR TRIPLETS

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Objectives: Review the antenatal and neonatal care of triplets from one tertiary centre.

Study Methods: Historic prospective cohort study from 1999 to 2010 of 52 continuing triplet pregnancies and their 145 liveborns delivered at the Royal Women's Hospital, Melbourne, Australia.

Results: Mean gestational age at delivery was 31.5 weeks (SD 3.4; 22.6–38.0). Mean birth weight was 1595 g (SD 515). Conception was spontaneous in 28 (53.8%) sets, from IVF in 7 (13.5%) and from ovulation induction in 17 (32.7%). Histopathology revealed trichorionicity in 30 (57.7%), and a monochorionic set was present in 22 (42.3%) gestations. Neither obstetrical complications nor short-term neonatal outcomes were affected by mode of conception or chorionicity. Most common complications were: preterm labour 19/52 (36.5%), PPROM 9/52 (17.3%), pregnancy induced hypertension 8/52 (15.4%), pre-eclampsia 4/52 (7.7%), gestational diabetes 4/52 (7.7%), and chorioamnionitis 4/52 (7.7%). TTTS occurred in 6/22 (27.3%) monochorionic pairs (median age of 18.4 [15.0–24.0] weeks). Twenty (42.3%) sets had IUGR in one or more fetuses. Three women (5.8%) experienced intrauterine demise(s). Most newborns (97.2%) were admitted in NICU. Eight (3.4%) died in the neonatal period. CPAP was used in 54 (37%) neonates while 31(21%) were intubated, and 81 (57.9%) had RDS. Sepsis was diagnosed in 13 (9.22%), IVH in 9 (6.4%) and NEC in 2 (1.4%). The "take-home-baby" rate for a complete set of triplets was 80.8%, and almost 1 in 5 women experienced loss.

Conclusions: Triplet pregnancies carry significant risks despite recent advances in care. Mode of conception and chorionicity don't affect the overall obstetrical or neonatal outcomes.

■ P-OBS-JM-010

MANAGEMENT ALGORITHM FOR A COMPLETE HYDATIDIFORM MOLE WITH A COEXISTING LIVE FETUS

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Objectives: Complete hydatidiform mole with a co-existing live fetus (CHM&CF) is a rare event. The literature is sparse on ideal management. We report a case of a CHM&CF with persistent vaginal bleeding from 7 to 24 weeks gestational age (GA) with a successful maternal and fetal outcome.

Study Methods: Case report and review of the literature.

Results: A 31-year-old gravida 3 para 2 conceived after ovulation induction with clomiphene citrate. Her first obstetrical ultrasound was performed at 7 weeks GA for vaginal bleeding and there appeared to be a single intrauterine gestation. At 13 weeks a first-trimester screening ultrasound was preformed. A echogenic mixed cystic solid mass closely associated with placental margin was identified. A follow-up ultrasound confirmed that this was likely a CHM&CF. An amniocentesis at 15 weeks revealed a euploid fetus. The patient chose to proceed with the pregnancy after counseling of the increased risks of complications. Serial ultrasounds showed a CHM that remained relatively stable in size from 20 weeks GA onward. The patient stopped bleeding vaginally at approximately 24 weeks GA. A caesarean section and hysterectomy were planned for 32 weeks GA. The patient went into preterm labour at 27 weeks 6 days and delivered a live female infant. Her serum β-human chorionic gonadotropin (β-hCG) was negative at 2 months postoperative. β-hCG was followed until 6 months postoperative.

Conclusions: Based on our experience with this case and a review of the literature we propose a management algorithm for complete hydatidiform mole and coexistent fetus.

■ P-OBS-JM-011

ANTEPARTUM GOODPASTURE'S SYNDROME: A CASE REPORT AND LITERATURE REVIEW

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Objectives: Goodpasture's syndrome is characterized by circulating auto-antibodies directed against an antigen specific to the glomerular basement membrane (GBM). Typically this results in glomerulonephritis (with crescent formation) and pulmonary hemorrhage. This disorder is extremely rare in pregnancy.

Study Methods: Case report and literature review.

Results: We illustrate the case of a 35 year old Caucasian gravida 4, para 1 woman diagnosed with Goodpasture's syndrome in the second trimester of her fourth pregnancy. She presented in acute renal failure at 16 weeks' gestation. The diagnosis was confirmed by renal biopsy at 17+6 weeks' of gestation. She required plasmapheresis, daily hemodialysis, and immunosuppressive therapy. The pregnancy was complicated by pulmonary hemorrhage and anemia requiring multiple transfusions. She required multiple ICU admissions due to acute respiratory failure, congestive heart failure, hypotension and atrial flutter. Additional complications included clostridium difficile infection and Stevens-Johnson Syndrome. She required multidisciplinary care by nephrology, maternal fetal medicine, respirology, cardiology and intensive care specialists. Bilateral notching of uterine artery Doppler was demonstrated at 18+5 and 23+3 weeks' gestation. Fetal ultrasound surveillance demonstrated intermittent absent end diastolic flow velocity in the umbilical artery Doppler at 27+4

weeks' gestation. She had a premature spontaneous breech vaginal delivery in the ICU at 28 weeks' gestation. The small for gestational age infant weighed 580 grams and required a prolonged NICU admission.

Conclusions: This case demonstrates the severe maternal and fetal morbidity associated with an antepartum diagnosis of Goodpasture's syndrome. Disease progression in pregnancy requires intense multidisciplinary care.

■ P-OBS-JM-012

USE AND RELEVANCE OF GENDER-SENSITIVE POLICY AND GENERAL HEALTH INDICATORS: COMPARISON OF GENDER-SENSITIVE POLICIES AND STATUS OF WOMEN'S HEALTH IN SOUTH ASIA

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Objectives: We used a multi-sectoral approach to conduct an integrated analysis of gender-sensitive policy development in Bangladesh, India, Nepal, Pakistan and Sri Lanka to assess women's health outcomes.

Study Methods: The World Health Organization's (WHO) La Trobe Consortium (2003) Health Information Framework was used to generate a list of gender-sensitive policy indicators with a focus on political and economic empowerment, violence against women and health and education. Through reviews of existing cross-nationally comparable statistical databases, information for general health indicators provided insight on the current status of women in South Asia. The results, key findings and interpretations of each policy indicator with its corresponding general health indicator was then assessed by one or two country specific investigators to support or reject the existence and relevance of each.

Results: Examples of the realization of gender equity from gender-sensitive policies and general health indicators reveal that each of the countries could learn valuable lessons from one another. Although the economic, political, social and cultural climates of the five countries may differ, the integration of women's needs into formulation, monitoring and analysis of policies is a universal necessity. Moreover, the findings illustrate a multi-sectoral approach to gender mainstreaming in policies as a key determinant in achieving equity and positive health outcomes.

Conclusions: The conclusion suggests that it is not enough to develop gender-sensitive policies but assessing the implementation and monitoring of policies from a multi-sectoral approach is a vital step in ensuring that they are gender-equitable and result in positive health outcomes.

■ P-OBS-JM-013

CLINICAL COURSE AND OUTCOME OF PRETERM PREMATURE RUPTURE OF THE MEMBRANES (PPROM) IN TWIN PREGNANCY: COMPARISON BETWEEN PPROM IN TWIN A AND B

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Objectives: To examine the clinical course and outcome of twin gestation complicated by PPROM of Twin A versus Twin B.

Study Methods: A chart review of all twin gestations admitted to SHSC with > 24 hours between PPROM and delivery from 2004 to 2010 was undertaken. Patient characteristics, risk factors for PPROM, latency period, delivery details and postpartum complications were determined.

Results: 76 maternal charts were identified. The average maternal age was 32.3 years; 46 nulliparas and 30 multiparas were included in the analysis. 58 were dichorionic and 18 were monochorionic; 10 were Twin B PPROM and 66 were Twin A. The overall average gestational age at PPROM was 27.5 weeks. The average latency from PPROM to delivery was higher in the Twin B group relative to the Twin A group (41.3 days vs 10.7 days, $P < 0.05$). In a subset analysis, Twin B pregnancies were matched and compared to Twin A by chorionicity and gestational age. A longer latency (35.8 vs 18.2 days) in Twin B PPROM was still identified ($P < 0.05$). Placenta abnormalities were identified in 22.2% of Twin B PPROM. However, 66.7% vs 44.4% of Twin A pregnancies were complicated by threatened preterm labour and cerclage.

Conclusions: The increased latency and later gestational age at delivery in Twin B PPROM is a clinically important finding possibly linked to a different mechanism and greater likelihood of pregnancy retention. This may ultimately change neonatal outcomes and lead to improved results of pregnancies complicated by PPROM in Twin B.

■ P-OBS-JM-014

THE INFLUENCE OF TERM AND PRETERM PRELABOUR RUPTURE OF MEMBRANES ON THE RISK OF NEONATAL MORBIDITY AND MORTALITY IN PREGNANCIES COMPLICATED BY DIABETES

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Objectives: To estimate the influence of prelabour rupture of membranes on term and preterm outcomes in infants born to diabetic mothers.

Study Methods: We conducted a population-based cohort study of women with diabetes in pregnancy (preexisting or gestational) using data from the Nova Scotia Atlee Perinatal Database from 1988 to 2009. Outcomes in newborns of diabetic women following preterm birth (< 37 weeks) with PROM (PPROM) were compared to those without PPROM. In a second analysis, outcomes in newborns of diabetic women following birth at term with PROM were compared to those without PPROM. Logistic regression was used to control for biologically plausible confounding variables. The effects were expressed as odds ratios and 95% confidence intervals.

Results: A total of 6503 diabetic women delivered 6488 liveborn infants (5818 at term and 630 preterm). Among preterm births, there was an increased risk of chorioamnionitis or funisitis (OR 8.73, 95% CI 1.46–29.27) with PPROM (n = 223) compared to without PPROM (n = 427), but not composite neonatal morbidity and mortality. Among term births, there was a significant difference in composite neonatal morbidity and mortality (OR 1.96, 95% CI 1.14–3.37), with the biggest contribution being the increased risk of pneumonia (OR 2.26, 95% CI 1.07–4.80).

Conclusions: There is an increased risk of infectious and overall morbidity and mortality in infants born at term to diabetic women following PROM. Prior to term, risks to the neonate following PPROM appear to be primarily related to prematurity.

■ P-OBS-JM-015

MATERNAL AND NEONATAL OUTCOMES IN PREGNANCIES COMPLICATED BY ANTEPARTUM HEMORRHAGE AND HOSPITAL ADMISSIONS

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Objectives: Antepartum hemorrhage (APH) is a common cause for hospital admissions during pregnancy and is associated with adverse maternal and neonatal outcomes. The objective of our study was to examine the morbidity and mortality in this high risk group.

Study Methods: The Canadian Perinatal Network Database collects data by chart review for women admitted at 22+0 to 28+6 weeks gestation with an indicator condition, that includes APH. The neonatal data is obtained by cross-linking to the CNN Database. The databases were queried for maternal and neonatal outcomes for women who presented with APH.

Results: 806 women were admitted with APH and followed to delivery, neonatal data was available for 704 babies. The most prevalent causes for bleeding were placental abruption (n = 256) and placenta previa (n = 171). 72 women recieved blood transfusions, of those several required urgent transfusions. In regards to serious maternal morbidity, there were 5 cases of DIC, 18 ICU admissions, 14 hysterectomies and 8 uterine artery embolizations. One maternal death occurred with an admitting diagnosis of placenta previa. The median gestational age at delivery was 31.4 weeks, 75% were born at < 37 weeks. 50 babies were stillborn and an additional 33 died during resuscitation. Of the 621 live births, 62% required nursery or NICU admission. Blood transfusions were required for 177 babies and 138 suffered serious neonatal morbidity.

Conclusions: For women with APH, mortality is rare, but serious morbidity is reported and can require life-saving interventions. Adverse neonatal outcomes are common in this group and likely reflect the high rate of associated preterm delivery.

■ P-OBS-JM-016

RARE PREGNANCY IN YOUNG WOMAN WITH PRADER-WILLI SYNDROME

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Objectives: To report a case of a term pregnancy in a young woman with Prader-Willi syndrome (PWS).

Study Methods: A 30 year old primiparous woman with PWS presented with abdominal pain and fluid leakage to a community emergency department. Her abdomen was gravid and examination confirmed rupture membranes and cervical dilation (3 cm). She was transferred to our centre for labour and delivery. Her labour was augmented with oxytocin but did not progress after 12 hours of administration. She subsequently developed hypertension that was difficult to control with labetalol, hydralazine and magnesium sulfate and was delivered via C-Section for dystocia. The patient had phenotypic features of PWS and global developmental delay. She was living in assisted care but was in a voluntary relationship with another member of the facility. She delivered a healthy term female. Subsequent genetic testing confirmed PWS in the mother (46,XX. del(15)(q11.2q11.2) (SNRPN-) and a normal genotype in her offspring.

Results: Most patients with PWS have hypogonadotrophic hypogonadism. Review of the literature documents 2 cases of women with PWS who have become pregnant. One delivered a healthy child; the other was affected with Angelman syndrome. Our patient remained hypertensive postpartum and was discharged on irbesartan with follow-up.

Conclusions: Most patients with PWS have an underdeveloped hypothalamic-pituitary-ovarian axis, do not menstruate and are infertile. However, parents and caregivers should be cautioned that not all patients are sterile and contraceptive options should be addressed, particularly in patients who menstruate periodically.

■ P-OBS-JM-017

QUALITY ASSURANCE IN THE USE OF LOCAL OBSTETRICAL ULTRASOUND SERVICES: LOOKING BACK SO WE CAN LOOK AHEAD

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Objectives: This study was designed to quantify a perceived problem of incorrect ultrasound bookings in the local Fetal Assessment Unit (Royal University Hospital, Saskatoon, SK) and to identify specific conditions/indicators which are most often booked incorrectly. We hypothesized that the improper bookings are time consuming, inefficient, and ultimately compromise the quality of patient care.

Study Methods: A retrospective review of all ultrasounds performed in the unit over a 6-month period in 2010 was performed. Ultrasounds were identified by a Procedure Log Book and the corresponding Procedure Booking Forms were then viewed directly on the Provincial Picture Archiving and Communication System. These forms were assessed according to completeness of demographic data, accuracy of stated EDC, indication and type of ultrasound test ordered, and appropriateness of test ordered. Any discrepancy between the indication and the test ordered was further assessed in accordance with the Canadian Institute for Health Information and the Management Information Systems standards for obstetrical ultrasound.

Results: 794 ultrasounds were performed. In total, 31% of these scans were booked incorrectly. Scans booked for growth assessment, postdates surveillance and diabetes in pregnancy were most commonly booked incorrectly. This resulted in 58 additional hours of scanning time.

Conclusions: Scans are being booked improperly and this translates into additional time/resource pressures on the Fetal Assessment Unit. Information gathered will help focus physician education strategies as well as lead to the development of indication-based booking forms. This should result in improved use of obstetrical ultrasound and thus, patient care.

■ P-OBS-JM-018 BEST OF FOUR

PATIENT FLOW AND LENGTH OF STAY (LOS) BEFORE AND AFTER THE MERGER OF TWO TERTIARY CARE OBSTETRICAL TRIAGE UNITS

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Objectives: To proactively plan for the merger of two tertiary care obstetrical triage units by assessing patient flow, practice differences, and patient volume variation to ensure that best practices and patient flow are optimized.

Study Methods: Multidisciplinary teams at London Health Sciences Centre (LHSC) and St. Joseph's Health Care (SJHC) produced current state value stream mapping of the obstetrical triage processes. Electronic data (2009–2010) was abstracted and analyzed at LHSC and SJHC in order determine triage volumes by year, month, day, and time of day. A future state map of the new obstetrical triage unit was completed. Finally, a chart review was conducted before and after the merger to assess time to primary and secondary nursing assessment, health care provider assessment and length of stay (LOS).

Results: The future state value stream map for triage was created based on best practices. Anticipated patient volumes by month,

day (34 visits/weekday) and time (peak volumes at 1000 and 1900 hrs) were established and validated in the new unit. Two-thirds of the daily visits were between 0700 and 1900 hrs. The average LOS increased from 123 to 147 minutes following the merger. Factors contributing to the increased LOS were assessed.

Conclusions: The robust obstetrical triage planning process enabled an effective merger based on an understanding of the variations in patient volumes and best practices. The daily variation in visits increased LOS has lead to increased daytime staffing to improve time to nursing and health care provider assessment.

■ P-OBS-JM-019 ..... BEST OF FOUR

INTERPREGNANCY INTERVAL AND RISK OF ADVERSE PERINATAL OUTCOME

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Objectives: To determine whether short interpregnancy intervals (IPIs) are associated with an increased risk of adverse perinatal outcomes.

Study Methods: A population based study of women with two consecutive singleton births from 1999 – 2007 was conducted using a linked dataset from the Alberta Perinatal Health Program Database and Alberta Health and Wellness. Pregnancies with congenital anomalies were excluded. Primary outcomes assessed were preterm birth, very preterm birth, low birthweight (LBW), small for gestational age (SGA) and large for gestational age (LGA). Logistic regression, controlling for confounding factors was used to estimate the relative risks (RR) and 95% confidence intervals (CI) for interpregnancy interval and each of these perinatal outcomes. Short Interpregnancy intervals (IPIs) were defined as 0–5 months and 6–12 months. Long IPIs were 24–59 months and greater or equal to 60 months.

Results: Overall, 45,173 women met the study criteria. Short IPIs of 0–5 months were associated with an increased risk of Preterm birth RR = 1.43 [1.23 to 1.66], LBW RR = 1.55 [1.28 to 1.88], and SGA RR = 1.33 [1.12 to 1.57] and a decreased risk for LGA RR = 0.87 [0.77 to 0.99]. The risk of preterm delivery, LBW and SGA were also significantly increased in patients with long interpregnancy intervals.

Conclusions: Both short and long IPIs are associated with a significantly increased risk of certain adverse perinatal outcomes. These results may inform how we counsel patients regarding birth spacing and nutrient supplementation.

■ P-OBS-JM-020 .....

ANALYSIS OF ACUITY AND PATIENT FLOW USING AN OBSTETRICAL TRIAGE ACUITY SCALE (OTAS)

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Objectives: To determine the distribution of patient presentations and patient flow by acuity using a 5 category (5-Non-Urgent, 4-Less Urgent, 3-Urgent, 2-Emergent, 1-Resusitative) Obstetrical Triage Acuity Scale (OTAS).

Study Methods: A retrospective analysis of 936 triage charts from January 2009 to December 2010 was performed. Acuity, time of arrival, primary and secondary nursing assessment, health care provider notification and assessment, and time of discharge were collected. Length of stay (LOS) was stratified by acuity.

Results: The distribution of acuity based on OTAS score was calculated: [OTAS 5 = 364 visits (39%), 4 = 272 (29%), 3 = 182 (19%), 2 = 103 (11%), 1 = 15 (2%)] and the mean LOS by acuity [OTAS 5 = 118 (+SE 5.2) minutes, 4 = 109 (+6.5) minutes, 3 = 107 (+8.0) minutes, 2 = 164 (+19.4) minutes, 1 = 140 (+30.9) minutes. Components of the LOS for level 5 were primary nursing assessment at 15 minutes, health care provider assessment at the 73 minute mark, and discharge at the 118 minute mark. Similar analysis was completed for acuity 1 to 4.

Conclusions: Implementation of OTAS demonstrated that 68% of all triage visits were lower acuity (OTAS 4,5). The LOS for lower acuity was similar to urgent patients. Barriers to patient flow were time to health care provider assessment and time to discharge. A fast track pathway for lower acuity patients may reduce the LOS and improve flow for more urgent patients.

■ P-OBS-JM-021 .....

CHOCOLATE CONSUMPTION ESTIMATED BY MATERNAL SERUM THEOBROMINE AND THE RISK OF DEVELOPING PREECLAMPSIA

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Objectives: Recent studies suggested that cocoa products, a major source of antioxydants, could positively influence cardiovascular risk factors such as blood pressure and endothelial dysfunction by an activation of nitric oxide. The aim of the study was to assess if first trimester serum theobromine concentrations, a known biomarker of chocolate consumption, are associated with risk of preeclampsia.

Study Methods: This was a nested case-control study within a larger prospective cohort of pregnant women in Quebec City. Chocolate consumption was estimated by measuring, during the first trimester of pregnancy, maternal serum concentration of theobromine, the major methylxanthine component of chocolate. Preeclampsia diagnosis was confirmed by reviewing of the medical records of the 76 cases, using the NHLBI Criteria; each case was paired for age, smoking and parity with 2 controls randomly selected from the cohort.

Results: Mean maternal first trimester serum theobromine levels for preeclamptic women and their controls were respectively of 0.695 µg/mL 0.816 µg/mL; these results were not statistically different. Means were adjusted for BMI, previous history of preeclampsia and previous history or actual gestational diabetes.

Conclusions: These findings show no statistically significant association between serum theobromine, a biomarker of chocolate consumption, and preeclampsia. This association would however be best studied in the setting of controlled trial where the numerous possible confounding could be controlled.

■ P-OBS-JM-022 .....

COMPARAISON D'UNE MÉTHODE ALTERNATIVE DE POSITIONNEMENT À L'ACCOUCHEMENT À LA POSITION CLASSIQUE EN DÉCUBITUS DORSAL

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Objectives: Comparer les issues obstétricales d'une méthode alternative de positionnement à l'accouchement à la position classique en décubitus dorsal.

Study Methods: Nous avons étudié rétrospectivement 276 accouchements effectués entre 2007 et 2010 par 4 omnipraticiens, 2 utilisant une méthode alternative de positionnement (décubitus latéral surtout) et 2 autres utilisant la méthode classique en décubitus dorsal.

Results: Les deux groupes étaient similaires sauf pour une plus grande proportion de travail induit (40 % vs 27 %, $P = 0.0303$) et un âge gestationnel plus avancé (39.1±1.4 vs 39.4±1 SA, $P = 0.032$) dans le groupe des positions alternatives (ajustement effectué). Le mode d'accouchement et les issues périnéaux étaient similaires pour les deux groupes avec 74 % et 72 % ($P = 0.8164$) d'accouchements vaginaux spontanés et 38 % et 44 % ($P = 0.3682$) de périnées intacts pour les positions alternatives et classique respectivement. Aucune différence n'a été observée concernant les anomalies du cœur fœtal, le score d'Apgar < 7 à 5 minutes, la dystocie du travail et des épaules, les pertes sanguines et la rétention placentaire. Cependant, il y avait une plus grande proportion de pH de l'artère ombilicale < 7.20 dans le groupe des positions alternatives (32 % vs 20 %, ORa = 2.0, CIa = 1.1–3.8).

Conclusions: Les deux méthodes étaient équivalentes pour la plupart des issues. Les pH artériels plus bas pourraient découler du défi que représentent le monitoring foetal et les interventions d'urgence dans les positions alternatives d'accouchement. À posteriori, nous n'observons aucune différence significative pour les pH < 7.10. Vu l'intérêt croissant pour les positions alternatives, notre étude souligne l'importance de mener des études prospectives sur le sujet.

■ P-OBS-JM-023

ÉTUDE QUÉBÉCOISE SUR LES TECHNIQUES PRIVILÉGIÉES POUR LA FERMETURE DE L'HYSTÉROTOMIE

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Objectives: Les techniques optimales de fermeture d'une césarienne ne sont pas identifiées. Notre objectif est d'évaluer les techniques utilisées au Québec.

Study Methods: Un questionnaire anonyme a été envoyé aux membres de l'AOGQ en décembre 2011 pour évaluer les technique de fermeture de la césarienne privilégiée selon différentes mises en situation (césarienne élective pour siège, répétée, urgente, avec ligature), pour la fermeture de l'hystérotomie et la fermeture du péritoine, des muscles grands droits ainsi que les fils utilisés. Des tests non-paramétriques ont été utilisés.

Results: Parmi 491 courriels envoyés, 185 (38 %) obstétriciens-gynécologues ont répondu au questionnaire. La fermeture privilégiée chez les femmes nullipares étaient majoritairement (85 %) une technique en 2 plans, quelque soit la situation (césarienne urgente ou non) alors que la technique en 1 seul plan était plutôt réservée aux femmes refusant la tentative d'AVAC (40 %) et celles ayant une ligature tubaire (52 %) ($P < 0.001$). Par ailleurs, une majorité (64 – 72 %) utilise un surjet barré pour le premier plan. Nous avons observé des variations significatives ($P < 0.01$) parmi les techniques privilégiés selon l'âge, le milieu, et le nombre d'année de pratique, et ce, dans toutes les étapes de la césarienne (fils, suture barrée ou non, nombre de plan, trans-déciduale ou non, fermeture péritonéale etc.). De façon plus importante, dans 47 % des situations proposées, les réponses les plus populaires étaient différentes de celles recommandées (Cochrane systematic review, Williams Obstetrics).

Conclusions: Bien que la césarienne soit une des interventions chirurgicales les plus pratiquées, il existe grande variabilité dans les techniques privilégiées par les obstétriciens-gynécologues québécois.

■ P-OBS-JM-024

HOW OFTEN ARE LATE PRETERM BIRTHS PREVENTABLE? ANALYSIS FROM A CANADIAN TERTIARY CENTRE

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Objectives: To determine the proportion, characteristics, and predictors of late preterm births (LPTB) in relation to evidence based (EB) and non-evidence based (NEB) indications.

Study Methods: We conducted a retrospective cohort study of LPTB between 2010 and 2011 at McMaster University Medical Centre. Indications for LPTB were classified as EB or NEB a priori after reaching a consensus based on the literature. Data were abstracted from maternal antenatal and labour records. Univariate analyses were completed using Fischer's exact, Chi-square, or Mann-Whitney U tests as appropriate. A multi-variable logistic regression was performed including gestation at birth, delivery provider, previous stillbirth, multiple gestation, previous Cesarean section, corticosteroid administration, and previous preterm birth as possible predictors for NEB LPTB.

Results: A total of 215 women met inclusion criteria, of which 136 (63%) were classified as EB and 79 (37%) as NEB LPTB. There were no differences in baseline characteristics between groups. Preterm prelabour rupture of membranes was the most common NEB indication, accounting for 62% of NEB births. Stable maternal medical conditions accounted for the second most common NEB indication (16%). Patient request contributed 4% of NEB LPTB. Logistic regression did not identify any variables predicting NEB LPTB.

Conclusions: In this study, we identified that a significant proportion of LPTB are due to NEB indications. A review of LPTB indications may allow conservative management for those that are potentially avoidable, hence reducing the number of LPTB and the associated morbidity and mortality.

■ P-OBS-JM-025

INDUCTION OF LABOUR PRACTICES – AN AUDIT OF OBSTETRICIANS' COMPLIANCE TO GUIDELINES

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Objectives: Induction of labour (IOL) occurs when the risks of continuing the pregnancy outweigh the risks of induction. At The Ottawa Hospital (TOH), the rate of IOL has increased by 57.7% from 2002 to 2009. The objective of this quality improvement project is to review the indications for IOL at TOH and assess obstetricians' compliance rate at meeting criteria for specific maternal/fetal indications for induction.

Study Methods: This is a retrospective cohort study of IOL at TOH between July 2010 and June 2011. The Niday Perinatal Database was used to identify patients who underwent IOL for diabetes, pre-ecclampsia or gestational hypertension, oligohydramnios, and small for gestational age (SGA) or intrauterine growth restrictions (IUGR). Criteria for each indication were generated from national guidelines. A chart review was completed by an obstetric resident and each patient was coded as either having "met criteria" or "not met criteria" for IOL.

Results: Between July 2010 and June 2011, there were 1349 induced labours with an overall induction rate of 24.7%. Of these, 54.6% were inductions for postdates and PROM.

Of the 315 charts reviewed with an indication of diabetes (n = 58), pre-ecclampsia and gestational hypertension (n = 122), oligohydramnios (n = 34), and SGA and IUGR (n = 101), 210 cases (66.7%) met the IOL criteria.

Conclusions: A review of current IOL practices at TOH has demonstrated that a significant proportion of induced labours do not meet minimum criteria for certain indications. Educational workshops, knowledge translation activities, and an ongoing internal audit of IOL practices may help improve compliance to IOL guidelines.

■ P-OBS-JM-026

RETHINK AID: INTERNATIONAL MATERNAL HEALTH COLLABORATIONS

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Objectives: Many challenges limit India's progress to eradicate maternal mortality. Therefore the concept of social entrepreneurship has evolved to synergize philanthropic and market-based solutions to address this. This case study outlines a social enterprise in India that focuses on eliminating maternal mortality by providing low cost, high quality obstetrical care to the working poor.

Study Methods: This case review is an observational study conducted in November and December 2011 to gather information on the quality of maternal and newborn care provided by Lifespring Hospitals – a chain of 16 maternity hospitals in Hyderabad, India.

Results: Lifespring is a joint venture between Hindustan Latex Limited, a Government of India Enterprise and Acumen Fund, a New York social venture capitalist company. It offers basic obstetrical care that costs 50 percent less than other hospitals. The total number of deliveries at all sixteen sites since 2005 to December 2011 was 13 445 and total outpatient department visits was 230 732. The maternal mortality was 0 and the neonatal mortality was 5 per 1000 live births. The services provided at Lifespring include: antenatal care, postnatal care, deliveries, family planning services, medical termination of pregnancy, pediatric care, diagnostic services, pharmacy and health care education, access to skilled healthcare providers, blood transfusions and well-equipped operating theatres.

Conclusions: Given the complexity of maternal healthcare disparities we must consider innovative solutions to eradicate high rates of maternal mortality and gender inequities. Lifespring demonstrates how a social enterprise is addressing medical, socioeconomic and healthcare related causes of maternal mortality by applying an innovative model.

■ P-OBS-JM-027

THE SURGICAL OBSTETRICS TEAM: A CONCEPT FOR SAFER PATIENT CARE

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Objectives: Caesarean delivery in medically or surgically complex patients is associated with high morbidity. The multi-disciplinary approach to difficult cases has been shown in other disciplines to improve outcome. In an attempt to decrease surgical morbidity, as well as improve surgical outcomes and patient safety, we present two cases of complex caesarean delivery managed via the surgical obstetrics team approach at The Ottawa Hospital.

Study Methods: The first case is that of a patient with Klippel-Trenaunay syndrome, a rare congenital disease characterized by capillary and venous malformations and chronic coagulopathy, once thought to be a contra-indication to pregnancy. The second is a case of placenta previa with invasive placentation in a morbidly obese woman with a history of 2 previous caesarean sections.

Results: Our surgical obstetrics team consists of individuals from several medical and surgical disciplines, including maternal-fetal medicine, anesthesia, internal medicine, neonatology, radiology and nursing. The surgical expertise is provided by gynaecologic surgeons with advanced surgical skills. Due to diligent pre-operative planning, careful intra-operative execution, and anticipation of complications by all members of the team, both of our patients had positive maternal and neonatal outcomes.

Conclusions: The multi-disciplinary team approach has become the cornerstone for managing complex medical conditions. Surgical obstetrics, in particular, presents many opportunities for involvement of such a team. With growing medical and surgical complexity in obstetrics, implementation and evaluation of strategies to improve patient outcome and patient safety is necessary.

■ P-OBS-JM-028

TRENDS IN THE ETIOLOGY OF STILLBIRTH, 1989–2009

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Objectives: To evaluate the etiologies of stillbirths

Study Methods: All autopsies for stillbirths between 1989 and 2009 at the McGill University Health Center were carefully reviewed in order to determine the etiology. Baseline patient characteristics and the pregnancy history were also reviewed.

Results: Between 1989–2009, 332 stillbirths were identified. 70 had no autopsy examination; and 43 were medically induced terminations. 2 cases had incomplete data leaving 217 stillbirths that were included in the study. Amongst these, the mean maternal age was 31.05 (±5.8) years, gravidity was 2.48, parity was 0.80, and the number of prior abortions was 0.68. 23 patients (11%) had a twin pregnancy; 43 (20%) were smokers; 23 (11%) had hypertension and 12 (6%) had diabetes. In 65 cases (28.1%), there was a prior history of subfertility. The mean gestational age at diagnosis was 236 (±83) days, with a birth-weight of 1888 (±1084) grams. The most common cause of stillbirth was unexplained antepartum asphyxia (58–26.7%). Abruptio placenta was identified in 28 cases (12.9%), intrauterine growth retardation in 6 (2.8%); other placental or umbilical cord factors accounted for 43 cases (19.8%). Fetal malformations accounted for 18 cases (8.3%) whilst other fetal causes were found in 27 cases (12.4%). Infection was the primary factor in 23 cases (10.6%) with the remainder being due to maternal toxemia (3.2%), diabetes (1.8%) and intra-partum asphyxia (1.4%); there were no cases of isoimmunization.

Conclusions: Despite detailed pathological examination, antepartum asphyxia of unknown origin remains the most common contributor to stillbirth.

POSTER GYN-JM

■ P-GYN-JM-001

BILATERAL SALPINGO-OOPHORECTOMY AND SEXUAL HEALTH: A MIXED METHODS STUDY EXPLORING RISK-REDUCING VERSUS BENIGN SURGERY GROUPS

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Objectives: To examine the impact of risk-reducing bilateral salpingo-oophorectomy (RRBSO) on sexual function in BRCA mutation carriers, compared to women undergoing BSO for benign indications.

Study Methods: Our study included 26 women who had undergone a RRBSO because of BRCA carrier status and 13 women who had BSO for a benign gynecologic indication. Women were invited to participate if they were at least 6 months post-BSO. Participants completed questionnaires that included validated measures of sexual response, sexual distress, sexual self-image, and mood. 25 women completed a follow-up interview, which included open-ended questions about their sexual health.

Results: There were no statistically significant differences in sexual response, sexual distress, or body image self-consciousness between the groups. Furthermore, there were no significant differences noted in depressive symptoms, anxiety, or relationship adjustment scores. Using content analysis of interviews, the main theme identified was the importance of pre-operative knowledge of sexual side effects. Pre-operative awareness of post-BSO sexual side-effects was highly correlated with patient satisfaction and inversely correlated with post-operative sexual distress. A majority of participants reported that they did not discuss post-BSO sexual functioning with their physicians, and had to seek out information independently. Regardless of whether participants reported post-BSO sexual distress, satisfaction with RRBSO remained high.

Conclusions: Whether women received BSO for benign or risk-reducing indications, this study found no significant difference in the impact upon sexual functioning. Patients with pre-operative knowledge of post-BSO sexual side effects report being more prepared for surgery, and experience less sexual distress following their BSO.

■ P-GYN-JM-002 ..... BEST OF FOUR

ABORTION TRAINING IN CANADIAN FAMILY PRACTICE AND OBSTETRICS AND GYNAECOLOGY RESIDENCY PROGRAMS

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Objectives: To explore abortion training in Canadian family practice and obstetrics and gynaecology (ob/gyn) residency programs.

Study Methods: Canadian ob/gyn and family practice residency programs were sent an investigator-designed questionnaire that was to be distributed to the residents of the program. The questionnaires included information regarding demographics, abortion training offered, resident participation in training, competency in abortion techniques, and intention to provide abortions.

Results: 115 residents completed and returned questionnaires. 64 (55.7%) respondents were family practice residents, and 51 (44.3%) were ob/gyn residents. A minority of respondents received training in induced abortion. 31 (27.0%) participants reporting performing at least one medical abortion, 39 (33.9%) a first trimester surgical abortion, and 18 (15.7%) a manual vacuum aspiration. In regards to second trimester procedures, 17 (14.8%) respondents reported performing at least one dilatation and evacuation, and 35 (30.4%) an induction of labour. 45 respondents (39.1%) plan on providing abortions after completing residency. The majority of these respondents (86.4%) are from programs that offer training in induced abortion. Of the 45 participants who intend to provide abortions, 30 (66.7%) are ob/gyn residents. The majority of respondents (90.3%) believe that ob/gyn and family practice residency programs should offer elective abortion training. The major limitation to our study is the small sample size. Estimated rate of return was 10%.

Conclusions: The majority of our study's respondents have never received training in induced abortion. In our study, residents from programs that offer abortion training are more likely to plan on becoming abortion providers ($P = 0.027$).

■ P-GYN-JM-003 .....

ENDOMETRIAL ABLATION PERFORMED IN A PROCEDURE ROOM COMPARED TO THE OPERATING ROOM

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Objectives: To compare procedure room to operating room endometrial ablation in terms of patient satisfaction, tolerability, and adverse events.

Study Methods: Prospective study of a convenience sample of 58 women having Novasure® or Thermachoice® endometrial ablation for abnormal uterine bleeding either in the OR or procedure room setting at the Victoria General Hospital in Winnipeg, MB. Questionnaires used included the Visual Analogue Scale for pain and a patient satisfaction questionnaire. Data such as time in hospital, medications given, and adverse events in hospital was also collected via chart review.

Results: Women having endometrial ablation in the OR received a greater variety of medications while in hospital and while not statistically significant, had a higher occurrence of severe pain (20% versus 0% of procedure room patients) and nausea and vomiting (20% versus 0% of procedure room patients). OR patients spent a greater time in hospital, averaging 6 hours and 8 minutes compared to procedure room patients, who spent an average of 3 hours and 5 minutes in hospital ($P < 0.05$). Recovery time was greater on average for OR patients (2 hours and 51 minutes) versus procedure room patients (1 hour and 18 minutes) ($P < 0.05$). Visual Analogue Scale pain scores were similar for both groups when taken 30 minutes post-op and just prior to discharge. Overall patient satisfaction with the procedure was similar for both groups.

Conclusions: Procedure room endometrial ablation is safe, fast, and associated with similar patient satisfaction when compared to the operating room.

■ P-GYN-JM-004 .....

NEEDS ASSESSMENT QUESTIONNAIRE IN KILEMA, TANZANIA

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Objectives: A team of gynecologists, in partnership with the Canada-Africa Community Health Alliance, travel to Kilema, Tanzania, twice yearly to teach essential surgical and obstetrical skills and to present various healthcare topics. The goal is to identify areas for improvement for this transfer of knowledge.

Study Methods: A 23-question survey was administered to 25 healthcare providers and 15 patients of the Kilema Hospital. The answers were then coded and analyzed.

Results: 73% of respondents described their level of healthcare as good or above. 71% of respondents would not go elsewhere for care. 90% of respondents perceived health education as the biggest barrier to healthcare. 75% of respondents felt that there is enough attention placed on maternal/newborn healthcare but that delayed arrival to hospital (16%) and obstructed / prolonged labours (22%) are major problems in the district. 89%

of respondents wanted the gynecology team to provide education regarding various healthcare topics and 53% of respondents wanted surgical teaching for the assistant medical officers.

Conclusions: The majority of respondents were satisfied with the healthcare currently provided at the Kilema Hospital. This community appeared to use their resources successfully. The Canadian gynecology group's main goals are to teach surgical techniques and various other healthcare topics, which is what the respondents required. The goal of this outreach project is to create sustainability in a low resource setting and create approaches to education and transfer of medical and surgical knowledge that can eventually be applied in another low resource community.

■ P-GYN-JM-005 ..... BEST OF FOUR

CANADIAN SURVEY OF SURGICAL EVALUATION IN OBSTETRICS AND GYNECOLOGY RESIDENCY PROGRAMS: FACULTY AND RESIDENT PERSPECTIVES

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Objectives: Gain an understanding of current surgical evaluation practices in Obstetrics and Gynecology Residency Programs across Canada and describe any differences in surgical evaluation between faculty and resident perspectives.

Study Methods: REB approval was obtained. Survey Monkey was used to electronically distribute a survey to Canadian Obstetrics and Gynecology residents and faculty. Three separate requests were sent to maximize response rates. Descriptive analysis was performed.

Results: The survey was completed by 82 faculty and 153 residents between April and September 2011. Presently, 44% of faculty and 33% of residents felt their programs current form of evaluation was the best method of evaluating surgical skills. More than 95% of responders agreed that direct observation in the operating room was used for evaluation, with 81% of faculty feeling comfortable evaluating residents. Despite faculty feeling comfortable evaluating residents, there was a high rate of inter-observer variation (17% of the time faculty agreed on a residents performance). Furthermore, 58% of faculty felt the program identified residents in need of remediation but only 27% felt their program was properly able to remediate identified residents. The majority of residents (77%) felt they would benefit from more formal evaluation. Lastly, only 46% of residents felt prepared for independent surgical practice at the end of residency; however, 81% of faculty felt the residents were prepared.

Conclusions: The survey supports that both residents and faculty feel the need for more formal surgical evaluation tools for Obstetrics and Gynecology Residency Programs across Canada to enhance resident surgical evaluation.

■ P-GYN-JM-006 .....

SURVEY OF NURSE LED EMERGENCY GYNAECOLOGY SERVICES IN AN ISOLATED GYNAECOLOGY UNIT, IN A DISTRICT GENERAL HOSPITAL

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Objectives: The objective of the survey was to review the services provided in a nurse led emergency gynaecology unit, in an isolated gynaecology department and to determine if standards of practice were in keeping with RCOG standard of practice and service organisation, for emergency gynaecology services.

Study Methods: A retrospective case note review of patients seen in the unit over a 12 month period. Total no of patients seen=1100, total no of case notes reviewed=134.

Results: The survey revealed that the practice met most of the RCOG guidance. However there was a high rate of patient transfer to a neighbouring hospital, a limited spectrum of emergency gynaecology cases were seen, there was limited input from specialist trainees/consultants in gynaecology, resources available in local hospital was underutilized for efficient patient management, education and training.

Conclusions: it was concluded that if there was more input from specialist trainees and consultants in gynaecology during day time working hours (9am–5pm), the rate of patient transfer will be reduced, a broader spectrum of emergency gynaecology patients will be managed, there will be efficient use of local resources to manage emergency gynaecology cases and also provide education and training.

■ P-GYN-JM-007 .....

A CASE OF BARIUM SULPHATE INDUCED URTICARIA CAUSED BY THE LEVONORGESTREL IUD

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Objectives: Barium sulphate is commonly used in radiographic studies. The levonorgestrel-releasing IUD has a T-shaped frame that is pigmented with barium sulphate to facilitate its visualization radiographically. We present a case of barium sulphate induced urticaria in a 59-year-old man. The hypersensitivity reaction occurred following intercourse with the patient's wife. The wife had a levonorgestrel releasing IUD for treatment of menorrhagia. To date there are no cases of this in the literature.

Study Methods: A 59-year-old male presented to the emergency room with a 6-hour history of penile pain, redness, and urticaria. He was treated for an allergic reaction and discharged home. Three weeks later he presents again to the emergency room with swelling on his thorax, neck and face. Prior to his initial presentation in the ER the patient's wife had a levonorgestrel IUD inserted. The patient noted worsening symtpoms following each sexual encounter with his wife after the IUD placement.

Results: After consultation with an allergist, sensitivity to the barium sulphate coating the levonorgestrol IUD was proposed as the cause of the patient's symptoms. The exact mechanism triggering the reaction is not well understood, but it was recommended that the IUD be removed.

Conclusions: Since barium sulphate is considered an inert substance, some believe it is incapable of causing an IgE hypersensitivity reaction. Barium sulphate is used to coat the T-shaped frame of the levonorgestrol IUD. It is felt by an allergist that our patient's hypersensitivity reactions are the result of contact with his wife's levonorgestrel IUD.

■ P-GYN-JM-008 ..... BEST OF FOUR

REVERSAL OF INTERLEUKIN-1ß STIMULATED COX-2 EXPRESSION IN FALLOPIAN TUBE EPITHELIAL CELLS BY GLUCOCORTICOIDS

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Objectives: Recent studies indicate that high-grade serous ovarian carcinoma (HGSC), the most commonly diagnosed epithelial ovarian cancer (EOC), may originate from the fallopian tube epithelium (FTE). Risk factors for EOC are consistent with a role

of ovulatory events. Ovulation is an acute inflammatory event, during which the FTE is bathed in follicular fluid (FF) containing pro- and anti-inflammatory molecules such as IL-1β and cortisol. It is hypothesized that an altered ability of adjacent FTE cells to resolve the local pro-inflammatory environment associated with ovulation may contribute importantly to serous tumourigenesis perhaps through DNA adduct formation. The objective of this study was to determine if exposure of FTE cells to IL–1β or FF induced an inflammatory response, cyclo-oxygenase 2 (COX-2) expression, and whether glucocorticoids oppose this effect.

Study Methods: Human FTE OE cells were treated with IL–1β (50ng/mL), vehicle, or human FF for 24h. Protein lysates were resolved by SDS-PAGE and immunoblotted for COX-2 and tubulin. To investigate the impact of glucocorticoids, cells were pretreated with dexamethasone (10 nM) or vehicle. To investigate the global effects of these treatments on gene expression, total RNA was extracted and hybridized to Illumina HT-12 v4 Expression BeadChips.

Results: Both IL–1β and FF induced COX-2 expression and the effect of IL–1β was reversed by dexamethasone. Analysis of gene expression profiles is ongoing.

Conclusions: These findings support the hypothesis that proinflammatory signaling is induced in FTE cells at the time of ovulation and demonstrate that glucocorticoids act in these cells to inhibit this signaling.

■ P-GYN-JM-010

OVARIAN TORSION: A DESCRIPTIVE REVIEW

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Objectives: To provide health care professionals with a description of the history, physical exam and investigative findings of ovarian torsion.

Study Methods: A retrospective chart review of surgically proven ovarian torsion was conducted at the Royal Victoria Hospital in Montreal between 1995 and 2009.

Results: Fifty-eight cases were identified with ages ranging from 16 to 78 (mean=37) of which 24 (41%) had known risk factors such as mainly an existing cystic lesion, but also pregnancy, infertility treatments and tubal ligation. In terms of symptoms, a palpable mass was found in 13/58 cases (22%), nausea in 27/58 (47%), vomiting in 23/58 (40%) and fever was found only in 6/58 (10%). There was no vaginal bleeding documented in any case. Only 4 /46 patients who had a documented ultrasound report had confirmed ovarian torsion. Lesions on ultrasound were separated between groups: = 10 cm and < 10 cm. Both groups were found to undergo more oophorectomies than cystectomies, but with a slightly greater proportion in the larger than smaller lesion group (82% vs 54%). Also, larger lesions were removed mainly by laparatomy (82%), whereas smaller lesions were removed by laparascopy (67%).

Conclusions: Ovarian torsion seems to be associated with previous known cystic lesions. Also, the type of surgical approach and type of surgery seems to depend on the size of the lesion, as larger lesions are associated with more laparotomies and oophorectomies. Finally, although ultrasound is used as an investigative tool, the final diagnosis of ovarian torsion remains mainly at time of surgery.

■ P-GYN-JM-011 ..... BEST OF FOUR

DO WOMEN WHO HAVE HAD CERVICAL CANCER SCREENING PRESENT WITH EARLIER STAGE CANCER?

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Objectives: To determine if patients with advanced cervical cancer tend to have no cervical cancer screening, or screening that is outside recommended guidelines, compared to patients presenting with early stage cervical cancer.

Study Methods: We studied patients diagnosed with cervical cancer from 2004 through 2008. Information from Cancer Care Manitoba was collected and cross-referenced with the Pap test history of each cervical cancer patient from the Manitoba Cervical Cancer Screening Program database.

Results: A total of 239 patients were used in the analysis. 53.6% of patients had an early cancer, stage one; the remainder had stage two and beyond, designated late stage. Overall, 46% of patients never had a Pap test prior to diagnosis. The majority of patients, 55.7%, presented with abnormal pelvic bleeding; 34.3% presented because of an abnormal Pap test. Patients presenting with late stage cancer were more likely to have never had a Pap test than those who had an early stage cancer (76.7% versus 27.7%, $P < 0.0001$). Patients presenting with an early stage cancer were more likely to have had a Pap test within two years (39.3% versus 11.7%, $P < 0.0001$), and within two to five years (33.0% versus 11.7%, $P < 0.0001$) of their diagnosis, compared to patients with late stage cancer.

Conclusions: When comparing a population of patients diagnosed with cervical cancer, having had a Pap test within a two or five year period prior to diagnosis may prevent a diagnosis of a late stage cancer.

■ P-GYN-JM-012

CAESAREAN SCAR ECTOPIC PREGNANCY: A SINGLE CENTER RETROSPECTIVE CHART REVIEW OVER THE PAST TEN YEARS.

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Objectives: To examine the characteristics, management and outcomes of 7 caesarean scar pregnancies (CSPs) at a single tertiary obstetric center over a ten-year period.

Study Methods: Retrospective cohort study. Cases were identified from interrogation of the institutional medical record with patient data extracted from the medical record charts.

Results: Seven cases of CSP were identified from 2001–2011. Median maternal age was 28 years (range 22–36) with a median parity of 3 (range 1–5). In three of the 7 (42%) cases there was one prior caesarean section; in two of the 7 cases there was two prior caesarean section (28%) and > 2 in two of 7 (28%). The median gestation at diagnosis was 8.1 weeks (range 6–11.5). Vaginal bleeding was the most common presenting symptom. The final diagnosis was made by ultrasound in all cases. Treatment was with systemic methotrexate in sex cases with four (57.1%) requiring no further intervention and two cases requiring hysterectomy due to profuse vaginal bleeding day17 after treatment in one case and the patient refusing further medical treatment for persistent CSP in the second case. One case was treated with elective uncomplicated hysterectomy due to the patient preference.

Conclusions: The diagnosis of CSP can be challenging, and awareness of this condition is needed, particularly as the incidence is increasing. There does not appear to be a clear association between number of prior caesarean deliveries and CSPs. Recommendation on best management strategy could not be reached but systematic methotrexate treatment with close monitoring in a tertiary care center seems like a save first line management strategy in stable patients especially in those who want to preserve fertility.

■ P-GYN-JM-013

CASE REPORT: DIAGNOSIS AND MANAGEMENT OF AN ABDOMINAL ECTOPIC PREGNANCY IN A LOW RESOURCE ENVIRONMENT IN TANZANIA, AFRICA

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Objectives: Ectopic pregnancy is one of the leading causes of maternal morbidity and mortality in the first trimester of pregnancy worldwide. In African developing countries, the case fatality rate remains consistently between 1–3%, 10 times higher than that of industrialized countries. We discuss the diagnosis and management of a secondary extrauterine abdominal pregnancy in a low resource environment.

Study Methods: Case report and review of the literature.

Results: A 31-year-old female G3P3L3, misdiagnosed with malaria was referred to the Canadian gynecology team at the Kilema Hospital in the Moshi region of Tanzania with acute on chronic abdominal pain. The delayed diagnosis of a ruptured ectopic pregnancy was made with a culdocentesis. Definite surgical removal of a 7–10 week secondary extrauterine abdominal pregnancy was achieved in a referral hospital where more advanced diagnosis and treatment modalities were available. The patient required multiple blood transfusions and had a febrile transfusion reaction but she had an uneventful recovery.

Conclusions: Misdiagnosis, late recognition and treatment of ectopic pregnancy can lead to major complications and inadvertently to emergency surgical management. This is often the case in developing countries where resources and access to health care are limited. This accounts for the higher morbidity and mortality compared to industrialized countries. Education must be provided to healthcare workers in these developing countries to increase their suspicion of ectopic pregnancy in women of childbearing age and to perform the appropriate investigations. Diagnostic modalities such as serum β-hCG and pelvic ultrasound should also be more available.

■ P-GYN-JM-014

COST ANALYSIS OF MANUAL VACUUM ASPIRATION AS OUTPATIENT PROCEDURE VS ELECTRICAL VACUUM ASPIRATION IN THE OPERATING ROOM FOR 1ST TRIMESTER MISCARRIAGES: APPLYING LESSONS FROM A PAKISTANI HOSPITAL TO A CANADIAN HOSPITAL

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Objectives: First trimester (T1) miscarriages managed surgically in the operating room (OR) by electrical vacuum aspiration (EVA) can be costly and time-consuming. Manual vacuum aspiration (MVA) has been shown to be a safe cost-effective alternative to EVA, and more effective than misoprostol for management of T1 miscarriages in Pakistan. Importantly, it can be performed safely in outpatient departments (OPD) or emergency rooms (ER) with local anaesthetic. Encouraged by these findings in Pakistan, we performed a cost analysis of MVA in the OPD/ER vs EVA in the OR for T1 miscarriages presenting to a Canadian hospital.

Study Methods: Data was collected on the number and hospital cost of EVAs done for T1 miscarriages in the OR at the Ottawa Hospital between January 1 and December 31, 2011. The cost of performing a MVA in the OPD/ER was estimated.

Results: 218 patients had EVA under general anaesthetic – 112 were elective surgeries and 106 waited in hospital between 1–3 days before surgery. The average hospital cost of EVA in the OR was calculated to be ~$3100/case. The cost of MVA in the OPD/ER was estimated to be ~$900/case. Hospital costs can be reduced up to 70% with MVA. OR wait times can also be significantly reduced.

Conclusions: MVA is a cost- and time-effective safe alternative to traditional EVA for surgical management of T1 miscarriages in Canadian hospitals. MVA may become the management of choice over misoprostol (as shown in Pakistan). A Canadian cost-analysis is needed to compare the cost-effectiveness of MVA vs misoprostol.

POSTER OBS/GYN-S

■ P-OBS/GYN-S-001.....FINALIST

CARNITINE-ACYLCARNITINE TRANSLOCASE DEFICIENCY AND PREGNANCY: A CASE REPORT

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Objectives: To discuss the management of a carnitine-acylcarnitine translocase (CACT) deficiency (a rare, life-threatening metabolic disorder of mitochondrial fatty acid beta oxidation) in pregnancy.

Study Methods: Case report and literature review.

Results: A 27-year-old G2P0A1 known to have CACT presented at 9 weeks' gestation with an unplanned pregnancy. Extensive literature review revealed no reported cases of pregnancy in women with CACT and therefore no management guidelines. The patient was monitored closely by a multidisciplinary team of physicians. Carnitine supplementation was the mainstay of medical management; supplement dosages were adjusted based on monthly measurements of plasma carnitine. A medium chain triglyceride (MCT) supplement was added. Plasma carnitine levels were low during the pregnancy, but responded to increasing dosages of the carnitine supplement. Liver enzymes and blood glucose were monitored. Biophysical profiles were performed biweekly, starting at 28 weeks' gestation. The patient remained well throughout her pregnancy and went on to have an uncomplicated vaginal delivery at term following induction of labour. During labour and delivery, the patient was given intravenous dextrose and carnitine. A live, female fetus with a birth weight of 3320g was delivered at 39 weeks, 5 days gestation. The postpartum course was uncomplicated.

Conclusions: This report describes the first case of pregnancy managed in a CACT deficiency patient, with successful maternal and fetal outcomes following close management by a team of specialist physicians and strict patient compliance. Although this will be a valuable contribution to the literature, caution must be used when applying this information to future cases.

■ P-OBS/GYN-S-002

ONCE A CAESAREAN, ALWAYS A CAESAREAN? VBAC TRENDS IN NOVA SCOTIA

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Objectives: 1) To estimate the rates of vaginal birth after Caesarean (VBAC) in Nova Scotia over time, 2) To describe maternal and neonatal outcomes of women undergoing trial of labour versus elective Caesarean delivery.

Study Methods: A population-based retrospective cohort study of women with one prior Caesarean birth with a transverse incision and singleton pregnancy in the vertex position was conducted using the Nova Scotia Atlee Perinatal Database from 1990 – 2000. Temporal trends were determined for the study period and maternal and neonatal outcomes were compared. SAS 9.2 software was used for descriptive and comparative analyses.

Results: From a total of 179,212 live, term births 15,901 met inclusion criteria and were candidates for VBAC. Of these mothers, 47.3% opted for an elective Caesarean section and 52.7% planned a trial of labour (TOL). Although the percent of VBAC candidates remained relatively constant, the percent of those attempting VBAC decreased significantly from a maximum of 76.2% in 1995 to a low of 32.7% in 2007. Throughout this period, the rate of successful VBAC attempts remained constant at 66.5%. Women who had a TOL were more likely to experience uterine rupture and obstetrical trauma. More neonates delivered vaginally experienced major trauma and birth depression but fewer required mechanical ventilation.

Conclusions: Though VBAC rates have declined significantly in Nova Scotia since 1995, the likelihood of a successful VBAC attempt remains high. Maternal and neonatal morbidity are higher in women attempting VBAC than those who elect caesarean birth.

■ P-OBS/GYN-S-003

THE USE OF ULTRASOUND IN DEEP INFILTRATING ENDOMETRIOSIS: A CANADIAN QA AUDIT AND LITERATURE REVIEW

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Objectives: Ultrasound is important for the diagnosis of endometriosis; however, there are no comprehensive, surgically-relevant reporting standards for endometriosis. This audit was designed to determine the value of expert guided ultrasound for deep infiltrating endometriosis compared with routine gynaecologic ultrasound.

Study Methods: Pelvic ultrasound reports for 10 patients at a tertiary level hospital with suspected or diagnosed severe endometriosis were reviewed. Comparison of routine versus expert physician-performed scans was conducted including review of findings of ovarian endometriomas, compartmental pelvic anatomy and deep invasive disease. The expert guided real time ultrasound was conducted in a systematic fashion guided by the patient's symptoms and history.

Results: The audit revealed significant discrepancies in routine versus expert directed scans. While both accurately described ovarian endometriomas, routine scans failed to describe compartmental pelvic anatomy or detect deep invasive endometriosis, leading to missed or underestimated disease, additional imaging tests, and incomplete surgery. In one case, the MRI was negative, but the expert guided ultrasound was positive for deep invasive endometriosis which was validated at surgery. A literature review on this topic revealed international experience in expert guided real time ultrasound for endometriosis diagnosis, however, there are no Canadian publications to date.

Conclusions: Expert guided ultrasound for endometriosis offered more complete and reliable diagnosis and presurgical planning for deeply infiltrating endometriosis. Also, an expert guided ultrasound for deep infiltrating endometriosis offers a less expensive alternative to MRI. This audit brings forth the concept of standardizing ultrasound and the approach for diagnosis using an expert real time scan for deep infiltrating endometriosis.

■ P-OBS/GYN-S-004

TRANSVAGINAL ULTRASONOGRAPHY AT FIRST CONSULTATION ASSISTS MANAGEMENT OF INFERTILITY

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Objectives: To assess the usefulness of transvaginal ultrasonography (TVU) in establishing a cause for decreased fertility for women completing an infertility consultation

Study Methods: TVU examinations for 1127 infertile women were completed prospectively as a part of their first consultation appointment. Ultrasound examination results were reviewed to evaluate characteristics relevant to fertility.

Results: TVU was used to assess ovarian: follicle populations, size, follicular and luteal phase characteristics, and uterine morphology. Abnormal ovarian follicle populations were observed in 36.6% of women. Increased, decreased, or borderline-decreased ovarian size was observed in 23.6% of women whereas 73.4% had normal-sized ovaries bilaterally. Follicular or luteal phase characteristics in both ovaries and endometrium were "in-phase" (same) in 70% and "out-of-phase" (discordant) in 20% of women. The uterine cavity contour was arcuate or septate in 15.3% of women. Bicornuate, unicornuate, arcuate dimple, didelphys, and t-shape abnormalities were seen in 1.8% of women. One or more leiomyomas were seen in 12.7% of women. Hydrosalpinx (unilateral / bilateral) was discovered in 3.5% of women.

Conclusions: Many ovarian and uterine abnormalities leading to infertility were found using ultrasonography at first consultation. Abnormal ultrasound findings can be used to direct interventions and decrease the interval to appropriate therapy. Normal ultrasound findings with normal history and semen tests can support the diagnosis of unexplained infertility. Performing a diagnostic ultrasonography at the first infertility consultation obviates the need for clinicians to offer treatment plans based on assumptive causes of infertility.

■ P-OBS/GYN-S-005 BEST OF FOUR

TRANSVAGINAL ULTRASONOGRAPHY AT FIRST CONSULTATION IMPROVES DIAGNOSIS AND TREATMENT OF INFERTILITY

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Objectives: A pilot study was conducted to assess the diagnostic value of completing transvaginal ultrasonography at the first visit. During an infertility consultation, the history, examination and semen analysis precede investigations and development of the plan for therapy. We hypothesized that first visit ultrasound examinations would direct and focus investigations and therapeutic approaches more quickly than traditional clinical approaches.

Study Methods: Records of history, examination, semen tests, transvaginal ultrasonography examinations, investigations and therapies were reviewed for 266 infertile couples. The impact of ultrasound examinations on diagnoses, investigations and therapies were explored.

Results: A cause for infertility was established as a result of ultrasound findings in 84/266 (31.7%) couples. Final diagnoses included male factor infertility (MFI; 28%), ovulatory dysfunction (34%),

congenital anomalies (3%), and acquired anatomic abnormalities (25%). Some couples had more than one implicated diagnosis. Ultrasonography helped to confirm a preexisting diagnosis in 12.1% of couples. Diagnoses made specifically by ultrasound examination included ovulatory dysfunction (66/89; 74.2%), anatomic congenital anomalies (5/8; 62.5%) and acquired anatomical abnormalities (19/67; 28.4%). The ultrasound examinations also revealed a coexistent female factor in 16.4% of couples with MFI.

Conclusions: Ultrasound examinations completed during an infertility consultation provide clinicians with immediate anatomic and physiologic diagnoses that serve to focus investigations and therapy more quickly than traditional approaches. The transvaginal ultrasound examinations immediately direct timely investigations and customized treatment options, thereby expediting fertility.

■ P-OBS/GYN-S-006

INCIDENCE AND OBSTETRICAL OUTCOMES OF CERVICAL INTRAEPITHELIAL NEOPLASIA AND CERVICAL CANCER IN PREGNANCY; A POPULATION-BASED STUDY ON 8.8 MILLION BIRTHS

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Objectives: To estimate the incidence and outcomes of cervical intraepithelial neoplasia (CIN) and cervical cancer in pregnancy

Study Methods: We conducted a population-based cohort study using the Healthcare Cost and Utilization Project – Nationwide Inpatient Sample from 1999 to 2008. The incidence of CIN and cervical cancer were measured and logistic regression analysis used to estimate the adjusted effect of CIN and cervical cancer on obstetrical outcomes.

Results: There were 8,826,137 births over a 10-yr period of which 11,755 were among women with CIN and 294 among women with cervical cancer. Compared to controls, women with CIN were younger, had lower annual incomes, and more likely to be on Medicaid while women with cancer were more likely to be older. Women with CIN had lower rates of cesarean delivery but higher rates of transfusions and cesarean hysterectomies, while women with cancer had higher rates of cesarean deliveries, transfusions and cesarean hysterectomies. There were no significant increase of thrombosis, maternal death, instrumental delivery, IUGR , PPROM or intrauterine death was found.

Conclusions: CIN and cervical cancer are rare in pregnancy. Although there is a greater risk of transfusion / hysterectomy, overall major maternal and neonatal morbidity does not appear to be increased.

■ P-OBS/GYN-S-007

IDENTIFICATION OF FACTORS THAT INFLUENCE FULL DISCLOSURE DURING A GYNAECOLOGY APPOINTMENT

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Objectives: To examine whether characteristics of the gynaecologist (age, gender, level of education, ethnicity, type of health care worker, sexual orientation, marital status, and physical attractiveness), as well as the reason for appointment, are perceived barriers to honest patient communication.

Study Methods: A paper-based questionnaire was distributed to patients attending a gynaecology or colposcopy appointment at St. Michael's Hospital, Toronto, Canada, between January 2011 and January 2012.

Results: Responses for 286 completed questionnaires were analyzed. The most common barriers included having a male physician (40.9%) and having medical history reviewed by a medical student (24.6%). Women under the age of 30 specifically identified male gender as a barrier, whereas older women did not ($P < 0.05$). Open-ended responses revealed common themes to ameliorate communication, namely a professional and non-judgemental physician.

Conclusions: Physician gender and education level may be barriers to full disclosure from patients. Awareness of these factors is crucial to encourage complete communication and promote patient-centered care.

■ P-OBS/GYN-S-008

PATIENT FACTORS PREDICTING CHOICE OF HYSTERECTOMY FOR THE MANAGEMENT OF MENORRHAGIA

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Objectives: The objective of this study was to investigate factors predicting treatment choice for women with menorrhagia.

Study Methods: A retrospective chart review of premenopausal women referred to a gynaecology clinic of the IWK Health Centre from June 2008–January 2011 with menorrhagia (n = 181) was conducted. Patients who were treated with various medical or surgical options were compared with respect to demographics, menorrhagia characteristics, structural pathology, and past medical history. Factors were analyzed using ANOVAs with LSD or chi-squared tests with Fisher's exact test, as well as a logistic regression model.

Results: The majority of patients opted for surgical treatment (60.8%, 27.1% hysterectomy, 27.6% endometrial ablation, 6.1% other) rather than medical options (37.0%, 4.4% non-hormonal medications, 23.8% hormonal medications, 8.8% hormonal intrauterine system), while 2.2% chose no treatment. Mean BMI was 29.2 ± 7.0 and it did not differ among treatment groups. A significant number of patients who chose medical treatments over hysterectomy or ablation wanted to maintain fertility. The following factors were associated with significant numbers of patients choosing hysterectomy: age, fibroids, adenomyosis, large uterus, ovarian cysts, and family history of hysterectomy. The logistic regression model demonstrated that older age (mean 43.4 ± 5.5 years), fibroids, adenomyosis, ovarian cysts, longer duration of menorrhagia prior to referral (mean 30.4 ± 31.7 months), and previous caesarean section predicted preference of hysterectomy treatment.

Conclusions: While treatment choices are individualized, this study suggests that patient factors such as older age, previous surgery, and uterine pathology favour hysterectomy and should be considered during decision making.

■ P-OBS/GYN-S-010 FINALIST

EFFECT OF LATENCY ON NEONATAL AND MATERNAL OUTCOMES FOLLOWING PRETERM PREMATURE RUPTURE OF MEMBRANES

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Objectives: To assess the effect of latency between preterm premature membrane rupture and delivery on maternal and neonatal outcomes in a population-based cohort of live hospital births.

Study Methods: Subjects were identified from a Nova Scotia population-based clinical database. There were 4329 cases of premature rupture of membranes (PROM) occurring between 24+0 and 36+6 weeks of gestation from 1988 to 2009. Associations between pre-defined latency periods (< 24 hours, 48 hours, 7 days and > 7 days) and outcomes pertaining to mother and neonate were investigated using multivariate logistic regression. Primary outcomes included a composite neonatal infectious morbidity variable (sepsis, pneumonia, necrotizing enterocolitis, death), a composite neonatal prematurity morbidity variable (moderate or severe respiratory distress syndrome, chronic pulmonary disease of prematurity, grade 3 or 4 intra-ventricular hemorrhage, periventricular leukomalacia, death), and a composite maternal infectious morbidity variable (endometritis, septicemia, peritonitis, wound infection).

Results: Between gestational ages of 24+0 and 33+6 weeks the odds of composite neonatal prematurity-related morbidity were significantly decreased at latencies of 48 hours – 7 days (OR: 0.39; 95% CI: 0.23–0.65) and > 7 days (OR: 0.23; 95% CI: 0.13 to 0.41) when compared to latencies of < 24 hours. Similar results were observed between 34+0 and 36+6 weeks of gestation. There were no significant differences in the odds of composite neonatal or maternal infectious morbidity in either gestational age grouping.

Conclusions: The results suggest that prolonging pregnancy following preterm PROM may contribute to less prematurity-related morbidity without placing mother or neonate at risk for serious infection.

■ P-OBS/GYN-S-012

CHARACTERISTICS AND SURGICAL SUCCESS IN PATIENTS PRESENTING FOR REPAIR OF OBSTETRIC FISTULA IN WESTERN KENYA: A RETROSPECTIVE CASE SERIES

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Objectives: To carry out a large scale retrospective case series of patients who have undergone surgical repair of obstetric fistula (OF) in Kenya in order to describe patient characteristics and determinants of successful surgical repair.

Study Methods: Patient records of 483 surgical repairs of OF treated by the Principal Investigator (HM) between January 2005 and July 2010 at four medical centres in western Kenya were retrospectively reviewed. Descriptive and bivariate statistical analyses were performed.

Results: Success of fistula closure was 86% in first time vesicovaginal fistula (VVF) repairs and 67% in first time combined VVF/rectovaginal fistula (RVF) repairs. In previously attempted VVF and combined VVF/RVF repairs, 73% and 50% of fistulas were repaired successfully, respectively. First time repair was significantly associated with surgical success, when compared to patients with a history of previous attempt(s) (P = 0.027).

Conclusions: Among patient characteristics, this study found that young women with some primary or no education and prolonged labour at the time of first delivery were most highly associated with OF formation. Characteristics of this population were comparable to those reported in the literature from other countries in sub-Saharan Africa. This case series is the largest known study of its kind to report on surgical repair of OF in Kenya.

■ P-OBS/GYN-S-013

THE SCOPE OF IDENTIFIED THERAPIES FOR PRE-ECLAMPSIA MANAGEMENT IN LOW AND MIDDLE INCOME COUNTRIES – AN ANALYSIS OF ESSENTIAL MEDICINES LISTS (EMLS)

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Objectives: Pre-eclampsia is the second-leading cause of maternal mortality and morbidity in low and middle income countries (LMIC). The objective of this study was in LMIC, to determine how many drugs required for comprehensive pre-eclampsia management are listed in national Essential Medicine Lists (EMLs) of "drugs that meet the health care needs of the majority of the population".

Study Methods: National EMLs of the 144 LMIC identified by the World Bank were collected in collaboration with MCHIP and by using WHO documentation and broad-based internet searches. The EMLs were surveyed for therapies for the different aspects of pre-eclampsia management: hypertension, eclampsia, pre-eclampsia complications (e.g., pulmonary oedema, thrombosis), pre-term birth, and labour induction.

Results: Fifty-eight EMLs were identified. The most common parenteral antihypertensive agents listed on these EMLs were: hydralazine (67.2%), verapamil (58.6%), propranolol (39.7%) and sodium nitroprusside (37.9%). The most prevalent oral antihypertensive therapies were: nifedipine (96.6%), methyldopa (94.8%), propranolol (89.7%), atenolol (87.9%), carvedilol (27.6%), and prazosin (25.9%). Captopril, enalapril, hydrochlorothiazide and spironolactone were also common antihypertensive agents. Magnesium sulphate was present in 86.2% of EMLs (and calcium gluconate in 82.8%) for prevention and management of eclampsia. To manage complications of preeclampsia, oral furosemide was listed in 94.8% EMLs and parenteral heparin in 91.4%. Most EMLs listed parenteral dexamethasone (91.4%) for acceleration of fetal pulmonary maturity and oxytocin (98.3%) for labour induction.

Conclusions: EMLs of LMIC provide comprehensive coverage of all aspects of recommended pre-eclampsia pharmacotherapy. These EMLs may be used as advocacy tools to ensure the availability of these therapies within each country.

■ P-OBS/GYN-S-014

A MODIFIED SURGICAL APPROACH FOR UTERINE ENTRY AND CLOSURE IN PATIENTS UNDERGOING IN UTERO REPAIR FOR MYELOMENINGOCELE

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Objectives: To report outcomes of a case series of 13 patients undergoing prenatal myelomeningocele (MMC) repair using a modified surgical approach to uterine entry, amniotic membrane handling and uterine closure

Study Methods: Patients meeting criteria for prenatal repair of MMC were counseled about potential risks of surgery. Results of a consecutive series of 13 patients who consented to open prenatal repair of fetal MMC using a modified surgical technique without the use of a trocar from February through July 2011 are presented. Uterine entry and closure were modified to minimize trauma to the amniotic membrane. Patients were admitted for five days, then discharged home for continued care by their referring maternal-fetal medicine specialist. Weekly ultrasound reports were obtained from MFM providers and reviewed for chorioamnion separation, amniotic fluid and ventriculomegaly.

Results: Of the 13 patients included in this series, there have been no cases of chorioamnion separation to date. Twelve patients delivered between 34 to 37 weeks' gestation. Of these, three patients were delivered electively at 34 weeks' gestation: one patient for oligohydramnios, one patient experienced premature rupture of membranes (PROM) at 31 weeks' gestation and was managed expectantly, and one patient was delivered for increasing ventriculomegaly. One patient delivered at 33 weeks' gestation due to premature rupture membrane.

Conclusions: Early results suggest that a modified surgical approach to uterine entry, amniotic membrane handling and uterine closure may result in a decreased risk of chorioamnion separation and PROM. Further assessment of results with this technique in a growing series is ongoing

■ P-OBS/GYN-S-015

ANALYSIS OF ADEQUACY OF PRENATAL CARE AND PREGNANCY OUTCOMES IN PATIENTS PRESENTING TO THE OBSTETRIC TRIAGE UNIT AS THEIR POINT OF ENTRY INTO PRENATAL CARE: A DESCRIPTIVE STUDY

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Objectives: Describe the high-risk obstetric population presenting to triage with no previous prenatal care (PNC), identify the gaps in care that remain at delivery and compare care received to WHO standards.

Study Methods: Eligible charts were patients delivering at Winnipeg's Women's Hospital, discharged between April 1, 2008, and March 31, 2011, and coded with either the ICD-10 code Z35.3 or < 2 PNC visits. 382 charts were reviewed for patient socio-demographics, PNC history, investigations and pregnancy outcomes. The R-GINDEX was applied and care achieved was compared to WHO guidelines.

Results: 109 patients presented with no PNC, 89.7% in the 3rd trimester. Only 39 (35.8%) received subsequent PNC, with the R-GINDEX remaining "inadequate" for all and falling short of WHO standards. Gaps in PNC provided included varicella serology (performed in 41% of cases), mid-stream urine culture (41%) and Chlamydia and gonorrhea testing (46%). The average maternal age was 26.1, with gravida 4.7 and para 3.9. Striking socio-demographic trends included a high proportion of CFS involvement (57.1%), smoking (68.6%), alcohol (36.4%) and drug use (31.3%), and living in central Winnipeg (66.2%).

Conclusions: Most women who present with no PNC do so late in pregnancy and proceed to deliver as such. Thus, efforts to improve care must focus on facilitating earlier entry into care. This would also help improve compliance with WHO guidelines for continuing care. Appropriate treatment protocols could improve gaps in urine culture, Chlamydia and gonorrhea testing. Whether the socio-demographic trends noted are statistically significant remains to be determined.

■ P-OBS/GYN-S-016

ASSESSING GASTROINTESTINAL AND EMOTIONAL SYMPTOMS PRIOR TO AND DURING MENSES IN HEALTHY WOMEN

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Objectives: The rates and nature of gastrointestinal (GI) and emotional symptoms prior to or during menses have not been well defined.

Study Methods: As part of a larger study assessing the relationship between GI symptoms and menses in women with inflammatory bowel disease, we enrolled a cohort of healthy women to serve as controls. Consecutive premenopausal adult women presenting for routine pelvic examinations and/or for family counseling were invited to complete a survey. Participants were asked to consider their menstrual periods in the recent several months and identify which listed symptoms occurred during either the premenstrual phase (defined as the 5 days prior to menses onset), or during menses.

Results: 156 women completed surveys (mean age 32.3±9.9 yrs). The mean age of menarche was 12.9±1.8 yrs. 68% reported having regular menses (q25–35 days). Menses lasted a mean of 5.7±3.3 days. 33.1% used medicinal contraception. The percentage reporting premenstrual and perimenstrual complaints, respectively (significant p values for differences between phases are reported), included: abdominal bloating (61.5%, 50.6%, $P = 0.04$), abdominal pain (57.6%, 54.5%), pain in pelvis or lower abdomen only (48.7%, 45.4%), diarrhea (24.4%, 28.2%), nausea (16.7%, 14.1%), constipation (15.4%, 9.6%), vomiting (1.9%, 2.6%), fatigue (53.2%, 48.7%), joint pains (19.9%, 19.9%), depression (32.1%, 20.5%, $P = 0.02$), anxiety (15.4%, 10.3%), and other emotional symptoms (23.1%, 14.7%, $P = 0.045$).

Conclusions: Rates of most symptoms both premenstrually and during menses are similar. That some symptoms were more common premenstrually, suggest that hormones released at end of luteal phase impact on both mental and GI symptoms.

■ P-OBS/GYN-S-017

CONGENITAL DIAPHRAGMATIC HERNIA: A PERINATAL STUDY OF RISK FACTORS AND OUTCOMES

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Objectives: The objective of our study was to evaluate the maternal risk factors and neonatal outcomes associated with the development of a congenital diaphragmatic hernia (CDH).

Study Methods: We conducted a population-based cohort study using the CDC's Linked Birth-Infant Death and Fetal Death data files on all births and fetal deaths in the United States between 1995 and 2002. We estimated the incidence of CDH and measured its adjusted effect on various outcomes using unconditional logistic regression analysis.

Results: The cohort consisted of 32,145,448 births during an 8-year study period. The incidence of CDH was 1.93/10,000 births. Fetuses with CDH were at an increased risk of preterm birth (OR 2.90, 95% CI: 2.72–3.11), IUGR (OR 3.84, 95% CI: 3.51–4.18), SGA (OR 1.60, 95% CI: 1.45–1.76), stillbirth (OR 9.65, 95% CI: 8.20–11.37), early neonatal death (OR 90.49, 95% CI: 84.01–97.47), late neonatal death (OR 100.15, 95% CI: 89.16–112.50) and overall infant death (OR: 94.80, 95% CI: 88.78 101.23). The 1-year mortality was 45.89% for the study cohort. Risk factors for the development of CDH included male fetal gender (OR 1.12, 95% CI: 1.06 1.17), maternal age beyond 40 (OR 1.51, 95% CI: 1.26–1.80), maternal Caucasian race (OR 1.15, 95% CI: 1.10–1.21), maternal smoking (OR 1.34, 95% CI: 1.22–1.46) and alcohol use during pregnancy (OR 1.37, 95% CI: 1.05–1.79).

Conclusions: Congenital diaphragmatic hernia is strongly associated with an increased risk of adverse fetal and neonatal outcomes. These findings illustrate the need for prompt fetal and maternal antenatal screening as well as adequate perinatal counselling for parents.

■ P-OBS/GYN-S-018

EARLY ADMINISTRATION OF LOW DOSE ASPIRIN FOR THE PREVENTION OF SEVERE AND PRETERM PREECLAMPSIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objectives: Low-dose aspirin started before 16 weeks decreases the risk of preeclampsia in high-risk women. However, different pathologies have been suggested for the different forms (severity) of the disease. We aim to compare the effect of aspirin on the risk of the severe vs mild forms of preeclampsia.

Study Methods: A systematic review and meta-analysis of randomized controlled trials were performed. Women randomized to low-dose aspirin or to placebo/no treatment at or before 16 weeks' were included. The outcomes of interest were severe, mild, preterm, term and early-onset preeclampsia. Pooled relative risks (RR) with their 95% confidence intervals (CI) were calculated.

Results: Among 7941 citations retrieved, 352 were completely reviewed and 5 studies (556 women) fulfilled the inclusion criteria. When compared to controls, aspirin started < 16 weeks was associated with a significant reduction in severe (RR: 0.22, 95% CI: 0.08–0.57, $P < 0.001$), preterm (RR: 0.11, 95% CI: 0.04–0.33, $P < 0.001$) and early-onset preeclampsia onset (RR: 0.18, 95% CI: 0.04–0.83, $P = 0.03$), but not the mild (RR: 0.81, 95% CI: 0.33–1.96) and the term (RR: 0.98, 95% CI: 0.42–2.33) preeclampsia.

Conclusions: Low-dose aspirin initiated at or before 16 weeks reduces the risk of severe, preterm, and early-onset preeclampsia, but not mild and term preeclampsia in high-risk population. Since excellent predictive values of first-trimester screening for the early-onset and severe forms of the disease are now available, our findings suggest that early prediction and prevention of preeclampsia is possible for the general population and emphasizes the urgent need for research in this area.

■ P-OBS/GYN-S-019

HOW RURAL PREGNANT WOMEN NAVIGATE RISK INFORMATION ON HOUSEHOLD CHEMICALS IN PREGNANCY: PHTHALATES AS A MODEL

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Objectives: To understand how rural pregnant women navigate information sources regarding risks of phthalate exposure in pregnancy, and how they would like to learn about low risk exposure during pregnancy.

Study Methods: Pregnant women from rural Southwestern Ontario were recruited through prenatal clinics for 40 minute interviews. All interviews were taped, transcribed and subjected to rigorous qualitative analysis through a grounded theory approach supported by NVivo 9™ software.

Results: Saturation was reached after 12 pregnant women were interviewed. Three interrelated and overarching themes emerged: Theme I - Process by which women obtain new information; Theme II – Process of sorting out new information and deciding what is important; and Theme III – Taking the responsibility that comes with obtaining new information. Sources of information are perceived to have inherent value ranging from strong to weak. Strong sources include physicians and governments, while weak sources include family and media. Women often cross reference weak sources in an ongoing and iterative fashion to evaluate its usefulness and make decisions. Sample quotes from the data will be used to illustrate how a model depicting how pregnant women use information sources and subsequently make decisions was constructed.

Conclusions: A unified message from various strong sources such as the SOGC is required to support or question information from weak sources in order for women to have the best available information on which to make risk decisions on household products in pregnancy.

■ P-OBS/GYN-S-021

PLACENTAL MIGRATION AND FINAL MODE OF DELIVERY IN PREGNANCIES DIAGNOSED WITH A LOW-LYING OR PREVIA PLACENTA AT THE 2ND TRIMESTER ULTRASOUND

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Objectives: To assess the rate and extent of placental migration and subsequent mode of delivery in pregnancies diagnosed with placenta previa or low-lying placenta at the mid trimester ultrasound.

Study Methods: A retrospective cohort study, conducted at McGill University Health Center in Montreal. Our ultrasound database was searched for all second trimester anatomy scans where either a placenta previa or a low-lying placenta had been identified. In each case the placental location (anterior/posterior) and the distance between the leading placental edge and the internal cervical os were recorded. Subsequent ultrasound examinations (after an interval of > 5 weeks) were assessed to evaluate migration of placenta. The final mode of delivery was collected from delivery records.

Results: 45 women were identified with either placenta previa (n = 30) or low-lying placenta (n = 15) at mid-trimester ultrasound, with the mean gestation at diagnosis being 20+3 weeks and the mean at follow up ultrasound being 32+5 weeks. The placenta was posterior in 29/30 previas (96.7%) and 10/15 (66.7%) of the low-lying placentas. The mean rate of placenta migration was not significantly different between the placenta previas (0.9mm/week) and the low-lying placentas (1.1mm/week) ($P = 0.8$). The rate of caesarean section delivery was significantly greater in women initially diagnosed with placenta previa (77%) as compared to a low-lying placenta (60%) ($P = 0.003$).

Conclusions: In cases of low-lying placenta and placenta previa, placental migration occurs at a rate of around 0.9–1.1 mm per week. Despite placenta migration, the overall caesarean section rate remains high in such cases.

■ P-OBS/GYN-S-022

THE MONTREAL CRITERIA FOR THE ETHICAL FEASIBILITY OF UTERINE TRANSPLANTATION

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Objectives: Currently, the only options for women with absolute uterine factor infertility (UFI) desiring children are surrogacy and adoption; however, recent studies examining the potential of uterine transplantation (UTx) as an alternative solution have shown promising results. Herein, we evaluate the ethical principles surrounding UTx.

Study Methods: A systematic literature review was conducted of human and animal trials of uterine transplantation, discussions of the ethical concerns surrounding this procedure, and other relevant philosophical articles. Guided by the principles of biomedical ethics and principlism, namely, autonomy, beneficence, non-maleficence and justice, a critical analysis of the issues surrounding the ethical and practical concerns was performed. Our conclusions were then codified into a set of criteria titled "The Montreal Criteria for the Ethical Feasibility of Uterine Transplantation" that we propose must be met for the ethical execution of the UTx in the future.

Results: The criteria for the ethical execution of UTx were divided into three categories: criteria that must be met by the recipient (age, proven infertility, suitability, capacity), by the donor (age, conclusion of parity, uterine health), and by the health care team (institutional capacity, impartiality, informed consent). An in-depth discussion of the ethical issues at play was included.

Conclusions: With new developments in transplantation and reproductive endocrinology and infertility (REI), UTx is soon likely to become a viable therapy for uterine factor infertility. "The Montreal Criteria for the Ethical Feasibility of Uterine Transplantation" provides an essential perspective on the ethical issues involved that will serve clinicians and investigators as the science advances in this direction.

■ P-OBS/GYN-S-023

TREATMENT OF PERIODONTAL DISEASE AND PREVENTION OF PRETERM BIRTH: EXPLORATION OF HETEROGENEITY BETWEEN RANDOMIZED TRIALS

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Objectives: This systematic review aims to evaluate the effect of periodontal treatment on the risk of preterm birth (PTB) and to explore heterogeneity between studies.

Study Methods: We conducted a systematic search of 5 major electronic databases. Randomized controlled trials (RCT) of pregnant women who were allocated to periodontal treatment or any comparator (no intervention, supragingival intervention, etc.) were included. Two investigators independently screened all references to determine eligibility, and extracted data. Meta-analysis of risk ratio (RR) was performed using pooled results from random effect models. Sensitivity and subgroups analyses were planned to explore heterogeneity according to the methodological quality of studies, countries income classification, co-interventions, PTB prevalence among controls, and type of control.

Results: We identified 795 references, of which 11 were included in this meta-analysis. As previously reported, we did not find an overall reduction of PTB with periodontal treatment (n = 11; RR 0.87; 95%CI: 0.70–1.06). However, there was a significant heterogeneity between the studies 12 (54%). On the other hand, we found that the use of chlorhexidine mouthwashes (n = 5; RR 0.69 [95%CI: 0.50–0.95]; 12 (43%) and periodontal treatment in low or middle income population (n = 6; RR 0.66 [95%CI: 0.54–0.81]; 12 (0%) were associated with a significant lower risk of PTB.

Conclusions: Our meta-analysis demonstrates that mechanical periodontal treatments are not effective for the prevention of PTB. However, antibacterial mouthwashes are associated with a protective effect. This finding supports the hypothesis that anti-bacterial agents administered in early pregnancy can reduce the rate of PTB.

WORK IN PROGRESS

■ W-GYN-IWH-RM-001

IMPACT OF VULVOVAGINAL ATROPHY IN POSTMENOPAUSAL WOMEN AND THEIR PARTNERS: THE PARTNER'S SURVEY

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Objectives: Postmenopausal vulvovaginal atrophy often leads to vaginal dryness, itching, irritation, reduced lubrication, dyspareunia, and postcoital bleeding. These symptoms can have a significant impact on a woman's quality of life by reducing her self-esteem and self-image and affecting her relationship with her partner. To understand the impact of vulvovaginal atrophy in the physical and emotional relationships between women and their partners and to learn how to encourage a positive dialogue between them.

Study Methods: The total sample for this project consists of 8,200 respondents divided evenly between women and their partners. 4100 postmenopausal women, aged 55–65 (55–59 and 60–65) years suffering from vulvovaginal atrophy, were invited to complete an online survey in Denmark, Finland, Norway, Sweden, Italy, France, UK, Canada and the US. The respondents were married or co-habiting and their last menstrual period was at least one year prior to the survey. Once the respondents finished completing the survey, they were instructed to ask their partners to fill out the partner's questionnaire.

Results: The questionnaires, which included 10 questions plus demographics, were designed to permit comparisons between the two groups with a 95 CI. Results will be shown at a global level including data from 1000 Canadian participants (500 women and their partners.

Conclusions: Results of the survey will be presented at the 68th Annual Clinical Meeting of the SOGC.

■ W-GYN-PS-MD-001

QUALITY IMPROVEMENT INITIATIVE TO DECREASE DIAGNOSTIC HYSTEROSCOPIES PERFORMED IN THE OPERATING ROOM

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Objectives: Minimally invasive techniques such as sonohysterography are equally effective as diagnostic hysteroscopy (DH) in diagnosing uterine pathology. Yet, at our institution the practice of DH, often combined with uterine curettage, continues to be performed in the main operating room (OR) under general anesthesia. We propose to use a Plan-Do-Study-Act (PDSA) cycle to reduce the number of DH performed in the OR.

Study Methods: To obtain baseline numbers of DH performed each month, we conducted a retrospective chart audit at a University teaching hospital between January 1 and December 31, 2011. Procedures will be followed prospectively in 2012 to evaluate the effectiveness of three interventions: 1) Provision of readily accessible sonohysterography 2) Case review and staff education 3) Implementation of a pre-operative protocol for the workup of abnormal bleeding.

Results: 111 DH were performed during the baseline chart audit. Preoperative diagnoses were post-menopausal bleeding (54),

abnormal uterine bleeding (35), polyps (15) and other (7). Pre-/malignant pathology was found in 14% of cases (15). There was an 8% complication rate (8 minor and 1 major complications which required hospital admission). The institutional cost of these procedures was $180,000 and 18.5 OR days.

Conclusions: DH require a general anesthetic, have a significant complication rate, utilize coveted operating room time and resources. Interventions aimed at changing the culture at our institution may decrease the number of DH procedures and improve quality care.

■ W-OBS/GYN-S-001

DO PEER REVIEWED "CHEAT SHEETS" IMPROVE MEDICAL EDUCATION? A DESCRIPTION OF A RESIDENT-LED OB/GYN TEACHING CURRICULUM FOR CLINICAL CLERKS

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Objectives: This project assesses the utility of a novel, resident-led teaching curriculum for University of Ottawa clinical clerks (students) in Obstetrics and Gynecology (ob/gyn). The curriculum's aim is to provide students with practical information for navigating wards, triage, and the labour and delivery (L&D) suite, thereby encouraging effective, informed and involved members of the clinical team.

Study Methods: On day one of a six-week ob/gyn rotation, students partake in a mandatory lecture by an ob/gyn resident. The content covers post-operative, ante- and post-partum rounding, triage assessments, and writing post-operative notes. Students are oriented to the daily routine, their role on the team, as well as operating room and L&D etiquette. A reference document, "the cheat sheet", containing detailed assessment outlines is distributed for use throughout the rotation. At the end of each rotation, students are invited to complete a voluntary anonymous survey to evaluate the usefulness and accuracy of the lecture and the reference document. One hundred ten students will participate. Data from the surveys will be analyzed using descriptive statistics.

Results: Based on a pilot study, we predict students will find this new curriculum a useful and effective learning tool. We also predict a faster, more straightforward integration of the student into the ob/gyn team, creating an enhanced learning experience.

Conclusions: We have described a simple, effective learning tool for ob/gyn clinical clerks. Based on future analysis of the data, we expect that students will rate this curriculum as a valuable contribution to medical education, meeting learning objectives, and increasing student satisfaction.

■ W-OBS-JM-001

THE IMPACT OF MATERNAL BODY MASS INDEX ON THE OUTCOME AND COST OF POSTPARTUM OBSTETRICAL CARE

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Objectives: Examine the impact of maternal pre-pregnancy BMI on the outcome and cost of post partum obstetrical care.

Study Methods: This is a retrospective cohort study using the NIDAY perinatal database. Women who delivered a singleton between 21 weeks and 42 weeks gestation and had a Body Mass Index (BMI) recorded were included. BMI was used to classify women as normal weight or obese according to the World Health Organization (WHO) classification system. Data was collected on postpartum maternal events such as length of stay, readmission rates, consultations, investigations and postpartum complications such as thromboembolic disease and postpartum haemorrhage. Rates of postpartum obstetrical events and complications will be compared among obese women and women who had a normal BMI. Logistic regression models will be used to determine adjusted odds ratios (aOR) and 95% confidence intervals (CI). Cost will be reported in Canadian currency.

Results: To date, our study has reviewed 1,518 charts. Analysis is currently in progress. Expected completion date is March 2012.

Conclusions: We hope the data from our study will strengthen the understanding of the impact and cost of maternal obesity on postpartum care. This may in turn lead to improved monitoring and possibly prevention of postpartum complications for pregnant women with an elevated BMI.

■ W-OBS-MD-001

FAMILY MEDICINE RESIDENTS' EXPERIENCE OF OBSTETRICS TRAINING AT THE UNIVERSITY OF OTTAWA

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Objectives: Intra-partum obstetric care is in a crisis in Canada as fewer providers are willing to provide this service, particularly in smaller communities. In preparation of an education intervention in the family medicine residency curriculum, we surveyed previous graduates of the program from 2005 to 2010. The purpose of the survey was to establish how many graduates were practicing intrapartum obstetrics and their experiences in obstetrics during their training.

Study Methods: An online survey was distributed to graduates of the residency program. The survey questions were derived from an earlier survey, the "Ontario Family Medicine Residents Cohort Study". We included opportunities for qualitative responses to questions. We received ethics approval from the Ottawa Hospital Research Ethics Board.

Results: We had 66 responses from a total of 311. Fourteen of the graduates had intended on practicing intrapartum obstetrics on entering the program, however at the time of the survey, only 10 graduates were practicing intrapartum obstetrics. Twenty-two of the respondents did not provide any antenatal care. Numerous graduates described negative experiences during their training. Several respondents identified the opportunity to work with family physicians as a positive aspect of their training.

Conclusions: In the past, family medicine residency training in obstetrics has failed to entice graduates to practice intrapartum obstetrics. Barriers to practice include negative experiences during training, in addition to anticipated interference with lifestyle and clinical practice. Improvements to clinical obstetric training for family medicine residents are warranted in order to increase the number who go on to practice intrapartum obstetrics.

■ W-OBS-MD-002

ASSESSMENT OF INTER–RATER RELIABILITY AND VALIDITY OF AN OBSTETRICAL TRIAGE ACUITY SCALE

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Objectives: To test the inter-rater reliability (IRR) and validity of our Obstetrical Triage Acuity Scale (OTAS), which we developed based on the Canadian Triage Acuity Scale (CTAS) used in many Emergency Departments.

Study Methods: We have developed a 5 category (5-Non-Urgent, 4-Less Urgent, 3-Urgent, 2-Emergent, 1-Resusitative) Obstetrical Triage Acuity Scale (OTAS) in the Obstetrical Triage Unit at London Health Sciences Centre. Ten triage nurses will complete the OTAS scoring of 40 paper based randomly generated actual clinical scenarios (kappa – 0.8, SE – 0.05, sample size 10 nurses, 40 case scenarios). A comparison (Correlation Coefficient, 95% confidence intervals) of scoring of identical scenarios will measure the inter-rater reliability of the OTAS. To measure the validity, triage resource utilization and patient outcome will be correlated to OTAS. Correlational analyses (Pearson) will be performed to examine the relationship between OTAS score and these metrics.

Results: We anticipate high reliability for low acuity patients (OTAS 4/5, IRR – 0.8–0.9) and intermediate reliability for OTAS 2/3 (IRR – 0.6–0.7). This would be similar to the IRR for CTAS and other 5 scale systems. We anticipate that resource utilization and the proportion of patients discharged, reassessed and discharged, and admitted will correlate to the OTAS classification.

Conclusions: This study demonstrating the reliability and validity will establish OTAS as the first rigorously studied obstetrical triaging tool. The benefits of a validated system will be applicable to all Obstetrical Triage Units and Emergency Departments providing urgent and emergency care to obstetrical patients.

■ W-OBS-MD-003

PANDEMIC H1N1 VACCINATION UPTAKE AMONG PREGNANT WOMEN IN WINNIPEG

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Objectives: This project aims to describe patterns of pH1N1 vaccination uptake among women pregnant during the 2009 pandemic.

Study Methods: Women who were pregnant during the pH1N1 vaccination campaign (which began in Winnipeg in October 2009) and delivered at Women's Hospital or St. Boniface Hospital between November 1 and May 31, 2010 were identified through administrative database and mailed a questionnaire to collect information on demographics and vaccine perceptions and behaviors. A second mail-out is underway and 60 qualitative interviews will explore identified factors in more depth. Descriptive statistics of data from the first 621 questionnaires received were computed using STATA 9.0.

Results: Preliminary results indicate high levels of knowledge of the pH1N1 vaccine and high vaccination rates (71%). One third of the preliminary sample did not know whether they had received the adjuvanted vaccine, 51% percent reported receiving the non-adjuvanted vaccine and 12% the adjuvanted vaccine. The main venue for vaccination was public health clinics (41%). Although the most mentioned source of information about the pH1N1 vaccine was the media, the most important influence on vaccination was health care providers' advice followed by concern for the fetus.

Conclusions: Although results are preliminary and based on a small subsample of women, they indicate high levels of pH1N1 vaccination among pregnant women in Winnipeg. Possibly due to increased contact with health care, advice from health care providers had great influence on whether women were vaccinated. Engaging health care providers is an important determinant of the success of this and future vaccination campaigns

HISTORIC

■ H-GYN-MD-001

KENNETH FENWICK AND THE SURGICAL AMPHITHEATRE

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Objectives: A 19th century development for patient care and medical education.

Study Methods: Historical literature review.

Results: During the last 50 years of the nineteenth century there was a rapid growth of surgical intervention due to the introduction of anaesthesia, the use antisepsis and asepsis, and the development of the nursing school. The change in obstetrics and gynaecology was striking. In 1899, Garrigues stated that "a competent man under favourable circumstances on a suitable case need not fear a maternal death from caesarean section" and textbooks described a wide range of major gynaecological abdominal and vaginal procedures. An important event in 1895 was the opening of the Fenwick Surgical Amphitheatre dedicated to surgical patient care and medical education. This was the initiative of Kenneth Fenwick, who received a MD in Kingston in 1874 and subsequently served as Professor of Obstetrics and Gynaecology from 1885 until 1896. Following visits to leading medical centres, in 1891, he recommended the development of a surgical amphitheatre for patient care and medical education. The Fenwick surgical amphitheatre was a two-story limestone building, the lower floor, a waiting room for students, the upper floor, a surgical theatre. It was described as equal to any other in America at the opening in 1895. Fenwick said "Surgical amphitheatre reflects the growing importance of surgeons and their skills to the care of patients and the education of students."

Conclusions: Obstetrics and Gynaecology was at the forefront of the development of health care and medical education in the hospital setting at this time.

■ H-OBS-MD-001

THE MAKING OF MAN-MIDWIFERY IN THE 18TH CENTURY

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Objectives: The history of the development of man-midwifery in the 18th century.

Study Methods: Historical literature review.

Results: In the 17th century childbirth was a social occasion for women. The midwife called with the onset of labour was joined by a number of community women. Mothers had confidence in their midwives who took charge. Because of small caseload, midwives had little experience in managing difficult births. Faced with failure to deliver turned to male surgeons to save the mother. Craniotomy and extraction was a grim business for the surgeon. In the 18th century there were a number of key developments including an increased knowledge of the anatomy and mechanism of labour, the development and introduction of obstetric forceps, and the development of lying hospitals staffed by midwife matrons responsible for normal deliveries with man midwife consultants for emergency consultations for abnormal deliveries. Whereas in the 17th century calls for the surgeon to save the mother in an obstructed labour were late; in the 18th century with demonstration of ability to deliver a living child in some obstructed labours led to early request for consultation, a practice increased by the close working relationship between midwives and man-midwives in lying-in hospitals and community charities.

Conclusions: Man-midwives had to earn the right to serve. The advance of knowledge and skills in the management of labour was associated with a decrease of maternal mortality from 21 to 9 per 1000 births at the end of the 18th century.

■ H-OBS-MD-002

THE ROLE OF THE DORAN BUILDING IN PUERPERAL FEVER IN CANADA

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Objectives: To demonstrate the role of the Doran Building in the prevention of puerperal fever.

Study Methods: Historical literature review.

Results: The Doran Building at the Kingston General Hospital, opened in 1894, represents an early Canadian initiative to apply the principles of sanitation, antisepsis, and asepsis to prevent puerperal fever in a freestanding lying-in hospital. During the 250 years leading up to 1890, an understanding of the clinical nature of puerperal fever, its cause, mode of spread, and means of prevention had gradually developed. Despite this progress, puerperal fever remained a major cause of maternal mortality in the latter part of the 19th century. The Doran Building is an example of a pavilion hospital, built as a freestanding facility with its own staff. Kenneth Fenwick, a vigorous advocate of antisepsis, and asepsis, established the principles of patient care to prevent of maternal mortality due to puerperal fever in the Doran Building. Beginning in 1894, there was a modest increase in the number of deliveries each year to a total of 3111 by 1928. There were 26 direct and indirect maternal deaths, representing a maternal mortality rate of 8.25 per 1000 live births. Puerperal fever accounted for the deaths of three women: one delivered in hospital and two delivered in the community and had been admitted following delivery.

Conclusions: The application of the principles of isolation, antisepsis, and asepsis limited the mortality in hospital due to puerperal fever in a manner consistent with the best hospitals elsewhere at that time.