Healthy Mothers and Healthy Babies:

New Research and Best Practice Conference

February 21 - 22, 2014 | Vancouver, BC

SYLLABUS

Perinatal Services BC
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Interprofessional Continuing Education

P1

New Research

BC Population and Public Health Prenatal Care Pathway

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BC Healthy Start Working Group

The Healthy Start Initiative is one pillar of the BC government's Healthy Families BC Strategy, and includes public health service standards which aim to reduce inequities to ensure that every family in BC has similar access to public health support services. This includes both universally delivered services for all families, as well as select enhanced services to meet the needs of families that may experience a greater degree of vulnerability. The Population and Public Health Prenatal Care Pathway is an evidence-informed practice support tool that has been developed to promote the implementation of the provincial service standards for the prenatal period.

Co-led by Perinatal Services BC and the Ministry of Health in collaboration with perinatal leadership in all regional health authorities, the Pathway is framed in the public health principles of population health, health promotion and health equity. The Pathway identifies key aspects of prenatal support that can be provided to promote the health of pregnant women and their families, organized into the following nine main categories: (1) health care/physical well-being, (2) nutrition, (3) psychosocial health, (4) healthy lifestyles, (5) healthy relationships, (6) Resources, (7) Injury Prevention, (8) preparation for birth, and (9) preparation for parenthood.

This poster presentation will provide an overview of the development process of the Care Pathway, including its guiding approaches to care and specific assessment areas, as well as an overview of the provincial dissemination strategy.

Biographies

Adam King is the Provincial Lead for Health Promotion and Prevention at Perinatal Service BC, an agency of the Provincial Health Services Authority. Adam is responsible for leading the development and implementation of best practice initiatives which promote healthy pregnancies and healthy infants, in collaboration with other agency leaders, the Ministry of Health and provincial stakeholders including front line leaders in community, primary care and acute care settings and the public. He is also responsible for building quality health promotion knowledge and skills across the health care continuum and assisting to prioritize health promotion issues and developing evidence-based solutions. Adam has a Master of Public Health degree and has previous experience leading health promotion and prevention initiatives at the international level through UNICEF and the Aga Khan Foundation, at the federal and provincial levels through the Public Health Agency of Canada, and at the regional level through the Fraser Health Authority.

P2

Innovative Practices

Bringing Alive the Mother's Story in Nursing Practice

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The Nuu-chah-nulth Nursing Program (NNP) has developed the Mother's Story—a culturally safe approach to pregnant and birthing care for Aboriginal women. The impetus for developing this approach was the comment a late Nuu-chah-nulth Elder respectfully stated to an NNP nurse early on in her career: "It makes me sad to watch you provide care to our pregnant women because it was something that we did so well before contact of European people" (Elder, personal communication, February 1, 1995). The NNP transformed care from the biomedical model to the Mother's Story approach, inclusive of Nuu-chah-nulth values and beliefs, sharing of power, and is culturally safe. The process of changing care engaged 14 Nuu-chah-nulth female representatives in the 2-year consultation.

This presentation will bring awareness of the saliency of practicing in a culturally safe way with Aboriginal women during pregnancy, birthing, and parenting from a public health nursing perspective. The goal of this presentation is to provide public and community health nurses, leaders, and other health professionals with an example of an innovative practice of providing care in a safe, culturally competent way that focuses on a strengths-based relational practice. This presentation will demonstrate the positive outcomes of providing care in this manner as well provide the essential requirements for nurses to be supported to successful practice the Mother's Story approach. Supporting literature and resources regarding this topic will be made available.

Learning Objectives

1. To become aware of the innovative Mother's Story care delivery model for supporting pregnant, birthing, and parenting women from a critical social theory lens.
2. To learn about the benefits and successes of working in partnership with Aboriginal people and women to improve the health of mothers and babies.
3. To be aware of the supports necessary for nurses to successfully practice the Mother's Story.

P3

New Research

Effect of Unintentional Injury During Pregnancy on Preterm Gestation and Neonatal Outcome

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Objective: To examine the effect of unintentional injury in pregnant women on preterm gestation, and on subsequent neonatal mortality and severe morbidity.

Methods: We carried out a study of all mother-infant pairs in Canada (excluding Quebec) from 2002-2011 using data from the Canadian Institute for Health Information. Unintentional injury including trauma from traffic accidents and unspecified injuries in pregnant women was defined using ICD-10 codes. Included were singleton live births with a gestational age ≥20 weeks at delivery (N= 2,527,244). Effects on the duration of gestation, intraventricular haemorrhage (IVH), respiratory distress syndrome (RDS), intensive care unit (ICU) admission, and death were examined using logistic regression after adjustment for maternal age, parity, and serious medical condition, and plus gestational age for neonatal outcomes.

Results: A total of 1,030 pregnant women with ≥1 unintentional injuries were identified, yielding a rate of 4.1 per 10,000, of whom 16.4% subsequently delivered a preterm live birth. The earlier in gestation the injury occurred, the higher risk of giving a preterm birth (p for trend <0.001), with an adjusted rate ratio [aRR] increasing from 2.2 (95% confidence interval [CI] 1.7-2.7) at 35-36 weeks to 4.7 (95% CI 2.3-9.4) at 20-24 weeks. For infants born to injured women, aRRs of IVH, RDS, and neonatal death were 2.3 (95% CI 1.2-4.3), 2.1 (95% CI 1.5-3.2), and 4.2 (95% CI 2.4-7.6), respectively.

Conclusion: Unintentional injury to pregnant women has a significant adverse effect on the earlier gestation, and is associated with an increased risk of neonatal severe morbidity and mortality.

P4

New Research

Toward Equity in Access to Midwifery Care for Priority Populations in Saskatchewan

Daphne McRae, Lori Hanson

In 2009 Dr. Lori Hanson and Dr. Debbie Mpofu, alongside a dedicated team, carried out the first funded midwifery research conducted during the process of midwifery implementation in Saskatchewan. The results presented here are a secondary analysis of the data collected during their *Equity in Access to Midwifery, Phase II* study. The research relies on key professional stakeholders' perspectives, including those of SK midwives, policy-makers, regional health managers, and primary care practitioners, to explore if and how commitments to equity in access to midwifery for priority populations in Saskatchewan are being realized.

This research utilizes nineteen in-depth interviews conducted in 2011-2012. Interviewees were questioned regarding models of care and policies or guidelines that they felt impeded or encouraged equitable access to care. The secondary analysis suggests that diverging professional views on equity, minimal public education, and a lack of prioritization of equity in health servicing may be creating barriers to the realization of equity in access to midwifery in Saskatchewan.

From this poster presentation participants will be able to:

1. Identify three diverging professional views on equity in access to midwifery care for priority populations.
2. Explain what is impeding public education of midwifery care in Saskatchewan and how this impacts priority populations.
3. Describe four ways in which provincial commitments to midwifery funding fail to support an equitable roll-out of services.

P5

Innovative Practices

Family-centred Maternity and Newborn Care National Guidelines – Canada

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The Family-Centred Maternity and Newborn Care National Guidelines is an essential document for those involved in maternity and newborn care. National guidelines in Canada were first published in 1968 and revised in 1975, 1987 and 2000. By 1987, the principle of family-centred care and importance of an inclusive approach, incorporating members of the woman's family, including the newborn, became widely recognized.

In 2012, the Society of Obstetricians and Gynaecologists was commissioned by the Public Health Agency of Canada to implement a needs assessment to determine stakeholder interest for a revision, and to identify content and revision collaborators. The response rate was 100%. Almost half the respondents had consulted the guidelines in the past. The majority of those who used the guidelines indicated a requirement for updates.

A revision is underway with factors under consideration including: strengths and limitations of technological developments in perinatal health care; the richness of the Canadian mosaic and culturally diverse population; recognition of responsibility to First Nations, Métis and Inuit peoples; consideration of the multifaceted nature of health care incorporating psychological, social, cultural and spiritual components in addition to biological health; the changing nature of families as they face evolving demands; and the vast geographic and climatic challenges in Canada.

Learning Objectives
Understand a family-centred approach applied to maternal and newborn care.
Understand impacts such as emerging technology, changing family constructs and the Canadian mosaic.
Understand the role of a national committee and importance of consultation in national guideline development.

Outcomes:
Over 30 key stakeholder organizations have agreed to participate in an endorsement process for the revised guidelines.
A methodology for recruitment of content experts and coordinating a virtual writing process.
Engagement of an Oversight Committee for overall guidance.
Completed content and literature review.

P6

Quality Improvement

Predicting the Onset of Spontaneous Labour in Post-Date Pregnancies: A Population-based Retrospective Cohort Study

Jennifer Hutcheon

Authors
Gerald Marquette, Jennifer Hutcheon, Lily Lee

Abstract
Objective: To estimate the probability of onset of spontaneous labour (OSL) in women with uncomplicated pregnancies reaching 41+0 weeks and examine the influence of maternal characteristics on this event.
Methods: We conducted a population-based retrospective cohort study of women in British Columbia, Canada, with uncomplicated singleton, cephalic pregnancies between 41+0 and 42+0 weeks' gestation. Detailed clinical information was obtained from the British Columbia Perinatal Database Registry. We determined the time after 41+0 until the exact day and time of OSL, prelabour cesarean or onset of labour following induction. A Kaplan-Meier curve was created to estimate the probability of onset of spontaneous labour. A Cox regression model was used to assess the independent influence of maternal age, parity, body mass index (BMI) and pregnancy weight gain on the OSL, and assess the extent to which prediction of OSL could be individualised according to a woman's characteristics.
Results: Among 15,253 women remaining undelivered at 41+0, there was a 67.6% [95% CI 66.4, 68.7] chance of OSL by 41+6 weeks. Although OSL was statistically more likely in younger women, higher parity, lower BMI and lower weight gain ($p<0.01$), the multivariable model's predictive ability was poor (c-statistic 0.56).
Conclusions: Maternal characteristics were not strong enough determinant for successful individualized prediction of OSL in women with uncomplicated pregnancies reaching 41+0 weeks of gestation. Our population-based estimates of the daily occurrence of OSL can be used to inform discussions with women on when to offer induction.

Learning objectives:

1) To describe the day-specific probability that a woman will go into spontaneous labour at or beyond 41+0 weeks gestation
2) To compare the impact of different labour induction policies between 41+0 and 41+6 weeks on the total number of inductions performed
3) To assess whether prediction of spontaneous onset of labour can be improved by incorporating maternal characteristics

Synopsis
In this study, we quantify the day-specific probability that a woman at 41+0 weeks of pregnancy will go into spontaneous labour during the following week. These data will help to inform evidence-based decision making on labour induction vs expectant management in post-date pregnancies.

P7

New Research

Gestational Age Dating Using Ultrasound Alone Instead of a Standard Gestational Age Dating Algorithm: Impact on Rates of Post-date Pregnancy and Preterm Birth

Jennifer Hutcheon

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Objective: Current standards for pregnancy dating employ algorithms that use information on last menstrual period, ultrasound biometry and newborn examination. We evaluated how the choice of pregnancy dating method (ultrasound exclusively vs. a standard pregnancy-dating algorithm) influences rates of post-date pregnancy and preterm birth.

Methods: Data from singleton pregnancies with ultrasound-confirmed dating were extracted from the British Columbia Perinatal Data Registry (2008-2011). Gestational age in days was computed using ultrasounds up to 20 weeks (method 1) as well as using a standard algorithm (based on a national clinical practice guideline (method 2). Median gestational age at delivery, proportion of pregnancies reaching 41+0 weeks and rate of preterm birth (delivery <37 weeks, and late preterm births (34+0 to 36+6 weeks) were compared.

Results: 113,829 women were included. The median gestational age at delivery using method 1 was 39+4 weeks (Interquartile range (IQR) 38+4- 40+3) and 39+4 weeks (IQR 38+5- 40+4) with method 2. The proportion of women reaching 41+0 weeks with method 1was 14.3% [95% CI 14.1, 14.5] and 15.5% [95% CI 15.3, 15.7] with method 2 ($p<0.0001$). The overall preterm birth rate with method 1 was 6.5% [95% CI 6.3, 6.6] compared with 6.4% [95% CI 6.2, 6.5] with method 2 ($p=0.3174$). The late preterm birth rate was 4.8% [95% CI 4.6, 4.9] with method 1 and 4.7% [95% CI 4.6, 4.8] with method 2 ($p=0.323$).

Conclusion: Dating pregnancies using ultrasound exclusively decreased the number of pregnancies reaching 41+0 weeks but did not impact the apparent rate of preterm births.

Learning objectives:

1) To describe current and new approaches for gestational age estimation
2) To evaluate the impact of the gestational age estimation method on apparent rates of post-date and preterm births.
3) To discuss the implications for clinical practice and public health surveillance of switching to an ultrasound-only based estimation of gestational age

P8

Innovative Practices

Interactive Learning: The On-line Manual for Fetal Health Surveillance in Canada

Janet E Walker

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Presenter:
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The *Fundamentals of Fetal Health Surveillance: A Self Learning Manual 4th Ed.* was produced by the Canadian Perinatal Programs Coalition in 2009. The manual was based on the Society of Obstetricians & Gynecologist's guideline titled, *2007 Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guideline*. The aim of the fundaments manual was to provide an evidence-based approached to fundamental concepts in fetal health and to be the knowledge component of a standardized interdisciplinary fetal health surveillance education program. The manual contains materials about intermittent auscultation and electronic fetal monitoring and covers physiology, technology, systematic assessment and identification of normal, atypical and abnormal fetal heart findings. Communication and teamwork are key components of the manual and the face to face course. In collaboration with the Centre of Excellence in Simulation Education and Innovation (CESEI) and a national advisory group, the fundamentals manual is now in an enhanced on-line format. Many of the concepts have become interactive and animated to provide the learner with a variety of learning styles to choose from. The learner now has the opportunity to use auditory, visual, and kinesthetic preferences to consolidate their learning. The intention is that the learner will come to the face to face workshop understanding key concepts so classroom time can be spent doing interdisciplinary case review focussing on systematic assessment for fetal health surveillance.

Learning Objectives:

- Identify key concepts required to assess fetal health in the antepartum and intrapartum period
- Recognize and interpret normal, atypical, abnormal fetal health surveillance and the correct response to each
- Practice systematic interpretation of fetal health surveillance findings

Biographies

Janet E. Walker, RN, BScN, MSN has 30+ years of professional nursing experience that includes labour and delivery, antepartum home care, high risk antepartum, ambulatory care as well as leadership and management positions. Janet's current position is as the Provincial Lead for Education & Quality at Perinatal Services BC in Vancouver B.C. In her role, she is responsible for the organization and delivery of education, development of provincial guidelines and embedding quality in the work of PSBC. Janet sits on the SOGC Board of Directors as the national RN/NP representative.

P9

New Research

Bridging the Gap: Engaging Expectant Women in Informed Decision-making Interactively Online

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Context: Cesarean rates are high and maternal and perinatal mortality are rising. Postpartum depression and post-traumatic stress disorder range from 16-20% for childbearing women. Women have significant knowledge gaps and uncertainties about birth interventions, with major implications for informed decision-making during childbirth and mental and physical health for themselves and their babies.

Objective: Evaluate educational methods developed by Klein et al in "bridging the gap" between what women need to know to make informed decisions and current knowledge gaps.

Design: Randomized controlled study (RCT)

Setting: National online survey

Participants: Women approaching first birth. Pilot data indicated 626 women needed to detect 10% difference in knowledge improvement between two study groups.

Intervention: Interactive materials engaging expectant women in evidence-based, online information about common maternity interventions. Tools developed by our group (established obstetrical, family practice, midwifery and decision analysis experts) based on emerging evidence in the decision-sciences about Web 2.0 in disseminating health care information as part of informed decision-making.

Outcome Measures : Validated two-part questionnaire measuring women's knowledge and attitudes about childbirth approaches and interventions.

Results: Pilot showed significant change in women's attitudes towards more appropriate and defined use of technology after using our educational interventions compared to control group (3.61 control vs 3.83 experimental, p=0.032). Slightly larger increase in knowledge in experimental group, but no statistically significant differences in change in knowledge between the control and experimental group (8% control vs 12% experimental, p=0.358).

Conclusions: Our pilot RCT shows web-based educational materials can lead to knowledge and attitudinal change, improving women's ability to make informed birth choices.

Learning Objectives

After interacting with our poster presentation, attendees should be able to:

1. Compare the impact on women's knowledge and attitudes of our interactive, online maternity care education tools to static information available online.
2. Identify high quality online resources for pregnant women.
3. Identify women's knowledge gaps and uncertainties about interventions and approaches to childbirth.

P10

Quality Improvement

Optimal Birth BC: A Quality Improvement Program to Optimize Rates of Cesarean Section in BC

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The cesarean birth rate in British Columbia stands highest among provinces at 31.3.%. Healthy women who undertake a planned cesarean birth in Canada have a three-fold greater risk of serious maternal morbidity and a two-fold increase in neonatal mortality compared to those planning a vaginal delivery. The purpose of Optimal Birth BC, funded by CIHR, is to develop and test interventions to prevent unnecessary cesarean birth in a sustainable framework that will support both the uptake of evidence-based obstetrical health care and policy-development in regional health authorities, and informed decision-making among pregnant women. Optimal Birth has worked with the Vancouver Coastal Health Authority to decrease rates of inductions for the indication of post-dates in six out of seven hospitals. In the Northern Health Authority, Optimal Birth has demonstrated an association between compliance to the Society for Obstetrics and Gynecology professional practice guidelines for the diagnosis and management of dystocia and reduced rates of cesarean section. To fulfill its mandate to promote evidence-based decision making among consumers, Optimal Birth is currently developing a telephone text messaging program (SmartMom) to deliver prenatal education. We believe that SmartMom will enhance user engagement through delivery of text messages keyed to gestational age and parity that are aimed at promoting healthy behavior, accessing appropriate care, and using locally available resources. SmartMom will begin as a pilot project in the Northern Health Authority and expand throughout BC during the next two years.

Learning Objectives

1. Understand the difference between quality improvement and research
2. Identify the socio-demographic and clinical determinants of cesarean section in BC
3. Discuss evidence-based approaches to optimizing cesarean birth rates within regional health authorities in BC

P11

Quality Improvement

Our Journey to Becoming Baby-friendly: The First Steps

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The Breastfeeding Committee of Canada (BCC) was formed in 1991 in response to the WHO and UNICEF Baby-Friendly Hospital Initiative. There are 26 baby-friendly facilities in Canada; two in British Columbia (B.C.). To promote the well documented benefits of breastfeeding, the BCC recommends mothers exclusively breastfeed for at least six months, continuing up to two years with complementary food (2013). A literature review identified exclusive breastfeeding rates upon discharge are higher in hospitals with baby-friendly designation. Exclusive breastfeeding rates at six months are 19.2% in B.C. and 14.4% in Canada (Chalmers et al., 2009). Lions Gate Hospital (LGH) has implemented a pilot project to make strides towards baby-friendly designation. Project goals were to determine exclusive breastfeeding rates upon discharge; identify reasons for those rates; evaluate current documentation processes through a gap analysis, and provide recommendations to improve adherence to the 10 Steps outlined by the BCC in 2012. A convenience sample of newborn records from a three month period was randomly selected from LGH and audited. These included a BC Newborn Record and a BC Newborn Clinical Path form. A clear definition of exclusive breastfeeding remains missing from both forms. Documentation by staff was inconsistent and categorized as clear, unclear and incomplete. Staff interviews, yet to be conducted, are expected to be congruent with chart audit findings, and suggest a need for clarifying definitions related to newborn feeding. On completion of the pilot project, the findings will help identify how LGH can achieve their goal of gaining baby-friendly designation.

P12

New Research

Outcomes of Primary Maternity Care in Fort Smith, Northwest Territories

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Objectives:
This project examines the outcomes of primary maternity care in Fort Smith, where midwives have provided the only maternity care service since 2005. The objective is to compare perinatal outcomes at Fort Smith (2005-2012) with outcomes in a) the Nunavik midwifery clinics, b) the birth outcomes from women residing in Hay River, NWT and b) Canada as a whole.

Approach:
Using a retrospective cohort design, data was collected from medical charts at the Fort Smith Midwifery Program from 2005-2012 (n=300). Outcomes to be compared to the three comparison groups include: transfer rates outside of the community for childbirth; maternal outcomes such as postpartum haemorrhage, severe perineal trauma, and postpartum depression; rates of intervention including induction and Caesarean sections; neonatal outcomes such as morbidity, mortality, Apgar scores, and admissions to NICU; and breastfeeding rates.

Results:
Preliminary data analysis demonstrates that Fort Smith has fewer premature births compared to Nunavik and Canada. The C-section rate for women deemed appropriate for community birth in Fort Smith was 7% whereas the rate for those recommended for hospital birth was 37%. Since 2008 nearly 100% of women in Fort Smith have chosen a midwife as their primary care provider and approximately 50% of these women have given birth in the community.

Conclusion:
The birth outcomes from the midwifery service in Fort Smith, Northwest Territories are similar to outcomes from the successful Midwifery program in Nunavik and to outcomes from Canada. The results of this study support the return of childbirth to remote northern communities.

Learning Objectives

1) To learn about the birth outcomes associated with primary maternity care in rural and remote communities, and
2) To increase awareness of the challenges faced in accessing maternity care for rural and remote women in Northern Canada.

P13

Quality Improvement

Fear of Childbirth: A Concept Analysis and Clinical Implications

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Background: Fear of childbirth (FOC) is a clinical problem that can negatively affect a woman's life before, during, or after childbirth. Approximately 20% of pregnant women suffer from moderate to severe FOC, and in 6% of women this fear is severely incapacitating. FOC can result in obstetrical and psychological complications for both mothers and their infants. Due to the lack of a uniform conceptual definition, FOC is often unrecognized and/or misdiagnosed.

Learning objectives:
1) clarify the definition of FOC
2) review and analyze the literature on FOC
3) discuss future research on FOC

Methods: Walker and Avant's (1988) concept analysis method was used to define the attributes, antecedents, consequences, and empirical referents of FOC. Literature from 1980 to 2013 was comprehensively reviewed using databases PubMed, CINAHL, and EBSCO with the key words "fear", "anxiety", and "childbirth". Thirty-five original research articles in English (*n*= 35) with a direct focus on FOC were selected for this analysis.

Results: A conceptual definition of FOC was developed. Furthermore, some of the key findings of the concept analysis were as follows: 1) Canadian studies on FOC are limited; 2) there is evidence of association between FOC and both elective and emergency caesarean section deliveries; 3) individual obstetric and psychological support positively impacts the quality of life of pregnant women with FOC, and results in increased satisfaction with childbirth.
Conclusions: It is essential for the health professionals to consider these findings when identifying women at risk, and tailor prenatal care in a way that can reduce FOC.