Cesarean Birth in BC

Trends, Perspectives & Future Strategies

A CONSENSUS CONFERENCE

Consensus Panel Statement

January 24-26, 2008
The Morris J. Wosk Centre for Dialogue
Vancouver, BC
Canada

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Executive Summary

The caesarean birth rate in Canada has risen steadily for the last three decades in all jurisdictions. By 2005 in BC the rate had risen to 30.4%, the highest of all provinces and territories in Canada. The reasons for this are not completely clear, though many factors appear to be involved. These trends have raised concerns and questions within the maternity care community as well as all levels of government and the public. In an attempt to understand and address these issues, the Ministry of Health requested assistance from the BC Perinatal Health Program. This led to the formation of the Caesarean Birth Task Force (CBTF) of the BC Perinatal Health Program (BCPHP) in 2006. The mandate of the Task Force, as commissioned by the Ministry of Health, was to determine whether the caesarean birth rate was appropriate for the province and if not, to suggest steps that could be taken to address the inherent issues.

The specific objectives of the Task Force were to:

i. Review trends in caesarean birth rates in BC.
ii. Review evidence on maternal and infant risks, benefits and outcomes.
iii. Describe maternal, pregnancy and obstetric factors associated with rate increases and variations between provincial Health Authorities and Health Service Delivery Areas.
iv. Determine if current caesarean birth rates are medically justifiable, and if not, to propose quality improvement strategies that consider population characteristics and practice context, and other variables.
v. Recommend practice strategies to optimize the use of caesarean birth in BC.
vi. Suggest a comprehensive continuous quality improvement (CQI) framework to support improvement initiatives.
vii. Propose an action plan to the BCPHP Executive Committee that will inform the development of guidelines, education initiatives, and future research and performance improvement.

The BC Perinatal Database Registry has collected and reported on all births in BC since 2000. Over this time there has been an average of 40,000 births per year. During this time the rate of spontaneous vaginal delivery decreased from 64.2 to 60.1%; the rate of assisted vaginal delivery, including vacuum and forceps intervention, decreased from 12.2 to 10.4%. The provincial caesarean delivery rate rose from 23.6 to 29.5%.

This task force builds on the work of a previous Provincial Task Force that reported in 1993. Some of the trends relating to caesarean section have persisted since then, but a number of factors have changed. The availability of the BC Perinatal Database Registry for ongoing monitoring, analysis and feedback has greatly strengthened our ability to track trends and changes, both for practice patterns and demographics. In addition, there is widespread support within all levels of government and within the maternity care community to look closely at the issue of caesarean delivery as it relates to current practice. A number of studies comparing caesarean and vaginal birth outcomes among low-risk mothers suggest that vaginal birth is preferable for maternal health. These studies have shown increased maternal morbidity in both the current pregnancy and future pregnancies. In addition, large studies have shown a 2 to 3-fold increase in various neonatal respiratory morbidities following elective

caesarean delivery compared to vaginal delivery, with resultant increase in need for admission to a Newborn Intensive Care Unit (NICU).

Some factors that help explain the rising caesarean rates are: increasing maternal age, rates of hypertension, diabetes, obesity and multiple gestations. However, the increase in proportion of caesarean births exceeds actual increases (individually and collectively) in the prevalence of these conditions among pregnant women. In other words, the caesarean birth rate is rising faster than medical or demographic conditions would justify.

While the frequency of induced labour has remained fairly stable, the caesarean delivery rate for induced mothers increased from 22.6% in 2000 to 25.7% in 2005. For nulliparous women with postdate pregnancies, induction, as opposed to spontaneous labour, was associated with almost twice the rate of caesarean delivery.

Our statistical analysis also suggests that caesarean delivery frequency varies with the care provider, geographic location, health delivery area and mix of care providers. This may reflect the reality that obstetricians care for women who have an increased risk of requiring intervention, while women with less risk seek out the care of midwives and family doctors. The perception of risk may also vary between groups of care providers, and may be a contributing factor to the trends seen in the past six years. In general, it appears that both consumers and providers of care have become comfortable with technology, and more risk averse. However, all interventions bring some risk of complication, and need to be evaluated on their merit.

In addition to concerns for maternal and neonatal health, economic issues are important to consider in the provincial picture. The Canadian Institute for Health Information (CIHI) estimates the average cost of caesarean section to be significantly higher, and length of stay longer, than vaginal birth. Thus, a rising caesarean delivery rate puts increasing economic and human resource demands on our already challenged system.

Research evidence suggests that significant reductions in caesarean birth rates can be achieved through customized quality improvement strategies rather than arbitrary benchmarks. Multi-faceted strategies include peer review, audit and feedback and identification of barriers to change. Sustainable change requires clear, accessible and timely data, management infrastructure, ongoing monitoring, and, perhaps most importantly, the support of hospital administration and commitment of team members. Surveillance and monitoring of important indicators, with a continuous cycle of accurate and timely data collection, synthesis and dissemination, are crucial to the success of any improvement strategy. The BCPHP is committed to the ongoing monitoring of birth outcomes in BC.

All available research suggests that the public needs better information about pregnancy, labour and birth. A strategy to engage consumer-oriented media should be central to this work, and will contribute to better understanding and decision-making by the public. Childbearing women and their families should be provided with evidence-based information about pre-existing or demographic factors and modifiable factors that contribute to obstetric interventions in childbirth. High quality information will allow women to be active participants in their own care.

It is hoped that by surfacing these important issues, we can as a provincial community, work together to assure that the women of BC and their families have access to the best maternity care. The BCPHP is confident that with the commitment of our excellent maternity care providers, and our partners in government and health administration, these objectives can be achieved.

The overall recommendations from the Caesarean Birth Task Force follow. These summarize the detailed recommendations and summary statements that are to be found at the end of each section of the report.

OVERALL RECOMMENDATIONS

MINISTRY OF HEALTH

1. The Ministry of Health develops a ten-year health human resources plan that aims to:

    a. Train, recruit and retain more care providers in maternity care, including perinatal nurses, midwives, primary care physicians and obstetric specialists. Doula support is not yet funded provincially, but research evidence suggests that this should be considered.

    b. Support the continuing development of collaborative multidisciplinary models of maternity care with the "right mix" of maternity providers appropriate to the needs of the community or jurisdiction.

    c. Design a system to support obstetric specialists in their consultant role.

2. The Ministry of Health addresses existing barriers, incentives and funding for the development of collaborative models of practice among maternity care providers including midwives, nurses, family physicians and obstetricians through the development and evaluation of demonstration projects and dissemination of rigorous program evaluations.

3. The Ministry of Health partners with provincial agencies (Michael Smith Foundation for Health Research, BC Medical Services Association) to fund requests for research proposals to develop and disseminate knowledge of practice change that will reduce rates of caesarean section.

4. The Ministry of Health develops a process for ongoing evaluation of progress towards implementing the recommendations of this report, including semi-annual review.

BC PERINATAL HEALTH PROGRAM (BCPHP)

1. BCPHP performs ongoing data monitoring with respect to caesarean section rates and factors associated with caesarean section and disseminates this information on an annual basis to health authorities and all levels of maternity care facilities.

2. BCPHP assists health authorities to define local evidence-based benchmarks for caesarean section rates.

3. BCPHP partners with health authorities to develop quality improvement strategies aimed at reduction of caesarean rates while maintaining optimal birth outcomes. These strategies include:

    a. Creation of multi-disciplinary teams mandated to implement quality improvement programs (See Appendix E: Implementing EPIC) within designated hospitals

    b. Analysis of local determinants of variation in caesarean birth rates (e.g. Robson classification)

    c. Establishment of hospital or region-based reduction targets for caesarean birth

    d. Selection of strategies and interventions to reach targets based on published evidence and local determinants of variation

    e. Implementation of strategies with rapid cycles of evaluation and modification

f. Dissemination of experience with practice change and evaluation among partnering health authorities and hospitals

g. Assisting Health Authorities or institutions in the use of comparability techniques to help them assess their performance against comparable institutions or regions

4. BCPHP supports the dissemination of knowledge gained from these quality improvement initiatives through publication in peer-reviewed literature.

5. BCPHP incorporates findings of published evaluations into BCPHP guidelines.

6. BCPHP modifies the structure of the perinatal database to promote ongoing surveillance of relevant variables arising from quality improvement strategies.

7. BCPHP disseminates evidence-based information appropriate for childbearing women, their families and the general public about pregnancy and childbirth, including:

a. Risks and benefits associated with caesarean vs. vaginal birth

b. Modifiable factors associated with risk of caesarean birth such as obesity, smoking and advancing maternal age

8. BCPHP uses lay media outlets to disseminate this information--including public service announcements, web-based resources, and print material.

REGIONAL HEALTH AUTHORITIES

1. Regional Health Authorities designate internal responsibility for dissemination of caesarean birth surveillance products developed by BCPHP within health authorities.

2. Regional Health Authorities partner with BCPHP to develop quality improvement strategies aimed at reduction of caesarean rates while maintaining optimal birth outcomes as outlined in recommendation (2) under BC Perinatal Health Program. This will include allocation of resources for coordination and support of quality improvement strategies.

3. Regional Health Authorities commit to encouragement and resourcing of practice change initiatives arising through quality improvement activities.

MATERNITY CARE PROVIDERS

1. Providers access dissemination materials made available through Health Authorities and BCPCP.

2. Providers invest time in adopting recommended best practices within hospitals.

3. Providers consider participation in quality improvement teams within hospitals.

4. Providers assist in the dissemination of consumer-oriented educational materials distributed through the BCPHP as well as in the interpretation of these materials in the appropriate context for consumers.

5. Providers participate in quality improvement processes of practice guideline development and evaluation at the BCPHP.

Question 1:

IS IT POSSIBLE TO OPTIMIZE THE CESAREAN BIRTH RATE IN BC?

Yes. It is possible to optimize the use of cesarean birth (CB) in BC. This will not mean identifying a single discrete rate for the whole province, as it will vary depending on a number of factors. Nonetheless, we believe that optimal use of cesarean birth in BC implies that several criteria have been fulfilled.

a. We must as communities of care providers and as a province embrace that for the majority of women birth is a natural, physiologic process that deserves our respect and support. Values of individual families, cultures and communities must be reflected in our care models, respecting choice and autonomy. This includes respecting a woman's choice of birth place.

b. The best rate is one that is associated with optimal outcomes for mothers and for babies. This rate must reflect both a balance between established benefits and risks for mother and baby, and one that avoids unnecessary interventions.

c. The focus should not be on the CB rate but on providing the best possible care and birth experience for individual women and their families. Most women will be satisfied with their childbirth experience if they are respected and involved in an optimal decision-making process. In this context, the safe birth of a baby is a cause for celebration regardless of the mode of delivery.

d. All women in BC should have access to comprehensive and culturally sensitive maternity care as close to their home community as possible. Communities must be engaged in discussions about local maternity care services that are appropriate for their needs.

BC is one of the safest places in the world to give birth and to be born. Safety should remain paramount.

We endorse in principle the BC Perinatal Health Program's (BCPHP) *Cesarean Birth Task Force (CBTF*) report (2007)[1] and its recommendations to optimize the use of CB in BC.

Question 2:

WHAT ARE THE ROLES OF CAREGIVERS IN OPTIMIZING CESAREAN BIRTH IN BC?

Optimizing cesarean birth begins well before the onset of pregnancy. By ensuring that women understand the impact of age on childbearing, care providers can enable them to make informed decisions about the most appropriate time to choose to become pregnant. Similarly, care providers need to ensure that women understand the importance of healthy weight and physical fitness on becoming pregnant, as well as on achieving the best possible outcomes and childbirth experience for themselves and their babies.

Some of the pivotal issues arising from the CBTF report and this conference are:

[1] BC Perinatal Health Program, (2007) *Cesarean Birth Task Force Report.*

a. Continuing education and ongoing training of all care providers including doulas,[2] prenatal educators, nurses, midwives, family physicians, obstetricians, anesthesiologists and pediatricians. Collaborative multidisciplinary models of education should be developed and supported. Mentoring should be recognized as a core competency of professional practice and should be encouraged and supported appropriately.

b. Human resource issues in maternity care are urgent in this province and demand innovative and collaborative approaches. Care should be woman and baby centered to ensure that every family gets the best possible care. Collaborative models should be implemented across the province with priority given to smaller centres. Such collaborative models could be facilitated by participation in patient safety-based team building programs.

c. Care providers need to understand and be able to discuss the risks and benefits of interventions with their patients. All care providers need to provide evidence-based (EB) information and be cognizant of their own practice patterns and biases. They must be able to offer informed choice and facilitate decision-making by giving women up-to-date, complete and balanced information.

d. We embrace the concept that knowledge can be gained from multiple sources, and that while evidence-based practice developed from research remains the foundation of modern health care, other concepts such as practitioner experience, client values and local practices may also be of value and should be considered when appropriate.

e. All care providers should regularly participate in ongoing Continuous Quality Improvement (CQI), local practice audit and review.

Use of Best Practice

All care providers should adopt the best practice as appropriate to achieve optimal outcomes. Regional differences in resources and circumstances may require different implementation of best practice. Comprehensive maternity care, including CB capability, must be maintained in rural BC.

Existing guidelines (e.g.; SOGC and BCPHP) steer us toward best practice in many areas, and will help us achieve optimal outcomes. In addition, we support the use of strategies that have been shown to have a positive effect on intervention rates without decreasing safety.

Strategies must address both primary and subsequent cesarean births. Approaches to decreasing unnecessary CB include:

a. Accurate dating of pregnancy, including the use of first trimester dating ultrasound.

b. Review of induction policies and avoiding unnecessary inductions.

c. Support the practice of avoiding admission to hospital in early labour.

d. Promotion of appropriate support during labour, including doulas and nurses trained in labour support skills. We support the goal of having one-to-one nursing for all labouring women where possible.

[2] Certification from Doulas of North America (DONA) International

e. Promotion of judicious use of all forms of pain management in labour, including non-pharmacological forms. When required, modern low-dose epidural techniques should be used and ongoing care of these women should support physiological birth.

f. Appropriate diagnosis of active labour, ongoing assessment of progress in labour, including the use of partograms, and the timely diagnosis and management of dystocia.

g. Adopt and implement new SOGC fetal surveillance guidelines[3] to decrease inappropriate CB and enhance interprofessional communication.

h. Care providers should recommend against non-medically indicated CB; however it is important to respect a woman's autonomy, realizing that the ultimate decision rests with the woman.

i. Booking elective repeat CB *after* 39 weeks gestation, when there is no medical indication for earlier delivery.

j. Appropriate use of assisted reproductive technology to help families with infertility but with efforts to minimize multiple pregnancies.

k. External Cephalic Version should be offered for breech presentation in appropriate cases. We support development and enhanced training for ongoing skills for vaginal breech delivery.

l. Appropriate and cautious use of operative vaginal delivery should be supported through enhanced training and skill development.

m. Encourage select mothers with twin pregnancy at term to deliver vaginally *if* the skill set and backup-support necessary is available. Referral to a centre that can support attempted vaginal delivery of twins may be an option.

n. The best way to avoid subsequent CB is to prevent the first one. In order to avoid subsequent CB, VBAC should be offered to all women, when clinically appropriate. In a woman with a prior cesarean section scar, the balance of short-term and long-term risks and benefits of a trial of labour (TOL) vs. elective repeat CB must be individualized and the ultimate decision rests with the woman. The majority of women with a prior cesarean scar are good candidates for a TOL. It is appropriate to recommend a TOL in women with a high probability of success and a low probability of morbidity.

Question 3:

WHAT SUPPORT IS REQUIRED FROM GOVERNMENT, HEALTH AUTHORITIES, HOSPITALS AND THE BCPHP TO OPTIMIZE THE CESAREAN BIRTH RATE ACROSS BC?

We support, in principle, the BCPHP *CBTF* report recommendations. In addition, we would like to highlight factors that are of high priority for the Ministry of Health:

[3] Liston, R., Sawchuck, D., Young, D., *(2007)* Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guideline. *J of Obstet and Gyne Canada*. 29(9): Supplement 4.

- Address the looming human resource crisis in maternity care through planning, restructuring and improving remuneration.

- Improve capacity for data collection and analysis for health care providers locally, at the level of the Health Authority (HA) and at the BCPHP.

- Improve best practices through funding necessary research and CQI.

We urge the Ministry of Health to maintain the momentum from both the *CBTF* report and this consensus statement by immediately developing an implementation plan.

Government:

a. Develop a model for management of medical-legal issues that has arbitration and mediation at its core.

b. Develop a province-wide strategy to provide culturally sensitive maternity care for First Nations women.

c. Develop a province-wide strategy to ensure equal access and support for maternity care for women who are marginalized for social or geographical reasons.

d. Develop a provincial strategy for implementation of a comprehensive electronic database and health record for maternity care in BC that includes incorporating primary care providers. Computer information system strategies must ensure individual HA choices do not impair the ability to share information and collect quality provincial data to guide future directions. Data in real time or of short turnaround is a priority.

e. Enhance capacity through increased training for maternity care providers including midwives, nurses, family physicians, and consultant care, with a special emphasis on primary care providers.

Ministry of Health:

a. Train, recruit and retain more care providers in maternity care, including perinatal nurses, midwives, primary care physicians, obstetric specialists, anesthesiologists, pediatricians, and doulas.

b. Design a system to support and appropriately remunerate maternity care providers, including family physicians, midwives, doulas and others that will allow the obstetric specialist to practice in a consultant role. This may include alternate payment plans, salaries, and funding for doulas. In addition, family physicians should be compensated for on-call services.

c. Develop new funding models that provide access, retain and recruit midwives, family physicians and specialists in rural and remote communities. Barriers to family physicians, midwives and specialists collaborating and sharing care should be removed.

d. Appropriately remunerate maternity care providers for currently non-funded activities such as CQI and counseling around pregnancy-related issues.

BC Perinatal Health Program:

a. BCPHP should assist in providing feedback on obstetrical indicators and outcomes to individual hospitals using Robson's criteria.[4]

Regional Health Authorities:

a. Regional Health Authorities, through internal designates, should take responsibility and assume accountability for perinatal health with co-operative local and provincial strategies.

b. Regional Health Authorities should support comprehensive maternity care as close to a woman's home as possible.

Hospitals:

a. Need to develop and support a strategy for hiring and retaining personnel.

b. Need to establish and maintain CQI, internal audit and review.

c. Need to provide timely data on obstetrical indicators and outcomes.

d. Need to develop programs that build collaborative multidisciplinary teams.

Question 4:

WHAT IS AN APPROPRIATE PUBLIC EDUCATION STRATEGY REGARDING CHILDBIRTH?

Province-wide, women and their families need information on normal birth, the risks and benefits of interventions, as well as an understanding of factors such as age and healthy weight that affect CB rates.

Public Education is a pivotal part of assuring best care for women. Strategies should include both widespread campaigns and targeted learning strategies such as province-wide curriculum for accessible prenatal education. This should be done in partnership with community health colleagues.

We believe the public needs more balanced information regarding the risks and benefits of CB. Information and education that promote birth as a normal physiological event should be widely distributed and incorporated into the public school curriculum.

Implementation of these strategies is beyond the scope of this panel and requires consultation with consumers, experts in education and public relations to maximize impact on public awareness.

[4] Robson, M.S., *(2001)* Classification of caesarean sections. *Fetal and Maternal Medicine Review.* 12(1): p. 23-39.

Panel Members:

Jan Christilaw – MD, FRCSC, MHSc
Obstetrician-Gynecologist
Chair of the Panel

Dr Jan Christilaw completed her residency in Obstetrics and Gynecology at the University of British Columbia in 1986, and a Masters of Health Care and Epidemiology in 2002. She is the past-president of the Society of Obstetricians and Gynecologists of Canada and has served the SOGC in many capacities over the last 15 years, including many years on Council, as Co-Chair of the Women's Health Task Force, on the JOGC Editorial Board, and as chair of the Ethics Committee. She is currently VP of medicine for BC Women's Hospital and Health Centre in Vancouver, BC. Her portfolio includes being a Senior Medical Director of Provincial Women's Health Programmes, Medical Director of Aboriginal Women's Health and is a co-leader of the Provincial Women's Health Network. She is also a Clinical Professor in the Department of Obstetrics-Gynecology at UBC. This year, she has been working on creating a partnership between UBC and Makerere University in Kampala, Uganda for services in Obstetrics, Pediatrics and Public Health, traveling to Uganda three times in recent months. Birth, in its clinical, social, cultural and personal dimensions, remains an enduring passion. She is married to Dr. Warren Bourgeois, who is a Professor of Philosophy and Bioethics at Kwantlen College. She has two sons, David aged 19 and Tim, aged 13.

Grant Ayling – MB, ChB
Family Physician

Dr. Ayling graduated from Otago University, Dunedin, New Zealand in 1976. He worked for four years in London, England, from 1978 to 1981, principally in the areas of pediatrics, obstetrics, gynecology, neurosurgery, emergency medicine, orthopedics and dermatology. During this time he received his Diploma of Child Health and his Diploma from the Royal College of Obstetricians and Gynecologists. Subsequently, Dr. Ayling worked as a family physician in New Zealand for six months and then emigrated to Canada in 1982 where he spent a year as a resident in obstetrics and gynecology. Since July of 1983, he has been in full time family practice in Vancouver and continues in that capacity today. He is currently a clinical Assistant Professor in the Department of Family Medicine at the University of British Columbia where he is actively involved in teaching first and second year medical students in family practice, third year students in obstetrics and family practice residents.

Geoffrey Cundiff – MD, FACOG, FACS, FRCPSC
Obstetrician-Gynecologist

Dr. Cundiff is currently a Professor in the Department of Obstetrics and Gynecology at the University of British Columbia and Head of the Department of Obstetrics and Gynecology at Providence Health Care in Vancouver. He is also a researcher at the Centre for Health Evaluation & Outcomes Sciences. He received his medical degree from the University of Texas Southwestern Medical Centre in 1989 and completed his residency in Obstetrics and Gynecology at Parkland Hospital in Dallas, Texas in 1993. Since completing a fellowship in Urogynecology and Endoscopy at Greater Baltimore Medical Centre in Baltimore Maryland, and a second in Reconstructive Pelvic Surgery at Duke University Medical Centre in Durham North Carolina, he has been actively involved in academic medicine at John Hopkins University School of Medicine, and now at the University of British Columbia. His clinical research interests focus on women's health issues including epidemiology of the pelvic floor disorders, outcomes research for treatments of pelvic floor disorders, prevention of maternal obstetrical trauma, anatomy, and surgical education.

Jerome Dansereau – MD, FRCSC
Obstetrician-Gynecologist

Dr. Dansereau is the current Director of Perinatalogy Services, Medical Director of the Child/Youth and Family Program, and Chief of the Department of Obstetrics & Gynecology for the Vancouver Island Health Authority. He is also a Clinical Associate Professor, Perinatologist and Sonologist for the Division of Maternal-Fetal Medicine and the Department of Obstetrics & Gynecology at the BC Children's & Women's Hospital, the University of British Columbia, and the University of Victoria. Dr. Dansereau's areas of interest and expertise include maternal-fetal medicine/high risk obstetrics, fetal monitoring and fetal assessment, and prenatal diagnosis.

Nancy Dudek – MS
Consumer Representative

Nancy Dudek has an Masters in Science in biology and has conducted research in ecology, plant genomics, and the genetics of aging. She is currently a project manager at the Child and Family Research Institute where she is coordinating a laboratory expansion. Nancy is especially interested in translational research. She interacts daily with a team of scientists and clinicians who integrate knowledge that is gained at the laboratory bench with the delivery of health care. She doesn't have children but hopes to start a family someday. Nancy is a native of Chicago, IL and new to Vancouver.

Marlowe Haskins – MD, CCFP
Family Physician

Dr. Haskins received his medical training in Calgary, Alberta, and St. John's, Nwefoundland. Subsequently, he received further training in obstetrics and surgery and has practiced as a GP/surgeon in rural British Columbia for the past 15 years. He currently lives and works in Smithers, BC, with his wife, four children, two dogs and one cat.

Linda Knox – RM
Midwife

Linda Knox is a Registered Midwife and the Assistant Head for the Department of Midwifery at BC Women's Hospital and Health Centre and Providence Healthcare (St. Paul's Hospital) in Vancouver, BC. She is a Clinical Assistant Professor in the Division of Midwifery, Department of Family Practice, at the University of British Columbia.

Linda is a past President of the Midwives Association of BC and was involved in the work of establishing midwifery as a recognized profession within the healthcare system in BC. She has been a practicing midwife in the Lower Mainland for 20 plus years, and was a co-owner of the first community-based midwifery practice in Vancouver following regulation. She is currently working as a care provider in the South Community Birth Program (SCBP), a collaborative, multidisciplinary maternity care program. The SCBP team of midwives and family practice physicians equally share the primary care of pregnant women and also collaborate closely with community health nurses and doulas. She is the mother of two daughters and a son, and has two beautiful grandsons.

Lily Lee – BN, MSN, MPH
Nurse

Ms. Lee is a Perinatal Nurse Consultant at the BCPHP. She is responsible for providing strategic leadership in interdisciplinary support and education. She currently chairs the BCPHP Cesarean Birth Task Force and is a member of the Canadian Perinatal Surveillance System Steering Committee. She brings many years of experience

in advanced nursing practice and management roles and has led several successful research utilization projects, which involved introducing evidence-based nursing care protocols. Lily is an Adjunct Professor at the UBC School of Nursing.

Kathleen Lindstrom – LCCE, FACCE, CD DONA, CDT DONA
Prenatal educator

Ms. Lindstrom is a Lamaze Certified Childbirth Educator and a Fellow of the American College of Childbirth Educator. She is also a DONA International Certified Doula and Doula Trainer, and the Perinatal Program Manager for the Faculty of Health Sciences at Douglas College.

Luba Lyons Richardson – RM
Midwife

Luba Lyons Richardson is a registered midwife who practices with the Victoria Midwifery Group. Luba has been in community midwifery practice for over 30 years. She was the first Midwifery Dept. Chief in VIHA South and is currently the Dept. Vice Chief. Luba was a Board member of the College of Midwives of BC from 1995 – 2003 and was the CMBC President for 6 years. As President, Luba was involved in all aspects of the integration of midwifery in BC. She was also the CMBC representative on the Ministry of Health's Home Birth Demonstration Project Advisory Committee.
Luba is a Clinical Assistant Professor in the Division of Midwifery, Department of Family Practice, at the University of British Columbia, where she has been a preceptor for students since the program began. She also sits on the Midwifery Program's Advisory committee. Luba has 3 grown children and two grandchildren.

Shiraz Moola – MD, FRCSC
Obstetrician-Gynecologist

Dr. Shiraz Moola is currently a solo Obstetrician/Gynecologist practicing in Nelson, British Columbia. After completing an undergraduate medical degree at Queens University, he completed a postgraduate residency at the University of Toronto. During that time he had the opportunity to train and perform research in rural Zimbabwe and in South Africa. Following his residency he provided consultant care in the Yukon, Northwest Territories and Nunavut. He then worked as a surgical associate in the division of Gynecology Oncology at the University of Western Ontario before returning to the Arctic. Serendipity brought him to the Kootenays to take up his current post. He continues to pursue research as a co-investigator with the Rural Maternity Care New Emerging Team (RM-NET). His other research interests include critical care obstetrics, and health outcomes research. His clinical interests include ultrasound, minimally invasive surgery and oncology. He has two children, Rohan and Khalil that remain happily growing concerns.

Maria J. Odulio – MD, FRCSC
Obstetrician-Gynecologist

Dr. Maria J. (Marijo) Odulio graduated with an MD degree from the University of British Columbia in 1998. She has a BSN undergraduate degree and previously worked as a labor and delivery nurse for several years. She obtained her FRCSC in Obstetrics and Gynecology after residency at UBC in 2003. She is currently a member of the Department of Obstetrics and Gynecology at Prince George Regional Hospital and is a clinical instructor with the University of Northern BC Northern Medical Program.

Clarice Perkins – BSc, BSN, MA
Nurse

After completing her BSc (l984) and BSN (1986) degrees at UBC, Clarice worked for 2 years at BC Children's Hospital before joining BC Women's in 1988. She has been in a variety of different roles at BC Women's, including working as a bedside nurse in both Postpartum and Delivery Suite, and as a Charge Nurse, Team Leader, Perinatal Clinical Educator, and Program Coordinator in the Birthing Program. In 2002 she completed a Master's degree at Royal Roads University in Victoria. Since 2005 she has been acting as Manager, Access & Utilization for BC Women's Hospital, and has become acutely aware of the impact that cesarean births, particularly elective repeat cesareans, have on bed utilization. In 2006 she became one of the co-investigators in a research project sponsored by the BCW Department of Family Practice, entitled: **"**Maternal Choice: women's perceptions of the factors that influence their decision on how to give birth to their next baby after having had one previous Cesarean section (C/S) with their last baby". She is the mother of two daughters and a son, and the proud Nana of two little granddaughters.

Roanne Preston – MD, FRCPC
Anesthesiologist

Dr. Roanne Preston is currently the Department Head of Anesthesia at BC Women's Hospital, as well as a Clinical Associate Professor in the Faculty of Medicine at the University of British Columbia, and Division Head of Obstetric Anesthesia at UBC. She received her medical training in Ottawa and was on staff in the Department of Anesthesia at the Ottawa Hospital for 10 years and Obstetric Anesthesia Director for 4 years before moving to Vancouver. She is currently a Royal College Examiner in Anesthesia. Her research interests include patient safety in obstetric anesthesia, optimal labour epidural analgesia and optimizing spinal anesthesia for cesarean birth.

Glen Ward – MDCM, PhD, FRCP(C)
Pediatrician

Dr. Glen Ward graduated from McGill University Medical School in 1986 and earned his PhD in 1990. He competed his Pediatric training at the Hospital for Sick Children in Toronto and has worked as a general consultant Pediatrician in Langley and White Rock for the past 17 years. His real life pediatric training began 15 years ago with the birth of his twin daughters.

Henry Woo – MD, FRCSC
Obstetrician-Gynecologist

Dr. Henry Woo received his medical training at the University of Toronto and completed his residency in Obstetrics & Gynecology at the University of British Columbia. He is currently a Clinical Assistant Professor in the Division of General Gynecology and Obstetrics at UBC. His main areas of interest are in Operative Obstetrics, MIS GYN surgery, Office Gynecology and Resident education.