

CORE LINK: "COLLABORATIVE OBSTETRICAL RESOURCE" PROPOSAL FOR LOW RISK OBSTETRICAL SHARED CARE CLINICS

PROJET POUR DES CLINIQUES DE SOINS OBSTÉTRICAUX CONJOINTS POUR LES FEMMES À FAIBLE RISQUE

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ABSTRACT

As a growing number of women and their families seek low risk obstetrical care, the number of maternity care providers falls. For family physicians, this is due in large measure to an unsustainable model of practice that includes constraints on lifestyle, prohibitive malpractice insurance and unsatisfactory remuneration. Ontario, British Columbia, Manitoba, Quebec and Alberta have regulations in place for midwifery to address this growing problem. However, due to the limited scope of practice for midwives, the small number of practitioners, and the profession's attrition rate in general, there continues to be an enormous gap between the demand for access and the supply of low risk obstetrical care providers and services.ⁱ

It is proposed that CORE LINK, Collaborative Obstetrical Resource Link, will develop shared-care clinics across the country, called Maternity CORE sites. These clinics will work within an interdisciplinary model developed to harness the unique skills and expertise of all community based, primary care professionals who work with the low risk obstetrical population, while addressing the barriers and challenges that these practitioners face in doing their work.

CORE LINK is currently seeking approval in Ontario to pilot this project. A proposal for the CORE LINK project was submitted in November 2003 to the Primary Health Care Transition Fund.ⁱⁱ CORE LINK approval is pending to begin a fully integrated model of service delivery. As an interim approach, a two-phase process has been proposed that does not interfere with existing models of care. CORE LINK will utilize common clinical and evaluation tools to ensure that there will be a multi-centred approach to data collection and analysis across all Maternity CORE sites.

This article will discuss how the CORE LINK project can both entice new practitioners to practice family centred obstetrics and conserve and protect established professionals from leaving through the development of an interdisciplinary approach to practice, funded through an Alternative Payment Plan within a shared liability model.ⁱⁱⁱ

KEY WORDS

research participants, pregnant women, models - educational

THIS ARTICLE HAS BEEN PEER-REVIEWED

RÉSUMÉ

Alors qu'un nombre croissant de femmes ainsi que leur famille demandent des soins obstétricaux à faible risque, le nombre d'intervenants offrant ces soins est à la baisse. Pour les médecins de famille, ceci est attribuable en grande

partie à un modèle de pratique qui n'est pas viable, qui impose des contraintes sur le mode de vie, des taux d'assurances prohibitifs, ainsi qu'une rémunération qui laisse à désirer. L'Ontario, la Colombie-Britannique, le Manitoba, le Québec ainsi que l'Alberta ont instauré une réglementation permettant à la pratique sage-femme de faire face à ce problème qui prend de l'ampleur. Toutefois, à cause de certains facteurs comme le champ d'activité limité pour les sages-femmes, le petit nombre de praticiennes, ainsi que le taux d'abandon de la profession en général, de grandes lacunes persistent entre la demande d'accessibilité et la disponibilité des intervenantes donnant des soins obstétricaux pour femmes à faible risque et l'approvisionnement des services.ⁱ

CORE LINK, Collaborative Obstetrical Resource Link, prévoit mettre sur pied des cliniques de soins obstétricaux conjoints, nommées Maternity CORE sites, et ce, à l'échelle nationale. Le mode de fonctionnement de ces cliniques est basé sur un modèle interdisciplinaire qui favorise les habiletés uniques et les expertises des professionnelles de soins de santé primaires communautaires qui travaillent avec les femmes à faible risque, tout en adressant les limites et les défis avec lesquels doivent composer les praticiennes en exerçant leur métier.

Actuellement, CORE LINK demande l'approbation en Ontario pour pouvoir diriger ce projet. Un plan pour le projet CORE LINK fut soumis au Fonds pour l'adaptation des soins de santé primaires, en novembre 2003.ⁱⁱ Pour l'instant l'approbation de CORE LINK pour amorcer un modèle offrant des services entièrement intégrés est en suspens. Comme approche provisoire, un processus à deux volets, qui n'affecte aucunement les modèles de soins existants a été proposé. CORE LINK utilisera des outils cliniques et des méthodes d'évaluation standards, dans le but d'assurer une approche multidisciplinaire pour la collecte et l'analyse des données, et ce, pour tous les sites Maternity CORE.

Cet article examinera comment le projet CORE LINK peut à la fois attirer de nouvelles praticiennes à oeuvrer en obstétrique à orientation familiale tout en conservant et en protégeant les professionnelles qui sont déjà établies, et ce, en développant une approche interdisciplinaire à la pratique, financée par un Plan de Payment Alternatif au sein d'un modèle de responsabilité partagée.^{ii,iii}

MOTS CLÉS

Participant·es de recherche, femmes enceintes, modèles d'apprentissage

CET ARTICLE FUT RÉVISÉ PAR SES PAIRS

INTRODUCTION

In his paper titled "Family Physicians in Maternity Care: Still in the Game?", Dr. Reid states that in 1983, 68% of family doctors in Canada attended births; however, by 1995 the figure dropped to 32%.¹ Currently, the percentage of family physicians participating in intrapartum obstetrics is 17.7%.⁴ The small number of practitioners providing maternity care, including obstetricians, family physicians and midwives, can hardly handle the more than 360,000 births in Canada yearly.¹

Will there be adequate numbers of caregivers to look after pregnant and birthing women in the future? The number of practitioners who attend low risk women in prenatal, intrapartum and postpartum care for

women and their newborns differs across the country. British Columbia and some of the Atlantic provinces have historically had a larger proportion of family physicians participating in this care; however, they are experiencing a decline in numbers similar to Quebec and Ontario.^{1,2,3} The number of licensed midwives remains small nation-wide and the attrition of midwives is an ongoing concern. The Association of Ontario Midwives will publish data in the summer of 2004 that will provide information on the numbers of midwives who have left midwifery in Ontario. Research is needed to discover the exact reasons why midwives are leaving the profession in Canada.

When examining the issues surrounding the exodus of family physicians from providing maternity care, it

must be seen as a multifaceted problem, which includes not only models and sustainability of practice but also issues around remuneration, malpractice insurance and support from hospitals and other community agencies who work with the obstetrical population.^{4,5}

CORe LINK will be committed to supporting those practitioners who provide and teach low risk obstetrical care, thus creating a strong and growing network of providers in the community.

OBJECTIVES

CORe LINK's overall objective is to demonstrate to government policy and program leaders that an evidenced-based, hybrid interdisciplinary low risk clinical obstetrical program will offer a better and more efficient model of care with improved health outcomes, improved practitioner retention and recruitment, and improved access to high quality obstetrical community based services for women and families of low obstetric risk.ⁱⁱⁱ Features of this program include:

- multidisciplinary education for trainees
- funding through an Alternative Payment Plan (APP)
- a shared liability insurance process

All clinical services offered will conform to the standards laid out in the Health Canada Family Centred Maternity Care document, all participating professionals' college standards of practice and the Society of Obstetrician and Gynaecologists of Canada's clinical guidelines.^{iv,v,vi,vii}

EVALUATION

Evaluation of the proposed CORe LINK project intends to serve in reassuring appropriate governing bodies and the Ministries of Health in Canadian provinces that true interdisciplinary collaborative care between community based, primary care practitioners can be undertaken with safety and satisfaction for both practitioners and women.^{viii}

In general, CORe LINK will set out to evaluate the following:

- Health outcomes for low risk obstetrical women and their healthy newborns
- Clinical intervention and appropriate use of obstetrical technology

- Access to care and choice for women
- Allocation of health care dollars for community based primary care obstetrics
- Midwifery and physician attrition rates
- Recruitment and retention of practitioners
- Low risk obstetrical educational opportunities for practitioners and trainees
- Client and community satisfaction
- Practitioner job satisfaction

DATA COLLECTION

Information for the purposes of evaluating the CORe project will be gathered from hospital and Maternity CORe clinical records as well as practitioner case logs for each woman.^{viii} In order to effectively communicate client information and assist in efficient data collection, a web-based Electronic Medical Record (EMR) will be implemented such as the "OSCAR" system (Open Source Clinical Application Resource).^{xi} Paper-based multidisciplinary charts will travel with the woman in order that other allied health care practitioners, who may encounter the client, can share written clinical assessments in an efficient manner. Questionnaires will be used to collect data regarding client and practitioner satisfaction.^{viii}

All information will be kept in accordance to the privacy laws in Canada.^{xii} All information will be kept confidential and locked in a filing cabinet or on a password protected computer. No data will be stored or reported with identifying information. The surveys will be kept for 10 years and then destroyed. Data will not be reported from people who work in a small department or group unless anonymity of the practitioners can be maintained, or unless those participants give their written consent.

DESCRIPTION OF CORe LINK

As the central program, CORe LINK seeks to create a multi-centred research project across the country. The individual sites will be referred to as Maternity CORe(s). Each CORe site will incorporate the expertise from low risk obstetrical practitioners. Participant practitioners may include family physicians, midwives, doulas, lactation consultants, public health nurses, and community hospital partners. This group will provide evidence-based, high quality and client focused clinical care to low risk pregnant women within an interdisciplinary model.



Maternity CORE sites will also provide comprehensive, multidisciplinary educational opportunities to trainees and residents who are interested in pursuing low risk obstetrics in their practice. Maternity CORE sites will serve as a centre for continuing education for existing practitioners in the community. This approach to care has been shown to be efficacious in other settings.

It is intended that Maternity CORE sites will also become research centres to examine other obstetrical initiatives, including both community and hospital based programs. They will pursue changes in existing policies to decrease barriers to choice for women.

In the paper titled “The Family Physician Delivering Babies: An Endangered Species”, Dr. Scherger suggests that a team of midwives and family physicians can bring “excellent training in both the scientific and humanistic aspects” of obstetrical care.⁶ Howard and Leppert used a team concept with midwives, nurse practitioners, and physicians in an obstetrical and gynecology residency program to help create a balance between education and service. This program was well received and the study states that the majority of these clinicians will work within a collaborative model of practice.⁷

Other studies have looked at the development of an academic midwifery service using a partnership model between medicine and midwifery. They state that by examining organizational relationships, philosophical approaches and roles and responsibilities, a thriving hospital and community based academic service could be created.^{8,9,10}

SCOPE OF CORE LINK AND MATERNITY CORE SITES

CORE LINK - Maternity CORE sites will not be offering home birth initially, due to the current issues surrounding family physicians providing this service. A CORE practitioner will ensure an appropriate referral to another midwife is made immediately if the woman is choosing a home birth.^{ix} Instead of home birth, a cost effective in-hospital initiative run by low risk obstetrical practitioners is suggested.^{viii}

PHASE I AND PHASE II

It is proposed that in provinces where collaboration between midwives and family physicians in an interdisciplinary shared-care model of practice is not supported by various governing bodies at this time, a

two-phase process be suggested.^{ix}

Phase I will be the template for Phase II by creating a system and framework for professions to eventually combine their expertise and unique skills to an enhanced model of care. In Ontario, it has been proposed to the Primary Health Care Transition Fund that Phase I of the Maternity CORE project run for approximately the first two years of the project.

During Phase I there will be no sharing of clinical care between midwives and physicians, unless a pilot site for full collaboration is granted. Clients will enter the clinic through a common intake process and will choose their clinical stream after reading an informed choice sheet.^{viii} From that point forward, practitioners only from the chosen stream will provide clinical care.

With parallel but separate clinical streams for midwifery and family practice, there will be clear benefits to participating practitioners and consumers. Practitioners will be able to share marketing and outreach efforts, continuing education and clinical review activities, space, staff, and approaches to influencing policy and practice at other levels of the system, including within the hospital. Women will have an uncomplicated, seamless approach to necessary medical consultations and have the benefit of a multidisciplinary team reviewing and discussing their cases together.ⁱⁱⁱ

Assuming that agreement can be obtained from their training programs, Phase I will also be beneficial to trainees in family medicine, midwifery, and other related health disciplines to learn within this multidisciplinary setting.ⁱⁱⁱ

Phase II would then move forward to examine the benefits of having the two professions work side by side in an interdisciplinary model to increase both access to care providers and the retention and recruitment of practitioners. Through this model, improved health outcomes are anticipated while ensuring accountability through the use of a hybrid model of primary care funded through an Alternative Payment Plan.

REMUNERATION

During Phase I, each practitioner group would access their existing funding agreement. During Phase II, it is proposed that existing funds for anticipated midwifery services and projected funds for family physician

deliveries in the individual service areas be extracted from their original sources and flowed instead to the Maternity CORE site. Therefore, when a fully functional interdisciplinary team is organized, there will be no duplication of funding within any Maternity CORE site.

Several studies show increased cost effectiveness and less resource utilization when midwives and family physicians in a team setting provided care. Ratcliff, Ryan and Tucker and Rowley looked at the costs of alternative care for low risk pregnant women by comparing a shared-care model (obstetrician and family physician) versus the care provided by a team of family physicians and midwives.^{11,12} It was concluded that family physician/midwife care is a satisfactory option for pregnant women and that this type of collaborative multidisciplinary team care was found to cost substantially less.

PROFESSIONAL INTEGRATION THROUGH CORE LINK

Inter-professional integration is a problem that many Canadian midwives face at some point in their careers to some degree. In Ontario, midwives operate as primary care practitioners for pregnant women; however, the need for collaboration between physicians and midwives remains an important and integral part of care. This includes the need for consultation when a client's care is beyond the scope of practice of a midwife.^v Due to the lack of legislated clinical integration between midwives, physicians and nurses pertaining to low risk obstetrics, difficulties with interprofessional relationships and clinical consultations may occur.¹³

In jurisdictions where midwifery has been a part of the health care system for many years, midwives still feel the least integrated of health care providers.¹⁴ In Wiles and Robison's study, they examined six emerging issues that required attention when developing successfully integrated teams. They included:

- team identity
- leadership
- access to general practitioners
- philosophies of care
- understanding team members' roles and responsibilities
- process for when disagreement regarding roles and

responsibilities occurred¹⁴

Successful integration of professional groups must start with collaboration on all clinical levels of care, not just in the case of consultation. Relationship building creates trust among all members and thus reduces the gap between care providers who have a similar clinical agenda.

CHALLENGES

In Ontario, the model of midwifery care presents itself as an exclusive primary care model. It has been suggested by some that the College of Midwives of Ontario has created a model that is "not based in evidence, but ideology."¹³ As such, it is difficult for new and innovative models of care to be adopted because it requires a paradigm shift in philosophy. CORE LINK sets out to increase flexibility in the current midwifery model, outside of collaboration that is needed during consultations and transfers of care as described in the CMO's Transfer of Care and Consultation Guidelines. The CORE LINK integrated model, in which there is equity among all the members of the group, would ensure the unique skills and knowledge of each practitioner is preserved and utilized with maximum benefit for the team and client care. CORE LINK intends to demonstrate that low risk interdisciplinary clinical teams will support greater access to service through the recruitment and retention of practitioner groups and the multidisciplinary training of midwifery and family physician residents. It will also enhance inter-professional integration between the groups and provide an environment of choice and opportunity for women and practitioners alike.¹³

BENEFITS OF COLLABORATION

The Romanow Report, which was released in November 2002, clearly states the benefits of supporting primary care research that looks at integrating services and examining interdisciplinary models of care.¹⁵ The CORE LINK initiative provides a vehicle for midwifery and family practice to look at collaboration and co-operative models in Canada where there are low numbers of practitioners and a high demand for care. This initiative supports the main objectives of Mr. Romanow's report.¹⁵

Midwives and family physicians will provide continuity of care by utilizing a team approach with a shared



philosophy, for each client's care. Each woman will have the opportunity to meet each team member throughout her care and therefore will know the practitioner who is on-call for her birth. In addition to ensuring that this important tenet of midwifery care is maintained, the CORE LINK model also allows a decent lifestyle in terms of lessening the burden of call schedules for those practitioners who are involved.^v

This initiative requires significant attitudinal, institutional and behavioural changes. These barriers are not insurmountable. In the paper "Collaborative Practice Issues, Team-building: Making Collaborative Practice Work", S.R. Stapleton describes the critical attributes of collaboration and discusses how they can be developed and demonstrated.¹⁶ Examples of these attributes include: shared-care clinical environments, shared educational opportunities and training within a multidisciplinary team. CORE LINK sets out to ensure these key components are central to the research and success of the program.

HEALTH OUTCOMES

Based on existing literature, CORE LINK expects overall improved health outcomes for women of low obstetrical risk and their newborns through the implementation of this project.

Waldenstrom and Nilsson evaluated a collaborative model of practice in a low risk birth centre and its effect on pregnancy outcomes. Maternity CORE sites will not be set up as birthing centres; however, the study concluded that this type of program resulted in fewer visits to care providers, less testing and fewer overall health problems and improved health outcomes.¹⁷ Street, Gannon and Holt studied the clinical outcomes associated with low risk pregnant women receiving all of their care in the community from family physicians and midwives, and had similar conclusions.¹⁸

Government policy leaders need to look at studies such as the randomized controlled trial (RCT) by Rowley and colleagues. This important study shows the effectiveness of a shared care approach to the delivery of low risk obstetrics.¹² The study compares the effectiveness of using a team to provide prenatal and childbirth care, including a six week postpartum follow up, to a traditional model of primary care. The

results included a decreased need for medical intervention, a decreased need for neonatal resuscitation and an increase in maternal satisfaction with the collaborative approach.

Flessig et al set out to assess the feasibility of a maternity care program that offered care to both low risk and slightly complicated pregnancies.¹⁹ The key conclusions in this study stated that "community-led" care can be provided to most women, including those who have mildly complicated pregnancies, with equally good health outcomes. In order for this to be achieved, a broadening in the scope of midwifery practice across the country is necessary to address the minor complications that inevitably occur during a normal low risk pregnancy.ⁱ Most practitioners who care for pregnant women will agree that obstetrical risk is neither low nor high, but on a changing continuum.

CONCLUSION

The federal government, as well as most provincial governments, is interested in doing primary care research that looks at integrating services and examining interdisciplinary models of care to enhance access and create more efficiencies within the health care system.¹⁵ CORE LINK provides a vehicle for midwifery and family practice to look at collaboration and cooperative models in Canada where low numbers of practitioners and high need for programs has been demonstrated. CORE LINK also addresses the need for high quality educational services for trainees and practitioners through multidisciplinary teams of low risk obstetrical teachers and leaders.

Through a comprehensive network including hospitals, primary care providers, community health services, and clinical teachers, a continuous flow of care will be provided to women and their families who seek high quality low risk obstetrical care. This will ensure that attrition rates will slow, recruitment of family physicians and midwives will increase and access to high quality care to women and families will also increase. In addition to these benefits, CORE LINK anticipates that there will be a reduction in the costly duplication of care due to poor communication and fragmented processes.

Not all midwives or all family physicians are positively disposed to collaborative practice. Likewise, an

interdisciplinary model of care may not be appropriate for all childbearing women and their families. CORE LINK and affiliate Maternity CORE sites do not set out to change the primary care model of practice for either family physicians or midwives. Simply, CORE LINK invites a different perspective to choice in model of practice and service delivery for those practitioners who may be interested and to the women and families they serve.

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The Family Birthing Centre at the Toronto East General Hospital.

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FOOTNOTES

ⁱKornelsen J, Saxell L. Midwifery in British Columbia: is it time for an expanded scope of practice? *CJMRP* Fall 2003;2:2.

ⁱⁱLow Risk Obstetrical Task Force. Low risk obstetric teaching and recommendations. Department of Family Practice, Toronto East General Hospital, 1999.

ⁱⁱⁱMeuser JC, Murdoch JL. The Low Risk Obstetrical Clinic proposal. Department of Family Practice and Division of Midwifery, Toronto East General Hospital, 2000.

^{iv}Health Canada. Family-centered maternity and newborn care national guidelines, 2000.

^vCollege of Midwives of Ontario. The midwifery model of practice October 1994 and midwifery scope of practice January 1994. Ontario, November 2003.

^{vi}College of Family Physicians of Canada

^{vii}Society of Obstetricians and Gynaecologists of Canada. Practice guidelines. Available from SOGC 774 Echo Drive, Ottawa On K1S 5N5.

^{viii}CORE LINK evaluation, clinical materials, hospital initiatives: 2004 and CORE LINK and Maternity CORE websites (in construction) 2003; www.corelinkcanada.com and www.maternitycore.com.

^{ix}Primary Health Care Transition Fund application. Provincial/territorial envelope Canada: Ministry of Health and Long Term Care. Submission of CORE LINK, November 2003.

^xBritish Columbia Collaborative Maternity Centre. Children's Women's Health Centre of British Columbia.

^{xi}Chan D. Open source clinical application resource (OSCAR) 2002. Department of Family Medicine McMaster University, Hamilton Ontario.

^{xii}Canadian Federal Privacy Legislation. Personal Information Protection and Electronic Documents Act (PIPEDA). January 2004.

REFERENCES

1. Reid AJ, Grava-Gubins I, Carroll JC. Family physicians in maternity care: still in the game? *Canadian Family Physician* 2000;46:601.
2. Radomsky NA. Family practice obstetrics in a community hospital. *Canadian Family Physician* 1995;41:617.
3. Kaczorowski J, Levitt C. Intrapartum care by general practitioners and family physicians: provincial trends from 1984-1985 to 1994-1995. *Canadian Family Physician* 2000;46:587.
4. College of Family Physicians of Canada. Janus Survey 2001 The Janus project, family medicine obstetric/newborn care by family physicians/general practitioners in Canada: results of the 2001 National Family Physician Workforce Survey (weighted data). CFPC Website 2004.
5. Klein MC, Kelly A, Spence A, Kaczorowski J, Grzybowski S. In for the long haul: why do family physicians plan to continue or discontinue intrapartum maternity care? *Can Fam Physician* 2002;48:1216-22.
6. Scherger JE. The family physician delivering babies: an endangered species. *Family Medicine* 2000;19:95.
7. Howard FM, Leppert PC. Collaborative practice issues: postgraduate medical education. Reaction of residents to a teaching collaborative practice. *J Nurse Midwifery* 1998 43(1):38-40.
8. Angelini DJ, Afriat CI, Hodgman DE, Closson SP, Rhodes JR, Holdredge A. Nurse-midwifery prototypes. Development of an academic nurse-midwifery service program: a partnership model between medicine and midwifery. *J Nurse Midwifery* 1996 May-Jun;41(3):236-42.
9. Roberts J, Mahan C, Macken K, King VJ. Conference articles. Session four: academic and continuing education of health care providers...models of collaborative practice. Preparing for maternity care in the 21st century. *Women's Health Issues* 1997 Sept-Oct;7(5):319-29.
10. Baldwin L, Hutchinson HL, Rosenblatt RA. Professional relationships between midwives and physicians: collaboration or conflict? *Am J Public Health* 1992 Feb;82(2):262-4.

11. Ratcliffe J, Ryan M, Tucker J. The costs of alternative types of routine antenatal care of low-risk women: shared care v. care by general practitioners and community midwives. *Journal of Health Services & Research Policy* 1996 July;1(3):135-40.
12. Rowley RL, Randomized controlled trial/Australia. Care from a midwife team was effective. *Evidence-Based Medicine* 1996 Mar-Apr;1:94.
13. Tyson H. Developing a plan for growth and sustainability in midwifery practice. *Midwifery; building our contribution to maternity care. Proceedings from the working symposium, May 1-2, 2002.* Jude Kornelsen, Editor. Vancouver, British Columbia.
14. Wiles R, Robison J. Teamwork in primary care: the views and experiences of nurses, midwives and health visitors. *J. Advanced Nursing* 1994 Aug;20(2):324-30.
15. Romanow Commission on the Future of Health Care in Canada. Established April 3, 2001. Report: November 28, 2002.
16. Stapleton SR. Collaborative practice issues: team building. Making collaborative practice work. *J Nurse Midwifery* 1998 Jan-Feb;43(1):12-8.
17. Waldenstrom U, Nilsson C. A randomized controlled study of birth centre care versus standard maternity care: effects on women's health. *Issues in Perinatal Care & Education* Mar 1997;24(1):17-26.
18. Street P, Gannon MJ Holt EM. Community obstetric care in West Berkshire. *BMJ* 1991 Mar 23;302(6778):698-700.
19. Fleissig A, Kroll D, McCarthy M. Is community-led maternity care a feasible option for women assessed at low risk and those with complicated pregnancies? Results of a population based study in South Camden. London. *Midwifery* 1996 Dec;12(4):191-7.

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