MCP 2 Multidisciplinary Collaborative Primary Maternity Care Project | Projet de soins primaires obstétricaux concertés

Multidisciplinary Collaborative Primary Maternity Care

Literature Review:

Guidelines for Model Development

Discussion Paper

Prepared By

Malcolm Anderson, PhD
andersnm@post.queensu.ca

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Multidisciplinary Collaborative Primary Maternity Care

LITERATURE REVIEW[1]

1.0 Purpose

The Multidisciplinary Collaborative Primary Maternity Care Project received funding from the Primary Care Health Transition Fund to "*reduce key barriers and facilitate the implementation of national multidisciplinary collaborative primary maternity care strategies as a means of increasing the availability and quality of maternity services for all Canadian women*". There are several underlying objectives, anticipated results and measures of success that guide the implementation and development of the initiative.

The initiative is based around seven inter-related components:

- Guidelines for models
- National Standards for Terminology and Scopes of Practice
- Harmonization of standards and legislation
- Collaboration among professionals
- Change Practice Patterns
- Facilitation of sharing information
- Promotion of the benefits of multidisciplinary collaborative maternity care (Awareness Program)

Developing guidelines for models has an explicit '*change*' dimension as organizations and professionals either independently or collectively move from one way of providing care to another. Change is multidimensional. Any change introduced into organizations will be understood in terms of the *context* in which it is introduced (i.e., internal and external contexts), the *content* that is the focus of the change, and the *process* by which change is introduced. The inter-relationships among Context, Content, and Process form the framework for introducing change, managing expectations and enhancing uptake and further knowledge transfer. In operational terms it provides the foundation for implementation – for developing guidelines for model adoption.

[1] The analysis and conclusions presented in this report do not necessarily reflect the views of the members of the MCPMCP or their partner associations. Funding for the research was provided by Health Canada as part of the Primary Health Care Transition Fund. The views expressed herein do not necessarily represent the official policies of Health Canada.

2.0 Method

This literature review represents the first phase of a three-phase approach to build guidelines for developing Multidisciplinary Collaborative Primary Maternity Models. The report is based on a systematic literature search and review process that synthesized material relevant to the development and functioning of multidisciplinary collaborative primary maternity care models. The following approach was used:

- Develop mesh headings for searches
- Conduct Searches – Web searches and peer-review databases (see below)
- Contact relevant organizations and associations to collect grey literature
- Review relevant material
- Synthesize
- Prepare Literature Review

The paper provides the literature foundation for future phases of this Guideline development work. Following the literature review, additional methods will be used to further delineate the potential 'models' that can be applied to the Canadian context (these methods include interviews, site visits, focus groups and an e-delphi process (Anderson, 2004). Following a description of the methods used to identify and collect the relevant material; Section Three focuses on the literature reviewed, and presents the review of the salient literature for the development of models of multidisciplinary collaborative primary maternity care. We seek to develop a conceptual framework for subsequent model development. This includes discussion, and questions raised, on the clarity on definitions used, the meaning of 'models', and indeed, the meaning of collaboration. The final section summarizes the findings and points to future directions for the work remaining.

The literature also presented a number of challenges for establishing the *foundation for a Compendium of Collaborative Primary Maternity Care models.* Initially it was felt that the compendium could be well developed following the literature review. The review, however, identified many studies where there was little, if any, discussion or clarity on the terminology used, such as 'models', 'multidisciplinary', interdisciplinary, 'transdisciplinary', 'collaboration', cooperation, partnerships, and so on. Moreover, in some studies reviewed it was clear that 'traditional' forms of care were seen by some as 'collaborative' and to others they were not. Developing the compendium seemed unwise at this point without more in-depth discussions with the project's steering committee and other key informants, especially in regard to inclusion and exclusion criteria for the compendium and consensus on the definitions and terminologies that will drive the ensuing model development.

In light of these considerations, the appendix provides the foundation of the compendium without exhaustive details of all the potential options at this point. That would be counter-productive until further discussions take place. In the meantime, the initial compendium material provides a review of a number of research papers salient to the model development. Many of the papers, however, focus predominantly on evaluations and comparisons between 'traditional' models of care and 'new' models (depending on your viewpoint) featuring nurse-midwives and family physicians.

Literature Search

The review process synthesized all material relevant to the development and functioning of multidisciplinary collaborative primary maternity care models. This primary objective was completed by conducting a systematic academic literature search on health databases since 1990. Our initial MeSH headings for the search at different levels included:

Maternity care
Reform/renewal
Innovation
Multidisciplinary teams
Population health
Policy, Change initiatives
Change programs
Change management
Policy development
Health System change
Best practices
Partnerships
Collaboration
Evaluation

A snowball approach was used to acquire additional material that came to light following the initial literature search.

Searching for Existing Reviews

A focused search strategy for existing reviews of evaluation studies of comparable primary health care renewal initiatives and change management programs was conducted. The criteria for inclusion in the first search were the following:

Systematic reviews
Meta-analysis
Peer-reviewed journal articles
Abstracts
Written in English
1990-2004

Electronic Databases

Following the development of a search strategy with key words and combined word sets identified, the following databases and information sources were accessed with restrictions to the last decade of the journals publication:

- Ovid (1990-2004)
- Healthstar (1990-2004)
- Medline (1990-2004)
- EBM Reviews (1990-2004)
- Cochrane Reviews and Cochrane Controlled Trials Register (4th Quarter 2004)
- CINAHL (1990-2004)
- Emerald (2003-2004)
- EMBASE (1990-2004)
- Agestar (1990-2004)

Search Engines
Vivisimo Clustered Search Strategy

- Multidisciplinary collaborative primary maternity care models (137 articles)
- Research (26 articles)
- Community (12 articles)
- Planning (11articles)
- Women (10 articles)
- Managed Care (11 articles)
- Family Medicine (3 articles)

Google Scholar http://scholar.google.com/

COCHRANE COLLABORATION
http://www.cochrane.org/

Health Canada
http://www.hc-sc.gc.ca/hpb/lcdc/publicat/cdic/cdic214/cd214a_e.html

Lycos, Alta Vista, Netscape, Ask Jeeves, Look Smart, Dogpile, Copernic, Fazzle, Metacrawler, Killerinfo,

Web of Science – 22 hits on collaborative maternity care models.

Expanding the Search
An expanded search strategy was required to gather information on related entry terms drawn from the National Institute of Health MeSH Website.

Selected MeSH Heading Identification (http://www.ncbi.nlm.nih.gov/)

1. Delivery of Health Care, Integrated

Entry Terms:
Integrated Delivery Systems
Delivery System, Integrated
Delivery Systems, Integrated
Integrated Delivery System
System, Integrated Delivery
Systems, Integrated Delivery
Integrated Health Care Systems

2. Quality of Health Care

Entry Terms:
Health Care Quality
Quality of Healthcare
Healthcare Quality

3. Health Care Evaluation Mechanisms

Entry Terms:
Healthcare Evaluation Mechanisms
Evaluation Mechanism, Healthcare
Evaluation Mechanisms, Healthcare
Healthcare Evaluation Mechanism
Mechanism, Healthcare Evaluation
Mechanisms, Healthcare Evaluation

Culling the Research
In total 466 articles were located and reviewed as they relate to maternity care, models of care, collaboration, integration, Health Renewal, and Health Reform etc. From that number, there were 88 articles reviewed and cited in this discussion paper, and another 50 that were reviewed for the compendium development.

3.0 The Literature

3.1 Context

There is growing acknowledgement that maternity care in Canada is reaching crisis proportions (e.g., Canada Perinatal Health Report, 2000; Pellizzari and Medves, 2002; Rogers, nd). Rogers notes several factors that have created a crisis in maternity care in Canada, including fewer family physicians providing intrapartum care, the vast majority of obstetricians working in large urban areas, with fewer births in rural hospital settings nurses are having less opportunity to maintain their skills, and although midwives have been attending to a growing number of births since 1994 they are still relatively limited in their scope. There is a decrease in the number of physicians willing to provide obstetric care, fewer obstetricians who can or will provide low risk primary obstetric care, and fewer family practice residents interested in incorporating obstetrics into their practices (Lane and Malm, 1997). The causes for these are many and varied, including lifestyle issues, inadequate coverage available from colleagues, inadequate remuneration, rising malpractice insurance fees, risk of complications and litigation and insufficient exposure and training during residency (Lane and Malm, 1997).

Thus through a combination of factors, maternity care faces considerable human resource issues. Recognizing the crisis proportions the proceedings of *The Future of Maternity and Newborn Care in Canada* conference (2001) stressed that; “a national strategy to sustain maternity care in Canada is needed” and “must be built on the following principles”:

- Accessibility
- Best Practice
- Informed choice
- Family centered
- Community-based
- Respect, Collaboration
- Trust among all
- Flexible and competency-based roles
- Quality of work life for caregivers
- Learning together

As noted by Pellizzari and Medves (2002) in their review of maternity services in Ontario, a comprehensive plan for maternity care should “*allow women to choose the place of birth in consultation with care givers … should recognize the different health providers who can provide maternity services (i.e., nurses, nurse-practitioners, midwives, and physicians), and must provide both a fair systematic payment scheme that encourages collaboration and the resources at the local level to support its sustainability*”. Similarly, the British Columbia Reproductive Care Program 2000 Consensus Conference on Obstetrical Services in rural or remote communities notes that; “the primary consideration for perinatal care providers is that team competency is required. Competency of the individual practitioner or discipline is insufficient to offer a consistent service”.

3.2 Responding to Needs in Maternity Care

Women's experiences with maternity care consistently show that they do not like fragmented care, inconsistent advice, insensitive caregivers, and long waiting times (Brown and Lumley, 1993, 1994, 1998; Garcia et al, 1994; Hodnett, 2005; Read 1994).

The way women are treated by professionals in their first birthing experience will determine how they feel about that birthing experience for the rest of their lives (Simkin, 1990,1992). Many studies highlight the importance of control (e.g., Green et al 1990; Halldorsdottir and Karlsdottir, 1996), and of information giving (e.g., Kirkham, 1999; MacKay and Smith, 1993) as central to positive birthing experiences.

Lomas et al (1987) note that satisfaction with childbirth is the most important qualitative outcome in the assessment of the childbirth experience. In a randomized control trial Harvey et al (2002) observed that women experiencing low-risk pregnancies were significantly more satisfied with their childbirth experience when care was provided by midwives than by doctors. Harvey et al also note, however, that the lower scores may have reflected, in part, that those women assigned to the doctor group were disappointed because they had sought midwifery care.

Although many factors have been suggested as contributing to satisfaction, few have been rigorously evaluated. Control over the experience has been shown to affect satisfaction (Davenport-Slack and Boylan, 1974; Knapp, 1996; Simkin, 1992 ;). Other factors shown to affect satisfaction include the attentive attitude of the caregiver, the provision of information and communication (Omar and Schiffman, 1995), and the continuity of care (Graveley and Littlefield, 1992). The literature also indicates that 'expectations' is a difficult construct and highly variable depending on the woman, and the context of the experience (Harvey et al, 2002).

There have been many new programs introduced based on teams of midwives providing care from early pregnancy to the postnatal, and the antenatal and intrapartum periods (Waldenstrom et al, 2000). Numerous studies of nurse-midwifery care show that it is less costly than physician led care, improves access, is of high quality, and has high levels of satisfaction from those receiving care. Very few studies, however, have sought to examine the range of nurse-midwife and physician collaborative practices or how the collaborations affect the level and quality of the services provided (Miller et al, 1997).

In a convenience sample survey of nurse midwives conducted in the US in 1997, Miller et al found that most 'collaborative' practices focused on nurse midwives with one physician (13%), 58% with 2-5 physicians, 15% with 6 to 9, and 13% with 10 or more. Eighty-seven percent of nurse midwives practiced with obstetricians and gynaecologists, 10% with family practitioners and 3% with perinatologists. A multicentre randomized control trial of routine antenatal care by general practitioners and midwives was compared with shared care led by obstetricians. Tucker et al (1996) noted that routine *specialist visits* for women with low risk of complications offer very little or no clinical benefit. They found that care by general practitioners and midwives improved the continuity of care. Findings such as these support contentions for a reconfiguration of services and resources.

In another randomized control trial Waldenstrom et al (2000) showed that team midwife care was associated with increased satisfaction compared to standard, physician led care. The

differences were highest for antenatal care, with fewer differences for intrapartum care and postpartum care. Unfortunately it was difficult to draw conclusions regarding the elements of care that were important for antenatal care, although for intrapartum care the most important was the continuity of the caregiver.

Continuity of care often means attendance in labour by a known caregiver. But Waldenstrom et al (2000) observe that it can include antenatal, intrapartum and postpartum episodes in different combinations as well as with different numbers of caregivers. Continuity, they note, can also mean caregivers working with a shared philosophy and guidelines for practice. Green et al (2000) contend, in fact, that although there has been an emphasis on continuity of the carer in the literature there has been little research done on the *continuity or quality of care*. Their literature review showed that there is no evidence those women who were cared for in labour by a midwife that they had already met were any more satisfied than those who were not. Women wanted consistent care from caregivers they trusted, but most did not value continuity with the one carer for its own sake.

Currell (1990) is critical of *continuity* as the sole organizational response to improve the quality of care, preferring instead to use the phrase '*unity of care*' whereby midwives help women to problem solve and to provide a focused approach to care. This, she notes, may be more important than the continuity of the relationship. This is further supported by Lee (1997) who adds that it is more important, regardless of the model, to focus on 'women-centred, individualized care'.

There has been some questioning of the evidence as to whether women actually want to know their midwives during pregnancy and birth (Lee 1997, Warwick, 1997). Researchers cite evidence that there are maternal satisfaction outcomes from the traditional model that has community midwives antenatally and postnatally, and hospital midwives providing care for labour and birth, stating a lack of evidence from the caseload model that intrapartum continuity is preferred by most women (Walsh, 1999).

Indeed, Walsh (1999) states that, "*the evidence from a plethora of caseload/ continuity schemes is equivocal and confusing*". He notes that part of the reason for this is the quality of the research designs used by various studies. These include the following acknowledged problems with research in this area:

- The tendency for women to evaluate labour and birth experiences highly regardless of 'style' of care because of the intensity of the event.
- Evaluating highly what has been experienced because women have no knowledge of alternatives, and/or that the assumption that if alternatives were not provided then they must be second rate to what was provided.
- Difficulty of teasing out clear measurable outcomes for 'intangible' concepts such as 'known midwife' and 'continuity of care'.

Women did not highly rank the fact that they knew a specific midwife or midwives (Lee, 1993), while in other studies (e.g., Pankhurst, 1997) women prefer knowing just a few midwives during pregnancy and postnatally. Page and McCourt (1996) note that women prefer that the vast majority of care be provided by just two midwives during pregnancy and postnatally.

In summary, the literature suggests that *sustainable systems of care* (Maternity and Neonatal Workforce, 2003; NHS Modernization Agency, 2004) should be:

- Women centered
- Clinically appropriate
- Cost effective
- Evidenced-based
- Safe, accessible, flexible
- Responsive to local needs
- Providing seamless care
- Using an appropriate mix of human resources
- Improving health outcomes.

"*Collegial collaboration, or working together as complementary obstetric team members with mutual support and respect seems highly appropriate especially because women and their families have varying preferences for the style of maternity care they seek*" (Oakley et al, 1995:407).

3.3 Developing a Framework

It is important for this multidisciplinary collaborative primary maternity care initiative that there is agreement on operational definitions. An operational definition of multidisciplinary care must be flexible enough to accommodate the differing stakeholder viewpoints while at the same time recognizing the needs and rights of women requiring maternity care. It is also important to develop principles of multidisciplinary care.

3.3.1 Principles

Key elements from the literature suggest that the following principles can be applied to the context of this project, and indeed, the respective models that can be developed. They emphasize the importance of the team, communication, access to the full therapeutic range, standards of care and the involvement of women receiving maternity care.

- ***Defining the 'Core Team' in the Model(s)***

The team reflects the 'core' disciplines integral to the provision of quality maternity care. The importance of the psychosocial as well as clinical aspects of care should be considered, and inclusion, where appropriate, should be made of additional expertise or specialist services.

- ***Communication***

Communication highlights the importance of all team members being available to provide input into case discussion, and to share expertise and knowledge in the development of an individual management plan, but also recognizing the need for diversity in the ways in which cases are discussed by the team members. This principle can also state if and when multidisciplinary input is considered for all cases, allowing for flexibility in the way this is implemented; for example large caseload centres may establish agreed protocols for the management of a common, straightforward case scenario that may not require discussion and may require different levels of involvement by other team members.

- ***Therapeutic Range and Access***

Therapeutic range ensures that women are not disadvantaged by geographical remoteness or the small size of an institution in terms of their access to the full range of care options. The development of collaborative links between smaller rural hospitals and large urban teaching hospitals and other service providers is vital to the provision of optimal maternity care. This can be supported through the development of working links and protocols where required.

- ***Standards of Care***

These promote management in accordance with nationally agreed standards, and are supported through activities by respective organizations such as the partners in this project. This principle identifies the team's responsibility in ensuring that the treatment plan is acceptable to the woman requiring maternity care.

- ***Involvement of the Woman***

Involvement of the woman implies timely and appropriate information transfer among all treating health professionals and between those caregivers and the woman. This principle supports women's involvement in discussions about their care and their appreciation of a multidisciplinary team approach to their care.

- ***Collaboration***

(See discussion below)

3.3.2 The Multidisciplinary Collaborative Teamwork Model (MCTM)

There are a vast number of different models and descriptive accounts of various organizational arrangements for the delivery of health care. While there is agreement on what 'collaboration'generally is, there is no clear definitional consensus. The same can be said for other constructs pertinent to this project, including the meanings of multidisciplinary care, transdisciplinary care, and interdisciplinary care and so on. Given the potential confusion and disillusionment often associated with overlapping definitions, we have elected to focus on development of a working definition that can, *at worst*, be subject to ongoing development with the Steering Committee and Project staff. At a minimum, there is a straw dog to focus the thinking and refinement, and it can be the foundation for expanding thoughts on a range of different possible models for adoption.

The 'Multidisciplinary Collaborative Teamwork Model' (MCTM) is based on the literature and adapted from Drinka (2000). It develops the concept of collaborative team practice, while at the same time being flexible enough to address the needs and concerns of the respective stakeholders providing, and indeed, receiving maternity care in Canada. It is flexible enough to offer variants that can best suit different contextual needs of maternity care providers.

The model focuses on team practice to match the health care needs of the patient/client base, while respecting the various scopes of practice. The MCTM is centered on a group of individuals with diverse training and backgrounds who work together as an identified team. Team members consistently collaborate to solve patient problems that are too complex to be solved by one discipline or many disciplines in sequence. The MCTM creates formal and informal structures that encourage collaborative problem solving. Team members determine the team's mission and common goals, work interdependently to provide care, define and treat patient problems, and learn to accept and use disciplinary differences, differential power

and overlapping roles. They share leadership that is appropriate to the presenting care needs. There is a need for ongoing interdependence and collaboration as these serve as triggers to determine which method of team practice is the correct way to address the particular care needs as they occur. The team should have the capacity to adapt to changing and complex situations (Drinka, 2000:47). Two or more professionals may belong to a core team and at the same time use additional methods of practice and/or individuals, teams or groups depending on the particular need or problem.

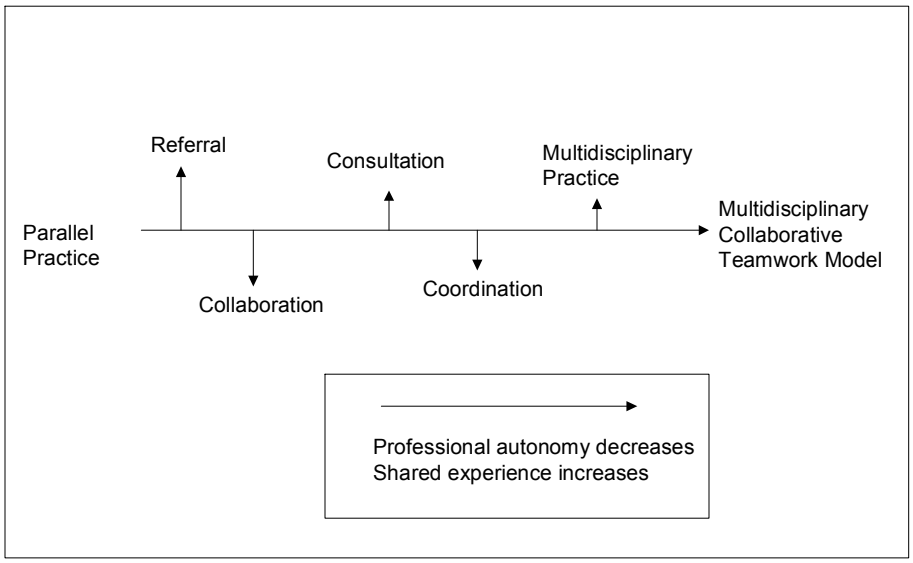
Team members should be familiar with the concepts and approaches of their colleagues and blur the disciplinary bounds to enable the focus to remain on the specific patient-centered care needs. In this context, discipline and authorization fade in importance, and the care needs of women and their own context guide the effective delivery of care (Interdisciplinary Collaborative Teams in Primary Care, 1995).

King and Shah (1998: 55) observe that "*although there is a paucity of literature specifically addressing the efficacy of collaborative practices composed of midwives and obstetricians/ gynaecologists, documentation as to the effectiveness of both interdisciplinary teams and midwifery care abounds; when considered collectively they form a compelling argument that such collaborative practices will best be suited to meet the requirement of a new health care delivery environment*".

King and Shah (1998) present a continuum of interdisciplinary practice, based in theory, that interdisciplinary teams match provider skill with patient/client acuity while offering a broad range of services one type of professional cannot individually provide. The continuum has been adapted for this project and is shown below (Figure 1).

In the diagram there is a move away from focusing at one end of the continuum – the parallel practice, referrals and consultations and so on, towards the development of a MCTM. Various models of maternity care exist at any point along the continuum, including 'collaboration' as a distinct and separate entity. This is partly because many providers feel they *do* collaborate even though they do not have any formal ongoing structured means of doing so, but rather on an ad hoc case-by-case basis. And that, to them, is collaboration. Multidisciplinary *collaborative* practice, however, takes on additional meaning, as discussed in the following section.

Figure 1: Continuum towards a Multidisciplinary Collaborative Teamwork Model (MCTM)



Adapted from King and Shah (1998).

Ultimately, it would be hoped that new models can improve care in a range of expected outcomes, including, for example,

- Positive maternity experiences
- Decreases in maternal morbidity
- Decreases in low birth weight
- Decreases in infant mortality
- Decreases in costs
- Satisfaction with care
- Satisfaction with work environment
- Successful births, and associated sub-elements

3.3.3 The Logic of Collaboration

Collaboration in Health Care

Collaboration is a complex and sophisticated process that requires hard work, and an investment of time to develop and maintain. Quite simply, almost too simply perhaps, Keleher (1998:8) writes; collaboration can be defined as "*working together in partnership*". Citing Henneman et al (1995), Stapleton (1998:13) notes that "*collaboration is a process which occurs between individuals, and only the persons involved ultimately determine whether or not collaboration occurs*". Collaborative practice can range from two practices of professionals from different professions to fully integrated joint multi-specialty teams (Miller and King, 1998). There are far ranging definitions of collaboration, so much so that it is important to situate it within the context of given initiatives. This then defines the process of

the new initiative and its content, while recognizing and respecting the context in which new models may emerge. Indeed, it is unlikely that guidelines for new model development will satisfy all the various specific and unique geographical, jurisdictional and organizational contexts in which new models may be developed, and there will be a necessity for flexibility that recognizes these different contexts.

Equally significant in today's health care environment is the role of evidence-based decision-making. Effective knowledge transfer can enhance the capacity of providers to deliver care in innovative ways that respond to the needs of women while using more effective integration of providers and services. Indeed, "*with an increasing focus on evidenced-based practice, the potential of innovative models of maternity care that incorporate these features cannot be overestimated*" (New South Wales Government (2000:15).

Benefits of Collaboration

The literature is clear that no one profession can effectively address health care issues in isolation of the skills, expertise and experiences of other professionals. Indeed, the overriding goal of collaboration is to improve the quality of care. Several studies have identified positive outcomes for patients, families and providers when care is collaborative (e.g., Alpert et al, 1992; Evans, 1994; Fagin, 1992; Pike et al 1993). Under this overarching goal is the achievement of many interrelated sub-objectives (see, for example, Brita-Rossi et al, 1996; Casto and Julia 1994; Chimmer and Easterling 1993; De Angelo, 1994; Gray, 1989, Gray and Wood, 1991, Jones 1994a, 1994b; Kelleher, 1998; Leppert, 1997; McClain, 1988; and Miller, 1997), including:

- Improved provider satisfaction
- Improved family satisfaction
- Fewer complaints
- More efficient use of time
- Decreased length of hospital stay
- Improved working relationships
- Enhanced continuity of care
- Lower costs

The benefits of an interdisciplinary collaborative approach in health care have included better health outcomes, and the opportunity for professionals to gain a greater understanding and respect for one another (Singleton and Green-Hernandez, 1998). Indeed, collaboration must be based on mutual respect and recognition of the specific role that each practitioner plays along the continuum of care (WHO, 2004).

There have been a number of papers that have identified models of collaborative practice among professions (e.g., between nurses and physicians – Alpert et al, 1992; Norsen et al, 1995; Pike and Albert, 1994, and between nurse-midwives and physicians – Graham, 1991; Miller, 1997; Sullivan and Witte, 1995; Vande Vusse and Hanson 1997). The continuing themes of these papers are the articulation of the essential features discussed for effective collaboration, the benefits and the challenges to overcome.

Defining Collaboration

Collaboration is defined as a joint communication and decision-making process with the goal of satisfying the health care needs of a target population. The basis of collaboration is the belief that quality patient care is achieved by the contribution of all care providers.

A true collaborative practice has no hierarchy. It is assumed that the contribution of each participant is based on knowledge or expertise brought to the practice rather than the traditional employer/employee relationship (Archangelo, et al; p106). Clark-Coller (1998:2) notes that, "*collaborative practice requires a non-hierarchical relationship between the professions, with an equitable distribution of work, authority, responsibility, and credit for success*". Stapleton (1998:12) offers the following definition of collaboration:

> "Collaboration is significantly more complex than simply working in close proximity to one another. It implies a bond, a joining together, a union and a degree of caring about one another and the relationship. A collaborative relationship is not merely the sum of its parts, but it is a synergistic alliance that maximizes the contributions of each participant, resulting in action that is greater than the sum of individual works."

Building on the work of Blake and Mouton (1970), Thomas (1982) and Thomas and Kilmann (1978), Weiss and Davis (1984:299) define collaborative practice between nurse and physician as interactions *"that enable the knowledge and skills of both professionals to synergistically influence the patient care being provided*". Their early work describes the five inter-personal *problem-solving situations* individuals used as avoidance, accommodation, compromise, competition or collaboration.

Collaboration thus:

> "*Involves attempts to find integrative solutions where both parties' concerns are recognized and important concerns are not compromised. It merges the insights of persons with differing perspectives, and consensus is gained among those in the problem-solving effort through examination and working through reservations regarding particular aspects of the decision"* (Weiss and Davis, 1984:299).

More recently, Way et al (2000:3) define collaborative practice as "*an inter-professional process for communication and decision-making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided*".

Core Components of a Collaborative Practice model

There are six core components of a Collaborative Practice model:

- A common group of patients
- Common goals for patient outcomes and a shared commitment to meeting these goals
- Member functions are appropriate to an individual's education and expertise
- Team members understand each others' role
- A mechanism exists for communication
- A mechanism exists for monitoring patient outcomes

There are also a number of values/behaviours that underlie collaborative practice models. These include:

- **Trust** among all team members establishes a quality working relationship that evolves over time as the team members become more acquainted with one another.
- **Knowledge** is a necessary component for the development of trust. Knowledge and trust remove the need for supervision.
- **Shared responsibility** suggests joint decision making for patient care outcomes and practice issues within the organization.
- **Mutual respect** for the expertise of all team members is the norm. This respect is communicated to the patients.
- **Communication** is not hierarchic but rather two-way, facilitating sharing of patient information and knowledge. Questioning of the approach to care of either partner cannot be delivered in a manner that is construed as criticism but as a method to enhance knowledge and improve care.
- **Cooperation and coordination** promote the use of the skills of all team members, prevent duplication, and enhance productivity of the practice.
- **Optimism** that this is the most effective method of delivery of quality care (which promotes success).

Although no foundational evidence is provided, Stapleton (1998) identifies 12 critical attributes for collaborative practice. In a similar vein to those characteristics shown above, these are:

- Open, honest communication
- Mutual trust and respect
- Understanding and valuing each other's perspective and way of thinking
- Familiarity with and valuing each other's style and scope of practice
- Equality and shared power
- Professional competence
- Shared responsibility and accountability
- Shared values, goals and visions
- Willingness to openly discuss differences
- Unified front and mutual support
- Willingness to devote time and energy to the relationship
- Frank discussion of financial issues

Similarly, Keleher (1998) identifies several key elements of successful collaborative practices:

- Willingness to move beyond basic information sharing
- Willingness and ability to challenge distortions and assumptions
- Belief system based on critical self-reflection
- Other key elements included: coordination, respect and cooperation, mutual trust, valuing and sharing.

Baggs and Schmitt (1988), in an extensive review of medical and nursing literature and interdisciplinary care, refer to six key attributes of collaboration:

- Cooperation
- Assertiveness
- Shared responsibilities for planning
- Shared decision-making
- Open communication
- Coordination.

And through a review process and reading of the literature Way et al (2000:3) identify seven key elements required for successful collaborative practice:

- Responsibility/ accountability
- Coordination
- Communication
- Cooperation
- Assertiveness
- Autonomy and mutual trust
- Respect.

Finally, three key features of collaboration identified by Weiss and Davis (1984) are:

- The active and assertive contribution of each party
- Receptivity to, and respect for, the other parties' contributions
- A negotiating process that builds upon the contributions of both parties to form a new way of conceptualizing the problem.

Clearly, there are common themes that emerge from the lists presented above.

Coeling and Wilcox (1994) suggest that *openness to information presented* and *adequate time to communicate* as important variables for effective collaboration. What is also important is the *appreciation of other professionals and their scope of practice*, which can best be illustrated in the education and training of new professionals. Successful examples of these exist that combine physicians, nurse midwives and nurse practitioners (e.g., Howard and Leppert, 1998; Leppert and Howard 1997). Aside from developing respect and understanding of the different scopes of practice, the exchange of learning early on in career development also increases the available patient population and provides a wider variety of clinical settings for the different professions (Howard and Leppert, 1998).

Respect and trust are expressed through open and honest communication. Communication requires effective listening and willingness to express one's views. Each person must be aware of the others' style of communication and thought processes. Styles need to complement one another, and adaptation may be required. Poor communicators make for poor collaborators. Trust also needs to be invested in the clinical competence of others. Mutual trust develops over time as a result of many positive experiences with one another. There is also a need to respect and understand differing perspectives or underlying philosophies of care, which will, in itself, enable a more comprehensive understanding of the patient/client. Moreover, "*individuals who feel secure and competent professionally can communicate their discipline's strengths, value, limitations, and contributions to colleagues from other disciplines*" (Stapleton, 1998:14). Stapleton adds that; "*the development of a mature collaborative relationship is an ongoing process requiring much time and effort on the part of each individual involved*".

In a cautionary vein, Celia Davies (2000) asks the question "Is there any content in the "C" words, so popular in government policy documents – coordination, collaboration and cooperation?" She notes that researchers are beginning to understand what working together can actually achieve. Stapleton (1998) questions whether health care providers really fully appreciate what collaboration means and know how to put it into practice in their day-to-day professional lives, or even recognize what it requires of each of its participants. Davies (2000) goes on to say that it is not what different partners have in common that is important, but rather that their differences make collaborating more "powerful" than working separately. While agreement and acknowledgement of each others skills and recognition are important it is the *challenging* and *questioning* that bring out the full potential of collaboration – and in many respects that may be the distinction between collaboration in its traditional sense in maternity care versus new models of *collaborative practice*.

In new collaborative models, asserts Davies (2000:1022), participants need to "*be confident enough to face the unfamiliar [and] respectful and trusting enough to listen openly to others*". There need to be ground rules, and power differentials among practitioners need to be resolved. Again, Davies notes:

> *"…along with deference to doctors, nurses still work "around" others. Individually, nurses and doctors may strive to overcome the lingering images of their professions, but there is a weight of tradition, including a tradition of gender thinking to contend with. Nursing is no more conducive to collaborative working than is medicine. Both need to change if a collaborative model is to work".*

Barriers and challenges to collaboration

There are a number of barriers and challenges to face when developing collaborative practice models (Kelleher, 1998; King and Shah, 1998; Stapleton, 1998).
These include, for example:

- Separate training for different health care providers (none fully understands the other practice perspectives)
- Different financial incentive (and disincentive) structures
- Hierarchical health care system
- Due to different professional socialization and training, barriers to effective communication between physicians and nurse-midwives and midwives (i.e., different ways of looking at the same problem)
- Dominance of the medical profession in health care
- Traditional independence of medical practice
- Differences in social status (power differential)
- Gender issues
- Satisfying professional autonomy

Rogers (nd) adds that there a number of challenges to developing collaborative models, including:

- The natural resistance to change
- Shortages of nurses, physicians, and midwives
- Current educational models
- Regulatory barriers

- Funding barriers
- Liability insurance barriers.

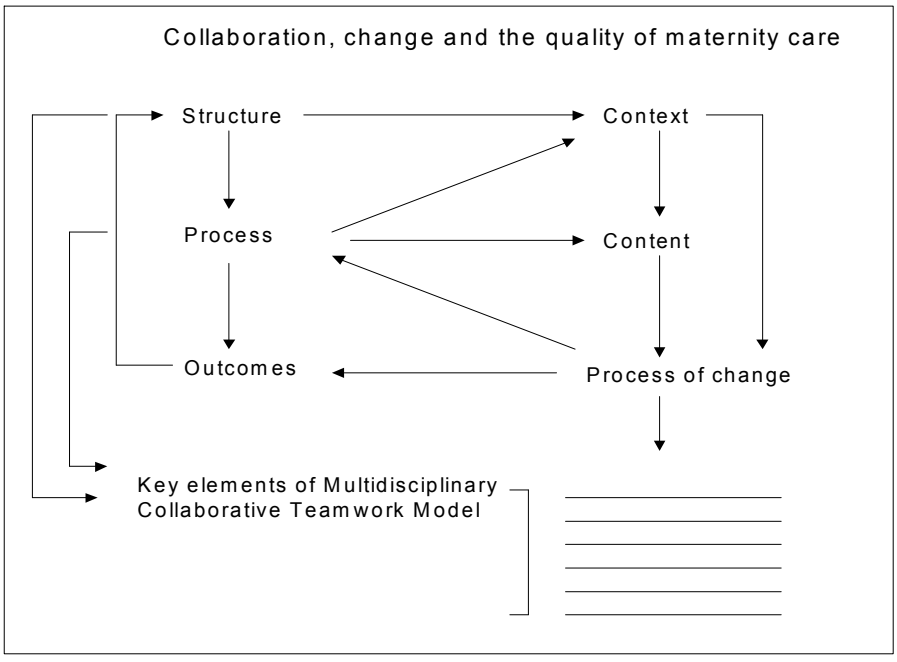
More generally, McLain (1988) notes that nurses and physicians failed to collaborate due to distorted communication and non-meaningful interactions.

This section on collaborative practice has identified a number of consistently recognized benefits, attributes and barriers. Experience from research and knowledge of current promising models of collaborative practice provide hope and support for further development of multidisciplinary collaborative teamwork models.

Given this empirical context, it is important to then situate the discussions on collaborative models from the underlying rationale – a quality perspective, and the theoretical and conceptual basis for this guideline for new models project initiative.

Figure 2 below reflects the integration of two complementary frameworks for the development of collaborative models; the well known Donabedian framework for quality (1966, 1980, 1982, 1985, and 1988) and the framework for understanding and applying change in organizations (Pettigrew et al, 1992). The logic of the integration is as follows: The ultimate goal of developing collaborative primary maternity care models is to improve the quality of care through more effective and efficient work processes and the realignment of increasingly scarce human resources. As described below, there are several key elements in a collaborative model that affect, and are affected by, the structures and processes in place in respective areas providing maternity care. To move to a collaborative model or models requires changes in what and how services are provided.

Figure 2: Collaboration, Change and the Quality of Maternity Care



Change is multidimensional. Any change introduced into organizations will be understood in terms of the *context* in which it is introduced (i.e., internal and external structures and processes), the *content* that is the focus of the change, and the *process (es)* by which change is introduced (Pettigrew et al, 1992). The inter-relationships among Context, Content, and Process form the framework for introducing change, managing expectations and enhancing uptake and further knowledge transfer. In operational terms this provides the foundation for implementation – for developing guidelines for model adoption. These key collaborative model elements are integral for improving outcomes, and in fact, lend themselves well to subsequent formative evaluation of the new models that may emerge. Thus in the bottom right-hand quadrant, the key features of a MCTM can be agreed upon and used as a basis for further model development. Although the literature discussed above has identified a number of key features, the 'space' is deliberately vacated until further discussion of the material presented here occurs, and the next phases of the project unfold.

3.3.4 Team Composition, Place and Space

There is international variation regarding the site of birth. In New Zealand and England, midwives attend 7 in every 10 births, while in the Netherlands; the rate is 90%, with 1 in every 3 babies born at home. In contrast, in Canada, most babies are born in hospital with a physician as the attending clinical professional (CIHI, 2004). And yet, when Statistics Canada surveyed Canadian women ten years ago over their willingness to receive care from health professionals other than physicians, 31% stated they would be willing to go to a birthing centre instead of a hospital to have a baby, 21% said they were receptive to the idea of having a nurse or midwife deliver their baby instead of a physician, and 85% said they would accept postpartum care from a nurse midwife instead of a physician (Wen et al, 1999). The site of care is thus another consideration for the development of multidisciplinary collaborative models. Is the optimal model one that integrates a blend of hospital and clinic settings (e.g., birthing centers) or is it more appropriate to consider births in *either* the home or hospital settings? Gready et al (1995) and Chamberlain et al (1996), for example, report higher levels of satisfaction with home births over hospital births. Again, *context* will play a key role in shaping the place and space of care in multidisciplinary collaborative models.

The team can be comprised of a wide range of health professionals, and organized to suit the needs of participating professionals. This flexibility reinforces the fact that 'one model' is unlikely to address different organizational and geographical contexts, within which necessity, driven often by human resource issues, may dominate the nature and extent of relationships, and act as a catalyst for development of multidisciplinary models. This re-emphasizes the role that *Context* (section 3.3.3) plays in the development of new models (Pettigrew et al, 1992). Indeed, context is also reflected by the various models of interdisciplinary care being developed in rural and remote regions in Canada (for example, rural and remote regions of Ontario (Rogers, nd) and the Inuit communities in the north – Tedford and O'Neil, nd).

In urban settings, the Maternity Centre in Hamilton Ontario is also responding to the contextual needs and drivers of the local community, and serves as an example of a MCTM. The centre is comprised of several family physicians, two nurse practitioners, a midwife, two social workers, a lactation consultant, a public health nurse, a dietician, and also physiotherapy support. The 'model' is based on a family physician/primary care nurse practitioner dyad, "*with collaborative interdisciplinary partners*" (The Maternity Center of Hamilton Annual Report, 2002). Secondment arrangements were made with hospitals for all

but the midwife. The Center's mission is to "provide high quality, accessible primary maternity care using an innovative collaborative multidisciplinary approach". In addition to its core team, the Hamilton FP/NP Dyad is comprised of an outer circle community network of obstetricians and gynaecologists, other consultants, hospitals, agencies, centres and groups and academics. A key feature of the model is the linking of families with their referring physician or collaborating with community physicians to set up families with physicians close to their home. Early evaluations of the model cite high satisfaction levels by providers and patients/clients, and all performance benchmarks being exceeded.

The literature more generally cites collaborative models among midwives and GPs/FPs, while there is little evidence of obstetricians in these team models. A survey of membership conducted in 1999 by the Society of Obstetricians and Gynaecologists of Canada, in fact, showed that 57% of members still worked in a solo practice (SOGC, nd).

There is a role that can be played by nurse practitioners in the provision of maternity care. In a systematic review of randomized control trials of whether nurse practitioners working in primary care can provide equivalent care to doctors, for example, Horrocks et al (2002) found that patients were more satisfied with NP care, NPs had longer consultations than did doctors, and there were no differences in health outcomes, prescribing rates, return consultations or referrals. Overall, Horrocks et al concluded that increasing the availability of NPs is likely to improve patient satisfaction and lead to higher quality of care. Kornelson et al (2003) meanwhile report from a survey that soon after the introduction of midwives in British Columbia, hospital-based perinatal nurses were holding negative views about midwives and their practice. Although the intent has been to develop collaborative practices, in actual fact it created parallel practices. And in Quebec, despite having guidelines in place for care following childbirth, there are severe deficiencies in the access to care for mothers when they return home. This is in respect to follow-up home visits by a nurse, continuity of care, and the duplication of services (D'Amour et al, 2003).

4.0 Summary

The purpose of this literature review has been to provide a foundation for subsequent model development. The intent has been to establish the fundamental characteristics of a Multidisciplinary Collaborative Primary Model(s) for Maternity Care. As such there has been less emphasis placed on hospital-based obstetrics care and more emphasis on community-based care. There are clearly strong inter-relationships and interdependencies, however.

Our intent has been to synthesize material relevant to the development and functioning of multidisciplinary collaborative primary maternity care models. The models, per se, have not emerged strongly in the literature, but despite that there have been many papers that have contributed to further delineating the nature and extent of model development for the project. We have sought to obtain some definitional clarity from the literature, as we feel this is fundamental to the model development. We have identified the benefits and characteristics of collaborative models while at the same time creating the foundations for building a quality framework for such models that could be introduced.

Several conclusions from the literature (and perhaps discussion points) can be established regarding development of multidisciplinary collaborative team models (MCTM).

1. There is no optimal number of providers in a MCTM.
2. There is no ideal size of a MCTM
3. Guiding principles for models and protocols need to be established while at the same time providing flexibility for different providers to be involved
4. Effective collaboration requires ongoing commitment at a number of different levels, including, though not exclusively,

    a. Open, honest communication
    b. Mutual trust
    c. Respect
    d. Understanding and valuing each other's perspective and way of thinking
    e. Familiarity with and valuing each other's style and scope of practice
    f. Equality and shared power
    g. Professional competence
    h. Shared responsibility and accountability
    i. Shared decision-making
    j. Shared values, goals and visions
    k. Willingness to openly discuss differences
    l. Willingness to share information
    m. Unified front and mutual support
    n. Willingness to devote time and energy to the relationship
    o. Frank discussion of financial issues

5. There is no clear or optimal configuration or composition of different providers in the ideal model(s)
6. There is no ideal model; there are many options possible but the delineation of these will be specific to the external and internal contextual factors.
7. The literature does not provided details underlying the fundamental key features of a MCTM (these will be examined, developed and expanded upon in subsequent phases of the project work)

8. There is an inherent human dimension to the development and success of the respective models
9. Consideration must be given to the organizational structures and the respective financial incentives and disincentives for providers to be involved in such models
10. The approach should be woman and family centered, respecting the needs of the expecting mother while recognising the service delivery structures in place and the resource implications of service patterns.

It is hoped that these points can be discussed and expanded upon by members of the Steering Committee and project staff.

It is clear that one 'model' will not suffice, and nor should it, given the diverse range of contextual factors that are in effect in a given location. As a number of different models could be developed, however, it is imperative that there are common attributes of multidisciplinary collaborative primary care that are conducive for uptake. To that end while the literature has not necessarily identified ideal models, it has provided some key model *features*.

An evolving framework building on the literature that reflects these features now needs also to have the details expanded upon. This will be done through the next phase of the research, which includes key informant interviews, site visits, focus groups and an e-Delphi process. The material developed in that phase will then be developed to create appropriate tools and templates to effect positive change in the delivery of maternity services with new models of multidisciplinary collaborative primary care.

Appendix – Compendium of Collaborative Maternity Care Models

The purpose of this section is to identify and describe Collaborative Maternity Care Models that have been discussed in the literature. It has been challenging to develop such a compendium based solely on the literature. This is due to several factors:

1. Heterogeneity of potential models described

    a. At different points along the maternity care continuum
    b. Between different providers
    c. At different periods of time
    d. In different and changing jurisdictional contexts

2. Reported in a range of papers, some of which provide some details of the models, or aspects of the models, while others are scant in their descriptions and of little value in terms of contributing to this initiative.

3. Content of the literature – for the most part there is a focus on a comparison of models – predominantly between 'new' midwifery-based models and 'standard' practice models. These comparisons range from randomized control trials to observational studies or descriptive overviews with little empirical evidence to support or reject the various models being proposed or in progress.

4. There is no consensus, and limited discussion on what constitutes new' or 'innovative' models.

5. There is little definitional clarity as to what constitutes collaboration, multidisciplinary care and so on.

Given this highly variable context, it was decided that *at this point in the project* it would do more harm than good to try and 'fit' the wide range of papers and reports into a singular classification system that ultimately would look very incomplete, and questionable, right now, as to its utility to the overall project. Rather, what follows is a description of some of the models identified, and a list of the many other articles reviewed that suggest various attributes of different models in time and place. As such, the compendium is a work in progress. Following further consultation with the Steering Committee and project staff we will continue with the development of the Compendium because we feel it will be a valuable resource for organizations and providers to draw upon as new innovative models are being developed.

At a general level there are general models of maternity care that have been described. There are differences in the models based on philosophy, focus, relationship between the provider and the pregnant woman, the main focus of prenatal care, use of interventions during labour, and in the goals and objectives of care (Rooks, 1999). The models include, for example:

Midwifery models (sometimes referred to as case-midwifery models) – Pregnancy and childbirth as normal physiological processes. Midwives are in partnership with the pregnant woman and the lead professional, are responsible for planning her care with her, will refer to other providers as deemed appropriate, and for ensuring the provision of maternity services

(Hatem, et al 2004). Continuity of care is not a feature of many midwifery models (Hatem, et al 2004). Ashcroft (2003), in fact, notes there is continuing debate about the risks, benefits and costs of continuity of caregiver models versus other midwifery models of care. The models focus on:

- Prenatal education
- Health promotion
- Risk reduction
- More hands-on lower level technology
- Closer supportive relationship during labour and delivery

Hodnett (2005) cites that experimental studies suggest some benefit for women using the midwifery models of care when compared to women giving birth in other models of care. Evidence from various experimental studies includes the following:

- Lower rates of intrapartum analgesia
- Lower rates of augmentation of labour
- Increased mobility during labour

Non-experimental lines of research evidence also suggest the following:

- Rates of spontaneous vaginal deliveries are higher
- Rates of caesarean section are lower
- Rates of episiotomy are lower
- Rates of severe perineal injury are lower
- Rates of neonatal admissions to special care units are lower
- Increased satisfaction with care through the midwifery model

See also Feldman and Hurst (1987), Fraser et al (2000), Saunders et al (2000), Scupholme et al (1986) and Turnbull et al (1996).

Nevertheless, with midwifery models there is still some research that has observed higher rates of neonatal morbidity and mortality (stillbirth and requirement for neonatal resuscitation) (see Fraser et al, 2000).

Caseload model (Walsh, 1999) – where midwives work in pairs or group practices and 'book' up to 40 women annually, with the aim of providing continuity of care through antenatal, intrapartum and post-natal periods.

Hatem et al (2004) observe that there is considerable debate on the clinical and cost effectiveness of different midwifery models of care and ongoing debate on the optimal provider at different stages in the maternity care (i.e., prenatal, intrapartum, and postnatal care).

Shared Models –The responsibility for the organization and delivery of care, throughout initial booking to the postnatal period is shared among different professionals. This can be a mix of family doctor and midwives, obstetricians and midwives, or providers from all three groups. All the different types of models in this category vary, and none provide complete continuity of the caregiver. The scope of the midwife varies significantly across countries depending on the risk of the woman. In some countries maternity care is midwife-managed (actual care)

but obstetrician led (responsibility and accountability) (e.g., Ireland, Iraq, Lebanon) (Hatem, et al 2004).

Medical-led models – Pregnancy and birth as normal physiological processes, and also an emphasis on the prevention of morbidity and mortality through detection of risk. Here, there are unintended consequences such iatrogenic complications with unnecessary interventions and poor psychosocial outcomes. There are two versions – obstetrician-led and family medicine-led. The obstetrician-led model is common in North America. There is:

- More state-of-the-art medical technology (including pre-natal tests)
- Higher-level technology-based intrapartum care
- Obstetrics approach that promotes positive view of medically-based decisions, including state of the art technologies.

Classifying the Models

There are a number of ways to classify models, although the variation discussed above re-emphasizes that classification by the literature alone will created an inaccurate and incomplete picture of the models that can be used to develop experience and understanding for this project and subsequent model development across the country.

Three broad categorizations that have been used in other contexts include:

1. Top Scorers - Models that have won national or regional awards or recognition.
2. Word of Mouth Snowballing Approach - Models that are identified by those in the sector as worthy of further examination and review (e.g., recommendations from the Steering Committee)
3. Promising Models - Models already showing some signs that they offer potential for promotion and broader knowledge transfer of their implementation process and actual outcomes.

Current Collaborative Care Models – Draft Working Document

Midwifery Model: Birth under Midwifery Practice Scheme

In 1996 continuity project – 'BUMPS' – a partnership caseload practice model, was launched in the UK[2]. Here, women register their pregnancy with their GP who then forwards the information to the midwives. The workload is distributed evenly among the partnerships so that each midwife has four women who are expecting to have their babies in any given month. The midwives are attached to particular GPs.

- All antenatal care provided in the women's homes except when obstetrical referrals are required.
- On-call patterns are designed to suit the personal circumstances of the midwives as far as possible
- One partner is always available on call at any given time
- Antenatal and postnatal care is covered within each partnership
- Antenatal drop-in session is held each week so women can meet other midwives if they want to.
- Conventional team model of care has 5-6 midwives providing antenatal and postnatal care. These join about 10 others to cover home births and join also a pool of up to 20 that cover hospital births.

A key finding of Walsh (1999) when evaluating this model was the centrality and importance of the relationship between the women and midwife. Also, the women who had previously had a child commented on the negative hospital experience and thus had a benchmark for comparative purposes.

Author: **Department of Health, United Kingdom**
Reference: Maternity Standard, National Service Framework for Children, Young People and Maternity Services, October 2004
Focus: Standards for Maternity Care
Setting: UK Delivery structure
HR Focus: N/A
Support for Components of collaborative model: Focus on organizational structure based on care pathways and networks.
Strength of Evidence: No evidence presented.

The document argues strongly for need for cooperation and linkages among providers, with specific focus being around the following vision and standard:

Vision:

- Flexible individualized services designed to fit around the woman and her baby's journey through pregnancy and motherhood, with emphasis on the needs of vulnerable and disadvantaged women.
- Women being supported and encouraged to have as normal a pregnancy and birth as possible, with medical interventions recommended to them only if they are of benefit to the woman or her baby.

[2] Birth under Midwifery Practice Scheme

- Midwifery and obstetric care being based on providing good clinical and psychological outcomes for the woman and baby, while putting equal emphasis on helping new parents prepare for parenthood.

Standard: Women have easy access to supportive, high quality maternity services, designed around their individual needs and those of their babies.

Commentary
This report draws attention to the roles that care pathways and managed maternity networks can play. Care pathways have been used increasingly in healthy care and attempt to formalize evidence-based protocols and guidelines into direct, individual women-focused care. The emphasis of the document is to place the woman and child at the centre of the process rather than meeting the needs of different service providers. The hope is to create pathways that can describe the routine progression of a woman through the antenatal period as well indicating tracer conditions or situations to show how standards will be implement in various circumstances. The document notes:

"*The use of these pathways should result in the same high standard of care being provided for all women. More importantly, if the woman is given a copy of her own care pathway or care plan and it is explained to her, it will enable her to understand exactly how to access additional services should the need arise*" (Department of Health, 2004:9).

There will be the development of '*Managed Maternity and Neonatal Care Networks*'. These are "*linked groups of health professionals and organizations from primary, secondary and tertiary care, and social services and other services, working together in a coordinated manner to ensure an equitable provision of high quality, clinically effective care*". Knowing which path to follow is expected to help:

- Reduce in clinical variation
- Eliminate of duplicated services
- Maintain quality of care
- Support adherence to clinical or other guidelines
- Give professionals agreed upon control over their respective care in the delivery process.

(Department of Health, 2004:9).

The woman is given a 'lead carer' who "*refers direct and acts as gateway and keeps in regular touch with the woman and the services she receives*" (p45). Referrals to and between services are managed through agreed and understood multidisciplinary protocols (e.g., all NHS maternity care providers have joint working arrangements with mental health trusts including direct access to perinatal psychiatrists). The report notes that the NHS maternity care providers and Primary Care Trusts in the UK will ensure that care pathways are in place. Again, without the underlying details, the report states that this will be achieved through "*a multi-disciplinary and multi-agency approach requiring agreement with all those likely to be involved in providing care, including service managers and all relevant health and social care professionals and service user representatives*". There is explicit reference to the fact that the option for all women is to access a midwife as the first point of contact is widely publicized, and that each pregnant woman has two early visits from a midwife early in pregnancy who will advise her of the options for care available in the local area. Throughout

the pregnancy women are offered the support of a specified midwife who can be contact 24/7 at any stage of the pregnancy if the women have any concerns.

While little in-depth is discussed about the nature and extent of collaboration among health professionals, the key element of importance for this study is the individualized plan that is provided to every woman. The reports states that every woman "*develops and is encouraged to regularly review, her individual care plan in partnership with a health care professional*". The plan itself is based on an assessment of the woman's clinical and other needs, and can be modified at any point during her pregnancy.

The centrality of the mother-care provider partnership is emphasized with these individualized plans of care, which at the same time can be guided with ongoing support of designated midwives. This reflects numerous studies that indicate women want:

- Confidence in staff providing care during the birthing process
- One-to-one care from a named midwife throughout labour and birth, preferably whom they had got to know throughout pregnancy
- Personalized care
- To be treated with kindness, respect and support
- Adequate information to make informed choices
- Access to medical help if complications emerge

In addition, the report notes that surveys show the area of most negative comments is in hospital post-natal services. The report states that this is where maternity support workers could play an important role, and that proposals have been developed to introduce these workers as part of the maternity care team.

Author: **Hatem M, Hodnett ED, Devane D, Fraser WD, Sandall J, and H Soltani**
Reference: Midwifery-led versus other models of care delivery for childbearing women. Protocol. *The Cochrane Database of Systematic Reviews*. 4, 2004.
Focus: Protocol outlining the approach that will be taken to systematically review the subject matter.
Setting: will be various settings in the review
HR Focus: Midwives, family physicians and obstetricians, others
Support for Components of collaborative model: none
Strength of Evidence: Brief review of existing evidence on outcomes of different models – midwifery, physician-led and shared care models.

Author: **Homer, CSE, Davis GK, Brodie PM, Sheehan A, Barclay LM, Wills J, and G. Chapman**
Reference: Collaboration in maternity care: a randomised control trial comparing community-based continuity of care with standard hospital care. *British Journal of Obstetrics and Gynaecology*. 2001. 108, 16-22.
Focus: To test whether a new community-based model of continuity of care provided by midwives and obstetricians improved maternal clinical outcomes, especially reduced caesarean section rate. It did result in a statistically significant reduced caesarean section rate, but there were no other differences in clinical outcomes.
Setting: Public teaching hospital in Sydney Australia.
HR Focus: Midwives and obstetricians (a team of 6 midwives provided care for 300 women per year). Emphasis was on continuity of care (a consistent team approach) versus a carer

(the same midwife). Unlike other studies, women were not transferred to standard care if they developed pregnancy related complications.
Support for various components of collaborative model: One midwife always on call. Continuity of midwives during labour.
Strength of Evidence: High

Author: **Hampson, JP, Roberts, RI and DA Morgan.**
Reference: Shared care: a review of the literature. *Family Practice*. 1996. 13, 3, 264-279.
Focus: a review of the literature on shared care, specifically the primary/ secondary interface.
Setting: review of literature, hospital and general or family practice.
HR Focus: Primary and secondary care, general and little on maternity care specifically (see below).
Support for Components of collaborative model: Communication is one of the most fundamental aspects of shared care. Inter and intra communication is still a problem especially with regard to discharge information/data. Also important are shared prescribing and disease management. Data suggest the most effective system(s) of shared care have yet to be established. Further evaluations are required, especially economic evaluations and considerations of patient preferences. It is concluded that a culture change, one that compels professionals to make sharing of patient information a much higher priority, is required. '*Shared obstetric care'* is viewed as between hospital and GP. Now, the authors note, the shift is towards 'integrated care' where obstetric care is provided by GPs, midwives, and health visitors, along with regular sessions with a visiting obstetrician. This type of care is a) equal in regards to standards of care to 'shared care', b) preferred by women, and c) decreases the number of hospital visits, which results in more convenience and less travel time for women and less duplication of effort, freeing up specialist time. Suggestion that improved integration could be supported through written protocols for screening, a cooperation card that would be the one and only record of care, initial assessment and tests ordered by GPs. They conclude stating that more research is needed and that good communication and management protocols, although no evidence is provided as to how and why. More generally, evidence of common factors for effective shared care include patient cooperation or shared care cards, initial and continuing GP education, written treatment and management protocols, an efficient patient record and recall system, protected GP time to perform necessary duties, effective communication, and appointment of a liaison officer. It is suggested that more effective IT use is required, as well as a central computerized medical record.
Strength of Evidence: Medium (and review not rigorous or systematic).

Author: **CA Lane and SM Malm**
Reference: Innovative low-risk maternity clinic. *Canadian Family Physician*. 1997. 43, 64-69
Focus: A family-physician based clinic for low-risk maternity care (antepartum, intrapartum and postpartum care)
Setting: Low-risk maternity clinic located in an out-patient setting in Foothills Hospital in Calgary Canada.
HR Focus: Family physicians
Support for Components of collaborative model: Lane and Malm developed a clinic designed to satisfy the needs of physicians not practicing obstetrics, providing also an avenue through which teaching and training of students, residents and other health care workers is possible. It is a viable alternative to the practice of physicians referring low-risk patients to settings more appropriate for high-risk expectant mothers. Lane and Malm note that the clinic is organized around the following principles:

- *Cooperative call system* – that enables individual physicians to have acceptable lifestyles
- *Dedicated group of core physicians* – based in one clinic created on the basis of a common philosophy for care and personalities that will ensure continuity of care
- *Assurance for referring practitioners* – who are assured their patients will return to them for ongoing care following pregnancy
- *Cost savings* – Increased efficiencies gained by focusing on uniform service in a dedicated clinic enables cost savings
- *Reduced malpractice fees* – they are less overwhelming when a large number of babies are delivered
- *Less risk and fear of complications and litigation* – they can be lessened by developing standard patient care protocols and by developing expertise and confidence in maternity care
- *Education and Training* – with a high number of obstetric patients the specific focus on maternity care can act as catalyst for encouraging future professionals to provide obstetric care in their careers.

Other aspects deemed necessary in the clinic among the physicians include excellent documentation, 3-4 year commitment to practice in the clinic, and support and confidence of hospital staff and consultants. Between three to five physicians were considered the optimal number as this would allow patients to get to know all physicians and enable physicians to meet easily and agree on clinic protocol and changes. They periodically update the protocols and also inform referring physicians of any changes to obstetric care that may affect their patients. Each physician can be reimbursed from the clinic for actual fees generated, less overhead, using a predetermined formula, or overhead could be paid from a central billing pool and remaining income divided equally. Support staff includes one nurse, a clerical staff person and a billing clerk – all part-time. At the time of writing they were also training nurse-midwifery students as part of another initiative at the Foothills Hospital. The clinic has been operating for 6 years, for approximately 40 new patients each month, and they cannot keep up with demand.
Strength of Evidence: Low. Note though that this is a descriptive paper by two of the founding physicians, and with no formal evaluation. They do, however, report that their model has received considerable attention across Canada as a viable solution to address maternity care needs.

Author: **TS Nesbitt**
Reference: Rural maternity care: New models of access. *Birth*. 1996. 23, 3, 161-165.
Focus: New models of care combining family physicians and midwives
Setting: rural US
HR Focus: family physicians and midwives
Support for Components of collaborative model: Does not specifically discuss elements of a collaborative model other than noting the advantages, described elsewhere of the combination of family physician and midwives in rural areas.
Strength of Evidence: Low, but cites other publications.

Author: **RI Feinbloom**
Reference: A proposed alliance of midwives and family practitioners in the care of low-risk pregnant women. *Birth*. 1986. 13, 2, 109-113
Focus: discusses advantages of midwifery
Setting: general overview citing examples for the US

HR Focus: family physicians and midwives
Support for Components of collaborative model: cites advantages of midwifery and suggests that family physicians could acquire midwifery skills as opposed to obstetric skills and define themselves as physicians practicing midwifery (p112).
Strength of Evidence: Low cites a few papers but mainly discussion and viewpoint.

Author: **Buescher PA, Roth MS, Williams D and CM Goforth**
Reference: An evaluation of the impact of maternity care coordination on Medicaid Birth Outcomes in North Carolina. *American Journal of Public Health*. 81, 12, 1625-1629.
Focus: Large administrative datasets on outcomes associated with maternity care coordination. Maternity care coordinators who help eligible women receive services that address medical, nutritional, psychosocial and resource needs. They also provide social and emotional support, which may lead to stress reduction and the adoption of healthy behaviours during pregnancy.
Setting: US Medicaid Baby Love Program in North Carolina
HR Focus: Care coordinators
Support for Components of collaborative model: Among women on Medicaid, who did not receive maternity care coordination, the low birth weight was 21% higher, the very low birth rate was 61% higher, and infant mortality rate was 23% higher than for those women who did receive coordinated services. Total cost savings over one year was estimated $2.2 million dollars for the coordinated services provided to 15,526 women (average of $140 per person).
Strength of Evidence: High. Possible selection bias by women choosing to enter the program although the authors note that they tried to control for this with various statistical approaches.

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Reference: Professional relationships between midwives and physicians: Collaboration or Conflict? *American Journal of Public Health*. 1992. 82, 2, 262-264.

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Reference: Provision of comprehensive perinatal services through rural outreach: a model program. *Journal of Rural Health*. 1989. 5, 4, 387-396.

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Author: **Buhler L, Glick N and SB Sheps**
Reference: Prenatal care: a comparative evaluation of nurse-midwives and family physicians. *Canadian Medical Association Journal*. 1988. 139, 5, 397-403.

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Reference: Evaluating satisfaction with maternity care in women from minority ethnic communities: development and validation of a Sylheti questionnaire. *International Journal for Quality in Health Care*. 2001. 13, 3, 215-230.

Author: **Flessig A, Kroll D and M McCarthy**
Reference: 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. 12, 4, 191-197.

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Reference: Comparison of midwifery care to medical care in hospitals in the Quebec Pilot Projects study: clinical indicators. *Canadian Journal of Public Health*. 2000. 91, 1:I5-I1.

Author: **Harvey S, Jarrell J., Brant R, Stainton, MC. and D Rach**
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Author: **Janssen PA, Lee SK, Ryan EM, Etches DJ, Farquarson DF, Peacock D and MC Klein**
Reference: Outcomes of planned home births versus planned hospital births after regulation of midwifery in British Columbia. *Canadian Medical Association Journal*. 2002. 166, 3, 315-323.

Author: HP Kennedy
Reference: A model of exemplary midwifery practice: results of a Delphi study. *Journal Midwifery Women's Health*. 2000. 45, 1, 4-19.

Author: **MC Klein**
Reference: The Quebec midwifery experiment: Lessons for Canada. *Canadian Journal of Public Health*. 2000. 91, 1, I1-4.

Author: Olsen O and MD Jewell
Reference: Home versus hospital birth (Cochrane Review) January 2004.
Support for Components of collaborative model: There is no strong evidence to favour either planned hospital birth or planed home birth for low risk pregnant women (based on only one randomized control trial – meta-analysis of observational studies, it was noted, does suggest that planned home births may be safe and with less interventions than planned hospital birth)
Strength of Evidence: High, but again, just one small RCT (11 women).

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Reference: Babies Can't Wait; Primary care obstetrics in crisis. Proposal submitted for funding to the Ontario Ministry of Health and Long Term Care Primary Health Care Transition Fund.

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