

Research and Theory

A literature review on integrated perinatal care

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Abstract

Context: The perinatal period is one during which health care services are in high demand. Like other health care sub-sectors, perinatal health care delivery has undergone significant changes in recent years, such as the integrative wave that has swept through the health care industry since the early 1990s.

Purpose: The present study aims at reviewing scholarly work on integrated perinatal care to provide support for policy decision-making.

Results: Researchers interested in integrated perinatal care have, by assessing the effectiveness of individual clinical practices and intervention programs, mainly addressed issues of continuity of care and clinical and professional integration.

Conclusions: Improvements in perinatal health care delivery appear related not to structurally integrated health care delivery systems, but to organizing modalities that aim to support woman-centred care and cooperative clinical practice.

Keywords

perinatal care, integrated health care delivery, woman-centred care, cooperative clinical practice, effectiveness

Introduction

Childbirth constitutes a major event in women's lives. During the perinatal period, which is generally defined as the interval between the decision to have a child and one year after the birth, the mother, her partner and her family face important physical, psychological and social upheavals. Consequently, in the case of both normal and problem pregnancies, perinatality is a period during which the use of health care services is particularly intense.

Recently, perinatal care, like other health care sub-sectors, has undergone major changes, one of these being the willingness to "integrate" the different services offered in the health care system. "Integrated care" has been a very popular organizational trend since the 1990s. One of the keys to its popularity has been the expectations it has raised, particularly in terms of improvements in quality of care and efficiency [1, 2].

In 1993, faced with pressures to cut costs and increase system productivity, the Quebec Minister of Health and Social Services began the process of reforming its policy on perinatality, with a specific focus on the issue of service integration. We were invited to participate in the reform process.

The objective of this paper is to present a review of the literature on integrated perinatal care. Two research questions are addressed. First, what is the current scientific knowledge concerning integrated perinatal care? In other words, what modalities does this integration adopt and what is its impact on patients, professionals and the health care system as a whole? Second, how can this knowledge be useful to policy decision-makers interested in perinatal care?

In order to address these questions, we chose to adopt an interpretive approach. We selected a reproducible sample of scientific studies (this selection process is described in the 'Search strategy' section

below) and decided, in order to appraise the studies retrieved, to focus on the current status of the topic under examination, rather than looking at the methodological quality of the paper being reviewed. This decision was made in order to allow our analysis to accommodate the markedly heterogeneous material to be reviewed.

We also chose to create an original conceptual framework to guide our analysis by blending a schema for health services and policy analysis with varying definitions of integrated care. This framework constitutes a powerful tool that supports meaningful answers to our research questions. In other words, it allows us to draw a clear portrait of the type of knowledge that is covered (and not covered) in the scientific literature, and reveals the strategies that should be useful for policy-makers regarding integrated perinatal care.

We consider that this paper makes two clear and intertwined contributions. First, in terms of theory, this kind of literature review on integrated perinatal care is innovative because it has never been done before. Second, in terms of practice, it provides direct research support to policy decision-makers interested in this modality of health care organizing. Further, this paper offers meaningful insights not only for policy-makers (who funded this review) but also for scholars and practitioners in the area of perinatal care. To our knowledge, no other published study has made this kind of contribution.

The following section introduces the conceptual framework we created to assess the value of the reviewed articles. It includes an expanded definition of integrated health care delivery. We then describe the search strategy, followed by an analysis and discussion of the documents reviewed. The paper concludes by noting the limitations and key points of our reflection.

Conceptual framework

Introducing a schema for health services and policy analysis

In a first step, we have adopted Rosenblatt and Woodbridge’s proposed “framework for policy research” for the analysis of health services and policies [3] (see Table 1). Rosenblatt and Woodbridge point out that “an understanding of the multiple levels of a system of care is essential to developing a framework for policy-relevant research.” Their attention to multi-level systems is precisely the reason we chose this framework to situate our review.

In Rosenblatt and Woodbridge’s view, a system of care entails three levels: a systemic level, an intervention program, and individual clinical practice. They hold that when scholars within the field of health service and policy research examine the impact of reforms, they focus as much on the individual clinical level as they do on the program and system levels,

Table 1. Rosenblatt and Woodbridge’s framework for policy research

Objectives of the health care system	Individual clinical practice level	Intervention program level	Systemic level
Effectiveness	Beneficial effects of individual clinical interventions on the state of individuals’ health	Beneficial effects of clinical interventions organized and developed by multidisciplinary clinical teams coordinating around the health of individuals	Beneficial effects of integrated modes of health service regulation, production and management on populations’ health
Efficiency	Maximization of the beneficial effects of individual clinical interventions on utilization and distribution of limited resources	Maximization of the beneficial health effects of coordinated multidisciplinary clinical interventions on utilization and distribution of limited resources	In a context of limited resources, maximization of the beneficial effects of integrated modes of service regulation, production and management on populations’ health
Equity	Beneficial effects of individual clinical interventions on health disparities	Beneficial effects of coordinated multidisciplinary clinical interventions on health disparities	Beneficial effects of integrated modes of service regulation, production, and management of health disparities between populations

Table 2. Definitions of integration by objectives/levels of the healthcare system

Objectives of the health care system	Individual clinical practice level	Intervention program level	Systemic level
Effectiveness Efficiency Equity	* Continuity of care * Sequential coordination * Reciprocal coordination	* Collective coordination * Professional integration * Clinical integration	* Collaboration * Functional integration * Normative integration * Systemic integration

with regard to the three classic objectives of any system of care:

1. effectiveness, or expectation of satisfactory results;
2. efficiency, or optimal resource utilization; and
3. equity, which encompasses the universality, accessibility and availability of resources¹ [4].

However, the number of studies focused on the three essential objectives of a system of care varies significantly in terms of level of analysis: the literature is more abundant on the subject of the effectiveness of individual clinical interventions, while efficiency and equity are more frequently analyzed at the systemic level. Studies on intervention programs are located midway between individual and systemic interventions. Finally, as Rosenblatt and Woodbridge emphasized, the same type of intervention rarely enables the simultaneous achievement of all objectives at all levels of the system. An intervention or procedure may prove highly effective at the individual level but be inefficient at the system level should it become universally available.

Blending the definitions of health care integration

Identifying the most relevant concepts of integration and related terms represents the second step towards creating a conceptual framework adapted to this review. The concept of service integration varies significantly across studies. Clarification is necessary to pinpoint the subject being analyzed and make meaningful comparison possible. A consensus emerges around the idea that integration is a process that cuts across all levels of health care delivery. We chose to first assemble the various concepts and dimensions of integration used in the studies, then to present the definitions proposed by the major theoretical writers in the field, and finally to classify both sets of definitions in terms of the level of integration to which they relate using Rosenblatt and Woodbridge's categories (see Table 2).

¹ Contandriopoulos et al. add another essential value for a system of care: freedom of choice, that is, freedom of decision and action for service providers as well as clients [4].

We began at the most basic level, the individual, which, according to Haggerty et al. [5] and Reid, Haggerty and McKendry [6], corresponds to the 'continuity of care' aspect of health care services. These authors describe continuity as having two essential characteristics: a longitudinal extension in time and a centralized focus on individual patients [5]. For an individual entering the health care system at a given moment, continuity reflects the degree of coherence, connection and consistency that he/she experiences in relation to this event (at the time and over time), in relation to his/her health needs and personal situation.

Three types of continuity can be distinguished in terms of the type of care and the context in which it is provided: 'informational continuity', or the consideration of past events in resolving the current problem; 'continuity in approach', which involves the provision of complementary services and flexibility of care adapted to the patient's particular morbidity and/or psychosocial needs; and 'relational continuity', or the relationship maintained over time between the patient and one or several care providers. It is important to note that continuity does not refer to an attribute of health care organizations, but rather to the perception patients have when they "experience service integration and coordination" [5].

Still at the individual level, 'coordination' refers to deliberate cooperative actions by health professionals, i.e. the activities or tasks shared by various professionals and organizational staff [7]. Coordination is characterized as 'sequential' when, during a single episode of illness/use of services, a patient encounters two or more professionals in succession. Coordination is 'reciprocal' when the patient is treated simultaneously by a number of professionals. Finally, coordination is described as 'collective' when a diverse team of professionals jointly handle the management and delivery of services. Collective coordination entails a shift from the individual level to the professional group level. All of these modes of coordination, although each in succession makes increasing demands on the group, have three common characteristics:

1. they indicate an attitude of cooperation on the part of professionals resulting in awareness of their interdependence in carrying out their tasks²;
2. they may be offered by professionals operating either within the same organization or in different organizations; and
3. in the case of professionals drawn from different organizations, they may belong to the same or different levels of care.

The term 'collaboration' reflects the inter-organizational nature of the arrangement. Collaboration refers to cooperative inter-organizational relations that develop over time through a process of sustained communication [8]. Given that no single organizational partner enjoys sufficient legitimate authority to manage the situation on their own, the roles and responsibilities of each must be negotiated. This concept of collaboration leads to the consideration of the integration of health services as a process of institutionalizing collaboration across the health care system.

Beside the concepts of continuity, coordination and collaboration, other terms appearing in the literature regarding integration in the health sector are useful here. Shortell et al. [1] talk about 'dimensions of integration'. The expression 'medical integration', or more inclusively 'professional integration', applies when caregivers are assigned (or assign themselves) to multidisciplinary teams to better respond to the needs of people using the health care system. This dimension of integration denotes a cooperative attitude among professionals. The term 'clinical integration' is employed when professionals attempt to coordinate their individual clinical practices around a particular patient. This dimension covers different modalities of coordination. Finally, 'functional integration' arises when the system of care links its financing, information, and management modalities, so as to foster professional and clinical integration.

In addition to functional, clinical, and professional integration, Contandriopoulos et al. [9] introduce the concepts of 'normative' and 'systemic integration'. 'Normative' integration refers to the coherence between the network actors' collective system of representations and values, and the operational modes of integrated service organization [10]. In contrast, 'systemic' integration refers to the harmonization of the structure and functioning of the health care system and its interaction with its social context.

² Our definition of cooperation relates to that of continuity of care as experienced by care-providers as formulated by Reid, Haggerty and McKendry [6]. These authors note that continuity of care is recognized by professionals when they possess sufficient information and knowledge for their clinical practice, while feeling that the care they provide is recognized, valued and sought out by other professionals

Search strategy

In addition to the analytical framework used to limit our investigation to articles actually dealing with service integration as we conceptualize it, other criteria were used to fine-tune the literature selection. We chose to include only works published in English and French in peer-reviewed journals between January 1990 and June 2004. The scope of the review was limited to Canada, the United States, Australia and northern and western Europe. A number of databases were consulted: Medline, CINALH, ProQuest Research Library, HealthStar, and the Cochrane Library. The keywords used were: prenatal (antenatal) care OR perinatal care AND integrated care OR continuity of care OR care coordination OR parental (parent) support. This research strategy led to the identification of 178 articles. Initial content analysis of abstracts of these articles, performed separately by each author and then jointly discussed, allowed us to discard articles found to be not immediately relevant, that is, not directly related to integrated perinatal services. This process reduced the number of articles to 64. This significant reduction was mainly due to the term 'integration' being associated with issues other than care delivery. Further, as is often the case in health services and policy, the studies chosen were markedly heterogeneous in terms of objectives, methods, length of time being studied, and the contexts in which they were conducted. As noted in the introduction to this paper, this heterogeneity is a powerful rationale for the decision to do an interpretive review.

Relevant articles were first classified according to our conceptual template (see Table 3)³, then examined in terms of their level of analysis and the objective of the health care system and, finally, discussed in terms of their integrative features. The Appendix contains a complete list, alphabetical by author, of the papers reviewed for the present study.

The following sections present our analysis of the papers reviewed. In accordance with the framework adopted for the study, we present the analysis by level of care. However, since the majority of papers concern the intervention program level, we have decided to begin with all those papers that fall into the individual and systemic levels of care (Table 3, first and third columns), and then to present the papers on intervention at the program level (Table 3, second column). For the sake of clarity, the latter category has been further divided into management of normal pregnancies and management of at-risk pregnancies.

³ A study can appear in more than one box if the scope of the study included more than one level and/or objective.

Table 3. Classification of articles by level of analysis and health care system objectives (See Appendix for list of reviewers)

Objectives of the health care system	Individual clinical practice level * Continuity of care * Sequential coordination * Reciprocal coordination	Intervention program level * Collective coordination * Professional integration * Clinical integration	Systemic level * Collaboration * Functional integration * Normative integration * Systemic integration
Effectiveness	Avon Premature Infant Project (1998) Boss et al. (2001) Bower (1997)* Carrington et al. (1993) Earle (2000) Grossman et al. (1996) Halloran et al. (1992) Harper et al. (2003) Jamison and Buscher (1992) Oakley (1991) Oberg et al. (1991) Silva et al. (1993)	European Collaborative Study (2003) Benussen-Walls and Saewyc (2001) Boss et al. (2001) Bower (1997) Bradley and Martin (1994) Bradley and Martin (1996) Buesher et al. (1991) Covington et al. (1997) De Ferrari et al. (1993) DeKoninck et al. (2001) European collaborative study (2003) Farquhar et al. (2000) Fink et al. (1992) Giles et al. (1992) Graff et al. (1995) Halloran et al. (1992) Harper et al. (2003) Hart et al. (2003) Hodnett (2000) Homer et al. (2000, 2001, 2002) Jan et al. (2004) Luks et al. (2003) Villar et al. (2001) Waldenström and Turnbull (1998) Waldenström et al. (2000)	D'Amour et al. (2003) Harper et al. (2003) Hemminki and Blondel (2001) Hemminki et al. (1990) Larson et al. (1992) Little et al. (2002)
Efficiency	Grossman et al. (1996)**	Fink et al. (1992)** Giles et al. (1992) Villar et al. (2004)	D'Amour et al. (2003)**
Equity	Carrington et al. (1993) Grossman et al. (1996)	Bradley and Martin (1994) Bradley and Martin (1996) Buesher et al. (1991) Fink et al. (1992)	D'Amour et al. (2003)

* Opinion article.

** Non-economic evaluation.

In the final section, we offer a holistic discussion and synthesis of the literature.

Individual and systemic levels of care

Twelve of the 64 studies (18.75%) retained concerned the individual clinical practice level of care. Even fewer, only six papers (9.37%) referred to the systemic level. Further, the sole aim of almost all these 18 studies is to ascertain the effectiveness of the interventions under examination.

Most of the investigations that fall into the individual practice level explore the effectiveness of health care

interventions for patients who share a specific characteristic, such as pre-term births [11, 12], low-weight newborns [12], maternity-related deaths [13, 14], or low-income mothers [15, 16]. The conclusions of these studies argue the benefits of prenatal health care for better health outcomes, as well as the benefits of continuity of care, particularly in the case of low-income mothers.

At the individual practice level, the contribution of Earle's study seems to be particularly significant [17]. Through a longitudinal study of mothers in their first pregnancy, Earle identifies the dimensions of the relationship between midwife and pregnant client that make it possible for the future mother to experience

her first pregnancy with the greatest possible sense of well-being. Among the key valued features of the relationship are the mother-to-be's feelings of uniqueness in her relationship with her midwife and the midwife's necessary positive reassurance concerning her client's clinical/medical condition. These two aspects of the relationship require different competencies on the part of the health care professionals: one competency assumes an approach that is personalized according to the characteristics and needs of the pregnant woman; and the other competency presupposes clinical/medical skills and knowledge that allow the professional to reassure the woman experiencing a new biological condition for the first time.

In the group of studies that explore integrated perinatal care at a systemic level, the results regarding its effectiveness appeared rather disappointing. This was the case in the study by D'Amour et al., in which the authors noted the very modest success of a regional perinatal care integrative initiative in terms of accessibility, continuity of care and relevance [18]. They concluded by highlighting the need for greater flexibility and speed in the transmission of clinical information between first, second and third-line health care organizations to overcome deficiencies in that area. Likewise, the comparison of eastern and western European countries conducted by Hemminki and Blondel indicates that no one prenatal service model displays a clear advantage in terms of service use or perinatal mortality in Europe [19].

Intervention program level

As noted above, the majority of the studies we examined concern the intervention program level of analysis. As in the case of those studies that focus on individual or systemic levels of analysis, the authors of these studies would generally seem to be interested in gauging the effectiveness of interventions. Few studies sought to measure the efficiency of interventions or to maximize their beneficial effects in a context of limited resources. Information on this subject remains too limited to enable us to draw conclusions.

Despite their tremendous variability, for the sake of clarity we classify the studies at the program level of care into two overall sub-sections, namely 'management of normal pregnancies', by physicians or by midwives, and 'management of at-risk pregnancies'. This sub-division, which emerged during the review, is meaningful in terms of the health care needs of different types of clients.

Management of normal pregnancies

Medical management

Although diverse, a number of papers focus on the medical management of normal pregnancies. First, in the longitudinal research on clinical effectiveness [20, 21], those measuring biological results in the mother and the child suggested that, in women experiencing a pregnancy without medical complications, prenatal services led by obstetrician-gynaecologists and those provided by general practitioners or midwives do not differ significantly⁴. However, in all these cases, women expressed greater satisfaction with the services provided by family doctors and midwives than with those provided by their obstetrician-gynaecologists.

The scheduling as well as the content of prenatal visits varied widely from one country to another [20, 21]. Moreover, fewer prenatal visits did not seem to be associated with significant differences in the measures of the mother's and child's health [20]. Nonetheless, four visits was considered an indispensable minimum [20]. One evaluation of economic status in the United Kingdom, using data from 1993–1994, indicated that a decrease in the number of prenatal visits did not result in economic benefits to the health care system [22, 23]. In that study, reducing the number of prenatal visits was associated with an insignificant increase in hospital readmissions, generating cost increases in neonatal care. Finally, such a reduction would, in industrialized countries, likely be associated with greater dissatisfaction with services received [23].

Specialized prenatal service programs (i.e. nutrition, anti-smoking) [21] or educational services provided by professionals in their private practice [24] achieved maximum results when addressed to clearly targeted clientele, generally young mothers with low incomes. Such specialized programs may mitigate disparities in health status. This is of particular interest in connection with systems of caregiving that are predominantly privately funded, as is the case in the United States.

Better transmission of clinical information between first-line general practitioners and hospitals emerged in several studies as a way to enhance the effectiveness of individual clinical practice in the prenatal and postnatal periods [25]. Instituting shared clinical files [25] and establishing the position of inter-organization program coordinators [25, 26] are two components that seem to facilitate the transmission of information

⁴ We note here that, according to the studies reviewed, services provided by midwives, even when the midwife is the primary provider of perinatal services (Hemminki et al. [19]) always appear to be more or less coordinated with routine or standard medical services, whether first-line or in hospital.

between professionals at different levels of care, thus improving the effectiveness of perinatal programs.

Management by midwives

Most of the studies reviewed measure patient satisfaction with services received, particularly with regard to continuity of care, which, along with humanization or *woman-centred care*, is one of the most highly valued dimensions of midwifery. In the articles under review, continuity was generally understood as the provision of care by the same professional (i.e. continuity of caregiver) during the entire perinatal period—that is, throughout the pregnancy, labor and delivery—and postnatal period. Some of the studies analyzed also measure effects on the health of the mother and child, while taking into account continued provision of care (process measuring).

By and large, these studies indicate that women express greater satisfaction when the principal perinatal caregiver is a midwife. The level of satisfaction is higher during the prenatal period, irrespective of the study, the country in question or the principal caregiver. The results of the review also indicate that, in comparison with the routine or standard services in place, teams of midwives improve continuity of care, whether this involves midwife teams working in the community, as in the British experience, or midwife teams working in hospital maternity clinics, as in Australia. However, because the services of midwives have been compared to services provided by other professionals operating within diverse models of organizing care, it is difficult to determine if this greater satisfaction is due to greater continuity of care or to the clinical practice of midwifery itself [27].

In perinatal care, continuity of care, understood in terms of its informational approach and relational dimensions [3], was enhanced when perinatal services were provided by a small number of midwives working within the same team. The form and organizational context in which midwife teams operate, as well as the prenatal stage they monitor, vary from country to country. In Australia, recent experiments involve teams of midwives providing prenatal care in a hospital environment [28], and midwife teams providing pre- and postnatal services in a community-based clinic (in coordination with obstetricians) and attending the woman at the hospital during labor and delivery [29–31]. Giles et al. reflect on the efficiencies of this practice in the context of Australian hospitals [28]. Their study points out that when services were provided by professionals receiving lower salaries than doctors within the same organization (in the case being studied, prenatal management services provided by midwives), economies in operating costs were

realized. Such economies were not evident when the professionals worked in different organizations [32].

In the United Kingdom, emphasis is put on setting up community midwife teams that stress continuity of caregiver throughout all prenatal stages. This model is compared to conventional midwife services [33, 34] or to other models, including doctors in the community or doctors and midwives in a hospital environment [35]. The reviewed studies indicate that women do, in fact, like having a midwife they met during the prenatal period with them during labor and delivery, but it need not be one midwife in particular. In this context, a pattern emerges: a small group of midwives who adopt a common approach to care, characterized by humanization and continuity of care throughout the pregnancy, delivery and postnatal period, is the model preferred by both mothers and midwives.

Finally, in terms of clinical effectiveness, the practice of midwifery, especially when carried out in isolation [36], is associated with an elevated perinatal mortality rate. A higher, although not statistically significant, rate of neonatal mortality in the group of women monitored by midwives is noted in the assembled meta-analyses [27, 37]; the higher mortality rates generally occur among women at low medical risk at the outset of their pregnancy. Experiments in Australia [29–31] and the United States [38], in which a clinical team made up of midwives and obstetricians worked together in a community maternity clinic, show multidisciplinary team practices involving midwives and obstetricians are effective in safeguarding the health of the mother, and promising in terms of cost of service provision [38].

Finally, in another study with different objectives from those in the abovementioned studies, Waldenström et al. focus on the characteristics of women who use one of Sweden's rare birthing houses, in particular, one located in Stockholm [39]. A portrait emerges of women who are older, better educated, more critical of medical procedures and less anxious about their pregnancy and motherhood than women managed in the conventional system. This profile resembles that of women who use birthing houses in other countries [40]. The authors hold that political decision-makers should take into account the growing number of women who fit this profile within the general population in their planning for future perinatal services.

Management of at-risk pregnancies

This group of investigations targets two broad types of client: women with low socio-economic status, often belonging to a visible minority group; and adolescents,

most of whom were also in precarious economic circumstances. Also to be found here are women considered at “medical risk”: those who had already given birth to offspring who were underweight, for example, or infected with HIV. These medical problems are often accompanied by socio-economic difficulties. Finally, some studies examine risk through the lens of child-related difficulties, particularly prematurity and delayed intrauterine growth. Here again, the risk factors being largely socio-economic, we found problematic elements, the problems in these studies resembling those presented in studies focused primarily on mothers or future mothers.

Overall, clients studied in the articles in this section have many points in common: they generally live in difficult conditions and face an aggravated risk of health problems. In the area of perinatality, as elsewhere, problems of poverty and health are so closely intertwined that it is difficult, often impossible, to distinguish the physiological and socio-economic components of risk [41]. Poor women are “at risk” because they are poor, and also, in certain cases, because they have already given birth to underweight babies present other health problems, have “risky” behaviors (smoking, poor nutrition...) or have not been adequately monitored during pregnancy. Thus, a reduction in social inequalities appears to be the clearly indicated solution, but this is not only difficult to attain, it also goes well beyond the health services framework. Other less ambitious objectives can still be targeted, such as reduction of barriers blocking access to care and services for these clientele.

Overall, the main consensus crystallizing around these articles centers on the importance of prompt, regular and adequate prenatal management to reduce health problems during the perinatal period. Harper et al. provide a convincing illustration that a significant proportion of deaths in childbirth in the United States could be avoided by adequate pre- and postnatal management [42]. Thus, the major overall challenge emerging from these studies is how to reach these specific clientele and offer services adapted to their particular situations in an effort to reduce their health risks. The challenge is daunting, given that these clientele face significant obstacles, sometimes linguistic and often cultural, in gaining access to care and various programs for assistance or health promotion. Adolescents too represent a particular “culture” which must be taken into account if they are to receive effective services that will improve their health and the health of their children. An imaginative response is therefore necessary to overcome these various obstacles and allow all women to have access to perinatal services adapted to their needs.

The review has allowed us to identify three strategies that seem to be useful in adapting specific client services and making them more accessible. The first strategy consists of ensuring continuity of care, and its positive effects are underlined in virtually all the literature on this subject [43–46]. In general, the term continuity is used to mean perinatal management carried out by the same person or by a small team of individuals with whom the future mother can establish a relationship of trust. Quantitative and qualitative analyses clearly demonstrate that the women who make up these specific clientele value continuity of care. Personalized, continued management encourages a bond of trust, which is often essential for the women to bring up certain difficulties they are facing, such as violence [44]. Women are more inclined to come for pre- and postnatal visits when they are acquainted with the professional they will meet.

The second strategy emerging from these studies emphasizes working in multidisciplinary teams. The multidisciplinary approach is currently very much in fashion, in research as well as in intervention, and the reviewed articles tend to demonstrate that this popularity is justified. In order to offer management adapted to the specific clientele mentioned in the studies, and especially to women presenting specific “medical risks”, it was useful to call on the knowledge of a range of providers. For certain problems, such as those associated with HIV, the interdisciplinary approach already seems to be predominant in Europe [47]. The articles concerning teenaged mothers also seem to highlight the appeal of interdisciplinarity for this clientele [43]. Interdisciplinarity is generally considered to be an effective strategy that is valued by professionals as well as pregnant women and their families. The challenge is to find a way to let interdisciplinary providers work together. For now, the main strategy described in the articles reviewed involves bringing together providers in the same institution and organizing formal and informal exchanges concerning the women being monitored. Another approach that is being explored is the linking of different services by a care coordinator who puts the pregnant woman in contact with various providers, not only medical but occasionally social [48]. The effects of this type of intervention, even in terms of satisfaction, proved to be less consistent and more difficult to measure.

Finally, the third strategy emerging from the texts as having the potential to promote health and especially accessibility of care is to set up clientele-adapted services. Good examples of the effectiveness of this strategy are described in the studies involving pregnant adolescents: services seem much more effective and more widely used when they are adapted to the

health, culture and living conditions of this clientele [43–45]. Among other factors, this adaptation requires flexibility, as well as adequate and specific training of the interveners, training that is difficult to acquire in non-specialized centers.

For immigrant women, adapted services aim primarily at reducing linguistic and cultural barriers, which block access to care and services [49]. However, the situation of women living in conditions of severe poverty remains highly complex, as these clients are sometimes difficult to reach even when adapted services are available. Home visits appear logical for reducing obstacles involving transportation and child care but, in many cases, these visits are made by nurses and do not replace pre- and postnatal management. Care coordinating services, offering both psychosocial support and personalized assistance in accessing various organizations and services, appear to have shown effectiveness in North Carolina [48]. Still, it is difficult to distinguish the different components of these interventions and to know which—providing financial assistance, providing psychological support, or facilitating access to resources—has proven beneficial.

Some articles report various strategies and programs as having a positive impact on the state of health and reduction of disparities, but the effects were often minimal or contradictory, and sometimes nonexistent, with no significant reduction in premature birth and delayed intrauterine growth [43, 45, 48].

Discussion: integrated perinatal care: why, how, with what results?

Fashions come and go in health care and service delivery, just as in other aspects of life. Some are the result of deliberate design and others the spin-off or unintended consequence of other changes. [50]

Health care systems in industrialized countries are developed around acute health problems [51]. As a result, none of the studies reviewed seems to have questioned gynaecologists and obstetricians working in a hospital setting since they are the main perinatal care-providers in pregnancies at risk. Questions have largely centred on the “medicalization” of services offered to women not at risk or at low risk at the outset of pregnancy. Our systems of care have favored the establishment of autonomous clinical practices and organizational independence, which has contributed to the fragmentation of caregiving. In the face of escalating costs, attention has turned towards organizing integrated service systems. But is integration

relevant in the perinatal sub-sector? According to Leutz [52], it is possible to integrate all services for certain populations⁵ or certain services for all populations, but it is not possible to integrate all services for all populations.

Before being implemented in the health sector, service integration was introduced in other sectors of the economy where, as Leggatt and Walsh indicate, “There are also less integrated service offerings for those consumers who desire greater control, choice or flexibility” [54]. Based on the texts we have gathered, that would be the case for women experiencing a pregnancy without complications, particularly those who opt for the services of a midwife. In other words, contemporary women want “customized” management involving a relational process with the provider (or providers) of perinatal services [17].

Finding customized management is not an easy task in a society in which pregnant women who choose a midwife approach because it is natural and less interventionist than the conventional medical approach are intermingled with women who wish to take advantage of epidural anesthesia during labor and delivery, or those who hope that health professionals will use all necessary available measures to keep their prematurely born babies alive.

Care-providers must not only possess the interpersonal skills of communication and humanization, but must also have the requisite clinical competencies to reassure the pregnant woman of the normalcy of her pregnancy or to recognize the presence of a biological/pathological complication. Thus, while midwives are recognized as champions of humanized care [55, 56], it must be acknowledged that obstetrician–gynaecologists are the ones who excel in the latter aspect of clinical practice, which is also desired and sought out by most pregnant women.

That being said, when a team of perinatal professionals work with pregnant women presenting no complications, the literature notes the importance assigned to the midwife as the principal service-provider. This preoccupation with continuity of care is a constant in the studies reviewed. Continuity of caregiver, which perinatal policy in the United Kingdom has heavily emphasized in the last decade, seems difficult to achieve in a context of limited resources. Moreover, continuity involving the same caregiver does not appear paramount for the pregnant woman—who, however, does value the fact that a midwife seen

⁵ It appears that integrated services would be particularly effective, as well as capable of generating improvements in efficiency, if they were organized around clienteles suffering from chronic illnesses (i.e. diabetes, arterial hypertension, mental illness, elderly persons with loss of autonomy) and provided by multidisciplinary teams operating in the first line of care [53].

during the prenatal period will attend her at the time of delivery. A small number of caregivers working together thus seems the most satisfactory formula for both mothers and professional team members.

Modalities of coordination established between teams of midwives and medical personnel appear to vary widely from one country to another. In the United Kingdom, community midwife teams, which came out of the *Changing Childbirth Initiative*, work with general practitioners. In the Australian experience recounted by Homer et al. [29–31], midwives work with obstetricians, and joint protocols of care are well established. Similar considerations apply to the clinical trial by Rowley et al. [57] included in the meta-analysis by Hodnett et al. [27]. When a family doctor is brought into the picture (i.e. the *shared care* experience [25]), emphasis falls on functional integration through sharing of clinical records or tighter coordination of tasks by virtue of the existence of a program coordinator position at the hospital.

The studies reviewed here show that modalities of coordination vary with the contexts in which the situations unfold, but that none represents a total integration of perinatal services. Leutz notes that in the United States, the most fruitful experiments with integrated services have been those that involve coordinated management and clinical integration, not those aimed at complete structural integration [52]. Similarly, in the British context, and more particularly with regard to modalities of integrating perinatal services after the adoption of the *Changing Childbirth Initiative*, Wyke et al. conclude that different modalities of service organization and integration may be appropriate in varying circumstances [49]. To sum up, with regard to management of general clientele experiencing pregnancies without complications, no “optimal” model of task coordination and inter-organizational collaboration emerges from the studies reviewed, apart from the observation that perinatal services do not appear to require a tightly integrated service system to ensure better health outcomes.

The observations drawn from articles dealing with specific clientele differed only slightly from those concerning general populations. The three strategies emerging from our analysis as having the potential to improve the effectiveness and equity of the system for populations with particular characteristics—ensuring continuity of care, working in interdisciplinary teams, and developing services adapted to clientele—are located primarily at the level of individual clinical practice (continuity of care) and at the intervention program level (continuity of care, multidisciplinary teams and services adapted to clientele). The studies also reveal the limits encountered by a system

of care intended to achieve the objectives of effectiveness and equity. Improving the health of women living in difficult conditions (poverty, ethnic minorities, teenage pregnancy, etc.) and reducing social inequalities that affect health are objectives requiring social changes that go beyond the framework of the system of care. Putting the proposed strategies in place will, we believe, have a positive, if limited, effect on health and the reduction of inequalities.

In conclusion, aside from the freedom of choice highly valued in most Western systems of care, the literature reviewed here emphasizes the goal of effectiveness, mainly at the individual clinical practice and intervention program levels. The perinatal sector does not require tightly integrated service systems to achieve this objective. With regard to the majority of women who experience pregnancy without complications, and at the level of individual clinical practice, it is humanization and “medical” competence that emerge as the most important dimensions. Continuity of care (informational, approach and relational) would not necessarily require that services be provided entirely by the same care-provider but could be achieved by a small group of professionals, all of whom are known to the woman. At the level of program intervention, it appears that multidisciplinary teams made up of midwives and obstetrician–gynaecologists working together in community-based maternity clinics hold out great potential for effectiveness (and, in all likelihood, efficiency). When provision of services takes place in more than one organization, the existence of a program coordinator can enhance both the speed of transmission and the quality of the information being transmitted. Finally, in the case of specific clientele (adolescents, low-income women, etc.), the coordination of tasks using models of service organization such as case management or care pathways seems to offer a promising avenue for further research on ways to achieve the objectives of effectiveness and equity within the limited framework for action allowed by existing systems of care.

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Appendix

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