ONTARIO WOMEN’S HEALTH COUNCIL

CAESAREAN SECTION BEST PRACTICES PROJECT

IMPACT AND ANALYSIS

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ONTARIO WOMEN’S HEALTH COUNCIL

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EXECUTIVE SUMMARY

BACKGROUND

In February 2001, the Ontario Women’s Health Council (OWHC) Caesarean Section Best Practices Project offered Ontario hospitals with maternal and newborn programs one-time grants to help them implement the best practices and recommendations in the OWHC report *Attaining and Maintaining Best Practices in the Use of Caesarean Sections* (October 2000). The goal of the project was to encourage hospitals with maternal and newborn programs to:

- assess their current status in relation to the critical success factors and recommendations in the report, and
- develop an action plan to implement “best practices” that will include the method for evaluating the effectiveness of the plan’s strategies.

The project provided $622,320 in grants to a total of 49 hospitals, which represented approximately 39% of Ontario’s maternal and newborn programs and accounted for about 72%1 of the province’s newborns.

THE PROJECTS

The scope of the initiatives undertaken for the project varied greatly across the sites. For example, a relatively small number of hospitals confined themselves to limited projects, such as conducting a one-time workshop or using the funding to pay for staff to take training courses. However, a large proportion used the funding to take steps (in addition to training) designed to implement or strengthen best practices, focusing on one or more areas identified during this or a pre-existing assessment.

The most common areas of focus were as follows: supportive care in labour (20), fetal heart surveillance (16), induction practices (14), vaginal birth after caesarean (VBAC) (9), admission and triage practices (7), and physical comfort and pain relief (6).

Hospitals also used a number of different strategies to promote or improve best practices, including:

- assessment (37), professional education (37), networking with other maternal and newborn programs (26), policy/guideline development (19), changes or enhancements to their databases (18), consumer education (10), the development of multidisciplinary teams or groups (10), the purchase of aids to support best practices (10) and efforts to involve consumers (7).

The strong focus on assessment likely reflects the OWHC direction in its grant invitation letter “to assess (hospital/site) current status and to develop an action plan for the implementation of best practices.” However, other patterns and trends, such as the high level of activity related to supportive care in labour, fetal monitoring, and induction, seem to indicate that these are the areas where maternal and newborn programs already perceive gaps between current and best practices, and where training or changes in hospital practices or policies can have the greatest impact. In some cases, the type of initiative may reflect the high proportion of projects that were nurse-led: supportive care in labour and fetal health surveillance are domains of nursing practice.

Most of the initiatives were led or guided by a multidisciplinary team. Only one initiative hired consultants to assist with their projects, although a number used some of their funding to pay maternal/newborn experts to provide advice or education. Two sites recruited either a nurse or nursing student to complete specific assessment tasks. Others identified key individuals within the maternal and newborn program to provide leadership or coordinate the activities. The leaders were usually nurses or childbirth educators, although in one case it was a midwife and, in another, a physician. In this way, the project provided opportunities for career development, and helped maternal and newborn programs develop and nurture leaders.

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1 Based on hospital reports/estimates of their annual births at the outset of the project as a percentage of Ministry of Health and Long-Term Care hospital birth volume data for year 2000.
Although the Caesarean Section Best Practice Project supported one-time, time-limited projects, it is clear that the majority of sites have in place or are developing strategies to support continuous quality improvement (CQI). About 21 reports made direct reference to plans for continuous improvement, and others may have plans that were not discussed in their reports. The most commonly cited approach to CQI was establishing best practice indicators, setting goals, monitoring performance, assessing performance against goals, and identifying strategies to address any gaps.

**IMPACT**

From the participating hospitals’ reports, it appears that the Caesarean Section Best Practice Project has been effective in raising awareness of caesarean section rates and the factors that influence them. It has achieved its goal of encouraging maternal/newborn programs to assess their programs and develop plans to address gaps between best practices and their services. It also appears to have reinforced the importance of supportive care in labour and of treating birth as a natural physiological process.

With a relatively small investment per site ($10,000 to $15,000, depending on the level of the maternal/newborn program), the OWHC has been able to encourage a significant amount of activity. The funding provided was used primarily to support professional education for hundreds of professionals (nurses, midwives, and physicians), and to review/revise clinical practice guidelines. As a result, the OWHC can be confident that more professionals are now aware of best practices and more sites have policies and procedures that are consistent with SOGC recommendations. There also appears to be a commitment on the part of most maternal/newborn programs to continuous quality improvement.

The OWHC knows that the project grants have stimulated activity. However, because of the short timeline for the initiatives (approximately nine months), it cannot yet know whether this investment/activity will have a positive, long-term effect on caesarean section rates. More work needs to be done to promote best practices, to monitor the impact of any changes on caesarean section rates, and to identify effective strategies. Ontario hospitals will continue to need systemic support in order to achieve and maintain low caesarean section rates.
I. BACKGROUND

RISING CAESAREAN SECTION RATES

Caesarean sections offer significant health benefits for women when used appropriately, but high caesarean section rates are associated with

- higher rates of maternal morbidity and mortality,
- more maternal psychosocial problems, and
- higher health care costs.

Attaining and Maintaining Best Practices in the Use of Caesarean Sections, Ontario Women’s Health Council, October 2000

Through the late and mid-1990s, Ontario experienced a significant increase in caesarean section rates. In 1997/98, Ontario’s caesarean section rate was 19%2 — up from 17.3% in 1994/95 and markedly higher than the desired rate of 10% to 15%.3 Concerned about this trend and its impact on women’s health, the Minister of Health and Long-Term Care asked the Ontario Women’s Health Council (OWHC) to develop an action plan to reduce inappropriate use of caesarean sections and decrease caesarean section rates in the province.

CAESAREAN SECTION WORKING GROUP

In 1999, the OWHC established a multidisciplinary Caesarean Section Working Group, whose members were experts in maternal and newborn care. Its task was to identify the factors that make it possible for hospitals to attain and maintain low caesarean section rates. The group examined maternal and newborn programs in four “best practice” Ontario hospitals; that is, hospitals that had been able to achieve low caesarean section rates throughout the period when many other hospitals saw their rates rise. Their analysis was summarized in an OWHC report titled Attaining and Maintaining Best Practices in the Use of Caesarean Sections (October 2000). The report describes the critical success factors associated with low caesarean section rates and sets out a series of recommendations for maternal and newborn programs (see page 5 for a summary of the Critical Success Factors). Those recommendations formed the basis for the OWHC Caesarean Best Practices Project, which was designed to promote best practices in the use of caesarean sections, which would eventually lead to a decrease in caesarean section rates in hospitals across the province.

2 That is, 19 caesarean sections for every 100 live births.

3 According to research studies, caesarean sections are necessary and beneficial in only about 10% to 15% of births (as cited in Attaining and Maintaining Best Practices in the Use of Caesarean Sections, Ontario Women’s Health Council, October 2000). However, with recent changes in the Society of Obstetricians and Gynecologists of Canada guidelines for caesarean sections which recommend caesarean sections for all term breech births, this “ideal” percentage may rise slightly.
CAESAREAN SECTION BEST PRACTICES PROJECT

All Ontario hospitals with maternal and newborn programs were eligible to apply for project grants. To qualify for a grant, the hospital initiative had to meet the following criteria:

• focus on implementing “best practices” described in the OWHC report;
• be tailored to the hospital/ community;
• foster the creation of a positive environment for change;
• have interdisciplinary support, including consumers; and
• include a plan to ensure that the findings are accessible and integrated into practice.

The Caesarean Section Best Practices Project, launched in February 2001, offered Ontario hospitals one-time grants to help them implement the best practices and recommendations in the OWHC report.

The goal of the project was to encourage hospitals with maternal and newborn programs to

• assess their current status in relation to the critical success factors and recommendations in the report, and
• develop an action plan to implement “best practices” that will include the method for evaluating the effectiveness of the plan’s strategies.

The project offered grants of $10,000 for sites in Level I hospitals, $12,500 for sites in Level II hospitals, and $15,000 for sites in Level III hospitals. In total, the OWHC provided $622,320 in project grants. Under the terms of the grants, best practices projects began in March 2001 and were to be completed by the end of the 2001 calendar year. However, the deadline was extended to the end of the 2001/2002 fiscal year (March 2002) to accommodate a number of hospitals that required additional time. Each project was required to submit a final report. This document provides an analysis of the projects/reports, and attempts to assess the impact of the Caesarean Section Best Practices Project.

4 Level I: Community hospital providing care for healthy mothers, babies, and families, or those with few immediate complications (estimated to be 85% of mothers). These hospitals have the capacity to deal with emergencies, recognize potential crises, and use the referral and transport system.

Level II: Hospitals that serve births with a gestational age greater than 32 weeks and moderate difficulties likely to resolve within two or three weeks, including providing ventilation for babies with severe respiratory problems for four to six hours (Level II) or up to 48 hours (Advanced Level II).

Level III: Hospitals with specialized neonatal expertise that have the capacity to serve births with a gestational age of 32 weeks or less, and provide high-risk intensive care (Level III) or life support (modified Level III) to premature and seriously ill babies.
II. PROJECT PARTICIPATION AND SCOPE

PARTICIPATION RATES

A total of 49 hospitals representing 64 sites\(^5\) received grants and participated in the Caesarean Section Best Practices Project. Of those, 28 were Level I sites, 27 were Level II sites, and nine were Level III sites. The participating sites represent approximately 39% of maternal and newborn programs in Ontario and account for between 94,000 and 97,000 births per year\(^6\) or approximately 72% to 75%\(^7\) of Ontario’s newborns born in hospital. The extent of participation alone ensures that a significant proportion of the province’s maternal and newborn programs are now more aware of caesarean section rates and the factors that influence them.

CONTEXT FOR THE PROJECT

Many of the hospitals that participated report that they have well-developed maternal and newborn programs and are attempting to implement best practices in their programs. For example, a significant proportion stated that they were already committed to providing family-centred care, and one-to-one supportive care during labour. At least 18 of the 49 hospitals already have or are building labour, birth, recovery rooms and/or labour, birth, recovery, postpartum rooms.\(^8\) Most reported that they already had multidisciplinary maternal and newborn teams responsible for strengthening and improving programs — although they were not necessarily focused on reducing caesarean section rates. Many claimed to have established databases and to be tracking caesarean section trends. Some reported on already completed assessments and identified specific areas with potential for improvement. In those hospitals, the OWHC grants helped reinforce the importance of best practices in the use of caesarean sections and allowed the hospitals to build on existing efforts. In others, it encouraged hospitals to examine their caesarean section practices and make appropriate use of caesarean sections a priority.

SCOPE OF THE INITIATIVES

In its original request for grant applications, the OWHC set out examples of possible projects, such as hosting a workshop or planning session, establishing a multidisciplinary team or committee, conducting focus groups or surveys with consumers, or coordinating a site visit to one of the province’s “best practice” hospitals.

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\(^5\) Twelve of the initiatives involved two or more sites.

\(^6\) Based on the number of births per year reported by participating hospitals at the time of application in 2001.

\(^7\) Based on Ministry of Health and Long-Term Care hospital birth volume data for year 2000.

\(^8\) Eighteen of the submissions noted that they had labour, birth, recovery (LBR) and/or labour, birth, recovery, postpartum (LBRP) rooms. Other hospitals may also have this type of accommodation, but did not mention it in their proposals.
The scope of the initiatives undertaken for the project varied greatly across the sites. A relatively small number of hospitals confined themselves to limited projects, such as conducting a one-time workshop or using the funding to pay for staff to take training courses. Some focused primarily on assessment and planning — as set out in the OWHC’s goals for the project. Some sites approached the initiative as a research project, developing a hypothesis, establishing a methodology to test the hypothesis, as well as ways to evaluate the impact of any changes in practice. Others took a more practical approach, using the funding to purchase supportive labour aids or established training courses that were not being covered through existing hospital budgets. However, a large proportion also used the funding to take steps (in addition to training) designed to implement or strengthen best practices, focusing on one or more areas identified during this or a pre-existing assessment. In a number of cases, the OWHC funding was augmented with funding/resources (i.e., staff time) from the hospital.

Some initiatives focused on one specific factor that may affect caesarean section rates, such as one-to-one labour support or induction practices. Others initiated activities related to several of the critical success factors described in the OWHC report.

Several hospitals involved in restructuring or part of a referral network, used the funding to help develop consistent policies and practices across all sites. For example, one hospital corporation, which operates one Level II and two Level I sites, used the funding to do a detailed analysis and comparison of practices in each site and outline the steps required to ensure consistency. As part of the project, it developed new corporation-wide policies on induction, augmentation of labour, and fetal health surveillance, as well as a standard patient profile and a plan for future directions. The two campuses or sites of another hospital corporation also highlighted the importance of developing consistent policies and procedures where possible. They have taken steps to review practices related to Intermittent Auscultation (IA), and have plans to look at other procedures in the future.

The three sites that make up another organization (one Level II and two Level I) worked together to streamline the transfer process between sites. This involved developing a common Labour Record, a Transfer Checklist, a Summary of Birth form, and Maternal Transfer form. While these activities were not caesarean specific, they did address community needs, improve communication between health care providers, promote more consistent care, and provide data that can be used to start to build a regional perinatal database — all of which contribute to the appropriate use of caesarean sections. Efficient, effective transfer protocols also have the potential to ensure that women receive appropriate care.

**Leadership**

Most of the initiatives were led or guided by a multidisciplinary team. Only one initiative hired consultants to assist with their projects, although a number used some of their funding to pay experts in the field to provide advice or education. Two sites recruited either a nurse or nursing student to do specific assessment tasks. Others identified key individuals within the maternal and newborn program to provide leadership or coordinate the activities. The leaders were usually nurses or childbirth educators, although in one case it was a midwife and, in another, a physician. In this way, the project appeared to provide opportunities for career development, and helped maternal and newborn programs develop and nurture leaders, particularly among nursing staff.

**Nature of the Reporting**

The reports submitted by the hospitals were as varied as their initiatives. Some were brief summaries of the activities undertaken and completed. Others were detailed descriptions of methodology, findings, and results. In several cases, the hospitals reported on the status of each of the OWHC critical success factors in their sites and their plans to address any weaknesses.
The variation was due in part to the fact that there were no specific reporting requirements, beyond the general requirement to report on the approved project activities. The variability of the reporting information makes it difficult to compare initiatives or draw conclusions about them. For example, 37 reported investing in some form of professional education designed to promote best practices, but only 19 reported making changes to existing policies and practices. It is quite possible that more sites have made or will make changes in policies and practices based on newly acquired information and skill from their educational activities; however, their reports did not reflect these changes.

**POTENTIAL FOR MEASUREMENT AND EVALUATION**

The ultimate goal of the Caesarean Section Best Practices Project was to reduce inappropriate use of caesarean sections. While a number of the hospitals listed “reducing the caesarean section rate” as an objective, this was not consistent across all sites. Some set more specific goals towards increasing practices that were likely to reduce caesarean delivery rates, such as “increasing the proportion of time that nurses spend with labouring women to 80%” and “increasing the vaginal birth after caesarean (VBAC) attempt rate from 47% to 60%.” However, each site’s ability to assess impact was limited by the timing of the initiatives. Given the short-term nature of the initiatives (average: nine months), it was difficult for some sites to fully implement their proposals in that time frame or have changes in place long enough to be able to measure and report a sustainable change.

Because of the limitation of the timing and the type of information provided in the reports, it is impossible for the OWHC to develop any quantitative measure of the impact of the Caesarean Best Practices Project as a whole — although some individual hospitals may be able to track the impact of changes on their own caesarean section rate or other measures over time. Six sites did report caesarean section rates before and after the initiative. Of those, four reported a decrease. However, it is difficult to determine whether the change was due to the initiative or would be sustainable over time.

Instead of focusing on quantitative measures, the OWHC analyzed the initiatives and their reports for activities and approaches that have the potential to create the attitude, organization, knowledge and information, connections, and ability to manage change essential to attaining and maintaining a low caesarean section rate.

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9 Only 25 of the 49 hospitals that received project grants provided information on their pre-project/baseline caesarean section rates. Even hospitals that did list “a reduction in the caesarean section rate” as an objective did not always provide a current or baseline rate measure.
III. Focus of the Best Practice Initiatives

As noted earlier, some hospitals chose to focus on one or more particular area(s) or critical success factor(s). The most common areas of focus were as follows: supportive care in labour, fetal heart surveillance, induction practices, vaginal birth after caesarean (VBAC), admission and triage practices, and physical comfort and pain relief. Hospitals also used a number of different strategies to promote or improve best practices, including: assessment, professional education, networking with other maternal and newborn programs, policy/guideline development, changes or enhancements to their databases, consumer education, the development of multidisciplinary teams or groups, the purchase of aids to support best practices and efforts to involve consumers. The table on this page summarizes the number of hospitals that focused on a particular activity/factor, and the number that used each type of strategy.

The strong focus on assessment likely reflects the OWHC direction to use the funding to “assess your current status and develop an action plan.” However, other patterns and trends, such as the high level of activity related to supportive care in labour, fetal monitoring, and induction, may indicate that these are the areas where maternal and newborn programs already perceive gaps between current and best practices. They may also reflect the high proportion of projects that were nursing-led: they are domains of nursing practice.

This chapter looks first at the activities that provide the knowledge and information required to strengthen maternal and newborn care, such as

- assessment and
- databases.

It then examines activities designed to promote the philosophy of birth as a normal physiological process, including

- attitudes towards labour and delivery,
- admission and triage practices, and
- physical comfort and pain relief.

Next, this chapter summarizes the efforts hospitals made to provide evidence-based care, specifically in the areas of

- supportive care in labour,
- fetal heart surveillance,
- induction, and
- VBAC.

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<thead>
<tr>
<th>Activity/Critical Success Factor</th>
<th>Number of Initiatives</th>
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<tbody>
<tr>
<td>supportive care in labour</td>
<td>20</td>
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<tr>
<td>fetal heart surveillance</td>
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<tr>
<td>induction</td>
<td>14</td>
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<td>VBAC</td>
<td>9</td>
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<tr>
<td>admission/triage practices</td>
<td>7</td>
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<tr>
<td>physical comfort/pain relief</td>
<td>6</td>
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<table>
<thead>
<tr>
<th>Strategies Hospitals Used</th>
<th>Number of Initiatives</th>
</tr>
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<tr>
<td>assessment</td>
<td>37</td>
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<tr>
<td>professional education</td>
<td>37</td>
</tr>
<tr>
<td>networking with other programs/sites</td>
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<tr>
<td>changes in policies/practices</td>
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</tr>
<tr>
<td>databases</td>
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<tr>
<td>consumer education</td>
<td>10</td>
</tr>
<tr>
<td>develop new teams</td>
<td>10</td>
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<tr>
<td>purchase equipment/resources</td>
<td>10</td>
</tr>
<tr>
<td>consumer involvement</td>
<td>7</td>
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</tbody>
</table>
Finally, this chapter examines the initiatives designed to strengthen the organization and create an environment that supports appropriate utilization of caesarean sections and can manage change in the areas of

- professional education (timely access to skilled professionals),
- networking and continuity of care,
- leadership and multidisciplinary teamwork,
- consumer education/involvement, and
- continuous quality improvement.

1. KNOWLEDGE AND INFORMATION

Assessment

Thirty-seven of the 49 initiatives reported conducting some type of assessment as part of their initiative. Other sites noted that their proposal was based on assessments that had already been done. Some did not make direct reference to assessment, but undertook initiatives that addressed specific problems that would appear to have been identified through some form of assessment.

Type of Assessment. The type and depth of assessment varied significantly. Some were in-depth assessments, using a number of different assessment tools (e.g., chart review, staff survey, patient satisfaction surveys), while others were less rigorous. The most common assessment approaches were as follows:

- chart reviews — in some cases, reviews of the medical records of all caesarean sections over a certain period of time, and in others a review of other interventions, such as induction, were completed in order to assess whether the intervention was being used appropriately and whether it was resulting in a higher than average rate of caesarean sections;
- a review of the program’s policies, procedures, and guidelines to determine whether they reflected the Society of Obstetricians and Gynecologists of Canada (SOGC) and other evidence-based practice guidelines;
- staff surveys or focus groups;
- a review of the program’s caesarean section-related statistics — in at least one case, the site compared its statistics with those of another comparable site;
- patient satisfaction surveys — in some cases, questions related to supportive care in labour and other factors that influence caesarean section rates were added to existing surveys; in others, the site developed a specific survey tool; and
- a review of the program’s performance on the critical success factors outlined in the OWHC report.

Some sites used the assessment process to test a particular hypothesis. For example, one hospital hypothesized that the same risk factors that contribute to the higher than average rates of chronic illness in the community (28% higher than the rest of Ontario) would also account for higher than average caesarean section rates. However, the chart review failed to support this hypothesis.

Findings. Through the reviews of medical records, some sites identified problems or gaps in documentation. For example, some charts did not provide enough information for reviewers to determine whether care providers adhered to best practice guidelines. As a result, a number of sites have recommended or introduced new forms or standards for documentation.

In virtually all cases where documentation was adequate, the reviews of medical records did not reveal any significant variance between the program’s practice and the Society of Obstetricians and Gynecologists of Canada (SOGC) recommendations. In most cases, the decision to perform a caesarean section appeared to reflect SOGC guidelines and to be clinically justified. This indicates that there may not be any “easy” answers or quick fixes to
reducing caesarean section rates, reinforcing the OWHC finding that system-wide efforts are required to affect caesarean section rates. Some sites identified other factors that may influence their caesarean section rates (see sidebar). A couple of sites hypothesized that their higher than average caesarean section rates may be justified by the nature of the population they serve. For example, one site noted that the lack of a surgeon in a nearby community means that more at-risk women are referred to their site for childbirth. However, there is no evidence to support this view. Some Level III sites suggested that the greater proportion of at-risk perinatal cases referred to them may influence their rates. However, one of the best practice sites featured in Attaining and Maintaining Best Practices in the Use of Caesarean Sections was a Level III program, and it was able to maintain low rates with its case mix.

Through the review of clinical practice guidelines, a number of sites identified policies and procedures that were not consistent with SOGC guidelines, and at least 20 sites developed and/or adopted new practice guidelines — particularly in the area of fetal health surveillance, supportive care in labour, and induction.

Through the staff surveys and focus groups, sites were able to identify staff knowledge, attitudes, and learning needs.

Through the patient satisfaction surveys, hospitals were able to identify common sources of dissatisfaction among women, such as the physical accommodation (particularly in sites where the physical environment did not allow enough space for family members or where women had to be moved from birthing rooms because of demand). However, in general, most sites that used patient satisfaction measures scored extremely high — both before and after their best practice initiatives.

In most initiatives that undertook an assessment, their assessment resulted in an action plan to address any gaps and promote best practices.

Hospital Opinion:
Other Factors Hospitals Suggest May Influence Caesarean Section Rates

- consumers’ unrealistic expectations of the birthing process (e.g., length of time the woman’s physician will be present, a pain-free delivery)
- low consumer acceptance of vaginal birth after caesarean
- population-specific factors (e.g., it was suggested by some sites that teen mothers tend to have poor prenatal care and poor preparation for labour, or that aboriginal populations tend to have a high frequency of diabetes and large-for-gestational-age infants)
- shortages of physicians and nurses — particularly in rural and remote communities
- human resource pressures that contribute to a tendency to push for delivery before midnight — because staff have to work the next day

NOTE: These are the opinions of the hospitals only and do not necessarily reflect research evidence. In some cases, they may highlight the need for more education.

Databases

The OWHC report Attaining and Maintaining Best Practices in the Use of Caesarean Sections (October 2000) recommended that maternal/newborn programs “develop a current, accurate, comprehensive, interactive database which is readily accessible to team members … [and] capable of supplying timely and easily interpreted reports on caesarean section rates.”

Eighteen of the site reports focused on databases. A significant proportion already had interactive databases in place. Others are in the process of developing them. In general, maternal/newborn programs recognize the value of accurate, timely information. As one hospital noted, an effective database “has the potential to change practice and impact on caesarean section rates.”
There is a growing trend to data entry at the bedside, with workstations in patient rooms. There is also a growing trend to have all members of the team involved in a woman’s care (i.e., attending obstetrician, pediatrician, family physician, midwife, anesthetist, nursing staff) enter data into a computerized birth record summary (in some sites, the practice had previously been for the responsible care provider to complete the summary). Many sites report that they have revised their labour and birth record in order to be able to track factors that may influence caesarean section rates (e.g., supportive care strategies used, methods of induction, epidural rate, complications, VBAC rates, high-risk populations). The changes are designed to address gaps in data, ensure best practices are followed, and resolve the documentation issues identified during assessments.

There is also a growing trend to shared or regional databases. For example, London has developed a city-wide obstetrical database. Reports are produced monthly and discussed in obstetrical meetings. Almost all sites in Southwestern Ontario noted that they are committed to participating in the Southwestern Ontario Regional Perinatal Database, while most sites in Eastern and Southeastern Ontario are part of the Perinatal Partnership Program of Eastern and Southeastern Ontario (PPPESO).10 The advantages of a regional database include the standardization of data collection and reporting across sites, the ability to generate and compare statistics both locally and regionally, the opportunities for networking, and potential cost savings for the various sites involved.

To improve the standard and consistency of documentation and data extraction, PPPESO is establishing a committee to develop a common labour and birth flowchart for the regions, and is considering developing clinical indicators that might be used locally and regionally to help interpret and understand caesarean section rates.

Sites are at different stages of development with the databases. Some of the other strategies that sites are using to improve their data include:

- training key people to extract data from the database and distribute it to front-line providers;
- computerizing data collection that is now done by hand; and
- developing an electronic delivery room register that allows staff to collect and edit information on all deliveries at the hospital.

2. PHILOSOPHY OF BIRTH
AS A NORMAL PHYSIOLOGICAL PROCESS

Attitudes Towards Labour and Delivery

The best practice literature acknowledges that attitudes, values, and beliefs influence caesarean section rates.11 Most sites reported that they either had or supported a philosophy of birth as a normal physiological process. A small number of sites used the OWHC Report, Attaining and Maintaining Best Practices in the Use of Caesarean Sections (October 2000) to develop a philosophy statement that reflected these values.

For example, one hospital established a philosophy team, organized a visioning exercise, developed a new philosophy, and then invited consumers, staff, and the community to an unveiling exercise that helped raise awareness of the new philosophy.

In some initiatives, the philosophy was developed jointly with other sites in the same hospital corporation, or

“Childbirth is a normal, healthy process. The role of the Perinatal Team is to support and promote the natural process, focusing on the well-being of the family unit. Women and their families will be supported in their right to quality health care services and their ability to make appropriate decisions about their own care. We will support women and their families in making decisions that are medically safe, recognizing and respecting their unique social and spiritual needs.”

Peterborough Regional Health Centre

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10 As of early 2002, this database was reported to be under review. It has the potential to become an on-line data collection system available to serve the province.

with other sites in the region — as a means of improving continuity and consistency of care. For example, one hospital corporation had identified a number of challenges related to transferring women from Level I sites to the Level II site (e.g., anxiety over the unknown, increased fear of complications, change in most responsible physician/health care team, different models of care). The joint philosophy along with the development of standard transfer forms, a common customer feedback form, and sharing of expertise between the sites (each hospital takes responsibility for providing in-service training on different topics and coordinating education sessions for all sites), was designed to help reduce the impact of these challenges and ensure greater continuity of care (e.g., same commitment to supportive care in labour) across all sites.

While most sites report they have a philosophy of birth as a natural physiological process, only a small number attempted to determine whether the philosophy is reflected in staff attitudes and practices. A staff survey conducted in one site noted that both nursing and medical staff strongly agreed with the statement that “birth is a normal physiological process,” but they also strongly agreed with the statement that “the birthing unit is a high-risk area” — despite the fact that 80% of births at that site are low-risk. These types of conflicting views may inadvertently affect the care that women receive and the decisions that are made about interventions, and this site is now making efforts to address this issue.

This particular survey also identified that the participating nurses may undervalue their impact. In the survey, physicians ranked nurses’ ability to influence caesarean section rates significantly higher than the nurses did.

As part of its survey of staff practices, one hospital was able to document that nursing staff were spending more time than they estimated in the room with labouring women. (Nurses had estimated that they were in the room between 50% and 75% of the time during active labour, but an in-room tracking tool indicated that they were in the room 75% of the time.) However, this survey also indicated that nurses needed more education about the impact supportive care has on patient outcomes and the importance of quality time spent with patients.

Another hospital noted that developing positive attitudes towards childbirth and pride in a low caesarean rate is not a one-time initiative. In the past, the site had low caesarean section rates (13%) and physicians could recall the pride the program took in those rates. However, the assessment for this initiative revealed that many staff members did not know the site’s current caesarean section rate or that it had increased. The site concluded that keeping the philosophy and pride alive requires ongoing effort.

**Triage/Timing of Admission**

In its assessment of caesarean sections, one hospital determined that women admitted prior to 4cm cervical dilatation had a higher rate of labour augmentation, epidural anesthesia, and caesarean section than those admitted later. It appears that managing admissions effectively can have a positive impact on caesarean section rates. Some sites have already established strict admission criteria designed to reduce the number of women admitted to labour and delivery rooms before they are in active labour. At least seven others are making changes to their admission and triage procedures that they believe could have a positive effect on caesarean section rates.
These changes include the following:

- reviewing triage and admissions criteria and developing guidelines;
- developing a flow chart to guide the triage/admission process;
- posting admission criteria for both staff and consumers;
- providing an early labour lounge in a separate part of the hospital for women in early stages of labour;
- equipping early labour lounges appropriately (e.g., comfortable chairs, recliners, television);
- managing staffing to support triage areas (i.e., organizing a consistent workload for staff in the triage/early labour area to ensure it is staffed at all times);
- establishing medical directives that will allow nursing staff to order blood work and discharge non-labouring patients — which will keep patients from waiting long periods of time in triage;
- developing an admission audit policy;
- developing a policy for booking and setting priorities for inductions (discussed in more detail in the section on inductions on page 17); and
- changing procedures for outpatient inductions from prostin vaginal gel to Cervidil in order to decrease non-labouring admissions to Labour and Delivery, and extend length of time between Cervidil doses, in the hope that women will go into active labour, decreasing the need for interventions.

There were no data from the sites to indicate whether these changes were effective in reducing early admission to labour and delivery rooms, or whether they had an impact on caesarean section rates.

**Measures for Physical Comfort and Pain Relief**

The OWHC report *Attaining and Maintaining Best Practices in the Use of Caesarean Sections* (October 2000) identified effective measures for physical comfort and pain relief during labour as an integral part of the philosophy of birth as a normal physiological process, one of the critical success factors for low caesarean section rates.

At some sites, pain relief is a critical issue because the maternal/newborn program does not have 24-hour access to an anaesthesiologist. One site noted that it expects its plan to address pain management to improve families’ patience during long labour and attract more families to the hospital. Another site identified its high rate of epidural usage as an issue and is planning a program to reduce it.

A number of sites undertook initiatives designed to improve physical comfort and pain relief during labour. Some looked at non-pharmacological pain relief, while others focused more on pharmacologic pain management.

The non-pharmacological measures included

- music therapy,
- touch therapy, and
- water immersion/hydrotherapy.

When one hospital introduced hydrotherapy in two of four rooms, the evaluation indicated no change in epidural rate. However, the time from admission to epidural is longer, and the program has documented a modest reduction in narcotic use. Women who have access to the tubs also reported a higher level of satisfaction with the birthing experience and higher level of maternal confidence, while those who did not have access to the tubs reported a higher level of dissatisfaction with the birthing experience.
The pharmacologic pain measures introduced or investigated included the following:

- promoting the anaesthesiologist’s early involvement in care planning to facilitate arrangements for effective pain management;
- arranging 24-hour access to epidurals whenever possible;
- educating nurses about the options available;
- evaluating the feasibility of adding IV push narcotic injections by nurses during labour; and
- expanding and supporting implementation of analgesic options, such as nitronox.

3. EVIDENCE-BASED CARE

**One to One Labour Support**

Close continuous labour support is defined as the “attendance by a caregiver to a woman during labour. The presence is timely and covers 80–90% of the time when a woman is in active labour.”

Best practice literature reinforces the importance of supportive care, but indicates that nurses often do not fill this role successfully.\(^{12}\)\(^{13}\)

Given this, it is interesting to note that over half the project initiatives focused on supportive labour care, and changes required to support this level/type of care. In addition, at least 16 sites pursued activities specifically related to fetal health surveillance, and six focused on measures for physical comfort and pain relief. These areas may have been chosen because sites identified the greatest gaps between best practices and their policies, or they saw the greatest potential to influence caesarean section rates. They may also have been chosen because they are domains of nursing practice, and many of the initiatives were nurse-led. The most common strategy to promote one-to-one supportive care was education. Sites either invited organizations such as PPPESO to conduct a workshop on site, or they sent staff to workshops or courses. A significant number used the initiative to train one or two individuals in the program, who would then be able to teach and mentor others. In several sites, the one-to-one supportive care education was provided by a midwife or doula. Another site also provided resources that could be used to provide labour education to lay people.

While some sites arranged for a one-time workshop only, others also made changes to their nurse orientation and continuing education programs to ensure that one-to-one supportive care becomes an integral part of the program. Some sites plan to offer annual training sessions in order to reinforce skills and keep staff up to date with any new developments.

Supportive care in labour education was aimed primarily at obstetrical nurses already employed in the program. However, some sites reported opening the training to nursing and midwifery students and to nurses working in prenatal clinics and other community settings. Two sites made a point of including physicians in order to develop physician champions of one-to-one supportive care. One site also provided resources that could be used to provide labour education to lay people.

Most supportive care education sessions focused primarily on the second stage of labour, and included topics such as: the benefits of supportive care, women’s expectations, nurses’ perceptions, comfort measures during labour, encouragement, reassurance instructions, advocacy, positions for back labour, continuous physical presence support strategies (birthing ball, counter pressure, massage), options for clients in labour (e.g., aromatherapy, labour positions, massage, and second stage positioning options), pushing techniques and positions, and the use of labour support tools. (Sites reported purchasing the following items designed to promote supportive care: birthing balls, birthing stools, massagers, videos on supportive care techniques, posters about patient positioning during labour, hot/cold packs, rocking chairs, CD players, TVs with VCRs.)


\(^{13}\)Gagnon, A., & Waghorn, F. Supportive Care by Maternity Nurses: A Work Sampling Study in an Intrapartum Unit. BIRTH Vol 23:1. March 1996.
In addition to education, sites reported using the following strategies to promote one-to-one supportive care in labour:

- hiring more nurses;
- identifying nurses who have problems providing supportive care, counseling them, and providing extra education and mentoring;
- providing textbooks and articles on labour support;
- providing a learning package on physical comfort and pain relief;
- developing a care map for management of a labouring patient;
- promoting the use of partograms to follow/document progress during labour, and sharing the partogram with other sites if patients have to be transferred;
- reviewing the set up of the labour/delivery/recovery rooms in order to promote supportive care (e.g., exploring adding workstations with comfortable seating and lighting that would allow the nurse to remain in the room continuously without interfering unnecessarily with the patient/partner dynamic);
- hanging caddies containing supportive labour tools in each birthing room; and
- providing a wider range of flexible physical comfort and pain relief techniques, such as equipping rooms with tubs and showers, introducing walking epidurals and patient controlled epidurals that encourage mobility during labour, and making arrangements for a 24-hour epidural service (see section on physical comfort and pain relief on page 13).

Some sites made an effort to evaluate the impact of the education programs and other changes on patient care. One modified the patient comment card to include a question about how much time the primary nurse spent in the room during labour. Another created a graphic tool that nurses now use routinely to document the amount of time they are in the room.

One site reported verbal feedback that best practices are being integrated. Others received positive staff evaluations of the education itself, while one had staff complete self-assessments that indicated the nurses are using their new knowledge and skills. One site assessed the nurses’ attitudes to supportive labour care after the education, and plans to resurvey them to see whether they maintain the positive attitudes and greater understanding of their role over time.

One site asked obstetricians and supportive care mentors to assess the impact of the education on nursing care, and received mixed views. The physicians and mentors seemed to feel that patients were now more willing to use alternative methods and seemed to have more confidence in their ability to cope. They also thought supportive tools were being used more, but they were not certain that nursing practice had changed significantly. In one site, supervisors observed the nurses most willing to use the new techniques and equipment, and asked them to provide leadership by talking about their experience and persuading other nurses to try the new approaches.

One site did a pre- and post-patient satisfaction survey, and reported no statistically significant difference in the response after the training. However, the pre-education results were already extremely high at this site.

**Hospital Opinion:**

Factors Identified by Project Sites that may Inhibit One-to-One Supportive Care in Labour

- the physical environment
- shortage of nurses
- lack of dedicated obstetrical nurses, particularly in small or rural hospitals
- unpredictable peaks of activity in the unit
- knowledge/comfort level of the nurse
- lack of equipment
- patients’ expectations
- lack of access to an anaesthesiologist (i.e., in sites with only one anaesthesiologist who may have to go into surgery, patients take an epidural when the physician is available, rather than when they need pain relief)

NOTE: These are the opinions of the hospitals only and do not necessarily reflect research evidence. In some cases, they may highlight the need for education.
**Fetal Health Surveillance**

Fetal health surveillance is an integral part of supportive labour care. It appears to be the area where practices and policies in maternal/newborn programs are most likely to differ from SOGC best practice guidelines.

Improving practice in this area appears to be particularly challenging because programs are trying to change an approach that has been in place for many years. As one site report stated, “We are still relying on the use of continuous electronic fetal monitoring (EFM) for management of low-risk patients, despite SOGC guidelines … most physicians and nurses have been brought up with EFM and are not comfortable with one-to-one supportive nursing care instead. The change requires re-education, physical environment changes, and encouragement to change.” The site is now using this type of three-pronged strategy to promote best practice.

Most of the sites that provided education on supportive care in labour also provided education on fetal health surveillance. Some sites focused on fetal health surveillance alone. A significant number used the PPESO course because it incorporated the SOGC guidelines. In a number of sites, one or two staff took an instructors’ course in fetal health surveillance in labour, so that their institution will have the capacity to train all staff. Most of the education was in the form of a workshop. However, some sites provided one-to-one mentoring at the bedside.

Almost half the initiatives reported developing new guidelines for fetal health surveillance, designed to promote the use of intermittent auscultation in low-risk women.

Other strategies sites used to promote best practice in fetal health surveillance included:

- making changes to the physical environment, such as putting a comfortable chair in the room and allowing the nurse to chart at the bedside;
- introducing policies and procedures on fetal scalp sampling;
- purchasing hand-held dopplers and placing them in the birthing rooms;
- providing copies of resources, such as *Fetal Health Surveillance in Labour* developed by the Canadian Perinatal Regionalization Coalition, SOGC, and Perinatal Education;
- offering incentives to nurses interested in attaining their perinatal nursing certificate;
- changing hospital policies that require EFM admission strips for patients in triage; and
- communicating changes to physicians and encouraging them to support the changes.

As with supportive care in labour, it is difficult for sites to assess the impact of the education and other changes on practice or on caesarean section rates over the course of the project. Some sites reported an increase in the use of IA. In the month after the training on fetal health surveillance, one site was able to document a slight decrease in EFM and a slight decrease in the epidural rate (from 39% to 32%). However, the report noted that the decrease might not necessarily be attributed to the educational intervention.

One site reported that before the initiative 90% to 95% of low-risk labouring women were being monitored electronically. It believes the rate has dropped since the education, but plans to use retrospective studies to track any changes.

At one hospital, a midwife provided mentoring and support in the use of IA. Before the midwife intervention, only 53% of the women who met the criteria for IA received IA; after the intervention, 71% received IA. However, the hospital report notes that, in the majority of cases, IA lasted less than one hour and was stopped for a number of clinical reasons including augmentation of labour, another nurse assuming care, and the initiation of epidural...
anaesthesia. The evaluation also indicated that the education had minimal impact; IA was used inappropriately in 4.2% of cases before the education and 3.7% of cases after.

**Hospital Opinion:**
Factors Identified by Projects that may Limit the Use of Intermittent Auscultation in Low-Risk Births
- anxiety over potential litigation
- lack of trust in the experience/ability of staff doing the monitoring
- lack of support from physicians
- hospital policies that require EFM
- consumer perceptions (i.e., some mothers may perceive EFM as better care) and lack of patient education about the benefits of IA
- shortage of staff
- lack of equipment

Benefits of IA
Sites identified the following benefits of Intermittent Auscultation
- greater mobility and comfort
- ability to change positions more easily
- decreased anxiety for women
- assurance of one-to-one nursing care
- more hands-on experience for the nurse — provides opportunity to facilitate a natural labour

**INDUCTION**

About 14 sites used the project to examine or make changes to their induction practices in order to ensure they reflect best practices.

At least two sites used their initiative to test the hypothesis that their induction rate was contributing to their higher than average caesarean section rates. They wanted to determine whether they were following SOGC guidelines for inductions, or whether stricter surveillance of induction practices was required. In both cases, the sites were adhering to the guidelines. However, one site identified weaknesses in the documentation: the majority of charts did not document the reasons for induction, and those that did document medical concerns did not clearly state the link between the medical concern and the need for an intervention in pregnancy. As a result of the assessment, the program addressed its documentation issues by developing new forms designed to record information on cervical status and reasons for intervention, and recommending the use of partograms.

The chart review at this site also revealed a tendency to induce women too early (i.e., at their due date, rather than 41 weeks), so changes have been made in the institution’s clinical practice guidelines. Other sites also reported revising their induction policy to limit access for low-risk healthy pregnancies prior to 41 weeks.

“Labour induction is an active intervention with potential risks for the mother and fetus. In the nullipara, overall, induction is associated with twice the risk of caesarean section as compared with spontaneous labour. Therefore, elective induction in the absence of maternal or fetal indications should not be undertaken.”

SOGC Guidelines, October 1996
One hospital used its funding from the OWHC to undertake an initiative designed to reduce the caesarean section rate for women undergoing induced labour, and to monitor/increase patient understanding, participation, and satisfaction with the decision to induce. The site’s hypothesis was that healthy pregnancies with vertex presentation induced between 37 weeks and one day and 41 weeks and zero days would result in higher caesarean section rates than in women who experience spontaneous labour. The analysis showed that, when independent variables are held constant, the odds of having a caesarean section are 50% greater for women whose labour is induced.

The researchers at the site expected to see delays in inducing labour for low-risk pregnancies, but that was not the case. This finding led to an internal review of practices associated with wait list management, and the introduction of a standardized induction protocol.

The introduction of the induction protocol has had no negative effects on birth outcomes, and may lead to policy changes that would restrict the conditions under which the hospital would grant elective inductions. The site plans to enhance its ability to monitor caesarean section rates and fetal morbidity by class of induction, measure its results against city-wide benchmarks, and eventually use the data to establish regional benchmarks.

The research also indicated that patient satisfaction with the birth experience in induced labour is significantly associated with helpfulness of hospital staff and the support they receive in the decision making process. Strategies to improve the birth experience include: patient education/consultation, clear communication in the event of a delay, effective physical comfort and pain relief, greater birth centre capacity, better admission procedures, and monitoring labour progression.

One hospital conducted a six-month trial of a standardized induction protocol and the use of patient controlled analgesia (intravenous Fentanyl). In the trial, 49% of patients who were induced used Fentanyl and 85% of them evaluated their experience as good or better, 64% as excellent. Of 16 inductions performed over the six months, 15 resulted in vaginal deliveries.

Other sites examined their induction practices because of the impact that inductions can have on workload, congestion in the birthing unit, staffing, the ability to provide one-to-one supportive care, and outcomes for both mother and infant. As a result of its analysis, one hospital implemented a 24-hour on-call obstetrician and developed a procedure to determine priority for labour and delivery procedures. Booked inductions are coded for risk and entered in a logbook. The obstetrician on call, charge nurse, and maternal fetal medicine physician on call review the list and make decisions about priorities. With this procedure, decisions are made more quickly. Another hospital has also introduced an induction booking form designed to limit the total number of elective inductions to four per day. Physicians have to provide the reason for the induction and assign a priority code, and the charge nurse schedules the inductions and calls patients to confirm.

Other strategies that sites have introduced to manage inductions include:

- developing consumer education materials to ensure that women are fully informed about the risks;
- raising awareness among staff about association between inductions and caesarean sections, and the clinical guidelines for inductions; and
- reviewing induction rates monthly.

**Vaginal Birth After Caesarean (VBAC)**

Nine sites looked specifically at VBAC rates and tried to identify ways to improve both the VBAC attempt rate and success rates — in line with SOGC guidelines. One site reviewed and changed other guidelines but deferred changes to its VBAC guidelines because “attitudes and evidence have been in flux over the past year.”
One site is in the process of conducting research on consumers’ attitudes to VBAC, but the research was not complete when the report was submitted. Most of the initiatives focused on consumer attitudes to VBAC.

For example, one hospital reported that repeat caesarean sections account for more than one-third of all its caesarean sections. Prenatal programs in the community that offered classes for women planning VBACs were not well attended, so the site ran a one-year pilot program in which women who had had a previous caesarean section were offered one-to-one consultation with a birthing unit nurse/childbirth educator. During the session, the women would discuss their previous birth experience and the benefits/risks of VBAC or elective repeat caesarean section. They were given information that recommends VBAC in the absence of contraindications. As part of the project, the educator was available by phone to answer any questions after the consultation. She also communicated with on-call obstetricians about the project, raised awareness in the program, and acted as a resource to other nurses.

Evaluation of the consultation services indicated that, although 100% of the women had discussed birth options with a physician, more than 90% indicated they did not have enough information to make an informed choice before the consultation. The pilot project also demonstrated the potential for this type of education program to optimize VBAC rates. Among women in the consultation group, VBAC attempt rates increased as did overall VBAC rates. Based on these results, the VBAC consultation is now a regular service. Other strategies that sites used to promote VBAC included

- providing classes on the benefits/risk of VBAC as part of prenatal education,
- developing new VBAC consent forms,
- identifying appropriate venues for providing information on VBAC, and
- disseminating educational materials about VBAC to appropriate care providers.

### Hospital Opinion:

Factors Identified by Projects that may Influence VBAC Rates

- consumer knowledge and understanding of risk
- the influence of the physician
- the availability of a neonatal ICU and on-site pediatrician

**NOTE:** These are the opinions of the hospitals only and do not necessarily reflect research evidence. In some cases, they may highlight the need for education.

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**4. Organization and Ability to Manage Change**

In their initiatives, the sites used a number of different strategies designed to strengthen their organizations and create an environment that would increase their ability to implement best practices and manage change.

**Professional Education**

About 37 of the initiatives used some form of professional education or training. As a result of these efforts, hundreds of health care providers received education focused on caesarean section best practices.¹⁴

As noted earlier, a significant amount of the training was focused on supportive care in labour and fetal health surveillance. In addition, nine sites invested in the SOGC ALARM (Advanced Labour and Risk Management) courses, and some used the funding to purchase MORE (Managing Obstetrical Risk Effectively) training.

While sites can document that training was provided and that staff attended, it is more difficult to assess the impact that education had or will continue to have on practice — although some sites did use pre- and post-education surveys of practice in order to assess impact.

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¹⁴ A number of projects reported the actual number of people who received training (a total of 441) while others reported in terms of percentages (e.g., 98% or 100% of nursing staff).
As one hospital noted in its report, evidence-based practice “is an approach to nursing that de-emphasizes ritual, opinions, and traditions as a basis for this practice.” The site acknowledged that the successful process of de-emphasizing ritual, opinions, and traditions often requires more than education.

One best practice education initiative, which was led by a family physician, was designed specifically to assess the effectiveness of the Management of Labour Best Practice Module of the ALARM course as a continuing medical education (CME) tool, in promoting best practice guidelines, and in improving communication and cooperation. The project involved physicians and nurses in four Level I sites and one Level II site that are part of a network.

The ALARM best practice module consists of a pre-assessment or pre-test to assess knowledge and learning needs, an audit of cases in the participant’s practice, a workshop where participants can interact with a facilitator, a written commitment to change that participants develop and sign, a period to incorporate these changes into practice, a post-test assessing knowledge, and a revisit of the commitment to change to allow participants to gauge success in incorporating changes into practice. The pre-test and audit were completed before the workshop. At the end of the workshop, participants were asked to list up to five changes they wanted to make in their practice, based on the knowledge and information received at the workshop. The sites were also given practice guidelines that could be kept at the bedside. The types of desired changes included: more accurate diagnosis of active labour, avoiding unnecessary admissions, performing cord gases after all births, eliminating EFM, correcting the interval and dosing of oxytocin to conform with ALARM recommendations, and improving documentation. Although most participants reported that they usually used partograms in their practice, 15 listed plotting and partogram as a change they would like to incorporate into their practice.

Four months later, participants were asked to participate in the post-study, which assessed the extent to which they had fulfilled their commitment to change. Participation in the study was good. Of the 36 people eligible to participate, 80% completed the pre-study, 94% attended the workshop, and 67% completed the audit portion of the post-study. The physician leading the study was able to document some changes in practice after the course, including changes in oxytocin-related practices at one of the two sites that had identified it as an issue, an increase in the use of partograms, and a decrease in the use of EFM (although two sites continued to require EFM on admission). He was also able to determine that the ALARM best practice model promoted use of common practice guidelines and improved communication and cooperation in the hospital partnership — although the amount of paperwork required in this type of approach was an issue for some participants.

In terms of impact on practice, it appears from the reports that the most effective ways to deliver education and influence practice are: one-to-one mentoring at the bedside, the example of peers implementing best practices, the opportunity to practice new skills during training, and the assessment of individual practice patterns and the use of a commitment to change.

Other Education Approaches
Sites used other education strategies — in addition to formal workshops and courses, including:

- lunch and learn
- best practice rounds
- a conference on best practice, clinical practice guideline
- research
- newsletters to communicate performance indicators, new research and successes
- point of care team learning strategies
- reflective practice tools
- modifications to orientation programs designed to meet continuing education needs
- the provision of a laptop computer, LCD player, and computer-based information that is easily updated and can be used for self-study
- mentoring

At least 26 sites reported some form of networking in their project, including site visits to best practice sites, cooperation with other sites to develop education programs, and collaboration among sites to delivery maternal/newborn care and ensure continuity of care. Networking and collaboration among hospitals in the same city or geographic area was reported frequently. Some is the result of referral relationships or efforts to standardize care and increase continuity of care within a given area.

The two regional networks — in Southwestern Ontario and Eastern and Southeastern Ontario — appear to be playing a key role in supporting maternal/newborn programs, providing education and assistance with databases, and promoting best practices and continuity of care. Even hospitals outside those regions are turning to those organizations for information, advice and assistance. The benefit of these regional networks is that the relationship is ongoing — unlike site visits, which may only involve a one-time connection.

A number of initiatives used the OWHC funding to support site visits — some to the best practice sites in the OWHC report Attaining and Maintaining Best Practices in the Use of Caesarean Sections (October 2002), and some to sites that provide a comparable level of service (as the visiting site) but have lower caesarean section rates. The reported benefits/impact of the site visits included the following:

- changes in practice (e.g., removing electronic fetal monitoring devices from labour and delivery rooms);
- learning how guidelines have been implemented in other institutions;
- identifying creative ways to resolve documentation issues;
- the opportunity for staff in the visiting site to discuss their observations; and
- gaining information about unit design and equipment, labour assessment process and areas, pre-registration procedures and teaching, and labour room charting and documentation methods.

As a result of its site visit, staff at one hospital have made a number of recommendations for an outpatient triage assessment form, a pre-registration/pre-admission program for all patients, a standard birth plan, a labour room telephone advice log sheet, an on-call system for nursing staff to support one-to-one labour care, and revisions to the labour room charting process.

For at least one Level I site, the site visit had limitations because of the lack of comparability between the two sites. For example, unlike the site visited, the visiting site is quite isolated (a 30 to 45 minute helicopter ride to the nearest Level II site) and has no obstetrician. This significantly affects the nature of its maternal and newborn program.

Sites also reported engaging in the following types of networking activities:

- forming regional task forces to encourage networking among hospitals that refer and plan education sessions;
- establishing a city-wide prenatal practice council that offers collaborative education sessions;
- developing a regional prenatal manual designed to reduce the number of pamphlets and standardize the information given to consumers;
- sending nurses to larger site for obstetrical training;
- holding teleconferences with best practice sites;
- developing a preceptor program;
- developing standard transfer forms and processes that provide patient information (including the patient’s understanding of caesarean sections) — the process also includes sending the forms and information back to the referring hospital when the patient returns for follow-up;
Hanover and District Group Practice

One of the most extensive examples of networking and collaboration designed to improve maternal/newborn care and reduce caesarean section rates is the group practice initiatives developed among family physicians in Hanover. In an attempt to address the decline in the number of rural family physicians practicing obstetrics, a group of family physicians have developed a physician call group model and hospital-based prenatal clinic. Physicians take turns covering obstetrical call for a week at a time, and are responsible for all deliveries and related issues. Once women have delivered, they can return to their own family physician or continue with the physician who delivered the infant for postpartum and newborn care.

To support this approach, the hospital runs a prenatal clinic one afternoon each week, which is attended by the on-call physician and the obstetrical nurses. Patients whose physician does not provide intra-partum care are referred to the clinic at 20 weeks; patients whose doctors are part of the group are referred at 36 weeks. All prenatal documentation is sent to the hospital. With this approach, the women meet the doctor on call that week and the nursing staff.

With this model, the site is able to:
- avoid practice of inducing patients if a physician isn’t going to be available;
- involve nurses more directly;
- provide an opportunity to educate students; and
- provide a high quality service that is acceptable to patients, physicians, and nurses.

The group practice model reportedly led to a reduction in caesarean section rates from 25.5% to 18.3%. When the group practice model was combined with the new protocol for induction and use of Fentanyl, the caesarean section rate reportedly dropped to 7%.

- developing a common customer feedback survey; and
- sharing expertise/resources (i.e., one hospital in a group provides in-service for others and coordinates educational sessions).

A significant proportion of networking activities between sites were designed to ensure greater continuity of care for patients.

Networking activities were not limited to connections with other hospitals. A significant number of sites reported developing and maintaining close working relationships with community organizations, particularly those that provide prenatal care and education, and those that serve vulnerable populations (e.g., teen health centres, Healthy Babies Healthy Children). Many sites felt these relationships were important in order to ensure that women are prepared for labour, able to make informed choices, and, therefore, less likely to require a caesarean section.

**Leadership/Teamwork**

Almost all the best practice initiatives appeared to be led by or report to a multidisciplinary team. In some cases, existing teams or committees took charge of the initiative. In others, sites established dedicated caesarean best practice task forces or committees. Some reports indicated that these caesarean specific groups are permanent (not limited to the life of the project) and will continue to meet regularly to review data and plan education and other initiatives.

Most sites also made an effort to use existing leaders or identify people within the program who would take a leadership role. Many used the funding to purchase the training that would enable certain individuals in the program to provide ongoing leadership and education. In most cases, the “new” leaders are nurses, midwives, and doulas. This may reflect the increased emphasis on supportive care in labour and on birth as a natural physiological process.

While most sites reported that their programs and care are multidisciplinary and that they have established multidisciplinary teams, few reported that they have assessed how effective their multidisciplinary collaboration is in practice. Only one site reported having
surveyed staff about their working relationships. It found that nurses were significantly less likely than physicians to believe that “they work in effective multidisciplinary teams that value the input of all members and share common goals, values, and a commitment to best practice” (36.7% positive responses from nurses versus 76.9% positive response from physicians). The report did, however, note that the recent external events had “undermine[d] trust and teamwork” in the current working environment. For sites to attain and maintain low caesarean section rates, it is not only important that multidisciplinary teams exist, but that they function effectively.

**Consumer Education/Involvement**

Seventeen sites included some form of consumer education/involvement in their initiative. Consumer involvement usually took the form of having a consumer representative on the caesarean best practice committee or group, or on the multidisciplinary team managing the initiative. Some sites set out plans to raise awareness in the community about caesarean section rates and to report regularly to the community on its rates (e.g., a community report card).

Consumer education initiatives focused primarily on the importance of birth planning and included:

- revising prenatal information, incorporating more information on birth choices, caesarean section, supportive care in labour, IA, and VBAC into prenatal classes (including techniques clients can use to prevent or minimize need for caesarean section);
- developing a pre-admission brochure on “what to expect from my caregiver during labour and delivery” which is distributed through prenatal classes, physician offices, and the hospital;
- distributing a patient education booklet to all prenatal patients, family physicians, the public health unit, and childbirth educators in the community;
- developing a caesarean section care path that emphasizes patient education and involvement in decisions affecting their care;
- establishing goals for labour preparation (e.g., by 2004, 80% of women who plan to give birth will attend a pre-admission nursing interview and have a birth plan);
- distributing family birth planning forms to all physician offices and through pre-admission clinics (one hospital uses this technique and reports an 80% compliance rate of women bringing completed forms to labour and delivery);
- enhancing patient education by ensuring labour support strategies are discussed at various levels (i.e., physician offices, prenatal classes, and the birthing unit);
- displaying posters of birthing positions in the birthing unit; and
- providing access to birthing videos.

The experience of one site reinforced the importance of assessing consumer needs. It introduced a monthly orientation/pre-assessment visit for all women planning to give birth in the hospital. However, because the majority of its clients were women who had already delivered in the hospital, there was little interest in the clinic. The hospital has since adjusted its approach. It now distributes birthing plan forms to physicians and prenatal education programs, and invites women to call to arrange a hospital visit if they are interested. The hospital also identifies pregnant women who come into the hospital for another reason (e.g., blood pressure check), offers them a tour, and completes a birthing plan with them.
Continuous Quality Improvement

Continuous quality improvement (CQI) is essential in attaining and maintaining low caesarean section rates. Although the Caesarean Section Best Practice Project supported one-time, time-limited projects, it is clear that the majority of sites have in place or are developing strategies to support continuous quality improvement.

About 21 reports made direct reference to plans for continuous improvement, and others likely have plans that were not discussed in their reports.

The most commonly cited approach to CQI is establishing best practice indicators, setting goals, monitoring performance, assessing performance against goals, and identifying strategies to address any gaps.

In some sites, performance data is for the whole program. Others provide or intend to provide data on an individual level. For example, one hospital has developed a “performance dashboard” that allows care providers to access their own peer-referenced data on caesarean section, VBAC rates, and induction. The data is updated automatically from the labour and delivery bedside data entry system. Individual performance is ranked relative to peers (e.g., general obstetricians in the same call group, family physicians, midwifery minimum/maximum intervention rates). Rankings are highlighted if the provider is in the bottom or top quartile. The hospital also intends to assess caregiver attitudes to and the impact of peer reference statistics, in order to determine whether this is an effective tool in promoting best practices.

One site that has been producing physician-specific data also intends to track and provide information to nurses on their individual caesarean section rates. Another site did this as part of its project, but reported that it did not find the nurse-specific data useful and has discontinued it.

Other CQI strategies include the following:

- developing regional comparisons to make data more meaningful;
- developing a structured form for reporting adverse events — the objective is to catch and document poor outcomes, near misses and communication failures, and develop procedures to prevent them;

- providing regular reports on caesarean section rates;
- ensuring caesarean sections are a regular item at department and other meetings;
- conducting regular patient satisfaction surveys;
- developing a city-wide Quality Coordinating Council to track outcomes;
- encouraging a peer feedback and self-evaluation process for all nurses;
- developing an evaluation tool to assess whether new guidelines are being implemented appropriately;
- developing a tool to assess individual patient needs and expectations (to support patient-centred care);
- establishing protected bulletin board space in staff planning rooms in each unit to post stats on deliveries, caesarean section rates, and induction rates; and
- dedicating a certain number of rounds each year to caesarean section.

Human Resource Issues

Another area of activity that could be considered part of CQI is recruitment, retention and succession planning. A significant number of sites — particularly those in rural and remote areas — identified shortages of physicians and nurses as a barrier to implementing best practices. Some expressed concern about the large cohort of professionals who will retire over the next few years, and the need for succession planning to be able to replace them.

Only a few sites had developed strategies to address human resource issues. For example, one site in a community faced with a severe physician shortage had recruited a nurse practitioner to provide prenatal care. Another site noted that establishing a best practice environment in and of itself was a recruitment/retention strategy: the site felt it would be more likely to attract skilled providers if it could provide that kind of environment. Reported one site, “Retention and recruitment of doctors and nurses is of paramount importance, and undertaking this initiative is expected to increase morale and pride in our practice, while providing our best care to the population we serve.”

In many cases, providing opportunities for professional education, appointing people within the unit to leadership roles and other strategies used to implement the initiative could also be considered human resource and retention strategies. However, more will likely have to be done to ensure that sites have the professional resources they need to implement best practices.
IV. Analysis of the Impact of the Caesarean Section Best Practice Project

The Caesarean Section Best Practice Project has been effective in raising awareness of caesarean section rates and the factors that influence them. It has achieved its goal of encouraging maternal/newborn programs to assess their programs and develop plans to address gaps between best practices and their services. It has highlighted the importance of supportive care in labour, and of treating birth as a natural physiological process.

With a relatively small investment per site, the OWHC has been able to encourage a significant amount of activity. The funding provided was used primarily to support professional education for hundreds of professionals (nurses, midwives, and physicians), and to review/revise clinical practice guidelines. As a result, the OWHC can be confident that more professionals are now aware of best practices and more sites have policies and procedures that are consistent with SOGC recommendations. There also appears to be a commitment on the part of most maternal/newborn programs to continuous quality improvement.

The programs expressed their appreciation of the project and the extra funding it provided. As one site stated in its report, the OWHC funding “enabled the program to undergo a self-assessment that resulted in identification of measures to further enhance practice and initiate several quality improvement strategies … in addition to the work that took place within the time span of the project, education is continuing, a city-wide partnership in developing supportive care skills of nurses is evolving, and multidisciplinary review of data on a city-wide basis to promote evidence-based practice has been agreed upon.”

While the OWHC knows that a significant amount of activity has occurred, it cannot yet know whether this investment/activity will have a positive effect on caesarean section rates. More work needs to be done to promote best practices, to monitor the impact of any changes on caesarean section rates, and to identify effective strategies. Ontario hospitals will continue to need systemic support in order to achieve and maintain low caesarean section rates.
APPENDIX I

RECIPIENTS OF OWHC CAESAREAN SECTION BEST PRACTICE GRANTS

Alexandra Marine and General Hospital, Goderich
Almonte General Hospital, Almonte
Cambridge Memorial Hospital, Cambridge
Chatham Public General Hospital, Chatham
Clinton Public Hospital, Clinton
Dufferin-Caledon Health Care Corporation, Orangeville
East General & Orthopaedic Hospital, Toronto
Grand River Hospital Corporation, Kitchener
Grey Bruce Health Services, Owen Sound
Hamilton Health Sciences Corporation, Hamilton
Hanover And District Hospital, Hanover
Hotel Dieu Hospital, Cornwall
Humber River Regional Hospital, Toronto
Huronia District Hospital, Midland
Kingston General Hospital, Kingston
Lakeridge Health Corporation, Oshawa
London Health Sciences Centre, London
Mount Sinai Hospital, Toronto
Niagara Health System, St. Catharines
North York General Hospital, Toronto
The Ottawa Hospital / L’hôpital D’ottawa, Ottawa
Pembroke General Hospital, Pembroke
Peterborough Civic Hospital, Peterborough
Queensway-Carleton Hospital, Ottawa
Quinte Healthcare Corporation, Belleville
Royal Victoria Hospital, Barrie
St. Joseph’s Health Care System, Hamilton
St. Joseph’s Health Services Association, London
St. Michael’s Hospital, Toronto
St. Thomas-Elgin General Hospital, St. Thomas
Sarnia General Hospital, Sarnia
The Scarborough Hospital, Toronto
Sioux Lookout District Health Centre, Sioux Lookout
South Bruce Grey Health Centre, Kincardine
Southlake Regional Health Centre, Newmarket
Strathroy Middlesex General Hospital, Strathroy
Stevenson Memorial Hospital, Alliston
L’hôpital Regional De Sudbury Regional Hospital, Sudbury
Sunnybrook and Women’s College Health Sciences Centre, Toronto
Temiskaming Hospital, New Liskeard
Timmins and District General Hospital, Timmins
Trillium Health Centre, Mississauga
Wilson Memorial General Hospital, Marathon
Windsor Regional Hospital, Windsor
York Central Hospital, Richmond Hill