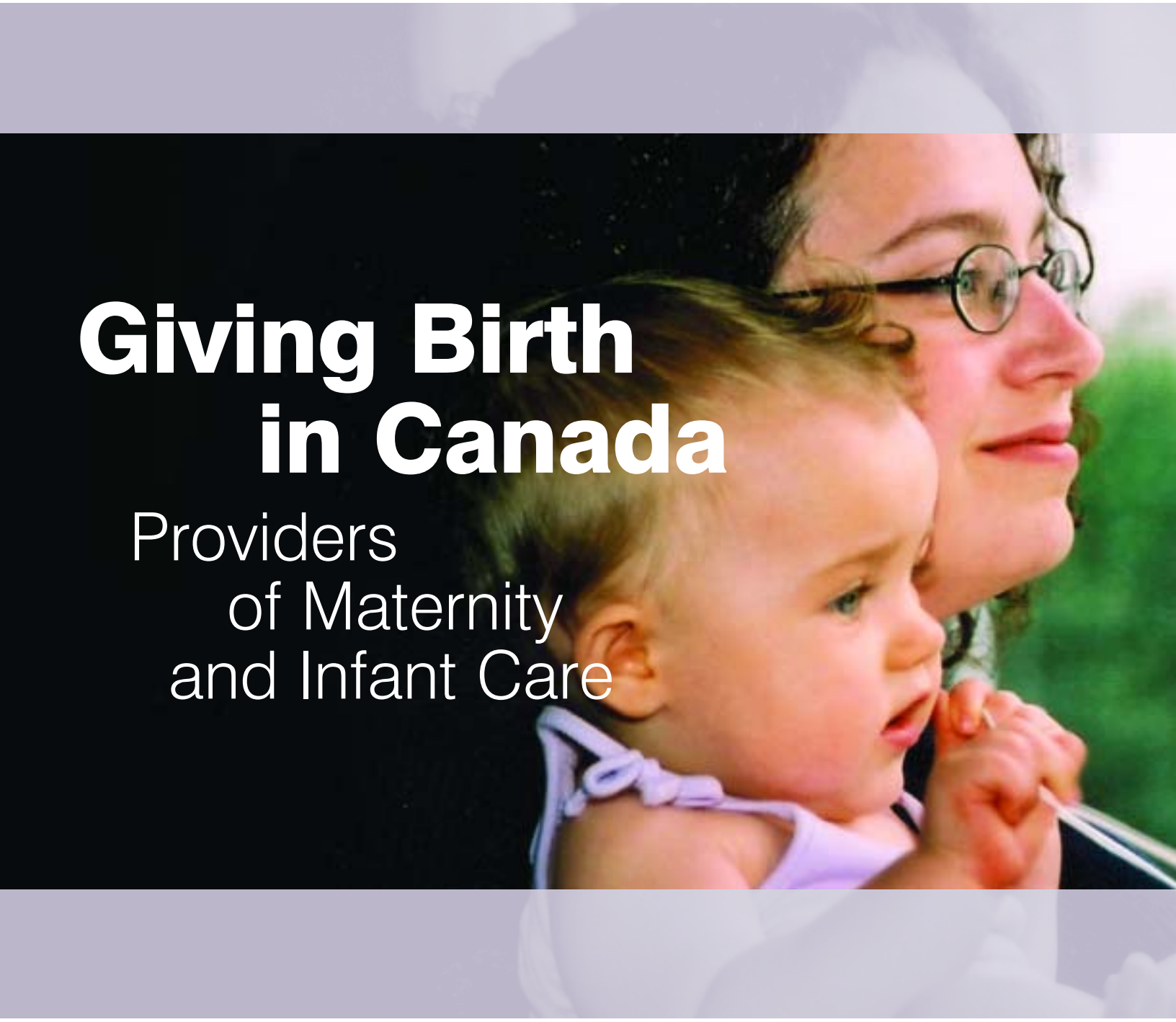


Giving Birth in Canada

Providers of Maternity and Infant Care

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Canadian Institute for Health Information
377 Dalhousie Street
Suite 200
Ottawa, Ontario
K1N 9N8

Telephone: (613) 241-7860
Fax: (613) 241-8120
www.cihi.ca

ISBN 1-55392-395-2

Cette publication est aussi disponible en français sous le titre :
Donner naissance au Canada : Les dispensateurs de soins à la mère et à l'enfant, ISBN 1-55392-397-9

Giving Birth in Canada

Providers of Maternity and Infant Care

Table of Contents

About the Canadian Institute for Health Information

Since 1994, the Canadian Institute for Health Information (CIHI), a pan-Canadian, independent, not-for profit organization, has been working to improve the health of the health system and the health of Canadians by providing reliable and timely health information. The Institute's mandate, as established by Canada's health ministers, is to develop and maintain a common approach for health information in this country. To this end, CIHI provides information to advance Canada's health policies, improve the health of the population, strengthen our health system, and assist leaders in the health sector to make informed decisions.

As of April 1, 2004, the following individuals are on CIHI's Board of Directors:

- **Mr. Graham Scott** (Chair), Managing Partner, McMillan Binch LLP
- **Mr. Bruce Petrie** (Ex-officio), Interim President and CEO, CIHI
- **Dr. Penny Ballem**, Deputy Minister, British Columbia Ministry of Health Services
- **Dr. Peter Barrett**, University of Saskatchewan
- **Dr. Laurent Boisvert**, Director of Clinical-Administrative Affairs, Association des hôpitaux du Québec
- **Ms. Roberta Ellis**, Vice President, Workers' Compensation Board of British Columbia
- **Mr. Kevin Empey**, Vice President, Finance and CFO, University Health Network
- **Dr. Ivan Fellegi**, Chief Statistician of Canada, Statistics Canada
- **Mr. Ian Green**, Deputy Minister, Health Canada
- **Mr. Phil Hassen**, Deputy Minister, Ontario Ministry of Health and Long-Term Care
- **Mr. David Levine** (Observer Status), President and Director General, Régie régionale de la santé et des services sociaux de Montréal-Centre
- **Dr. Cameron Mustard**, President and Senior Scientist, Institute for Work & Health
- **Dr. Brian Postl**, Chief Executive Officer, Winnipeg Regional Health Authority
- **Mr. Rick Roger**, Chief Executive Officer, Vancouver Island Health Authority
- **Dr. Tom Ward**, Deputy Minister, Nova Scotia Department of Health
- **Ms. Sheila Weatherill**, President and CEO, Capital Health Authority, Edmonton

Acknowledgements

The Canadian Institute for Health Information (CIHI) would like to acknowledge and thank the many individuals and organizations that have contributed to the development of the report.

Particularly, we would like to express our appreciation to the members of the Expert Group who provided invaluable advice throughout the process. Members included:

- **Dr. Elizabeth Whynot** (Chair), President, British Columbia's Women's Hospital & Health Centre
- **Mr. Jack Bingham** (Ex-officio), Director, Health Reports and Analysis, CIHI
- **Dr. Beverley Chalmers**, International Health Consultant, Centre for Research in Women's Health, Sunnybrook and Women's College Health Science Centre, University of Toronto
- **Dr. Jan Christalaw**, British Columbia's Women's Hospital & Health Centre
- **Dr. K. S. Joseph**, Associate Professor, Departments of Obstetrics and Gynecology and Pediatrics, Dalhousie University
- **Dr. Terry P. Klassen**, Professor and Chair, Department of Pediatrics, University of Alberta Hospital
- **Dr. Michael S. Kramer**, Scientific Director, CIHR Institute of Human Development and Child and Youth Health
- **Dr. André B. Lalonde**, Executive Vice President, Society of Obstetricians and Gynaecologists of Canada
- **Dr. Carolyn Lane**, Family Physician, The Low Risk Maternity Clinic, Calgary, Alberta
- **Dr. Kyong-Soon Lee**, Neonatologist, McMaster University
- **Dr. Miriam Levitt**, Research Facilitator, University of Ottawa, Faculty of Medicine
- **Dr. Hajnal Molnar-Szakács**, Chief, Maternal and Infant Health Section, Health Surveillance and Epidemiology Division, Population and Public Health Branch, Health Canada
- **Ms. Rachel Munday**, Primary Health Care Nursing Consultant, Government of the Northwest Territories, Department of Health and Social Services

It should be noted that the analyses and conclusions in the report do not necessarily reflect those of the individual members of the Expert Group or their affiliated organizations.

The editorial committee for this report included: Kira Leeb, Geneviève Martin, Susan Swanson (The Alder Group), Cheryl Gula, Patricia Finlay, Jennifer Zelmer, and Jack Bingham. Other core members of the team included Nadia Ciampa, Thi Ho, Nicole Howe, Jeanie Lacroix, Vanita Sahni, and Steve Slade.

This report could not have been completed without the generous support and assistance of many others who compiled data; undertook research; worked on the print and Web design, translation and distribution; and provided ongoing support to the core team. Special thanks are also extended to CIHI staff and their families for providing the baby pictures used in this report.

About This Report

This report is the first in a series of four special reports prepared by the Canadian Institute for Health Information (CIHI) on the health of and health care for Canada's mothers and infants. These reports will focus on the following topics:

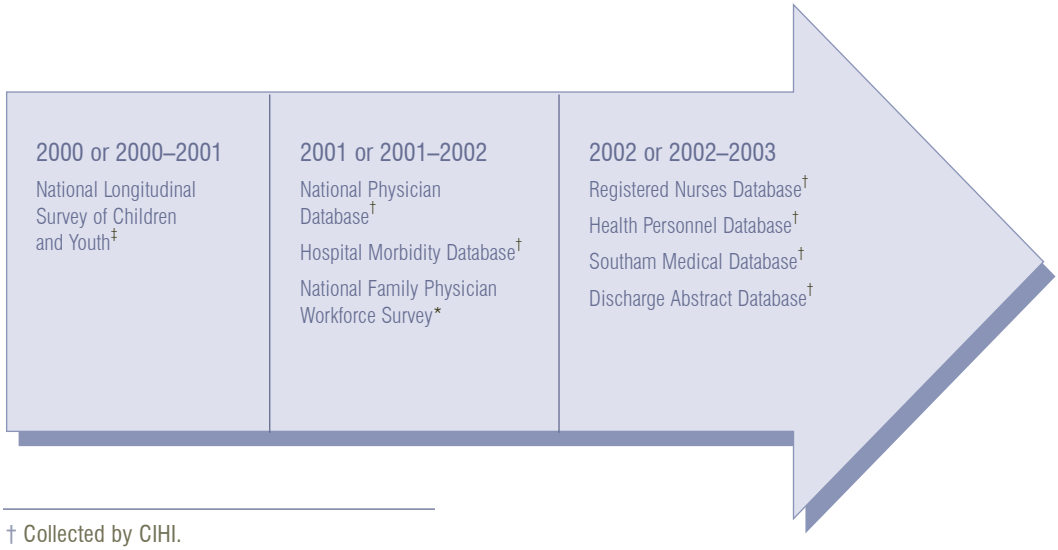
- **Giving Birth in Canada: Providers of Maternity and Infant Care** Trends in birthing and maternity care and a look at the changing scope of practice for maternal and infant care providers.
- **Giving Birth in Canada: Regional Indicators** Regional profiles of selected indicators of the health care and health status of Canada's mothers and infants.
- **Giving Birth in Canada: The Costs** Expenditures on maternal and infant care.
- **Giving Birth in Canada: A Profile of Canada's Mothers** What we know and don't know about the changing demographics of mothers in Canada and about their experiences in the health care system.

Each of these special reports presents a fact-based compilation of current research, historical trends, and new data and findings to assist care providers and decision makers in planning health services in maternity and infant care. These reports complement CIHI's ongoing reporting process and the initiatives of partners such as the Canadian Perinatal Surveillance System (see below).

FIGURE 1

Where the Data Come From

The figure below shows the most recent completed data year for pan-Canadian health data holdings at CIHI, Statistics Canada, and the College of Family Physicians of Canada (as of January 2004) used in this report. CIHI data from previous years are also generally available.



† Collected by CIHI.
‡ Collected by Statistics Canada.
* College of Family Physicians of Canada.

This report includes a Fast Facts section, to provide an expanded range of comparative data across the country. Whenever the icon to the right appears beside the text, it indicates that related data can be found at the back of this report.

Building on the Canadian Perinatal Health Report 2003

The Canadian Perinatal Surveillance System (CPSS) is part of Health Canada's initiative to strengthen national health surveillance capacity, delivered through the Health Surveillance and Epidemiology Division. The CPSS monitors and reports on perinatal health determinants and outcomes through an ongoing cycle of data collection and acquisition, expert analysis and interpretation, and communication of information for action.

Recently, the CPSS released its *Canadian Perinatal Health Report 2003*, which includes information on 27 perinatal health indicators on determinants and outcomes of maternal, fetal, and infant health. Statistics for each indicator consist mainly of temporal trends at the national level and provincial/territorial comparisons for the most recent year for which data are available. It can be downloaded free of charge from the following link: www.hc-sc.gc.ca/pphb-dgspsp/publicat/cphr-rspc03.

Highlights of This Report

- Most Canadian babies are born in hospital. Obstetricians are performing an increasing proportion of both vaginal and caesarean births. In 2000 they attended 61% of vaginal births and 95% of all caesarean sections—up from 56% and 93% in 1996, respectively. The majority of obstetricians (64%) attended between 101 and 300 deliveries in 1999, whereas family physicians attended, on average, 41 births in 2000.
- Most family physicians provide some maternity care, but fewer deliver babies than in the past. In addition, they are now less likely to deliver multiple births or perform caesarean sections. Instead, more family physicians are sharing care with other providers, providing maternity care for up to 32 weeks before transferring care to other family physicians, obstetricians, or midwives for the rest of the pregnancy and delivery.
- Ontario researchers recently asked new family physicians who do *not* deliver babies about the reasons behind their decision. They tended to attribute it to concerns about their personal lives, confidence with their obstetrical skills, fee structures, and the perceived threat of malpractice suits.
- The number of jurisdictions regulating and funding midwifery services is increasing. So is the number of trained midwives, and more expecting mothers are choosing midwives to deliver their babies either in hospital or at home.
- Childbirth in rural and remote areas presents unique challenges. Rural family physicians are far more likely to provide obstetrical care than their urban counterparts (27% reported delivering babies in 2000, compared with 12% in urban areas). The number of northern community hospitals offering obstetrical care has decreased over the past two decades, but new birthing centres are now available in some communities.
- There is a relative scarcity of anaesthesiologists and obstetricians practising in rural and remote areas, compared to urban centres. Similarly, there are lower rates of caesarean section births and vaginal deliveries with epidural anaesthesia in rural areas.
- Twenty years ago, women often stayed in hospital for close to five days with an uncomplicated birth, and even longer if there were complications. Today, healthy mothers and their infants are typically discharged 24 to 48 hours after delivery. Some research indicates that readmission rates of newborns suffering from jaundice have increased following the move to earlier discharge.

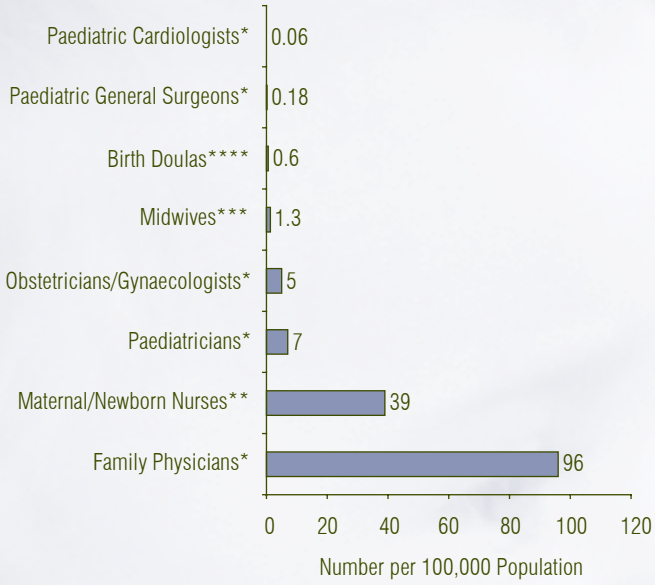
Birthing Trends in Canada

Popularized through Hans Christian Andersen's 19th-century fairy tales, the image of storks delivering babies endures today in stories and cartoons. In reality, however, babies need human help to arrive into this world.

FIGURE 2

Some Providers of Maternity and Newborn Care in Canada

Many different professions provide care for pregnant women and their children. The graph below shows the number of selected health care providers per 100,000 Canadians in 2002.



Note: Not all family physicians and obstetricians/gynaecologists provide care for expectant mothers and infants.
Sources: *Southam Medical Database, CIHI; **Registered Nurses Database, CIHI;***Health Personnel Database, CIHI; ****Doulas of North America Web site (www.dona.org)

In 21st-century Canada, that help may come from any of several kinds of care providers, all of whom have been trained to some degree to assist with the common miracles of pregnancy and birth. Much of this care occurs outside of hospitals, although pregnancy and childbirth are the leading causes of hospitalization among Canadian women, accounting for 24% of acute care stays in 2001–2002.[1] The continuum of care includes prenatal care and education, screening and diagnostics, home deliveries, postpartum home support, and newborn and infant care during the first weeks of life.

This report focuses on the changing profile of the people who provide care to Canada's mothers and infants, set within the context of overall birth and population trends. These changes are implicitly part of a larger context, and of the current debate about the future care needs of Canadians and the capacity of our health care system. Explicitly, they raise questions about how maternity care is and will continue to be provided across the country.

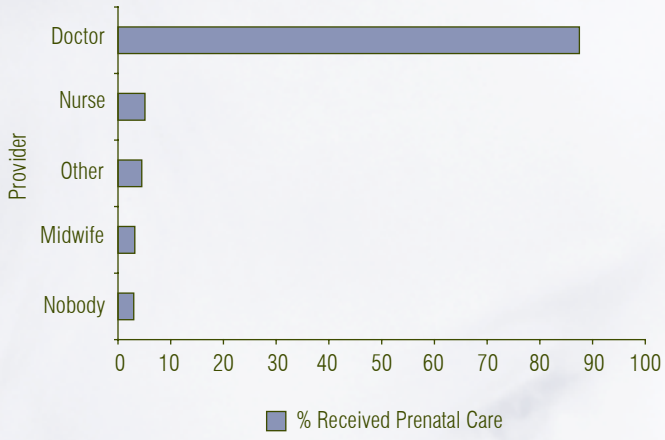
Pregnancy and Delivery: Who Provides Care?

For centuries, most births took place in the home, with help from local midwives, friends, or family. Today, patterns of care for mothers and their babies differ around the world and are evolving over time. Internationally, the World Health Organization declared in 2000 that nurses and midwives continue to play a key role in "society's efforts to tackle the public health challenges of our time."[2] In England and New Zealand, midwives attend seven in 10 births.[3] The rate in Holland is even higher (90%), where one third of all babies are born in the home.[4]

FIGURE 3

Prenatal Care Choices Among Canadian Women

According to Statistics Canada's 2000–2001 National Longitudinal Survey of Children and Youth, 97% of new mothers had prenatal care. Most saw a physician (88%). However, 3% received their prenatal care from midwives.



Note: "Other" includes carers not elsewhere specified, such as holistic practitioners or friends and relatives with prenatal experience. Mothers that responded "nobody" did not have prenatal care from a person; however they may have consulted other resources, such as books, television shows, or the Internet. The percentages add up to more than 100% as respondents could have multiple sources of care.
Source: National Longitudinal Survey of Children and Youth, Statistics Canada

Canada's experience is different. In a 2000–2001 survey, the vast majority (88%) of mothers reported receiving prenatal care from physicians.[5] Most babies are born in hospital with a physician as the attending clinical professional. These patterns have been in place for some time, although they are evolving gradually.

Results from earlier surveys indicate that women are open to other patterns of birth and postpartum care. In 1994, Statistics Canada asked Canadian women about their willingness to receive care from health professionals other than doctors during their pregnancy and delivery, and postpartum. Using their responses to this survey, Wen and colleagues reported that:[6]

- 31% of women said they would be willing to go to a birthing centre rather than a hospital to have a baby;
- 21% were receptive to the idea of having a nurse or midwife deliver their baby instead of a doctor; and
- 85% would accept postpartum care from a nurse or midwife instead of a doctor.

This report profiles the health professionals who care for Canada's mothers and their babies today—before, during, and after birth.

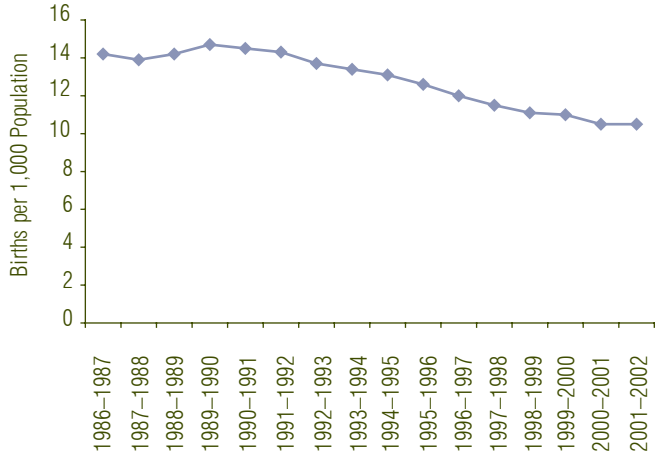
Birth Trends

How do birth trends affect those who are providing maternity and infant care? As fewer babies are born, the need for caregivers changes. Similarly, shifts in types of births may imply changing needs for care and mixes of providers.

FIGURE 4

Declining Birth Rates

By 2000–2001, Canada's birth rate had declined to 10.5 from 14.5 per 1,000 population in 1990–1991, a drop of 28%.



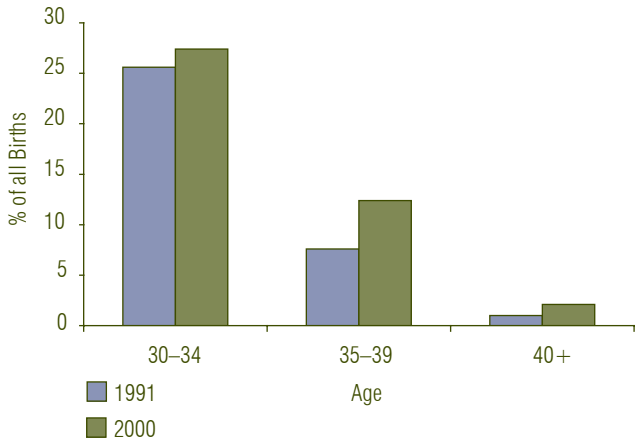
Note: Time periods are July 1 to June 30 for each year.
Source: Statistics Canada. (2003). *Annual Demographic Statistics*, 2002. Ottawa: Statistics Canada

Since 1990, the Canadian birth rate has been steadily declining. According to Statistics Canada, the 1990–1991 birth rate was 14.5 per 1,000 population; 11 years later it had fallen to 10.5 per 1,000 population. That translates to 75,737 fewer babies born. The birth rate has dropped in most provinces and territories (except Nunavut), but the magnitude of the decline varies.

FIGURE 5

Canada's Moms are Getting Older

Like multiple births, births by women over 35 are often considered high-risk, because of their increased risk for birth defects and other pregnancy complications. In 1991, 34% of babies in Canada (excluding Ontario) were born to women age 30 and over. By 2000, this had increased to 42%.



Note: This excludes live births where maternal age is unknown.
Source: Health Canada. (2003). *Canadian Perinatal Health Report, 2003*. Ottawa: Health Canada

While the overall birth rate has declined, the rate of multiple births has been increasing steadily for at least the last 10 years. However, the percentage increase in multiple births—of which most are twins—amounts to less than a 1% increase in the birth rate during this time.[8] Because all multiple births are considered to be high-risk given their increased risk for such things as miscarriage, premature birth, gestational diabetes, pre-eclampsia, and other health issues, more frequent monitoring and specialized birthing skills may be required, placing higher demands on health care providers.

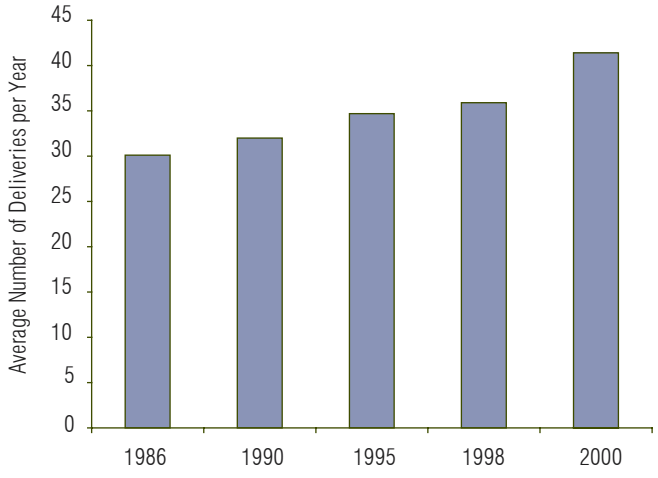
Family Physicians†

Most mothers receive care from family physicians before, during, and/or after childbirth. The 30,258 practising family physicians in Canada in 2002 accounted for just over half (51%) of all physicians in the country. On average, there were 96 family physicians per 100,000 population, but this rate varied greatly from one region to another.

FIGURE 6

Average Number of Deliveries per Year

While fewer family doctors are billing for obstetrical care, the ones who do are attending more deliveries. In 2000, these family physicians attended an average of 41 deliveries, up from 30 in 1986.



Source: Canadian Medical Association Physician Resource Questionnaire

Family physicians can be involved in all stages of maternity and infant care—from preconception to prenatal to postpartum and beyond. Almost two-thirds (64%) said that they were involved in some aspect of maternity care in 2001, up from 53% in 1998.[9] However, not all family physicians provide the full range of maternity care. In 2001,

† Throughout this report references to "family physicians" includes both physicians practising family medicine and those practising general medicine. The term "family physician" has been used in recognition of the fact that, in Canada, family physicians and not general practitioners are most likely to be providing maternity and infant care.

less than one in five (19%) family physicians providing some services did intrapartum care (attended births). Of the 19% who reported attending births, 85% reported being skilled at vacuum extractions, 44% did low-forceps deliveries, and 4% did mid-forceps and rotation deliveries.

While a higher percentage of family doctors than in the mid-1990s report providing maternity care, fewer are attending births. Fee-for-service billing data from provincial health insurance plans also suggest that family physicians' share of births attended has fallen. In 2000, they attended 39% of vaginal births, down from 44% in 1996. However, those family physicians still providing this service are doing so more often, on average, than before. According to the Canadian Medical Association Physician Resource Questionnaire, family physicians attended an average of about 30 deliveries per year in 1986, compared to 41 in 2000.

The proportion of family physicians attending deliveries varied across Canada—from 8% to 69% in 2001, depending on the province or territory. Family physicians in the western provinces and territories were more likely to attend deliveries than those in central or Atlantic Canada.[9]

Family physicians are also performing fewer caesarean sections and attending at fewer multiple births—both of which tend to be more complicated. They were the most responsible doctor for 5% of caesarean section births in 2000, down from 7% in 1996.[10] In the case of multiple births, the change was greater: just over 6% of these births‡ were attended by family physicians in 1994. But by 2000, this had declined to under 3%.

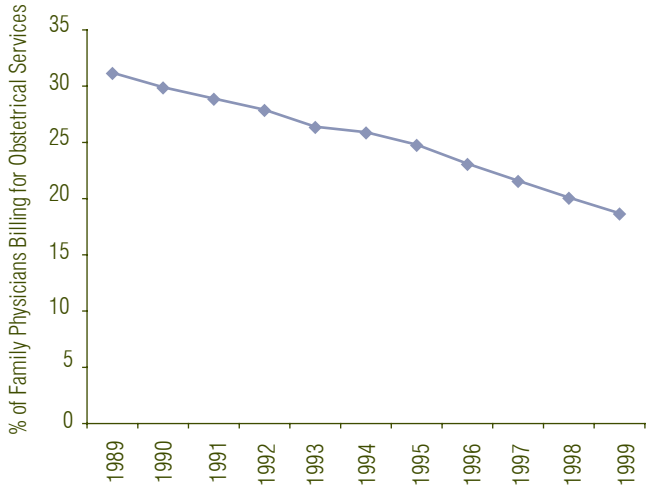
Canada's Family Doctors in 2001

- In 2001, Canada had 29,627 family physicians.
- According to billing data for 2001, approximately 16% provided delivery services.
- Of family physicians providing obstetrical care, 37% were female, up from 32% in 1996.
- Nearly half of family physicians (46%) were 45 years of age or older. Only 4% were under the age of 30; 12% were over 60.

FIGURE 7

Fewer Family Physicians Providing Obstetrical Services

Just over 31% of family physicians billed for obstetrical services in 1989, compared with fewer than 19% in 1999. These data include only family physicians who bill provincial health insurance plans on a fee-for-service basis. They do not include services provided under alternate payment plans.



Source: National Physician Database, CIHI

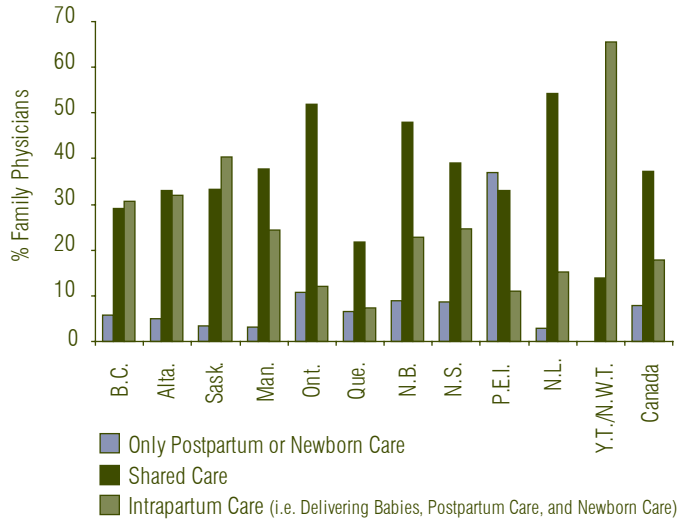
‡ Excluding births in Manitoba and Quebec.

According to the National Family Physician Workforce Survey, family physicians living outside urban and suburban areas were more likely to provide maternity care—particularly attending deliveries—than those living in urban areas. Specifically, 27% of family physicians working in small towns or rural areas provided intrapartum care as part of their practice, compared with 12% of those in urban and suburban areas (including inner city physicians). The level of maternity care (e.g. prenatal, intrapartum, postpartum, or newborn care) provided by family physicians also varied by the age and sex of family physicians, as well as their practice setting. For example, a higher percentage of female than male physicians under 40 reported delivering babies, but for those over 40 the reverse was true. Physicians working in group practices were also more likely to deliver babies compared to those working in solo practice (23% compared to 11%).

FIGURE 8

What Maternity and Newborn Care Do Family Physicians Provide?

In Canada, most family physicians involved in maternity and newborn care provide "shared care." This means that they provide prenatal care up to a certain number of weeks of pregnancy (often between 24 and 32 weeks) and then transfer care to another provider, such as an obstetrician, a midwife, or another family physician who delivers babies. Some family physicians also attend deliveries, but the proportion varies across the country. In a 2001 survey, 66% of family physicians providing some care for pregnant women and/or newborns in the Yukon and Northwest Territories said that they delivered babies, compared to 7% and 12% respectively in Quebec and Ontario.



Note: Data on "only postpartum or newborn" care were not available for the Yukon Territory and Northwest Territories. Data from Nunavut were not available.
Source: 2001 National Family Physician Workforce Survey, part of the JANUS Project, College of Family Physicians of Canada

When and why are family physicians deciding not to deliver babies? Evidence suggests that these decisions are made, at least in part, during residency.[11] An Ontario study tracked family practice residents throughout their training and for two years afterwards. While 52% of residents planned to practise obstetrics initially, by the time they completed the program, this had fallen to 17%. Only 16% were still delivering babies two years later. The authors suggest that various factors were associated with a decision *not* to deliver babies. These included concerns about personal lives, confidence with obstetrical skills, fee structures, and the perceived threat of malpractice suits. Those who were planning to provide intrapartum care at the end of their residencies, who did not feel it would greatly impact their personal life, and who practised in smaller communities, were significantly more likely to be attending births two years after the end of their residency.[11]

Obstetricians/Gynaecologists

If family physicians are providing less intrapartum care, which health care professionals are filling the gap? The answer, in large part, is obstetricians. In 2002, there were 1,592 obstetricians/gynaecologists practising in Canada, an average of five per 100,000 population. As for family physicians, their numbers vary by region. Among the provinces, Ontario had the highest rate of obstetricians/gynaecologists per 100,000 population (six in 2002), and Newfoundland, Prince Edward Island, New Brunswick, Saskatchewan, and Alberta had the lowest rate, at four.

Not all obstetricians/gynaecologists in Canada provide obstetrical care. A 1999 survey by the Society of Obstetricians and Gynaecologists of Canada (SOGC) found that 17% of respondents do not practise obstetrics at all.§ Of those who practise both obstetrics and gynaecology, only 29% spent more than half their time on obstetrics.[12] Recent billing information supports these findings. Of those obstetricians/gynaecologists who billed provincial fee-for-service health insurance plans in 2001, approximately 18% had not billed for any obstetrical services.[10] According to a new study, several factors are related to participation in obstetrical care: obstetricians/gynaecologists under 35 were more likely to provide such care, while females and those practising in cities with medical schools were less likely.[13]

The total number of births attended by obstetricians has been relatively stable since the mid-1990s. With birth rates falling, this means that they are attending a larger share of deliveries[10], including:

- 61% of vaginal births in Canada's provinces in 2000, up from 56% in 1996
- 95% of all caesarean sections in 2000, up from 93% in 1996
- 96% of all multiple births in Canada in 2000, up from almost 92% in 1994

Canada's Obstetricians/Gynaecologists in 2001

- In 2001, there were 1,590 obstetricians/gynaecologists in Canada.
- Of this number, 1,270 (80%) provided some obstetrical care.
- Of those providing obstetrical care, 36% were female, up from 27% in 1996.
- Just over 60% were 45 years or older; just under 10% were under age 35; and 9% were over age 65.

§ The survey included 668 obstetricians/gynaecologists, 41% of all obstetricians/gynaecologists in Canada.

Results of a 1999 SOGC survey indicated that the majority (64%) of obstetricians attend between 101 and 300 deliveries a year.[12]

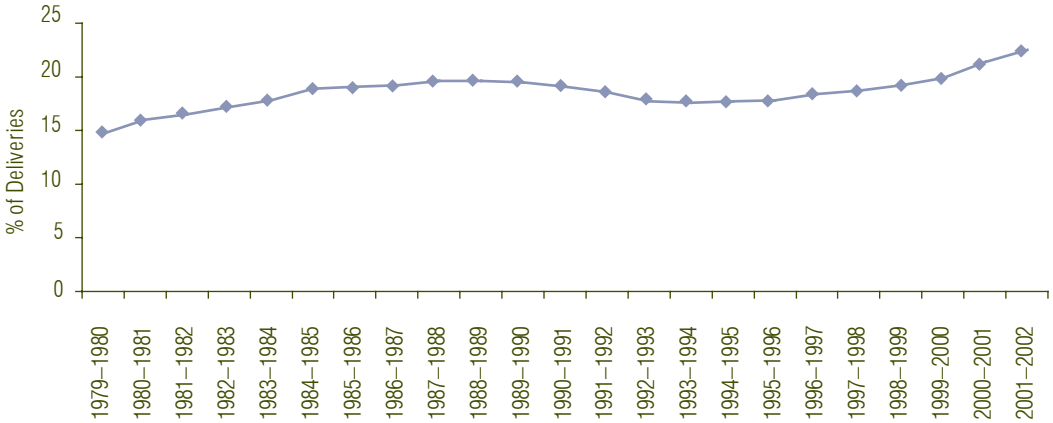
Caesarean Section Trends

In Canada, a significant percentage of births occur by caesarean section.

FIGURE 9

Canadian Caesarean Section Rates

Except for a dip in the early 1990s, Canada's caesarean section rate has increased in the last two decades. It reached an all-time high of 22.5% of in-hospital deliveries in 2001–2002.

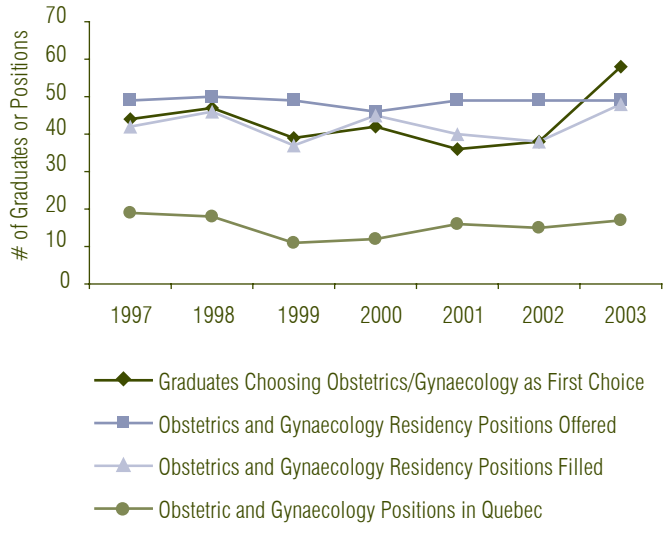


Sources: Statistics Canada (1979–1980 to 1993–1994); Hospital Morbidity Database, CIHI (1994–1995 to 2001–2002)

FIGURE 10

Learning Obstetrics and Gynaecology

Each year, graduating medical students choose specialties. According to the Canadian Resident Matching Service, the number of positions offered in obstetrics and gynaecology has been greater than the number of positions filled in the past seven years. Data from Quebec is presented separately, as Quebec training facilities do not participate in the Canadian Resident Matching Service.



Sources: Canada outside of Quebec: Canadian Resident Matching Service, www.carms.ca/stats/stats_index.htm; Quebec data: Conférence des recteurs et des principaux des universités du Québec

Looking Ahead

In 1999, the SOGC asked its members about their plans for retirement. Thirty-four percent of obstetricians/gynaecologists said that they were planning to retire in the next five years (1999–2004). According to CIHI, between 1999 and 2002, there were 114 retired obstetricians/gynaecologists and 27 who were semi-retired. If recent enrolment trends continue, about 250 new physicians would enter residency programs in obstetrics/gynaecology over the same period.

Midwives

Modern midwives combine knowledge of obstetrics with traditional midwifery practice and provide care for women in all stages of pregnancy, labour, childbirth, and up to six weeks postpartum.

Until the early 1990s, only a few countries, including Canada, did not have midwifery legislation.[4] However, these services are now regulated in British Columbia, Alberta, Manitoba, Ontario, and Quebec. Saskatchewan and the Northwest Territories have also passed midwifery acts, Saskatchewan has yet to be proclaimed.

Midwives may also work in other jurisdictions, but their practice is not regulated in the same way. Regulated (and to some extent unregulated) midwives help deliver babies both in the home and in hospital, except in Quebec, where they care for women giving birth in free-standing birthing centres. Regulated midwives can also prescribe appropriate drugs and order required tests during pregnancy.

FIGURE 11

Number of Graduates From Canada's Midwifery Programs

Midwives can train at five universities in three provinces (Ontario, British Columbia, and Quebec). The following table shows the number of graduates since 1996. The program at l'Université du Québec à Trois-Rivières started in 2001, and the program at the University of British Columbia began in the fall of 2002. They will graduate their first classes in 2004 and 2005 respectively.

School	1996	1997	1998	1999	2000*	2001	2002
Laurentian University	5	6	10	5	1	2	7
McMaster University	6	10	11	11	1	8	18
Ryerson University	8	6	3	12	5	11	8
L'Université du Québec à Trois-Rivières	N/A	N/A	N/A	N/A	N/A	0	0
University of British Columbia	N/A	N/A	N/A	N/A	N/A	N/A	0
Total	19	22	24	28	7	21	33

* The small number of graduates in this year may be due to a change in the length of the Ontario programs in 1998 from a two-year to a three-year program.
Source: Health Personnel Database, CIHI

Although regulation of midwifery is increasing, it does not necessarily mean that the care midwives provide is covered by provincial health insurance plans. While Ontario, Quebec, Manitoba, and British Columbia fund midwifery services from the public purse (as will the Northwest Territories), families in Alberta pay about $2,500 per course of care in out-of-pocket expenses.[4]

FIGURE 12

Midwifery Across Canada

Midwives are primary health care providers for women in all stages of pregnancy, from the prenatal phase to six weeks postpartum. Some provinces and territories have regulated midwifery. This means that midwives practising in these jurisdictions must have formal training and be licensed to practise. Regulation does not necessarily mean that their services are publicly funded. Jurisdictions also differ in the settings in which they allow midwifery to be practised.

Province/ Territory	Legislation (Year)	Funded	Out-of-Pocket Payment	Home, Hospital, or Birth Centre	Midwifery School
B.C.	Yes (1998)	Yes	No	Home/hospital	Yes
Alta.	Yes (1998)	No	Yes	Home/hospital/ birth centre	No
Sask.	Yes (act not yet proclaimed)	No	Yes	Home	No
Man.	Yes (2000)	Yes	No	Home/hospital	No
Ont.	Yes (1994)	Yes	No	Home/hospital	Yes
Que.	Yes (1999)	Yes	No	Birth centre (soon to be expanded to home and a few hospitals)	Yes
N.B.	No	No	Yes	Home	No
N.S.	No	No	Yes	Home	No
P.E.I.	No	No	Yes	Home	No
N.L.	No	No	No	Hospital (remote areas only)	No
Y.T.	No	No	Yes	Home	No
N.W.T.	Yes (act to be proclaimed in 2004)	Yes (2004)	Yes (before 2004)	Home	No
Nun.	Partially (one pilot project in Rankin Inlet)	Partially	No	Birth centre	No

Source: Adapted from Hawkins M, Knox S. (2003). *The Midwifery Option: A Canadian Guide to the Birth Experience*. Toronto: HarperCollins Publishers

Between 1993 and 2002, the number of regulated midwives practising in Canada grew from 96 to 413, a 330% increase. Some of this increase reflects regulatory changes, such as registration requirements, rather than actual growth in the number of midwives. Nevertheless, with the increase in the actual number of midwives and in the number of provinces who train and regulate them, more expecting mothers are choosing these health care professionals to deliver their babies.

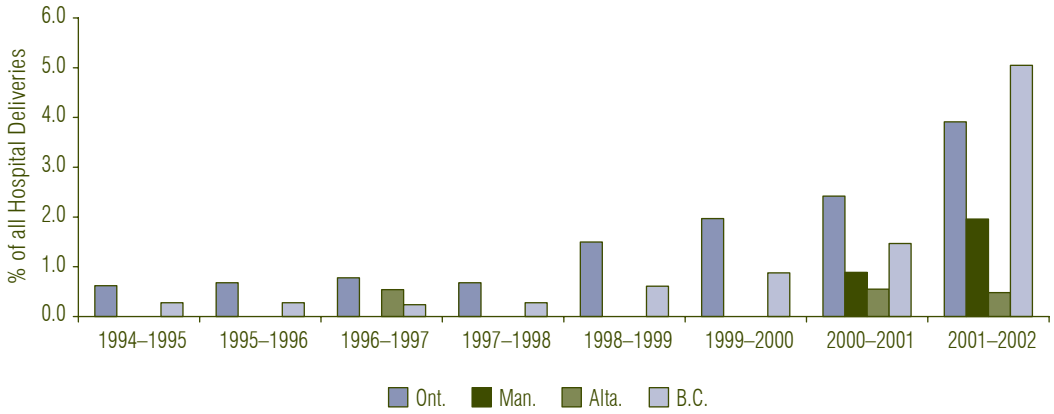
Canada's Midwives in 2001

- In 2001, there were over 370 midwives in Canada.
- Three quarters (over 75%) were female.
- As of 2001, 54% of Ontario's midwives were over the age of 40 (other provinces do not routinely collect this information on their midwives).

FIGURE 13

Hospital Births Attended by Midwives in Canada

The number of publicly funded hospital births attended by midwives is increasing in several provinces. As seen below, Ontario saw nearly a seven-fold increase between 1994–1995 and 2000–2001. (Similar data are not available for all years for other jurisdictions). Other data from Ontario show that midwives are increasingly likely to provide care in hospital, rather than the home. For example, the Ontario Midwifery Program from the Ontario Ministry of Health and Long-Term Care estimates that 72% of deliveries attended by midwives in 2000 took place in hospital, up from 61% in 1994.



Source: Discharge Abstract Database, CIHI

Providers and Rates of Interventions

While several different types of health professionals are trained to help deliver babies, their education, perspectives, and practice patterns may differ. A number of researchers in Canada and elsewhere have studied how the care midwives, family physicians, and obstetricians provide varies.[14] A Quebec study that compared 961 pairs of pregnant women receiving either midwifery care or medical care in the mid-1990s found that, overall, obstetrical technologies were used less often when women were cared for by midwives.[14] For example, tests such as ultrasound, genetic amniocentesis, and glucose screening were undertaken less often when midwives were primarily responsible for a woman's care. Women cared for by midwives were also less likely to be hospitalized prenatally, to undergo a caesarean section, and to give birth to preterm babies. However, the babies born into the hands of midwives were more likely to need assisted ventilation at five minutes of life.

Similar results have been found in other countries. According to American researchers who compared patterns of obstetric care provided to low-risk patients by family physicians, obstetricians, and certified nurse-midwives, certified nurse-midwives were less likely to use continuous electronic fetal monitoring and epidural anaesthesia, and had lower caesarean section rates. There was little difference between the practice patterns of obstetricians and family physicians.[15]

In the United Kingdom, researchers looked at the experience of 1,299 pregnant women cared for either by midwives or by a combination of midwives, hospital doctors, and family practitioners. Women cared for by midwives were less likely to have their labour induced and to have an episiotomy. Complication rates and perineal tears were similar in both groups. Women cared for by midwives were also significantly more satisfied with the care they received.[16]

Canada's Anaesthesiologists in 2001

- In 2001, there were 2,420 anaesthesiologists in Canada.
- Of these, 24% were female, up from 22% in 1996.
- The average age was 48 (0% were under 30 years of age, but 17% were 60 or older).

Anaesthesiologists

In 2002, there were 2,406 anaesthesiologists in Canada, or 8 per 100,000 population. This rate varies by jurisdiction. These specialists provide pain relief during labour and delivery, anaesthesia during caesarean sections, and neonatal resuscitation, among other contributions to the birthing process. According to the Canadian Anesthesiologists' Society, 35% of women in labour annually have epidurals requiring the services of an anaesthesiologist. In some cases, family physicians may also be able to do this procedure.

FF

The per capita rate of anaesthesiologists is lower in rural and remote areas; so are rates of caesarean sections and vaginal deliveries with epidural anaesthesia. For example, in urban teaching hospitals in eastern and southeastern Ontario, 63% of vaginal births had epidural anaesthesia. That compares with 11% in small community hospitals.[17] In some cases where anaesthesiologists are not available, general practitioners provide some anaesthesiology services. In other cases, expecting women may receive care in hospitals outside the area. (See section on care in rural and remote north for more information.)

Nurses

In 2002, more than 5% (12,167) of the total 230,957 registered nurses employed in nursing in Canada identified their primary area of responsibility as maternal/newborn care, about the same as in 1995. Nurses are involved at every stage of maternity and infant care—from providing childbirth education classes to offering pre-birth home care services to women at high-risk and assisting during labour and delivery. After the birth, public health nurses may also provide follow-up care (including lactation consulting) to new mothers and their babies.

FF

Canada's Nurses in 2001

- In 2001, there were 231,512 registered nurses employed in nursing in Canada.
- Of these, 95% were female, about the same as in 1996.
- Most were between 30 and 59 years of age (9% were under 30, but 5% were 60 or older).

Shared Care

Many pregnant women start their care with one primary health care provider, then transfer to another health professional for the remainder of their pregnancy. For example, many family physicians in Canada provide care up to 32 weeks of pregnancy and then transfer care to other family physicians, obstetricians, or midwives. In some jurisdictions, nurse practitioners may do the same. It has been suggested that collaboration among providers of maternity care is a way to address some of the issues relating to access to care, especially in rural and remote areas.[22] Shared care may also be a way to ensure that providers are making the most of their various skill sets.

Collaboration among providers is also often required for high-risk pregnancies. For example, midwives are typically required to refer high-risk deliveries to appropriate physicians. Likewise, family physicians may do the same. The National Family Physician

Expanding Roles for Nurse Practitioners

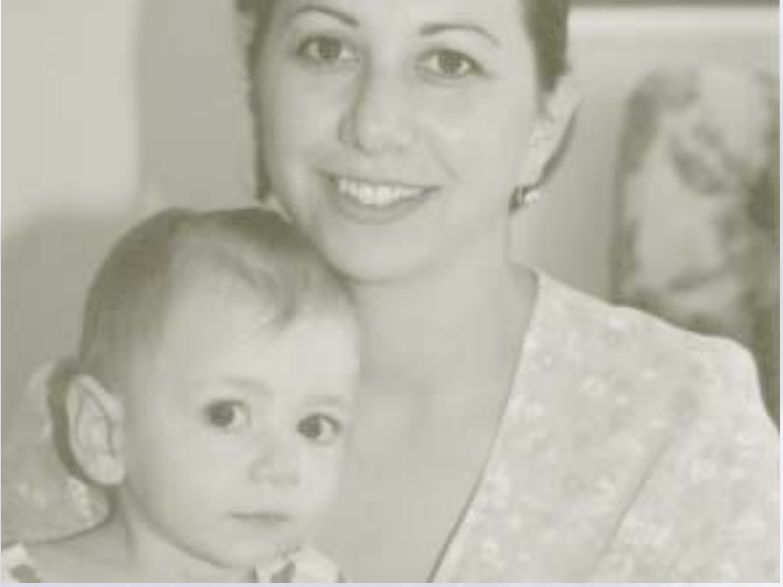
Wider use of nurse practitioners (NPs) is part of many primary health care renewal visions. NPs are registered nurses who have received additional education, including training to provide certain services formerly performed only by physicians, such as ordering tests, diagnosing illnesses, and prescribing drugs.

NPs may bring a unique perspective and expertise to their roles. For example, some assert that, whereas physicians' education tends to emphasize diagnosis and treatment of diseases, nurses focus more on the patient (and family) as a whole, both physically and psychosocially.[18] In this way, the role of nurses in primary health care may complement rather than substitute for the roles of other health care providers.

NPs work in most parts of the country, but Canadians in rural and remote areas are more likely to receive care from these professionals. For example, in 2002, about 60% of nurses in the Northwest Territories and Nunavut worked in expanded roles in primary health care settings.[19] Although the particular tasks may vary, most parts of Canada (Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador, and the Northwest Territories/Nunavut) have passed legislation that allows NPs to practise autonomously.[20] For example, NPs in Ontario may provide pregnancy diagnosis, birth options counseling, and prenatal care to 32 weeks.[21] Elsewhere, tasks that fall outside of their traditional scope of nursing practice must be delegated by a physician.

Workforce Survey asked family physicians who provide maternal care if they transferred their moderate-risk patients to an obstetrician: 11% of those who attended births indicated they transferred care. More (63%) said that they continued to provide care but consulted an obstetrician.

However, collaboration can be challenging, and it may take time to establish. For example, a survey conducted after the introduction of midwives into the British Columbia health care system found that maternal and newborn nurses and midwives generally provided care to women in parallel rather than by collaborating, and that tension existed between the two groups of professionals.[23]



Other Professionals Involved in Supportive Maternity Care

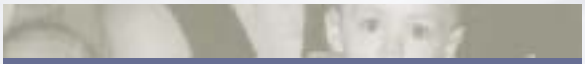
Prenatal Educators

Prenatal education classes, which provide information about various aspects of pregnancy, birth, and early parenting, are often offered in hospitals with maternity services or in the community. Prenatal educators come from a variety of backgrounds, including nursing. No universal certification standards for prenatal educators currently exist in Canada, but a few organizations have established their own certification requirements. As well, some community colleges offer certificate-level, continuous study courses in prenatal education.

Doulas

Doulas provide non-medical emotional support for expecting mothers and their families during birth and postpartum periods, but do not perform clinical tasks. There are two types of doulas: birth doulas and postpartum doulas. As of January 2004, there were about 200 birth doulas in Canada certified by the Doulas of North America. They provide support primarily during labour and birth. Postpartum doulas provide support in the home following delivery. A doula training course usually consists of a two or three-day seminar where skills in relaxation, breathing, positioning, pain control, massage, and other comfort measures are developed.

Doulas are not regulated or certified in Canada, although several organizations offer certification in the U.S. and in some European countries.



Labour Support and Caesareans

Labour support is a term that describes the "presence of an empathic person who offers advice, information, comfort measures, and other forms of tangible assistance to a woman to help her cope with the stress of labour and birth."[24] Many different practitioners are trained to offer support during childbirth, including nurses, midwives, and doulas.

Does having continuous support during labour reduce the likelihood of a caesarean section? A systematic review of 14 studies involving 5,000 women from 10 countries compared continuous support from a professional or non-professional caregiver (family members and friends) and regular care (some support, but not continuous). The authors concluded that uninterrupted labour support was beneficial: it was associated with significant reductions of caesarean section deliveries, operational vaginal delivery, and use of pain medication.[25]

Screening and Diagnostic Testing

Some health professionals are involved in maternity care at specific points in a pregnancy, rather than on a continual basis. For example, most pregnant women undergo a set of routine screening and diagnostic tests, such as ultrasounds and blood tests. If there are suspected complications or if the pregnancy is high-risk, more invasive and more frequent tests may be undertaken. Radiologists, ultrasound and laboratory technicians, and other professionals perform these tests.

Did You Know?

In 2003, the Canadian Task Force on Preventive Health Care stated that there was fair evidence supporting the benefits of ultrasound screening during the second trimester in periodic health examinations in normal pregnancies. They reported that ultrasound screening has been shown to contribute to increased birth weights, early detection of twins, decreased rates of induction, and increased rates of abortion for fetal abnormalities. Serial ultrasound screening throughout normal pregnancies is not recommended.

In some parts of Canada, particularly rural and northern areas, the limited availability of these professional and technical groups may affect the care available to expectant mothers. More information regarding imaging staff and services is available in *Medical Imaging in Canada*, a CIHI special report (available at www.cihi.ca).

Special Challenges for Care Providers

In popular song, pregnancy and childbirth have been referred to as a "common little miracle." When all goes according to plan, women have healthy pregnancies and babies are born without the need for extensive medical intervention. However, there are cases for which special types of care are needed in order to ensure the safety of both mother and infant.

Pregnancies are deemed high-risk if there is a higher-than-average chance of complications developing. For example, women with a history of medical conditions such as gestational diabetes, heart disease, or those carrying more than one child, may be considered high-risk. A normal pregnancy may also become high-risk when certain problems, such as signs of preterm labour, are identified. Typically, obstetricians tend to coordinate the care of high-risk women, and additional monitoring tests (e.g. ultrasounds) are often suggested.

High-Risk Pregnancies

Many hospitals have specialized clinics for women experiencing high-risk pregnancies, but these tend to be located in major urban centres. This is also true for hospitals with specialized intensive care units to care for high-risk infants. In Ontario, for example, of the 16 in-hospital neonatal intensive care units, 10 are in major urban centres.

Did You Know?

About 10% of all pregnancies are considered to be high-risk. High-risk pregnancies are those where either the mother, the baby, or both have a higher-than-average chance of developing complications. The complications could be due to a health problem that the mother had before she became pregnant. Or they could have developed during her pregnancy or during delivery. [7]

Childbirth in Rural and Remote Areas

Childbirth in rural and remote areas of Canada presents unique challenges for both women needing care and for care providers. Examples include[26, 27]

- distances from facilities and specialized equipment;
- the lack of peer support for providers and coverage for their practice; and
- the need for providers to have expanded or specialized skills.

Specific challenges to the sustainability of rural maternity practice include[17]

- the limited number of physicians available for on-call services;
- the lack of caesarean section capability;
- the lack of available anaesthesia services; and
- the small number of births in rural areas.

One result of the more limited availability of maternity services in rural and remote areas is that many women, especially those with high-risk pregnancies, must travel to urban centres to give birth.

Aboriginal Midwifery in Canada

Traditionally, childbirth knowledge and skills were passed along through the generations. In some Aboriginal communities, midwives continue to learn through apprenticeships. In Quebec, Inuit midwives in Puvirnituq and Inukjuak study midwifery as apprentices in their own communities. Quebec's midwifery law recognizes Inuit midwives who are already working in Nunavik, but not those in training. This is because the legislation currently recognizes only the training program at l'Université du Québec à Trois-Rivières but not the apprenticeship model of Aboriginal midwives. Nunavik officials have been lobbying for changes to this legislation.

In Ontario, Aboriginal midwives who practise in their own communities are not regulated under the provincial midwifery act. In British Columbia, Aboriginal midwives are working with the College of Midwives of British Columbia to establish a committee on Aboriginal midwifery. In Manitoba, legislation allows Aboriginal midwives to be accredited if their training was done through apprenticeship.[28]

Birthing in Canada's Far North

Since the 1960s, women living in the far north often flew to tertiary or secondary care hospitals about four weeks before their due dates, particularly if they were having multiple births or had other complications. Only unplanned births usually occurred in northern communities.[29]

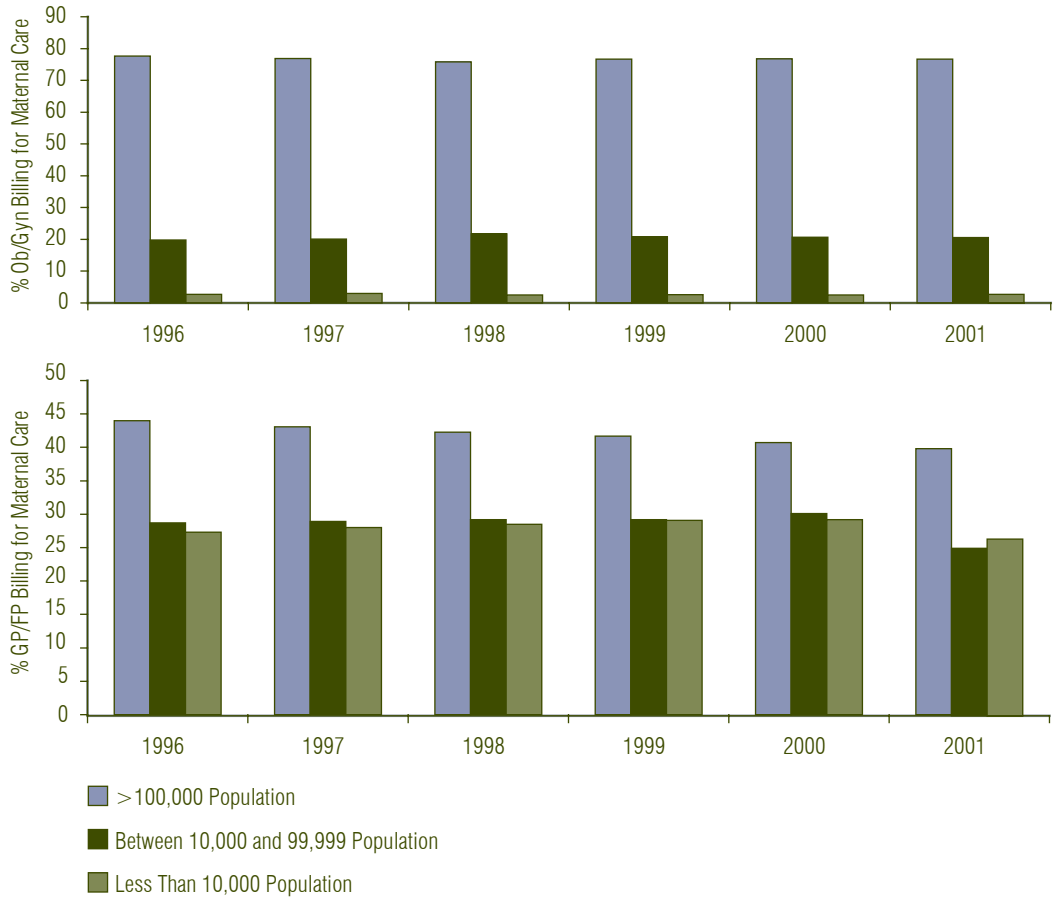
This practice meant that specialized care was close at hand, but women were far from home. In the mid-1990s, a regional health survey of birthing experiences by the Labrador Inuit Health Commission found that 84% of women reported that leaving home to have their babies was stressful. In addition, 54% reported that leaving home had a negative impact on their families.[30]

Today, birth rates in the far north are much higher than those in urban Canada. Women with complications or those requiring a caesarean birth still often travel to hospital. However, some of those with low-risk pregnancies are finding it easier to remain in their communities. For example, birthing centres were created in Puvirnituq, Nunavik in 1986; in Rankin Inlet, Nunavut in 1993,[30] and in Inukjuak in 1998.[31]

FIGURE 14

Where Family Physicians and Obstetricians Practise

Most obstetricians providing maternal care live in Canada's urban centres. Billing data show that the distribution of these specialists was relatively stable between 1996 and 2001.



Source: National Physician Database, CIHI

Birthing in Rural Canada

While birth rates in the far north are among the highest in the country, fewer babies are being born across Canada's rural areas than in the past. In some parts of the country, maternity services are also being reduced. In a survey of northern Ontario community hospitals, 15 of 39 communities had no obstetrical services in 1999, compared to only three in 1981.[32] The remaining hospitals offered a variety of services, ranging from no local caesarean capability to obstetrician-provided caesareans. In some hospitals, family physicians or general surgeons also performed caesareans. Researchers estimated that the average time to the nearest community with caesarean capacity was 45 minutes.

Answering Questions for Mothers in Rural Areas

A recent study in Ontario and Alberta examined women's experiences of rural maternity care. The study found that women identified their family physician as the primary source of answers for parenting questions and often did not look beyond the range of maternity care options presented by their family physician. Where family physicians were not as readily available, women tended to consider a wider range of options.[34]

A similar study of rural hospitals in British Columbia examined the availability of emergency caesarean sections from 1994 to 1999.[33] Of 60 rural hospitals, 19 had no capacity to provide caesarean sections; in six they were available on a limited basis; 10 had 24-hour availability provided by family physicians; and 25 had 24-hour availability provided by specialists. While hospitals with more services had a higher proportion of deliveries from the local hospital catchment area, no significant differences were found in perinatal deaths between hospitals with little or no availability of caesarean sections and those with 24-hour availability.

In many other areas of care, research shows that high-volume centres tend to have better patient outcomes. An expert panel, however, recently suggested that this is not the case for physicians attending births, providing that they have appropriate support. The Society of Obstetricians and Gynaecologists of Canada, the College of Family Physicians of Canada, and the Society of Rural Physicians of Canada affirmed in a 2002 joint statement that the competence of a maternity care setting is not dependent on the number of births performed annually by physicians. In fact, they suggested that good outcomes in low-volume settings are possible where access to specialist consultation and timely transfers are available and used appropriately.[35]

Care in the First Weeks of Life

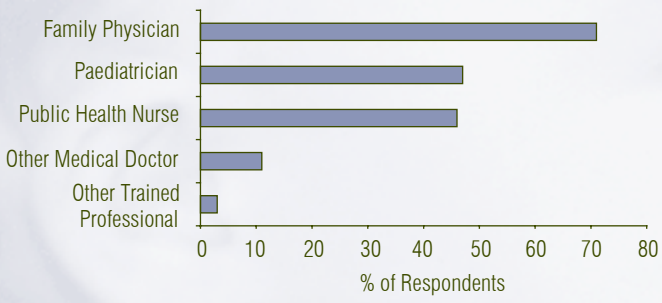
A generation or two ago, women often stayed in hospital for close to five days with an uncomplicated birth, and even longer if there were complications.[36] Today, healthy mothers and their infants are typically discharged 24 to 48 hours after delivery. Some mothers may choose to return home even earlier—particularly if a midwife delivered the baby.

Most babies and their mothers who go home 24 to 48 hours after birth do not experience problems. But some babies have jaundice, dehydration, or other conditions and need to return to hospital. In fact, according to CIHI data, between 1994 and 2000, jaundice was the number one cause for hospitalization of infants up to 28 days old in Canada. Several studies have found a correlation between declining lengths of stay and increased readmission rates for jaundice and dehydration.[37, 38, 39] To monitor these and other health concerns, women cared for by family physicians or obstetricians are often instructed to have their newborns seen by a family doctor (or paediatrician) 24 to 48 hours after leaving hospital, and midwives typically continue to provide care up to six weeks after birth. In addition, a variety of other professionals may become involved in care after birth. The following section highlights what we know about some of these health care providers.

FIGURE 15

Who Provides Health Care for Baby?

According to Statistics Canada's National Longitudinal Survey of Children and Youth, a family physician was consulted at least once for health care for 70% of infants 0 to 11 months old in 2000–2001. A paediatrician or a public health nurse was consulted for just under 50% of the infants in the same time period.



Source: National Longitudinal Survey of Children and Youth, Statistics Canada

Paediatricians

Paediatricians are specialists in caring for children. Most adults do not see a specialist for all their routine care. However, some Canadian parents opt to have their infants and children cared for exclusively by these specialists.

In 2002, there were 2,197 paediatricians** in Canada. As with other health care professionals, these doctors were distributed unevenly across the country. Among the provinces, Manitoba had

** This number includes all paediatric subspecialties, including paediatric oncology, paediatric general surgery, and paediatric cardiology.

the highest rate (nine per 100,000 population) and Saskatchewan and New Brunswick the lowest (four per 100,000 population).

Is there a difference in the care paediatricians and family physicians provide? Some studies have found that paediatricians and family doctors approach childhood illnesses differently.[40, 41] For example, a survey of family physicians and paediatricians looked at the factors that influenced their decision to refer children with recurring ear infections (otitis media with effusion) to specialists.[40] Overall, family physicians reported much lower thresholds for referring than did paediatricians. Family physicians tended to refer children after fewer episodes of illness, fewer months of effusion, lower levels of hearing loss, and fewer months of preventive antibiotic use than did paediatricians.

Canada's Paediatricians in 2001

- In 2001, Canada had 2,234 paediatricians.
- 43% were female; up from 38% in 1996.
- Their average age was 48; 0% were under 30, but 18% were over 60.

Care for Infants with Complex Health Care Needs

Babies with serious health problems may be admitted to a neonatal intensive care unit (NICU). There they receive care from a large team of health care providers, including paediatricians (known as neonatologists) specially trained to care for high-risk and premature babies. Neonatology has also become a subspecialty in many other professions. Nurses, physiotherapists, occupational therapists, pharmacists, respiratory therapists, dietitians, and others often acquire additional skills to work in this field. Neonatal nurse practitioners, for example, have received advanced training to care for newborns allowing them to diagnose illness and prescribe medications for infants.

Having an infant in a NICU and dealing with a large team of health care providers can be very stressful for parents. A recent study suggests that trained peer support may help mothers with infants in NICUs. Two groups of mothers both received the usual support from NICU health care providers; one group received the additional support of trained peers who had previously had a child in a NICU. According to the researchers, mothers who received peer support reported feeling less stress than those who received support only from NICU staff.[42]

Public Health Nurses

According to Statistics Canada's National Longitudinal Survey of Children and Youth, just under half of women with children between 0 and 11 months saw or talked to a public health nurse in the year prior to 2000–2001.

Public health nurses are part of a larger group of providers called community care nurses. In 2002, there were 12,302 such nurses in Canada. Community care nurses are registered nurses who provide care in a setting outside of institutions, possibly including care in homes. The category includes RNs who identify nursing care in outposts/isolated areas, hospice care, parish nursing, dialysis care, or public health as their primary area of responsibility. Not all community care nurses provide care to mothers and babies, but many do.

Healthy Babies, Healthy Children

Public health nurses and other professionals provide a broad range of services for families, before and after birth. In Quebec, for example, the Montreal Diet Dispensary program was begun in the 1960s to improve pregnancy outcomes in socially disadvantaged urban women. Now part of the Canada Prenatal Nutrition Program, the diet dispensary works with high-risk, low income women in the greater Montréal area. Starting with a home visit, education and counseling are key components of the program, which aims to improve diet and therefore facilitate a healthy pregnancy. As well, 94% of the program's clients receive food supplements. An evaluation of the program found that it helped to reduce the number of low birth weight babies. It also sugested that the costs of the program were more than offset by savings in subsequent health care costs.[44]

Likewise in 1998, the Ontario Ministry of Health and Long-Term Care launched the Healthy Babies, Healthy Children initiative.[43] This province-wide program is run by public health nurses who provide follow-up care to pregnant women identified as "at risk," as well as to all new mothers. Typically, within 48 hours of discharge from hospital after the birth of a baby, a public health nurse calls or makes a home visit to provide support for infant care and breastfeeding, as well as to help with the transition to parenthood. This program can also provide ongoing home visits by a public health nurse or a supportive home visitor, and referrals to other agencies and services if necessary.

In 2002, Ontario researchers published the results of a two-year program evaluation of Healthy Babies, Healthy Children. Based on almost 10,000 participant interviews with families, public health nurses, and lay home visitors, their findings included:

- In 2001, 88% of mothers with new babies in Ontario agreed to be screened. More than 80% of families with new babies received a phone call from a public health nurse shortly after returning home from the hospital.
- About 7% of all Ontario mothers with new babies could benefit from extra help and support. At the time of the evaluation they were receiving, on average, a 1.2-hour home visit every 18 days.
- One-third of all formal referrals were to breastfeeding, nutrition, prenatal, and infant health services; 16% were to parenting programs and services; 15% to medical services, child therapy, and development programs; 12% to economic, social, and related family supports; and 25% to other services.
- When researchers compared families who received Healthy Babies, Healthy Children home visiting with similar families who did not, they found that:
  - Children with home visits scored higher on most infant development measures.
  - Parents receiving home visits had a stronger sense of connection with community services and were more confident about their parenting skills.
  - Families receiving home visits made more use of community services and they had more contacts with public health nurses and other early years professionals.[43]

Getting Care Over the Phone

When health problems are not emergencies, or when parents have questions about their children's health, in many parts of Canada they now have a new place to turn. Telephone triage services are spreading across the country. These services are generally available 24-hours a day, 7-days a week. They supply answers to health-related questions and advise callers about how to handle non-urgent medical conditions. They are generally staffed by trained nurses who work with computer-assisted tools to help callers decide whether to care for themselves, see a doctor or other health care provider, or go to an emergency room. In some cases, callers can listen to pre-taped information on health-related topics. Or they may be referred to other crisis or community information lines.

Quebec's Info-Santé began in 1995. It later became the first province-wide telephone triage service. Telephone triage services are also operating in New Brunswick, Ontario, Alberta, British Columbia and other Canadian communities.

What do we know about these services and their ability to help parents? In total, Quebec's Info-Santé logged more than 2.5 million calls in 1998–1999.[45] That's 348 calls for every 1,000 residents. Women between 25 and 44—especially those with young children—were the most frequent users of the service. Likewise, in northern Ontario, two of the top 10 reasons people accessed a telehealth pilot project were children's rashes and fevers.[46]

Lactation Consultants

Rates of breastfeeding rose in Canada during the 1990s. According to the National Longitudinal Survey of Children and Youth, in 1994–1995 when mothers with children less than two years old were surveyed as part of a national initiative, about 59% reported breastfeeding for three months or more. By 1998–1999, this figure had increased to 63%.[8] More mothers also reported breastfeeding regardless of duration: 75% in 1994–1995 versus almost 82% in 1998–1999.[8]

Breastfeeding often involves a short learning curve for both mother and baby. But problems can occur, including difficulty in establishing feeding, engorgement with subsequent mastitis, and insufficient milk supply. Mothers with more difficult problems may

The Baby-Friendly Hospital Initiative

Breastfeeding is good for babies, according to many experts. Nationally and internationally, exclusively breastfeeding—at least for the first six months of life—is highly promoted.

In 1991 the World Health Organization (WHO) and UNICEF launched the Baby-Friendly Hospital Initiative. It was designed to encourage hospitals, health care facilities, and maternity wards to adopt practices that promote and support breastfeeding. As of 2003, more than 15,000 hospitals in 134 countries had been designated Baby-Friendly, meaning that they had met the standards set by the WHO/UNICEF initiative. In Canada as of 2003, only two hospitals had this status.

The Breastfeeding Committee for Canada recommends that all staff who may come into contact with pregnant and/or breastfeeding mothers should have at least 18 hours of breastfeeding education. The WHO and UNICEF have developed an evidenced-based training course—including three hours of clinical skills training—to provide this education. Called the *Breastfeeding Management and Promotion in a Baby-Friendly Hospital* program, it is often referred to as "The 18-Hour Course."

Canada's Lactation Consultants in 2002

- In 2002, approximately 1,191 Canadian lactation consultants were certified and registered with the International Board of Certified Lactation Consultants.
- Lactation consultants come from a variety of backgrounds. They could be from any field of health care or possibly from other areas.
- They may gain breastfeeding expertise through special training, personal experience, volunteer counseling, paid employment, or academic means.
- In 2002, 169 Canadians wrote the examination to receive certification through the International Board of Certified Lactation Consultants.

seek support and help from associations such as the La Leche League or specialized lactation consultants. A lactation consultant is a breastfeeding specialist trained in preventing, identifying, and addressing breastfeeding problems such as incorrect technique, cracked nipples, and infection. Lactation consultants may also provide specialized breastfeeding counseling in circumstances such as multiple births or preterm babies.

While there is no certification program in Canada, the International Board of Certified Lactation Consultants (IBCLC) does provide a certification examination for those worldwide wishing to become a certified consultant. The IBCLC requires that their members complete both university or college level course work in addition to clinical training, and members must also re-certify every five years. In Canada in 2002, 1,191 lactation consultants were certified and registered with this board.

Conclusion

Many different health professionals provide care to women and infants before, during, and after birth, working in hospitals, clinics, laboratories, physicians' offices, or in patients' homes. Declining overall rates of births, together with increasing rates of births requiring more specialized care, have the potential to affect all providers of maternity and infant care—so may what they are required to do in their profession and what they choose to do. Fewer newly practising family physicians are choosing to include obstetrics in their practices, for a variety of reasons. As family physicians in many regions are attending fewer births in general and fewer higher-risk births in particular, women more often are choosing obstetricians and midwives to deliver their babies. In rural areas, community hospitals have cut maternity services, requiring mothers to make different care choices.

Some innovative responses, such as formal shared-care services and the growing number of community birthing centres, have emerged. More innovations may be on the horizon. The changing scope of practice, along with a general trend toward earlier retirement, have implications for decisions in health human resource management, including recruitment and retention, professional training and continuing education, payment methods (salaries or fee-for-service), and fee structures. We hope governments, professional associations, and health facility associations can make use of information such as that contained in this report to respond to these changing needs.

What We Know

- The number of family physicians providing intrapartum and shared care.
- The percentage of hospital births, vaginal and caesarean, which are attended by obstetricians, family physicians, or midwives.
- The average number of births attended by family physicians and obstetricians in a year.
- The number of registered nurses who identify maternity/newborn care as their primary area of responsibility in each province and territory.
- The number of registered midwives in Canada, the provinces that have regulated the profession, and those funding their services.

What We Don't Know

- What types of informal care—such as from friends, family, and community groups—do parents and infants receive? What mix of formal and informal care would work best for different families and communities?
- How will declining birth rates, the increase in multiple births, and other demographic trends affect the demand for health care for mothers and babies? What is the best mix of obstetricians, family physicians, midwives, and other care providers to meet this need? What are the implications for training, costs, scopes of practice, and the delivery of health services?
- What impact will the increasing number of midwives have on obstetrical care in Canada? How has this change, as well as changes in the scope of practice for other professionals, affected the care provided to mothers and babies, their health, their satisfaction, and the costs of their care?
- How many allied health care providers provide care to mothers and their infants? What services do they provide? What is their effect on maternal and infant outcomes?

What's Happening

- Negotiations are underway between certain CLSCs and hospitals in Quebec that would allow midwives to deliver babies in hospitals. Also, the Quebec government is expected to pass a regulation allowing midwives to perform home births.
- The government of British Columbia has earmarked $2 million to encourage more physicians to continue delivering babies. Physicians with low obstetrical caseloads will receive a 50% bonus for up to 25 deliveries a year.
- Researchers at McMaster University are collecting policy and position statement information on the rationalization of maternity care in Canada with a particular interest in rural maternity care. They expect findings to be available by the summer of 2004.
- CIHI released updated health personnel data for years 1993 to 2002. As well, a special report on changing scopes of practice that includes information on how much time family physicians are devoting to obstetrical care will be released later in 2004.
- In March 2004, Saskatoon's Baby Friendly Initiative Partnership received the Health Quality Council Stellar Award. This recognizes the initiative's benefits for several programs, such as a pharmacy hotline, designating breastfeeding-friendly work sites, and a welcome wagon to increase use of lactation consultants.

Fast Facts FF

Number of Physicians by Specialty Across Canada, 2002 (Rate per 100,000 Population)

	Family Physicians	Obstetricians/ Gynaecologists	Anaesthesiologists	Paediatricians	All Physicians
B.C.	4,541 (109)	187 (5)	351 (8)	237 (6)	8,243 (199)
Alta.	3,020 (97)	133 (4)	229 (7)	227 (7)	5,637 (180)
Sask.	966 (96)	40 (4)	62 (6)	44 (4)	1,564 (155)
Man.	1,073 (93)	58 (5)	99 (9)	102 (9)	2,077 (181)
Ont.	10,242 (85)	666 (6)	924 (8)	888 (7)	21,735 (179)
Que.	7,917 (106)	399 (5)	566 (8)	559 (7)	15,800 (212)
N.B.	700 (93)	30 (4)	50 (7)	29 (4)	1,185 (157)
N.S.	1,007 (107)	51 (5)	86 (9)	66 (7)	1,943 (206)
P.E.I.	119 (85)	5 (4)	7 (5)	9 (6)	191 (136)
N.L.	585 (110)	20 (4)	31 (6)	32 (6)	929 (175)
Y.T.	48 (161)	1 (3)	1 (3)	1 (3)	52 (175)
N.W.T.	30 (72)	2 (5)	0 (0)	3 (7)	46 (111)
Nun.	10 (35)	0 (0)	0 (0)	0 (0)	10 (35)
Canada	30,258 (96)	1,592 (5)	2,406 (8)	2,197 (7)	59,412 (189)

Note: Physician counts include all active general practitioners, family practitioners and specialist physicians as of December 31 of the reference year. The data include physicians in clinical and non-clinical practice and exclude residents and physicians who are not licensed to provide clinical practice and have requested to the Business Information Group that their data not be published. Yukon and Alberta data for 2000 do not reflect the annual update from the Government of the Yukon or the College of Physicians and Surgeons of Alberta, respectively.

For purposes of reporting, physician specialty classification is based on postgraduate certification credentials achieved in Canada. Physicians designated as **family practitioners** include certificants of the College of Family Physicians of Canada. **Specialist physicians** include certificants of the Royal College of Physicians and Surgeons of Canada and/or the College des médecins du Québec. All other physicians, including non-CFPC general practitioners, foreign-certified specialists (or Canadian non-certified specialists), are included in the **family practice** counts. It is recognized that physician classification in this manner does not necessarily reflect the services provided, as the range of services provided by a physician is subject to provincial licensure rules and medical service plan payment arrangements. As such, rates may differ from other publications. For example, the Newfoundland Medical Board (NMB) granted full or provisional licenses to 132 non-certified specialists in 2002. These physicians are counted as general practitioners in this report but are counted as specialist physicians in the annual report of the NMB Registrar. The NMB Registrar records 448 family physicians, 30 obstetricians/gynaecologists, 53 anaesthesiologists, and 50 paediatricians in 2002.

Physician:Population ratios are expressed as physicians per 100,000 population. Physician per 100,000 rates use updated population estimates and may differ slightly from previously published figures.

Source: Southam Medical Database, CIHI

Registered Nurses (RNs) Specializing in Maternal and Newborn Care Across Canada, 2002

	Number of RNs (% of all RNs Employed in Nursing)
B.C.	1,684 (6.0)
Alta.	1,444 (6.2)
Sask.	403 (4.9)
Man.	693 (7.0)
Ont.	4,352 (5.5)
Que.	2,296 (3.9)
N.B.	364 (4.9)
N.S.	533 (6.3)
P.E.I.	87 (6.7)
N.L.	258 (4.7)
Y.T.	17 (6.3)
N.W.T.	29 (6.0)
Nun.	7 (2.6)
Canada	12,167 (5.3)

Note: CIHI data will differ from provincial/territorial data due to the CIHI data collection, processing, and reporting methodology.
Source: Registered Nurses Database, CIHI

Residency Programs

	Obstetrics and Gynaecology	Paediatrics	Paediatric General Surgery	Paediatric Emergency Medicine	Paediatric Radiology	Neonatology/ Perinatolgy	Maternal/ Fetal Medicine	Family Medicine
University of British Columbia	X	X	X	X		X	X	X
University of Calgary	X	X	X	X		X		X
University of Alberta	X	X		X		X		X
University of Saskatchewan	X	X				X		X
University of Manitoba	X	X		X		X	X	X
University of Western Ontario	X	X		X		X	X	X
McMaster University	X	X				X	X	X
University of Toronto	X	X	X	X	X	X	X	X
Queen's University	X	X						X
University of Ottawa	X	X	X	X		X	X	X
McGill University	X	X	X	X	X	X		X
Université de Montréal	X	X	X	X	X	X	X	X
Université de Sherbrooke	X	X						X
Université Laval	X	X					X	X
Dalhousie University	X	X	X			X	X	X
Memorial University of Newfoundland	X	X						X

Note: Family medicine data were compiled from university Web sites by CIHI.
Source: Royal College of Physicians and Surgeons of Canada

For More Information

1 Canadian Institute for Health Information. (2001). *Hospital Morbidity Database, 2000–2001*. Ottawa: CIHI.

2 World Health Organization. (2000). *Munich Declaration: Nurses and Midwives: A Force for Health, 2000*. www.euro.who.int.

3 British Columbia Centre of Excellence for Women's Health. (2003). *Solving the Maternity Care Crisis: Making Way for Midwifery's Contribution*. Policy Series. Vancouver: British Columbia Centre of Excellence for Women's Health.

4 Hawkins M, Knox S. (2003). *The Midwifery Option: A Canadian Guide to the Birth Experience*. Toronto: HarperCollins Publishers.

5 Statistics Canada. (2000). *National Longitudinal Survey of Children and Youth*. Ottawa: Statistics Canada.

6 Wen SW, Mery LS, Kramer M, Jimenez V, Trouton K, Herbert P, Chalmers B. (1999). Attitudes of Canadian women toward birthing centres and midwifery care for childbirth. *Canadian Medical Association Journal*, 161(6), 708–709.

7 Blecher, MB. (2001). *When Your Pregnancy's at Risk*. www.my.webmd.com/content/pages/3/3608_926.htm.

8 Health Canada. (2003). *Canadian Perinatal Health Report 2003*. Canadian Perinatal Surveillance System. Ottawa: Health Canada.

9 Reid T, Grava-Gubins I, Carrol JC. (2002). Janus project: Family physicians meeting the needs of tomorrow's society. *Canadian Family Physician*, 48(7), 1225–1226.

10 Canadian Institute for Health Information. (2001). *National Physician Database*. Ottawa: CIHI.

11 Godwin M, Hodgetts G, Seguin R, MacDonald S. (2002). The Ontario family medicine residents cohort study: Factors affecting residents' decisions to practice obstetrics. *Canadian Medical Association Journal*, 166(2), 179–184.

12 Blain D, Lalonde A, Milne JK. (2000). SOGC survey on practice patterns in obstetrics and gynaecology. In *Society of Obstetricians and Gynaecologists of Canada: Strategic Plan 2000–2005*. Ottawa: Society of Obstetricians and Gynaecologists of Canada.

13 Chan BTB, Willett J. (2004). Factors influencing participation in obstetrics by obstetrician-gynecologists. *Obstetrics and Gynecology*, 103, 493–498.

14 Fraser W, Hatem-Asmar M, Krauss I, Maillard F, Breart G, Blais R. (2000). Comparison of midwifery care to medical care in hospitals in the Quebec pilot projects study: Clinical indicators. *Canadian Journal of Public Health*, Jan-Feb, 91(1), 5–11.

15 Rosenblatt RA, Dobie SA, Gary Hart L, Schneeweiss R, Gould D, Raine TR, Benedetti TJ, Pirani MJ, Perrin EB. (1997). Interspecialty differences in obstetric care of low-risk women. *American Journal of Public Health*, 87(3), 344–351.

16 Turnbull D, Holmes A, Shields N, Cheyne H, Twaddle S, Gilmour WH, McGinley M, Reid M, Johnstone I, Geer I, Mcllwaine G, Lunan CB. (1996). Randomised, controlled trial of efficacy of midwife-managed care. *Lancet*, 348, 213–218.

17 Medves J. (2002). Rural maternity care in Canada—Will it survive? *Perinatal Newsletter*, 19(3), 1.

18 Patel VL, Cytryn KN, Shortliffe EH, Safran C. (2000). The collaborative health care team: The role of individual and group expertise. *Teaching and Learning in Medicine*, 12, 117–132.

19 Canadian Nurses Association. (2002). *Legislation and Regulation of the Nurse Practitioner in Canada*. Ottawa: CNA. www.cna-nurses.ca.

20 Way D, Jones L, Busing N. (2000). *Implementing Strategies: Collaboration in Primary Care—Family Doctors and Nurse Practitioners Delivering Shared Care*. Toronto: Ontario College of Family Physicians.

21 Canadian Nurses Association. (2003). *Legislation, Regulation, and Education of the Nurse Practitioner in Canada*. Ottawa: CNA. www.cna-nurses.ca.

22 Rogers J. (2003). Sustainability and collaboration in maternity care in Canada: Dreams and obstacles. *Canadian Journal of Rural Medicine*, 8(3), 193–198.

23 Kornelsen J, Dahinten S, Carty E. (2003). On the road to collaboration: Nurses and newly regulated midwives in British Columbia, Canada. *Journal of Midwifery and Women's Health*, 48(2), 126–132.

24 Hodnett ED, Lowe NK, Hannah ME, Willan AR, Stevens B, Weston JA, Ohlsson A, Gafni A, Muir HA, Myhr TL, Stremler R. (2002). Effectiveness of nurses as providers of birth labor support in North American hospitals. *Journal of the American Medical Association*, 288(11), 1373–1381.

25 Hodnett ED. (2003). Caregiver support for women during childbirth. (Cochrane Database Systematic Review). In *The Cochrane Library*, Issue 2, 2003. Oxford: Update Software.

26 Barer M, Stoddart GL. (1999). *Improving Access to Needed Medical Services in Rural and Remote Canadian Communities: Recruitment and Retention Revisited*. Vancouver: Centre for Health Services and Policy Research.

27 Chan B, Barer M. (2000). Access to physicians in underserved communities in Canada: Something old, something new. In *Fifth International Medical Workforce Conference 2000: Papers. Australian Medical Workforce Advisory Committee and Commonwealth Department of Health and Aged Care*, 213–242.

28 Carroll D, Benoit C. (2001). Aboriginal midwifery in Canada: Blending traditional and modern forms. *Network*, 4(3), 6–7.

29 Health Canada. (1996). Report of the Royal Commission on Aboriginal Peoples. Ottawa: Health Canada. www.ainc-inac.gc.ca/ch/rcap/sg/sgmm_e.html.

30 Archibald L, Grey R. (2000). *Evaluation of Models of Health Care Delivery in Inuit Regions*. Ottawa: Health Canada.

31 Nunatsiaq News. (1998). *Inukjuak Mothers Pleased with Birthing Center*. www.nunatsiaq.com/archives/nunavik981120/nun80703_01.html.

32 Hutten-Czapski PA. (1999). Decline of obstetrical services in northern Ontario. *Canadian Journal of Rural Medicine*, 4(2), 72–76.

33 McAllister J. (2003). WONCA: Rural hospitals safe for maternity. *Medical Post*, 39(38).

34 Sutherns R, Bourgeault IL. (2003). Finding out about birth options in rural Canada is harder than you might think. *Network*, 5(4), 8–9.

35 Society of Obstetricians and Gynaecologists of Canada, the College of Family Physicians of Canada, the Society of Rural Physicians of Canada. (2002). Joint policy statement: Number of births to maintain competence. *Canadian Family Physician*, 48(4), 751.

36 Wen SW, Liu S, Marcoux S, Fowler D. (1998). Trends and variations in length of hospital stay for childbirth in Canada. *Canadian Medical Association Journal*, 158(7), 875–880.

37 Lui S, Wen S, McMillan D, Fowler D. (2000). Increased neonatal readmission rate associated with decreased length of hospital stay at birth in Canada. *Canadian Journal of Public Health*, 91(1), 46–50.

38 Johnson D, Jin Y, Truman C. (2002). Early discharge of Alberta mothers post-delivery and the relationship to potentially preventable newborn readmissions. *Canadian Journal of Public Health*, 93(4), 276–280.

39 Lee S, Perlman M, Ballantyne M, Elliott I, To T. (1995). Association between duration of neonatal hospital stay and readmission rate. *The Journal of Pediatrics*, 127(5), 758–766.

40 McIsaac WJ, Coyte P, Croxford R, Harji S, Feldman W. (2000). Referral of children with otitis media: Do family physicians and pediatricians agree? *Canadian Family Physician*, 46, 1785–1788.

41 Boulis AK, Long J. (2002). Variation in the treatment of children by primary care physician specialty. *Archives of Pediatrics & Adolescent Medicine*, 156(2), 1210–1215.

42 Preyde M, Ardal F. (2003). Effectiveness of a parent "buddy" program for mothers of very preterm infants in a neonatal intensive care unit. *Canadian Medical Association Journal*, 168(8), 969–973.

43 Ontario Ministry of Health and Long-Term Care. (2003). *Healthy Babies, Healthy Children Report Card*. www.health.gov.on.ca/english/public/pub/ministry_reports/healthy_babies_report/hbabies_report.html.

44 Canadian Institute for Health Information. (2004). *Improving the Health of Canadians*. Ottawa: CIHI.

45 Dunnigan, L. (2000). *Recours au service téléphonique Info-Santé CLSC*. Enquête sociale et de santé 1998, 2e édition, Québec, Institut de la statistique du Québec, chapitre 21.

46 Canadian Institute for Health Information. (2001). *Health Care in Canada 2001*. Ottawa: CIHI.


ten
years
dix
ans
taking health information further
à l'avant-garde de l'information sur la santé