



# The Evolving Role of Canada's Family Physicians

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Joshua Tepper



Canadian Institute  
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# Table of Contents

- Acknowledgements** ..... 1
- Executive Summary** ..... 3
- 1. Introduction** ..... 9
  - 1.1 Family Medicine in the Canadian Health Care System ..... 9
  - 1.2 Time of Change and Challenges ..... 10
  - 1.3 More Than Head Counts . . . What Are They Doing? ..... 10
  - 1.4 Focus on Nine Areas of Clinical Activity ..... 11
  - 1.5 Questions Asked ..... 11
- 2. Methodology** ..... 13
  - 2.1 Where the Data Come From ..... 13
  - 2.2 Limitations of the Data ..... 14
  - 2.3 Who Is Being Studied? ..... 14
  - 2.4 Organization of the Data ..... 15
  - 2.5 Statistical Measures and Definitions ..... 16
  - 2.6 Defining Geographic Location ..... 16
- 3. Changes in the Workforce, 1992 to 2001** ..... 17
- 4. Summary Picture of Activity Levels and Changes in Practice** ..... 21
  - 4.1 Overview of Participation Levels ..... 21
  - 4.2 Overview of Workload Intensity ..... 23
  - 4.3 Four Broad Trends ..... 24
- 5. The Context of Change—Policy Directions, 1992 to 2001** ..... 25
  - 5.1 Changes in Medical Training and Licensing ..... 26
  - 5.2 Changes in the Health Care System ..... 27

<b>6. Changes in Specific Clinical Practice Areas</b> .....	<b>31</b>
6.1 Surgical Services .....	31
6.2 Office Practice .....	34
6.3 Advanced Procedural Skills Services .....	37
6.4 Anaesthesiology Services .....	40
6.5 Surgical Assistance Services .....	42
6.6 Basic Procedural Skills Services .....	44
6.7 Obstetrics .....	47
6.8 Mental Health Services .....	51
6.9 Hospital Inpatient Care .....	53
<b>7. Discussion and Considerations</b> .....	<b>57</b>
7.1 Activity Patterns: An Important Factor in Health Human Resource Planning .....	57
7.2 Decreasing Participation .....	58
7.3 Increasing Intensity of Service Provision .....	59
7.4 Stable at the Core .....	60
7.5 An Area of Sustained Growth .....	61
7.6 More Involvement and More Work by Older Physicians .....	61
7.7 Gender Differences .....	62
7.8 Geographic Differences .....	63
7.9 System in Evolution .....	64
<b>8. Limitations and Future Research</b> .....	<b>65</b>
8.1 Assessing "Quality" of Care Delivery .....	65
8.2 Additional Practice Areas and Settings .....	65
8.3 Non-Clinical Activity .....	65
8.4 Non Fee-for-Service Family Physicians .....	66
8.5 Impact of Health Policy .....	66
8.6 A Cohort Analysis .....	66
<b>9. Conclusion</b> .....	<b>67</b>
<b>Appendix A</b> .....	<b>69</b>
<b>Appendix B</b> .....	<b>71</b>
<b>Appendix C</b> .....	<b>73</b>
<b>References</b> .....	<b>83</b>



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## Executive Summary

The role of Canada's family physician has traditionally been characterized as providing a breadth of knowledge and skills in settings that range from clinics to different hospital settings, as well as homes and nursing homes. This breadth has been a defining feature of the profession and has helped position family physicians to provide "cradle to grave" care.

In the past few years, increasing attention has been focused on family medicine and the challenges the profession is facing. Studies and reports have examined the number and location of family physicians, their working conditions, patient access and the popularity of family medicine as a career choice.

Less attention has been directed to understanding what clinical activities family physicians are engaged in and whether there have been changes in the traditional breadth of activity engaged in by family physicians.

This report builds on smaller studies that describe changes in the patterns and scope of family physicians' clinical activities. It advances the literature by examining a broad range of health care services that are delivered in a variety of settings and that demand a wide array of clinical skills. The study looks at the participation of fee-for-service family physicians in nine clinical areas: office assessments, inpatient hospital care, mental health care, obstetrical care, surgical services, services that require advanced and basic procedural skills, surgical assisting and anaesthesiology. Results are presented for the period of 1992 to 2001. This report also outlines some of the many changes that have occurred during this time period that affect the education process and practice environment of family physicians.

This report addresses several questions that explore the changing nature of family practice in Canada:

- How has the family physician workforce changed in terms of age, gender and geographic distribution?
- What areas of clinical activity have family physicians traditionally engaged in?
- What were some of the major policy directions and initiatives in the education and practice arenas that occurred during the study time period?
- Within the nine clinical areas, how has the participation of family physicians changed over a 10-year period and how has the intensity of service delivery changed?
- How does participation in the identified clinical areas differ between genders? Has this changed over time?
- Are there differences in clinical activity based on geographic practice setting? How have these differences evolved over the years?
- Across age groups, how has activity in different clinical areas changed over time?

## Summary of Main Findings

Study results are based on two main measures. They are, for each clinical practice area, the percentages of family doctors who bill for services (participation rates) and the average number of services provided per family physician. A variety of patterns emerged across clinical areas—each with important nuances related to the age, gender and geographic setting of family physicians. The main trends can be summarized as follows.

**A) Stable:** Participation in office practice remained generally stable throughout the 10-year period of analysis. Participation rates ranged from 85% to 90%, and there was relatively little change in the average number of services provided per family physician.

**B) Increasing:** Only the area of mental health care had consistent increases in both study measures (that is, participation rates and average number of services provided per family physician). The participation rate for mental health care services went from 82% in 1992 to 85% in 2001. The average number of mental health care services provided per family physician increased by 12% during the same time period.

**C) Decreasing:** A steadily decreasing percentage of family physicians participated in hospital inpatient care over the period, dropping from 71% in 1992 to 62% in 2001. Also, fewer services were provided on average by those family physicians who continued to provide hospital inpatient care services. While the percentage of family doctors who provided services requiring basic procedural skills remained stable over the study period, the average number of basic procedures offered decreased by 33%.

**D) Decreasing participation with increasing intensity:** This pattern was most common and was seen in the remaining five clinical practice areas (surgical assisting, surgery, anaesthesia, obstetrics and advanced procedural skills services). In this pattern, the percentage of family physicians participating in the clinical service area decreased—but there was a corresponding pattern of increased average service delivery among those who continued to provide the service. For example, the participation rate for obstetrical care services went from 28% in 1992 to 16% in 2001. During the same period, the average number of obstetrical services provided per family physician increased by 33%.

The general trends described above provide a useful overview of how family doctors' practices changed during the 10-year study period. However, general descriptions do not reflect the diverse changes that have occurred across family physician age and gender groups, nor across urban and rural practice settings. These results are detailed in the main report.

## Discussion and Considerations

Canadian family physicians appear to be a heterogeneous population with a dynamic pattern of clinical activity that varies by age, sex, location and time period. Health human resource planning efforts that consider one family physician to be essentially the same as any other family physician will capture neither these differences nor the implications for service delivery. The practice trends presented in this report may help to inform physician resource planning efforts.

In almost all areas of clinical activity, there has been a consistent reduction in the participation of family physicians. For example, family physician participation rates in surgical services, surgical assistance, anaesthesia and obstetrical care declined by 32%, 31%, 28% and 43%, respectively, between 1992 and 2001. The finding of a general decline in the participation of family physicians in a variety of clinical areas is congruent with past studies.

Declining participation and service delivery rates may suggest a need to further explore the causes and catalysts of change. Efforts to address patterns of clinical practice may require a comprehensive and integrated approach that uses a variety of strategies. Such an approach may demand attention for both the education and practice environment. Similarly, successful efforts may hinge upon consideration not only of family medicine, but also of other medical disciplines and the broad spectrum of health care provider groups.

Within several clinical practice areas, participation rates declined—but at the same time, there was an increase in the average number of services provided by those family physicians who stayed involved. While it is beyond the scope of this study to examine cause and effect relationships, a number of explanations for this commonly observed trend are possible. Perhaps doctors who remain involved adopt a more intensive workload to compensate for the withdrawal of participation by other providers. Family physicians, in response to the increasing complexity of medicine, may explore opportunities to focus their practice in limited clinical practice areas, characterized by high levels of service that promote a sense of competency. Alternative explanations may point to a variety of implicit or explicit incentives/disincentives to engage in certain clinical activities.

A wide range of questions stem from the commonly observed pattern of decreased participation, coupled with increased intensity of service provision for those family doctors who remain involved. For example,

- How high can the workload for participating physicians rise, and how long can these physicians maintain the higher level of activity?
- What is an appropriate and realistic range of skills to expect individual family physicians to acquire and exercise through their practice?
- What is the level of “volume” or “experience” that confers and maintains competency?
- What policy changes are needed to support family physicians in traditional broad-based practices?

Results of this study illustrate a variety of practice trends across age groups. Discussion has taken place in health human resource forums about generational differences between physicians, and the suggestion has been made that new physicians (starting in training programs) are trying to establish a different balance between their clinical careers and their other professional or personal activities. Again, a variety of questions and considerations stem from these observations:

- Will younger physicians adopt the practice patterns of established older physicians as they age?
- Are there certain clinical activities that correlate with certain stages in the career life cycle?
- In addition to a possible desire to seek a different work/personal balance, what policy or other changes have occurred to create this apparent generational difference?

In this study, men and women generally mirrored each other in terms of broad patterns of change. However, there were differences in their level of participation and intensity of workload in different clinical areas. For example, female family physicians tended to provide surgical and obstetrical services more intensively than males. On the other hand, male family physicians provided 46% more office assessment services than female family doctors in 2001, and approximately twice as many advanced procedural skills services throughout the study period. With women entering family medicine in numbers significantly higher than men, the results of this study touch upon a number of possible considerations:

- How will the practice patterns of women change as they move through the “physician life cycle”? (The current number of older female physicians may be too small to draw strong conclusions.)
- What are the factors that lead to these gender differences? Are there strategies that can be implemented to either minimize these differences or capitalize upon them?
- What are other differences in practice between the sexes that should be considered? These might include patient acuity, illness burden of their practice, patient satisfaction, adherence to practice guidelines, etc.)

This study illustrates generally consistent patterns across geographic areas in terms of decreasing participation and increasing workloads. However, rural physicians consistently had higher rates of participation in most clinical areas. Mid-sized communities had the highest participation in surgical assistance services and hospital inpatient care. Relative to other regions, rural areas had a larger loss of participation in hospital-based services such as anaesthesia and surgical services. Rural regions may be particularly impacted by the broader health care system changes that are discussed within this report.

Future research on family physician practice across geographic areas may consider how regionalization, amalgamation and change in hospital service delivery have influenced the scope of family practice. Furthermore, although the trends toward decreased participation are similar across settings, the reasons for change may vary depending on geographic setting. Further research may also look at whether the health care system changes described above have greater implications in non-urban areas, possibly due to the limited other physician and health professional resources that are available in those areas.

## Limitations and Future Research

This report moves beyond describing the number, location and basic demographics of the workforce to reflect a profile of family physicians' clinical practice. A next step would be to capture issues around the quality of care provided by family physicians with different practice profiles. Future research may examine a broader range of clinical practice areas, such as sports medicine, women's health, emergency medicine, addictions, palliative care and First Nations' health. Alternative methodologies may also be used in future studies, possibly tracking practice changes among specific physician cohorts through time.

This report does not address family physicians' non-clinical professional activities (including research, teaching and administrative work), which may impact the amount of time available for direct clinical care. The report findings are also based exclusively on fee-for-service billing data. Thus, the extent to which the results can be generalized to family doctors who practise exclusively as non-fee-for-service physicians is unknown.

## Conclusion

This report describes recent changes in family practice within the context of the broader health care landscape. It looks at how differences between family practices—reflected in participation rates, intensity of service provision, gender, age and location—might contribute to human resource planning for family doctors. Other questions may still need to be asked: When should more traditional comprehensive family practices be encouraged? Is it still feasible to have all family physicians provide the traditional broad range of skills? Addressing these questions will help to define the roles of family doctors as we move into the future.





## I. Introduction

### I.1 Family Medicine in the Canadian Health Care System

One of the classic pictorial representations of the family physician is of a doctor, black bag in hand, standing beside a horse-drawn carriage. The family physician is ready to travel wherever patients need to be seen, and in the black bag is whatever equipment and medications the visit requires.

It is a powerful picture that implies some core concepts about the nature of family medicine. If the contribution of some physicians is their mastery of a focused area of medicine, then the hallmark of family physicians is their complementary role as doctors whose knowledge spans a wide breadth of clinical medicine.

This broad knowledge, and the corresponding clinical skill sets, enable the family physician to work in diverse settings such as patients' homes, medical clinics, emergency rooms, operating rooms, labour and delivery suites and hospital wards. In Canada, the family physician often serves as the main entry point to the health care system and the hub that provides continuity of care among many providers and throughout the life cycle. The importance of primary care in quality of health and the value Canadian society places on family physicians in the delivery of this care are well known.<sup>1, 2, 3, 4, 5</sup>

**In 2003 there were approximately 30,000 family physicians practising across the country in urban, mid-sized, rural and isolated settings.**

- What are they doing in their clinical practice?
- Does the traditional understanding and conceptualization of their role in the health care system still hold today?

If the contribution of some physicians is their mastery of a focused area of medicine, then the hallmark of family physicians is their complementary role as doctors whose knowledge spans a wide breadth of clinical medicine.

## 1.2 Time of Change and Challenges

The last decade has been a period of change and challenges for family physicians. Twenty-four percent of medical students chose to pursue family medicine as their first-choice residency program in 2003—a significant decline from the 32% to 35% results of the mid- to late-1990s.<sup>6,42</sup> Of those students electing to pursue family medicine training, an increasing number are seeking further sub-specialization in areas such as sports medicine and emergency medicine.<sup>7,8</sup> Initial research suggests that these doctors who choose to sub-specialize do not engage in traditional broad-based family practice.<sup>9</sup>

There are a variety of changes in the health care system that could impact upon family physicians. Other providers, such as chiropractors, nurse practitioners and pharmacists already share some areas of patient care with family physicians and seek to further increase their role.<sup>10, 11, 12, 13</sup> To the extent that family physicians participate in clinical areas targeted by a variety of medical specialty groups—such as obstetrics, anaesthesia and psychiatry—they may have a role to play in responding to health human resource demands related to other physician specialty groups. Finally, there is currently a wide range of regional, provincial and national efforts to alter the models of practice in which family physicians work.

These and other changes (some of which are explored in Section 5 of this report), combine to create a context in which family physicians may feel either “pushes” or “pulls” to change their scope of clinical activity.

## 1.3 More Than Head Counts . . . What Are They Doing?

In light of these events, significant health human resource research and policy discussion has focused on family physicians, family medicine and primary care.<sup>15, 16, 17</sup> The focus has generally been on the number, demographic profile and geographic location of family physicians. Other efforts have also looked at the ability of the public to access family physicians and the opinion of the public about family physicians and primary care.<sup>18</sup>

However, less attention has been given to the range of activity undertaken by family physicians. The importance of doing such research has been noted and a few reports in this area have highlighted a changing scope of work either among all those studied or among certain groups of physicians based on age or gender.<sup>19, 20, 21, 22, 23, 24, 25</sup> These studies have typically focused on a specific clinical area or geographic region.

This report builds on previous research by moving beyond discussing the number or location of family physicians to explore what they are doing. The report will document changing practice profiles of Canadian family physicians between 1992 and 2001.

This report builds on previous research by moving beyond discussing the number or location of family physicians to explore what they are doing.



## I.4 Focus on Nine Areas of Clinical Activity

Activity in nine clinical areas, traditionally identified as potentially part of a family physician's scope of activity, will be studied: office assessments, obstetrical care, surgical services (such as appendectomies, hysterectomies and tonsillectomies), surgical assisting, hospital inpatient care, basic procedural skills services (such as suturing, joint injection/aspiration and IUD insertion), advanced procedural skills services (such as setting fractures, performing vasectomies and intensive care/resuscitation), anaesthetic services and mental health care services. Further details on the nine clinical areas are given in Appendix A.

These nine areas are used as representative samples of clinical practice in which family physicians engage. They do not cover the broad spectrum of health care services offered by family doctors, such as preventive medicine, sports medicine, elder care and palliative care. Nor do they specifically describe the many detailed services that family doctors provide, such as bereavement counselling, working with patients to manage asthma and low back pain and diabetes, advising when to use and when not to use antibiotic drugs, performing a variety of therapeutic and diagnostic manoeuvres ranging from wart removal to cyst aspiration to appendectomy. Again, the selected areas of study represent a broad sample of clinical practice and are meant to serve as markers of family physicians' changing scope of activity.

## I.5 Questions Asked

This report will look at several key questions that explore the changing nature of family medicine in Canada:

- How has the family physician workforce changed in terms of age, gender and geographic distribution?
- What areas of clinical activity have family physicians traditionally engaged in?
- What were some of the major policy directions and initiatives in the education and practice arenas that occurred during the study time period?
- Within the nine clinical areas, how has the participation of family physicians changed over a 10-year period in terms of areas of activity and workload?
- How does participation in the identified clinical areas differ between genders?  
Has this changed over time?
- Are there differences in clinical activity based on geographic practice setting?  
How have these differences evolved over the years?
- Across age groups, how has activity in different clinical areas changed over time?





## 2. Methodology

### 2.1 Where the Data Come From

The primary database for this study was the Canadian Institute for Health Information National Physician Database (NPDB). The NPDB contains physicians' fee-for-service (FFS) claims data provided to the Canadian Institute for Health Information (CIHI) by provincial/territorial medical service plan administrative systems. NPDB files are submitted to CIHI on a quarterly basis. The files contain, for each physician within each jurisdiction, the total number of clinical services provided and payments made for each fee service code billed. In this report, annual results are based on aggregate data provided over four quarters, starting on April 1 of each year and ending on March 31 of the following year. Data for the years 1992–93 to 2001–02 were included in their totality.

All fee service codes within the NPDB are mapped to a National Grouping System (NGS) category. NGS categories describe health care services within specific clinical service areas. A detailed list of the 120 NGS categories, to which fee service codes are mapped, is given in CIHI's annual National Grouping System Categories Report. NGS categories are further classified under 14 broad clinical service areas, including, but not limited to, consultations and assessments, hospital care days, psychotherapy, major and minor surgery, surgical assistance, anaesthesia, as well as obstetrical and other diagnostic/therapeutic services. A detailed description of how NGS categories/strata were used to define clinical service areas in this report is given in Appendix A.

In addition to FFS payment and service data, the NPDB contains physician characteristics information. This study used NPDB data fields describing physicians' medical specialty, date of birth, sex and geographic location.

A second data source used in this study is the 2001 National Family Physician Workforce Survey (NFPWS). The NFPWS, also known as the "Janus Survey," was carried out by the College of Family Physicians of Canada. The 2001 NFPWS database contains a wide range of information, including family physicians' self-reported areas of clinical service provision. NFPWS clinical practice data were used in this study to validate NPDB data and to select provinces for inclusion/exclusion in the analysis of each clinical service area. Comparable data elements within the NPDB and NFPWS are listed in Appendix B, along with provincial exclusion results applied in analyzing each clinical service area.

## 2.2 Limitations of the Data

The NPDB collects information only on physician activities compensated through FFS payment programs. In recent years there has been a growth of alternative payment models for physicians, including capitation, salary, hourly wages and combinations of these models.<sup>26</sup> Existing data sources describe alternative payment and FFS payment trends for all physicians, including family doctors and non-family medicine physicians. In 2001, an estimated 16.2% of total clinical payments for all physicians were made through alternative (non fee-for-service) modes. This is up from 12.6% in 2000 and 10.5% in 1999.<sup>26, 27</sup> Furthermore, in 1990, 67.5% of physicians reported that 90% or more of their income came from FFS activity.<sup>28</sup> In 2002, 58.4% of physicians reported that 90% or more of their income came from FFS activity.<sup>28</sup>

In 2001, an estimated 16.2% of total clinical payments for all physicians were made through alternative (non fee-for-service) modes. This is up from 12.6% in 2000 and 10.5% in 1999.

Medical service fee schedules, used by physicians, are created in each province/territory through ongoing negotiations between medical associations and provincial/territorial governments. They are, therefore, dynamic lists that differ across the country and over time. While fee service codes typically cover well-defined clinical services, payment incentives and the creation of new fee codes may impact utilization patterns across NGS categories. NGS methodologies attempt to assign equivalent clinical service activities to like categories and to adjust for provincial/territorial variations in billing conventions.

Also, with respect to NPDB data, while FFS codes may specify a particular act, they do not necessarily specify the service delivery location. For example, simple suturing—whether done in the office, nursing home, emergency room or as part of a home visit—is typically billed under the same fee code. With the exception of office assessment and hospital inpatient services, it is difficult to identify the precise location of service provision.

The 2001 NFPWS was carried out as a self-report mail survey. A variety of potential limitations apply to survey data, including incomplete response, response bias and subjective interpretation of survey questions. The 2001 NFPWS was conducted as a census survey of family physicians, and the response rate was 51.2%. The resulting database reflects the self-reported activities of half of Canada's family doctors. Full methodological details of the 2001 NFPWS, including provincial/territorial response rates and weighting techniques to adjust for non-response, are available on the College of Family Physicians of Canada Web site ([www.cfpc.ca](http://www.cfpc.ca)).

## 2.3 Who Is Being Studied?

The focus of this report is physicians identified in NPDB as either general practitioners or family doctors. These two groups are analyzed together and referred to as family physicians or family doctors. As a short form, the initials “FP/GP” are used, primarily within figures. Physician specialty data within the NPDB is based on data submissions from provincial/territorial administrative payment systems; the family/general practitioner category may include non-certified specialists. The term “non-certified specialist” refers to non-family medicine physicians who do not (yet) possess specialty certification credentials awarded by the Royal College of Physicians and Surgeons of Canada or the Collège des médecins du Québec, but who are considered as specialist physicians within their jurisdictions.

As noted above, the NPDB contains only fee-for-service payment data. Thus, physicians were included in the study if they received any fee-for-service payments in a given year, regardless of whether FFS payments or alternative payments were the primary source of income. Furthermore, this study does not compare the practices of FFS and non-FFS physicians. Therefore, the extent to which the results can be generalized to family doctors who practise exclusively as non-FFS physicians is unknown.

## 2.4 Organization of the Data

This study reports family physician practice patterns between fiscal years 1992 and 2001 in each of nine broad clinical service areas. The studied clinical service areas include:

- office practice, based on office assessment claims
- hospital inpatient care
- mental health care, based on psychotherapy and counselling claims
- services that require basic procedural skills (such as suturing, joint injection/aspiration and IUD insertion)
- services that require advanced procedural skills (such as setting fractures, performing vasectomies and intensive care/resuscitation)
- surgical services (such as appendectomies, hysterectomies and tonsillectomies)
- anaesthesia services
- obstetrical services
- surgical assisting

As noted above, the NGS categories and strata used to define these clinical service areas are described in detail in Appendix A. NPDB categories and strata that were unlikely to reflect activities carried out by family physicians at any time during the study period (such as coronary artery bypass) were not used.

Practice patterns are described in relation to physician groups based on age, sex and geographic location. General trends for all family physicians, as well as notable trends for specific subgroups, are presented in the main body of this report. Detailed data tables summarizing each clinical service area are presented in Appendix C.

## 2.5 Statistical Measures and Definitions

Two main summary measures are used to describe family physician practice patterns in each of the nine clinical practice areas. They are:

- I) **Participation rate.** This measure reports the percentage of family physicians who bill for services within the clinical practice area in a given year. Participation rates are calculated as the number of family physicians who bill for the service divided by the total number of family physicians within the group being described, times one hundred.
- II) **The average number of services per family physician.** This measure indicates how intensely individual family physicians provide various types of health care services. It is calculated as the total number of services within a clinical practice area divided by the number of family physicians who billed for those services. Note that the calculation includes only those physicians who actually provide the type of service being reported. Also, this summary measure does not tell us whether individual family physicians provide a greater or lesser number of services over time. For instance, it is possible that in 1992 there were some family doctors who provided a high number of a particular service, while others provided relatively few services. If the family doctors who provided relatively few services ceased providing them altogether, and the remaining physicians continued to provide the same number of services as they always did, the average number of services provided would have increased.

Both of these summary measures are used to describe practice patterns for all family physicians in Canada or for a subgroup based on age groupings, sex and/or geographic location.

## 2.6 Defining Geographic Location

Geographic location descriptors used in this study are based on Statistics Canada definitions of census metropolitan areas (CMAs), census agglomerations (CAs) and communities not classified as CAs or CMAs.<sup>29</sup> CAs and CMAs are defined by Statistics Canada as “one or more adjacent municipalities centred on a large urban area (known as the urban core).”<sup>30</sup> CMAs have populations greater than 100,000 and CAs have populations between 10,000 and 100,000. Non-CMA/CA communities have populations of less than 10,000. In this study, CMAs are referred to as urban communities, CAs are called mid-sized communities and non-CMA/CA communities are referred to as rural communities.

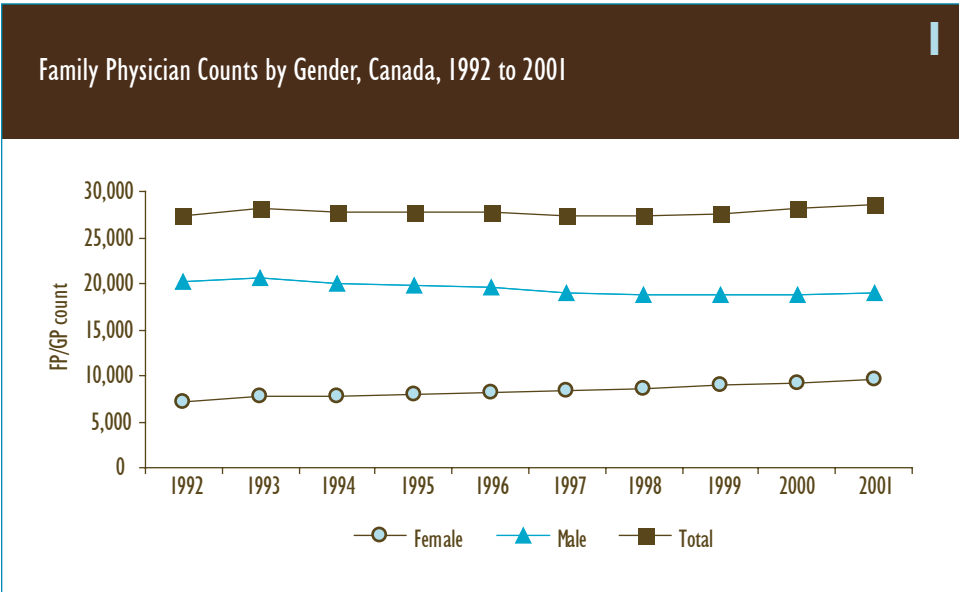
The challenges of defining urban and rural communities are well documented.<sup>31, 32</sup> The CA category spans a large variety of communities—the difference between a town of 10,000 and 100,000 is significant. This approach also does not take into account the distance of a rural community from a mid-sized or urban community. It does not consider other geographic factors, such as average yearly snowfall, that might affect a community’s “rurality.” Furthermore, as communities change population size over time they may change designation. Notwithstanding its limitations, the typology of CMA, CA and non-CMA/CA has been used in past health human resource reports.<sup>33, 34</sup>



### 3. Changes in the Workforce, 1992 to 2001

The total number of family physicians billing FFS increased from 27,447 in 1992 to 28,493 by the end of the study period, 2001. During this time, the gender ratio shifted, with an

increasing number of women (7,193 rising to 9,524) practising as family physicians accompanied by a decreasing number of men (20,254 dropping to 18,969). This change is illustrated in Figure 1. At the end of the study period, the ratio of male family physicians to female family physicians was about two to one.

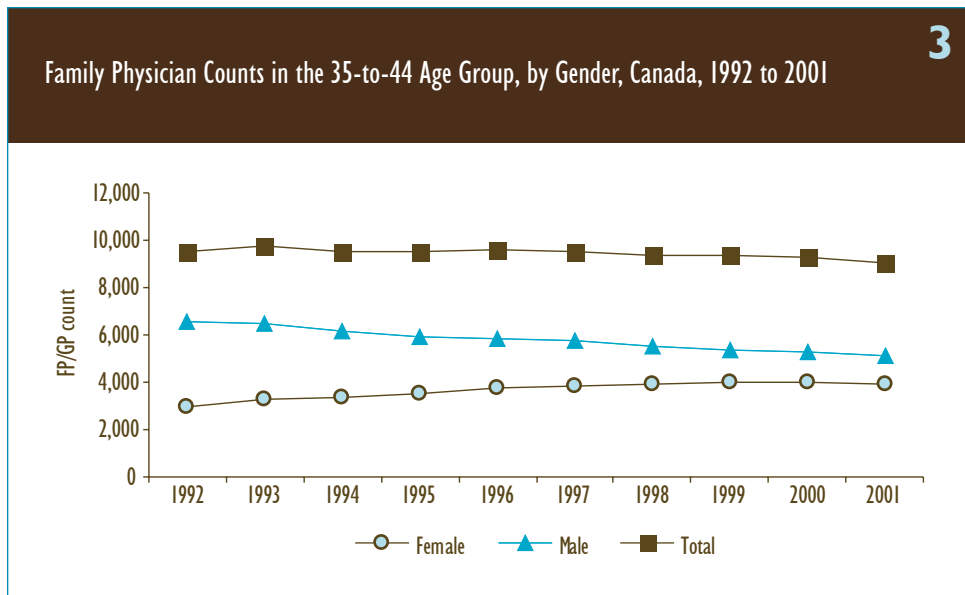
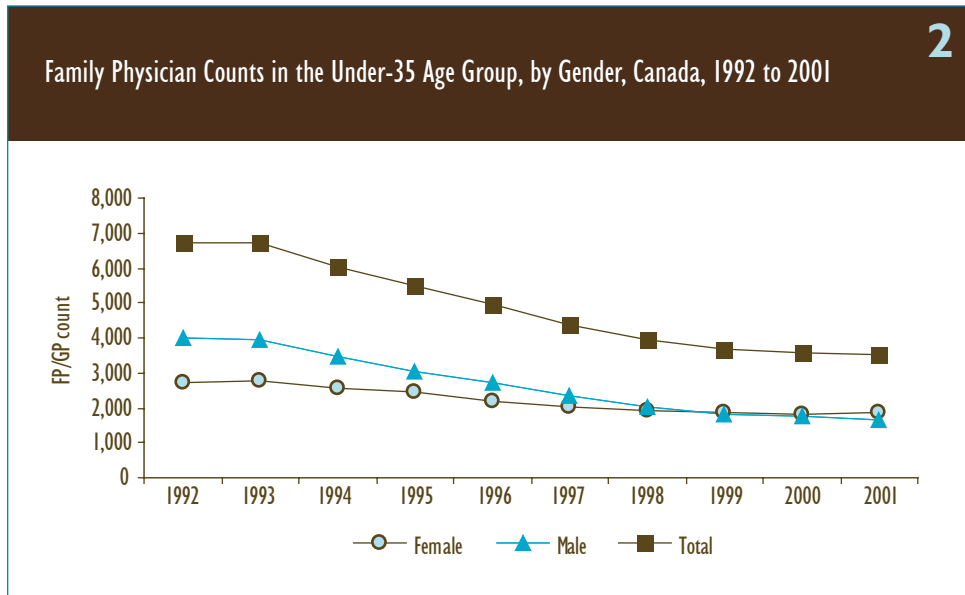


Source: National Physician Database, CIHI

Notes: Includes fee-for-service family physicians only. From 1992 to 2001, gender was not reported for less than 1% of family physicians.

The changing balance between male and female family physicians is largely due to a sharp decline in male physician numbers in the two youngest age categories. Since 1999, female family physicians have outnumbered males in the less-than-35 age group (see Figure 2).

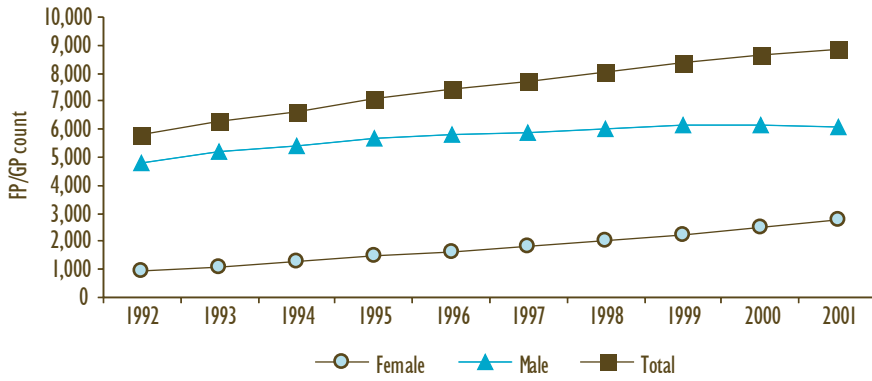
In the 35-to-44 age group, there appears to be an approaching parity between the two genders. In the older age categories, the relationship between male and female family physicians is constant or even widening (ages 55 to 64), with a greater number of male physicians relative to female. These patterns are seen in Figures 3 to 6.





Family Physician Counts in the 45-to-54 Age Group, by Gender, Canada, 1992 to 2001

4

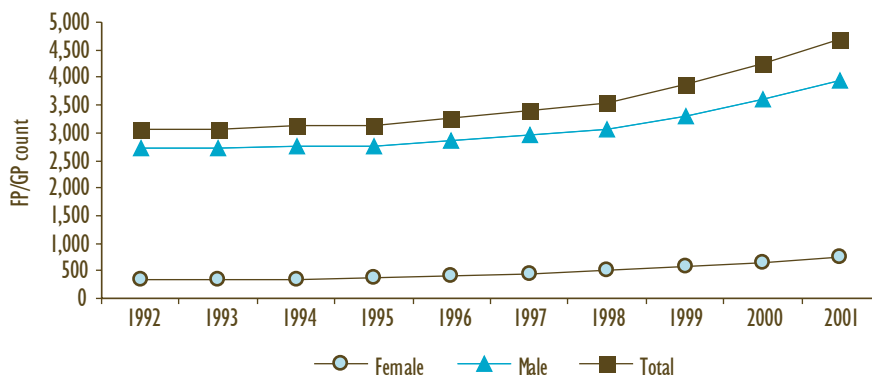


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. From 1992 to 2001, age was not reported for approximately 1% of family physicians.

Family Physician Counts in the 55-to-64 Age Group, by Gender, Canada, 1992 to 2001

5

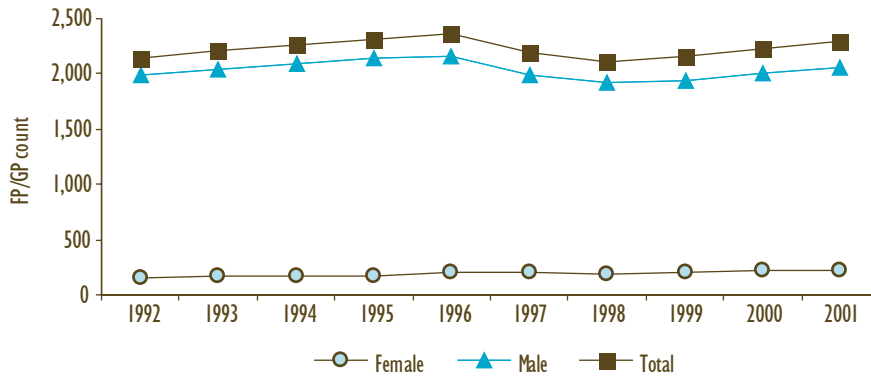


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. From 1992 to 2001, age was not reported for approximately 1% of family physicians.

### Family Physician Counts in the Over-65 Age Group, by Gender, Canada, 1992 to 2001

6



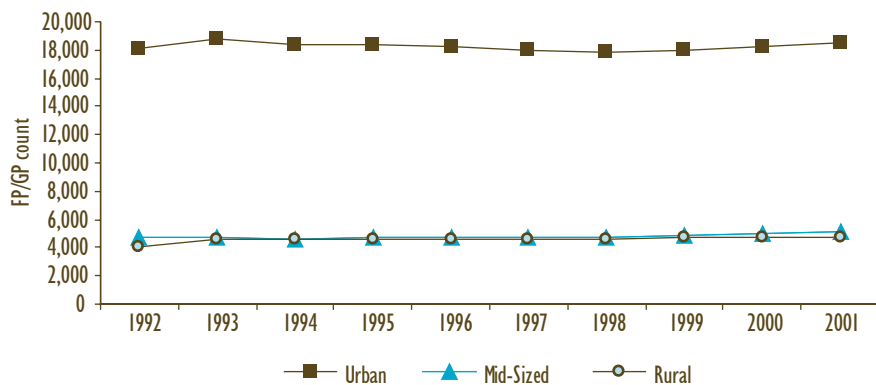
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. From 1992 to 2001, age was not reported for approximately 1% of family physicians.

The decreasing number of male family physicians and increasing number of female family physicians is true for urban, mid-sized and rural communities. The overall population of family physicians is also aging in all three of these geographic regions. In regards to total numbers, Figure 7 shows a small increase in urban settings (2%), with more significant increases in the mid-sized (8%) and rural (18%) areas.

### Family Physician Counts by Location, Canada, 1992 to 2001

7



**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. From 1992 to 2001, location was not reported for less than 2% of FP/GPs.



## 4. Summary Picture of Activity Levels and Changes in Practice

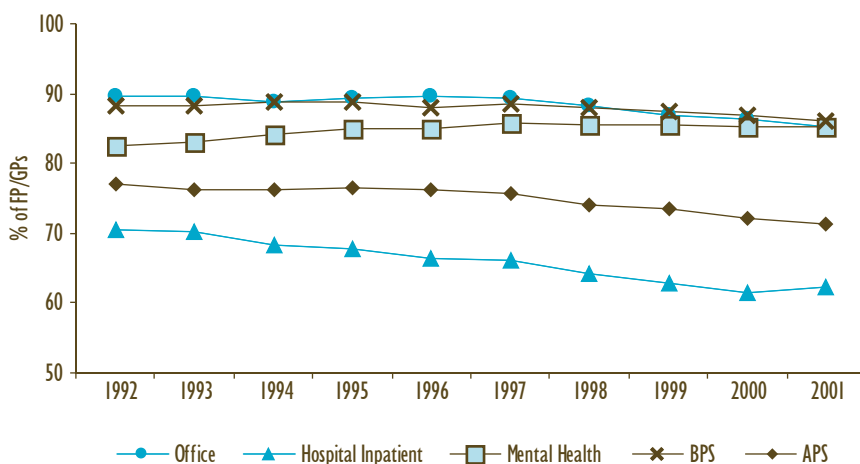
### 4.1 Overview of Participation Levels

While Section 6 of this report will explore specific areas of clinical practice, a broad picture of family physician activity is illustrated in Figures 8a and 8b. Throughout the study period (1992 to 2001), most (85% to 90%) family physicians were active in office practice, as well as providing mental health care services and services that require basic procedural skills. The percentage of total family physicians who provided hospital inpatient care declined from 71% in 1992 to 62% in 2001. The percentage of total family physicians who provided services requiring advanced procedural skills declined from 77% in 1992 to 71% in 2001. Finally, participation rates in surgical care, surgical assistance, anaesthesia and obstetrical services declined by 32%, 31%, 28% and 43%, respectively, between 1992 and 2001.

In summary, over the study period there was a convergence in family physician participation rates in office practice, mental health care and services that require basic procedural skills. While family physician involvement within each of the remaining areas declined, the inter-relationship between these areas remained fairly stable, as illustrated by the approximately parallel lines shown in Figures 8a and 8b.

Percentages of Family Physicians Providing Office Assessment, Hospital Inpatient, Mental Health, Basic Procedural Skills and Advanced Procedural Skills Services, Canada, 1992 to 2001

8a

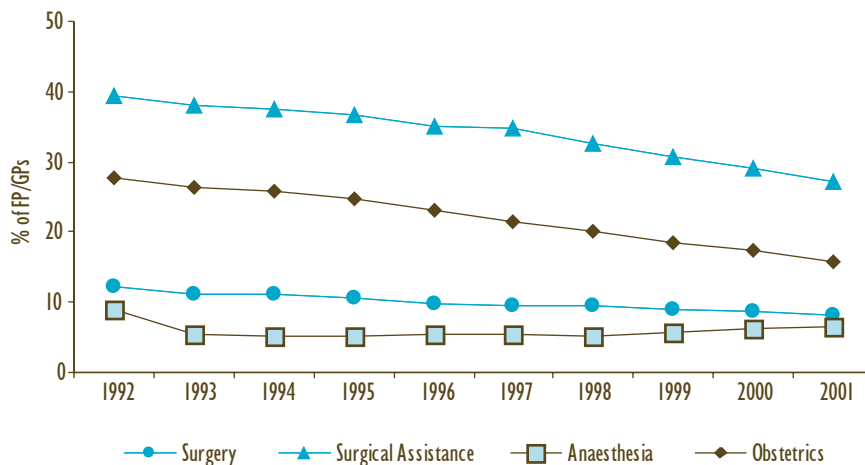


Source: National Physician Database, CIHI

Notes: Includes fee-for-service family physicians only.  
BPS= basic procedural skills  
APS= advanced procedural skills  
See Appendix A for definitions of clinical service areas.  
See Appendix B for provincial data inclusion/exclusion criteria applied to each clinical service area.

Percentages of Family Physicians Providing Surgery, Surgical Assistance, Anaesthesia and Obstetrical Services, Canada, 1992 to 2001

8b

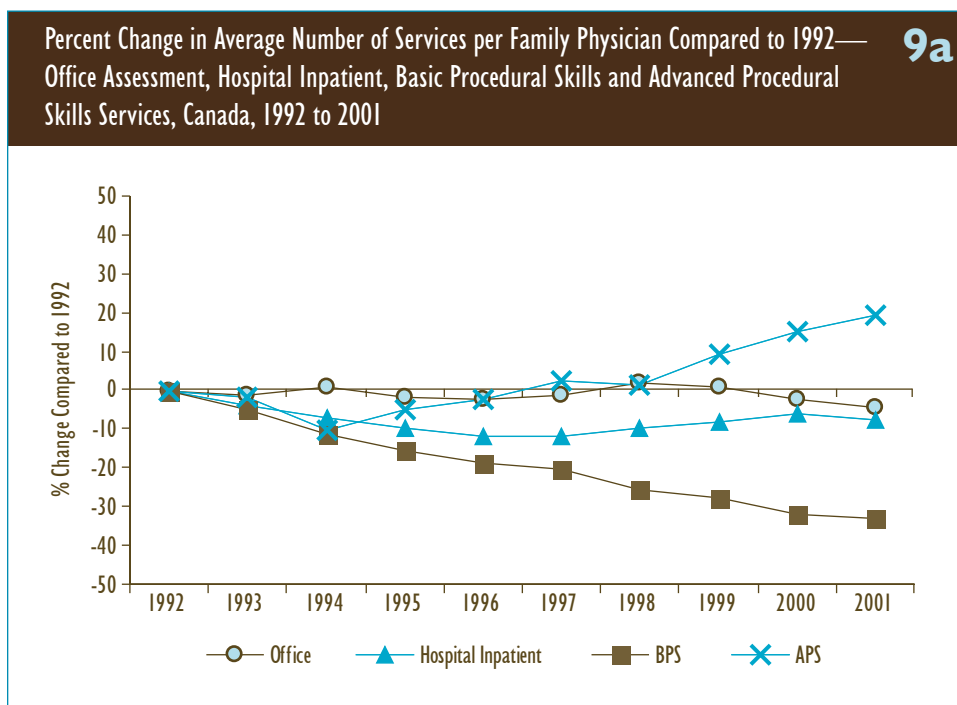


Source: National Physician Database, CIHI

Notes: Includes fee-for-service family physicians only.  
See Appendix A for definitions of clinical service areas.  
See Appendix B for provincial data inclusion/exclusion criteria applied to each clinical service area.

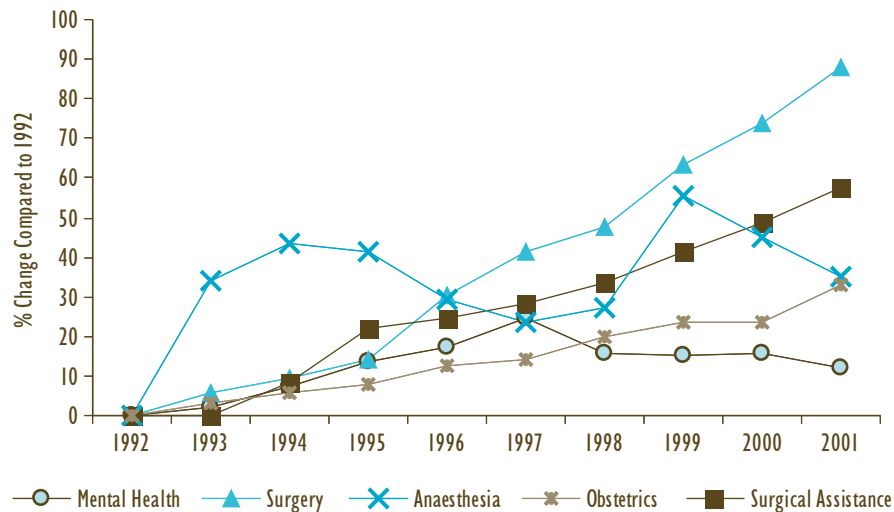
## 4.2 Overview of Workload Intensity

Figures 9a and 9b illustrate the percentage change in the average number of services provided in each year compared with the baseline year of 1992. Figure 9b illustrates an increase in the average number of services for mental health, surgery, surgical assisting, anaesthesia and obstetrics. While not necessarily linear, these increases were 12%, 88%, 57%, 35% and 33% respectively in 2001 compared with 1992. An increase of 19% in advanced procedural skills is seen in Figure 9a. Also shown in Figure 9a are small percentage decreases in office assessments (4%) and hospital inpatient care (8%). The percentage decrease (33%) in the average number of basic procedural skills services offered by family doctors was larger than for office assessments and hospital inpatient care (see Figure 9a).



Percent Change in Average Number of Services per Family Physician Compared to 1992—  
Mental Health, Surgery, Surgical Assistance, Anaesthesia and Obstetrical Services, Canada,  
1992 to 2001

9b



Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. See Appendix B for provincial inclusion/exclusion criteria applied to each clinical service area.

### 4.3 Four Broad Trends

Based on the patterns illustrated above, four broad practice trends among family physicians can be identified. They are:

- A) Stable:** The number of office assessment services remained generally stable throughout the 10-year period of analysis. Although participation rates declined slightly, there was relatively little change in the average number of services per family physician.
- B) Increasing:** Only the area of mental health care had consistent increases in both main outcome measures (that is, participation rates and average number of services provided per family physician).
- C) Decreasing:** A steadily decreasing percentage of family physicians participated in hospital inpatient care over the period of 1992 to 2001, and fewer services were provided on average by those family physicians who continued to provide hospital inpatient care services. While the percentage of family doctors who provided services requiring basic procedural skills remained stable over the study period, the average number of basic procedures offered decreased steadily.
- D) Decreasing participation with increasing intensity:** This pattern was most common and was seen in the remaining five clinical practice areas: surgical assisting, surgery, anaesthesia, obstetrics and advanced procedural skills services. In this pattern, the percentage of family physicians participating in the clinical service area decreased—but there was a corresponding pattern of increased average service delivery among those who continued to provide the service.

Further details of each of these trends in relation to the specific practice areas are included in Section 6.



## 5. The Context of Change— Policy Directions, 1992 to 2001

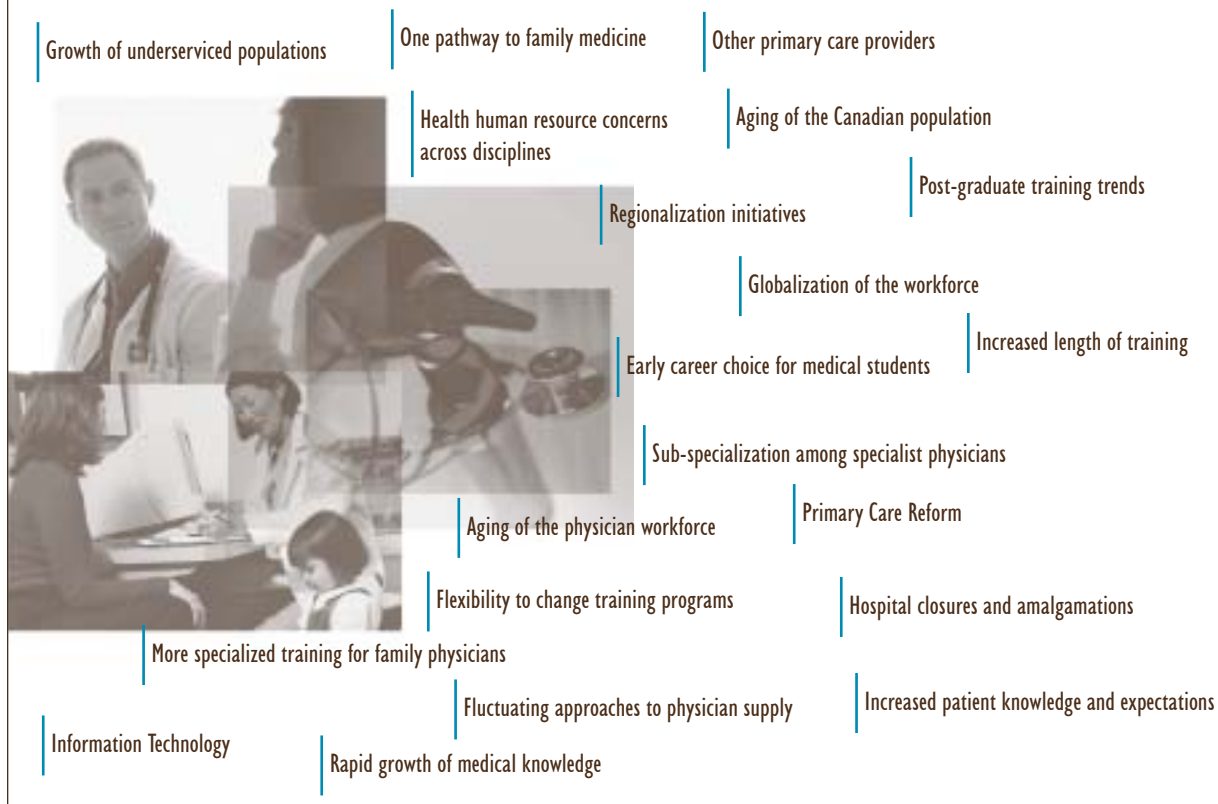
Shifts in physician activity occur in the broader context of changes in the health care system. Policy directions taken by governments, educational institutions and other stakeholders

can impact on the number and location of family physicians as well as their practice patterns.<sup>35, 36</sup>

This report does not suggest a cause-and-effect relationship between specific policies and particular shifts in clinical practice (or vice versa). Nor do the changes outlined below include all the changes that occurred during the study time period. However, by highlighting some of the areas of significant policy activity that occurred during the decade, insight can be gained into the environment in which family physicians made their practice decisions. These changes and others are highlighted in Illustration 1.

Illustration 1:

### Canada's Family Doctors: Surrounded by Change, Such as . . .



## 5.1 Changes in Medical Training and Licensing

### a) Path to family medicine

At the beginning of the study period (1992), those finishing medical school could enter primary care either by becoming a general practitioner after a one-year post-graduate rotating internship or by becoming a family physician through completion of a two-year post-graduate family medicine residency training program.

In 1993, the two-year family medicine residency program became the only option for medical students who wanted to become family physicians.<sup>37</sup> The impact of this change on the physician workforce has been documented in the CIHI Report *From Perceived Surplus to Perceived Shortage*, authored by Dr. Ben Chan.<sup>38</sup>

### b) Specialized training

There has been a steady growth of opportunities for family physicians to gain training in areas of further specialization, such as emergency medicine, sports medicine, obstetrics, palliative care, women's health, geriatrics and First Nation's health. Third-year post-graduate positions are primarily offered to individuals currently training to be family physicians, rather than those already in practice. There has been increasing interest in these opportunities by family medicine trainees. There has also been a similar trend towards more sub-specialization within other disciplines of medicine, such as general internal medicine and general surgery.<sup>39, 40, 41</sup>

There has been a steady growth of opportunities for family physicians to gain training in areas of further specialization

### c) Training in family medicine

Statistics published by the Canadian Resident Matching Service (CaRMS) report medical students' selection of post-graduate medical training programs in Canada. In its 2003 Match Report, CaRMS notes that it "has been tracking the interest of the graduating students in a career in family medicine as evidenced by family medicine as a first choice discipline."<sup>42</sup> The CaRMS report indicates that, during the time period of 1994 to 2001, the percentage of medical school graduates who selected family medicine as a first-choice discipline registered a high of 34.7% in 1997 and a low of 28.2% in 2001. The 2001 result represents an 18.7% reduction in the proportion of medical school graduates who selected family medicine as a first-choice training discipline compared to the high point in 1997.

The Canadian Post-M.D. Education Registry (CAPER) also reports medical training statistics. In its annual census report, CAPER gives the proportions of total postgraduate trainees who are exiting family medicine programs versus non-family medicine specialty training programs. CAPER's annual post-graduate exit statistics reflect the potential numbers of physicians who enter medical practice just after completing post-graduate training in Canada. The annual census report indicates that family medicine graduates declined from 44% of all exiting graduates in 1994-95 to 40% of all exiting graduates in 2001-02.<sup>43</sup> This decreasing proportion of family medicine graduates has been noted in research that considers Canada's future supply of family physicians.<sup>44</sup>

This decreasing proportion of family medicine graduates has been noted in research that considers Canada's future supply of family physicians



#### d) Career choice for medical students and flexibility in post-graduate training

Related to the medical training statistics noted in the previous section, are considerations of the factors that influence medical students' career choices. Many factors may be at play, and caution is warranted in assuming the decision-making importance of each. Medical students' decisions may be influenced by the amount of family medicine taught in the undergraduate curriculum. Also, research and statements published by the Canadian Federation of Medical Students and College of Family Physicians of Canada have suggested that changes to the educational and training system have led to medical students making career choices earlier than they would like.<sup>37, 45, 46, 47</sup> Premature career choice may be complicated by a reduction in opportunities to change training pathways after a career choice is made.

#### e) Length of medical education and post-graduate training

In the years preceding the study period, it was possible for students to enter medical school following two years of undergraduate coursework. This convention was in contrast to reports that favoured students entering medical school with a broader educational background.<sup>48, 49</sup> Medical schools responded by making completion of an undergraduate degree the usual requirement,<sup>50</sup> adding an additional one to two years to the education process. The increasing role of third-year fellowships in family medicine has increased the length of family medicine training for many by another year.

The increasing role of third-year fellowships in family medicine has increased the length of family medicine training for many by another year.

#### f) Opportunity to re-enter specialties

There has been a steady reduction in the ability of physicians already in the workforce to return and re-train in another discipline. This loss of opportunity may be one of the reasons behind a decreased selection of family medicine as a training option by medical students. Another disincentive is that many of the re-entry positions that remain available require a return of service contract following the training.<sup>36, 51, 52</sup>

## 5.2 Changes in the Health Care System

#### a) Regionalization, amalgamation and changes in hospital care

During the 10-year study period, most provinces and territories underwent a process of hospital amalgamation, health care system regionalization or both.<sup>53, 54, 55, 56</sup> At the same time, the approach to care in the hospital settings changed, with shorter hospital stays, increased outpatient procedures and a greater focus on community-based care. Changes in the hospital setting, including the impact on the role of family physicians, have been documented by the College of Family Physicians of Canada in their recent report, *Family Physicians Caring for Hospital Inpatients*.<sup>57</sup>

## b) Primary care reform

By 2001 (the end of the study period) almost all provinces and territories had committed to introducing new models of primary care delivery. Some engaged in limited pilots, while others invested in a significant roll-out of new approaches.<sup>15, 16, 17</sup> Many different models were implemented.<sup>14</sup> They typically addressed the issues of patient access, alternative models of financial remuneration for physicians, integration of a team of health care professionals and enhanced use of information technology. While primary care reform remains a focus, some reports suggest that these initiatives have created uncertainty within the profession and medical schools about the future need and role of family physicians.<sup>58, 59</sup>

While primary care reform remains a focus, some reports suggest that these initiatives have created uncertainty within the profession

## c) Increasing numbers and types of health care provider groups

A variety of health care provider groups have expressed increasing interest in participating in areas of care that are currently provided by family physicians.<sup>10, 11, 12, 13</sup> In some cases, there has already been an increase in the number of other health care providers, or a change in their practice scopes.<sup>36, 60, 61</sup>

## d) Needs of underserved populations

During the study period, there was growing concern about ensuring an appropriately trained number of health professionals providing care in geographical areas with need.<sup>35, 36</sup> A large range of measures have been taken to encourage health care workers to serve in areas of identified need, such as rural and remote communities, as well as some inner-city populations. These initiatives have included recruitment and retention measures, better data collection and changes to the educational/training system.<sup>62, 63, 64, 65</sup>

## e) Physician supply

As noted above, in 1993 a number of policies were implemented that had an impact on the supply of physicians. These included, for example, a 10% reduction in the number of medical school positions and policies related to international medical graduates' entry into the Canadian physician workforce.<sup>66, 38</sup>

In 1999, a Canadian Medical Forum physician supply report suggested that retirement rates would accelerate and outstrip the number of new graduates by 2008.<sup>66</sup> In the years following this study, many provinces have increased positions in medical schools and attention is being given to means of increasing the role of international medical graduates in the system.<sup>36</sup> Given the length of medical school and post-graduate training programs, the impact of these changes will not be reflected in the results of this study.

#### f) Societal changes

Significant demographic changes are occurring in Canada. The size of the population is growing at a faster rate than the supply of physicians. Furthermore, the population is aging.<sup>38</sup> Currently, those over age 65 utilize 70% of the health care budget.<sup>66</sup> Associated with this aging population are possible impacts on health care utilization, with respect to both volume and complexity.

There has also been a growth in patients' knowledge about their own health. This change has been facilitated and supported by a significant increase in access to medical information through resources such as patient advocacy groups, the Internet and increased media coverage. In turn, this has led to greater expectations of their health care providers and a greater desire to be involved in the decisions related to their own care or the care of a family member.

Changes such as those described above contribute to an environment that impacts on the day-to-day work of health care providers, including family physicians. The following section, Changes in Specific Clinical Practice Areas, looks at the trends in family physician practice patterns during the 10-year study period, 1992 to 2001.



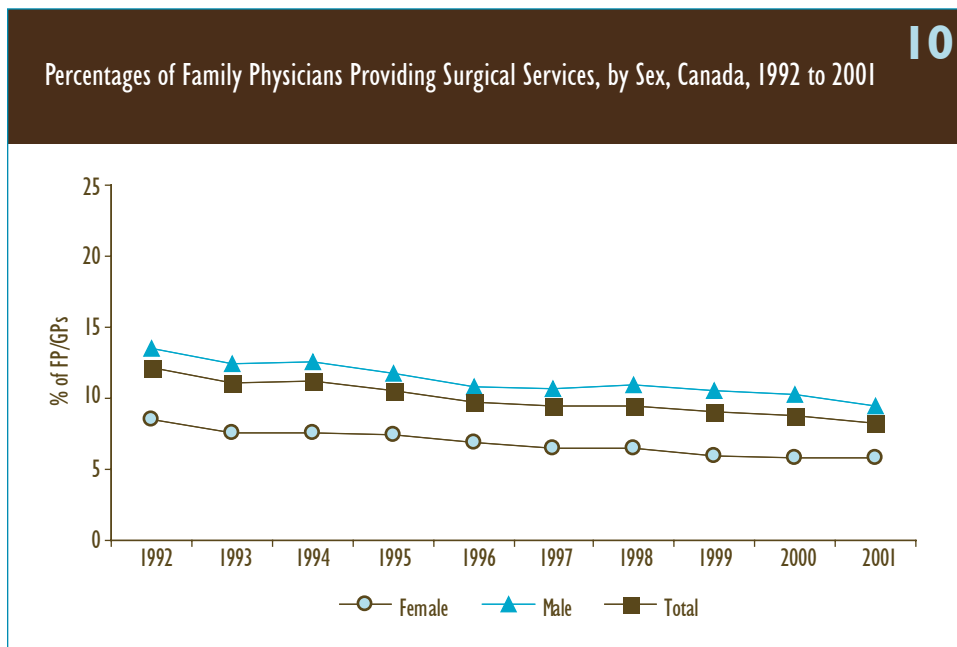


## 6. Changes in Specific Clinical Practice Areas

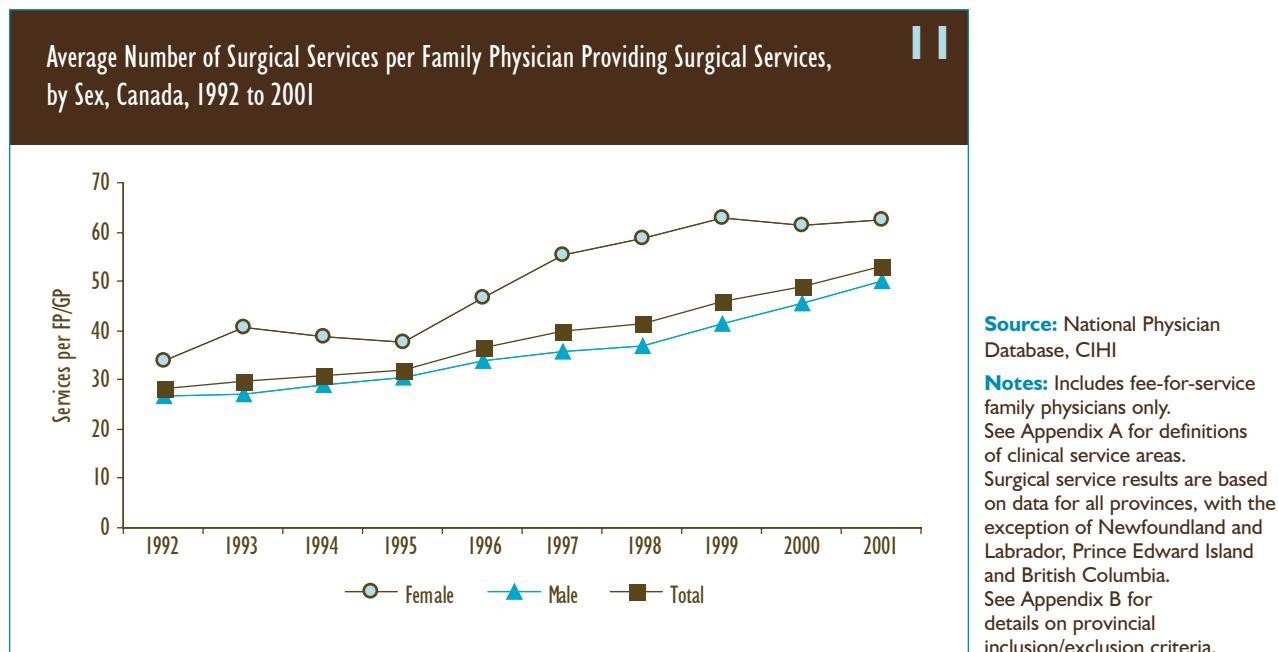
A detailed description of the types of health care services included in each clinical practice area is provided in Appendix A.

### 6.1 Surgical Services

In each year of the study period (1992 to 2001), less than 13% of all family physicians provided surgical services. In each year, the participation rate was higher for male family physicians as compared to that of female family physicians (see Figure 10). For instance, in 1992, 14% of male family physicians provided surgical services, compared to 9% of female family doctors. However, participation rates for both males and females declined in a similar fashion over the study period. By 2001 the participation rates had dropped to about 10% and 6% for males and females, respectively.



While male family physicians were more likely to provide surgical services, female family physicians who provided these types of services typically provided more of them. Figure 11 shows that, throughout the study period, female family physicians provided more surgical services on average than their male counterparts. For instance, in 2001 female family doctors provided 62 surgical services on average, compared to the male average of 50. For both males and females, the average number of surgical services provided increased steadily during the study period (see Figure 11).

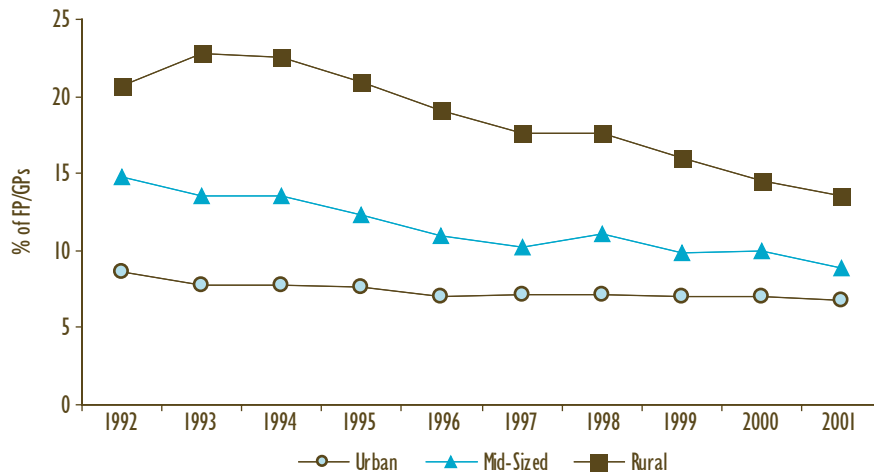


Rural and mid-sized communities had higher percentages of family physicians engaged in providing surgical services (see Figure 12). At the start of the study period (1992), 9% of urban family doctors, 15% of family physicians in mid-sized communities and 21% of those in rural places provided surgical services. Participation rates declined in all three geographic locations over the study period. The decline was most precipitous in mid-sized and rural communities where the participation rates dropped to 9% and 14%, respectively, in 2001.

At the start of the study period (1992), 9% of urban family doctors, 15% of family physicians in mid-sized communities and 21% of those in rural places provided surgical services.

Percentages of Family Physicians Providing Surgical Services,  
by Geographic Location, Canada, 1992 to 2001

12



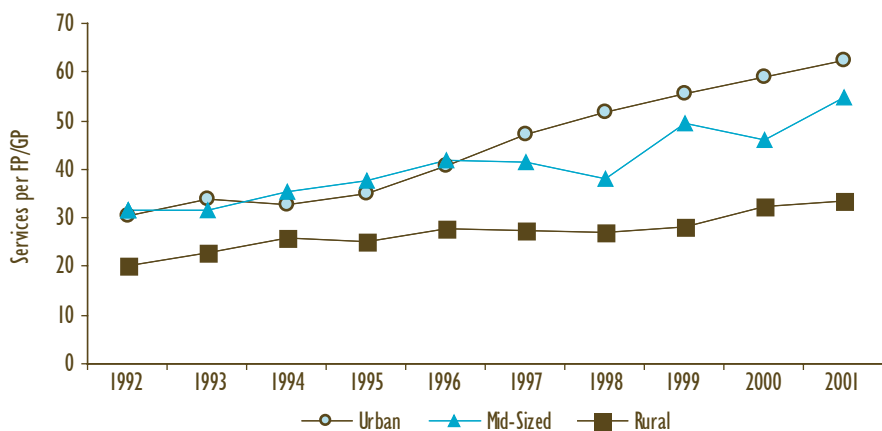
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Surgical service results are based on data for all provinces, with the exception of Newfoundland and Labrador, Prince Edward Island and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

In contrast to participation rates, the average number of surgical services provided by family physicians was typically higher in urban communities than in rural and mid-sized communities (see Figure 13). Rural family doctors provided fewer surgical services on average throughout the study period. The average numbers of surgical services provided by family physicians in urban and mid-sized communities was quite similar during the period of 1992 to 1996. However, from 1997 on, the average number of surgical services offered was greatest for urban family physicians.

Average Number of Surgical Services per Family Physician Providing Surgical Services,  
by Geographic Location, Canada, 1992 to 2001

13



**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Surgical service results are based on data for all provinces, with the exception of Newfoundland and Labrador, Prince Edward Island and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

## 6.2 Office Practice

Figure 8a showed that, between 1992 and 2001, 85% to 90% of family physicians billed for office-based assessments. It is important to note that throughout the study period, office-based assessments accounted for two-thirds of all services provided by family physicians. Given the stability of office-based practice and its predominant share of total billed services, subgroup variations in this clinical practice area are particularly suggestive of family physician workload variations for those family doctors who are remunerated predominantly through fee-for-service systems.

Participation in office assessments remained largely unchanged between 1992 and 1997. After that, there was a small but steady decline in participation. As shown in Figure 14, male and female family physicians were equally likely to participate in office practice. However, as shown in Figure 15, male family doctors provided a significantly higher number of office assessments, on average, than female family physicians. In 2001, male family physicians billed for 3,960 office assessments on average, compared to an average of 2,712 for female family doctors. In 2001, male family physicians billed for 46% more office assessment services than female family physicians.

In 2001, male family physicians billed for 46% more office assessment services than female family physicians.

Percentages of Family Physicians Providing Office Assessment Services, by Sex, Canada, 1992 to 2001

14



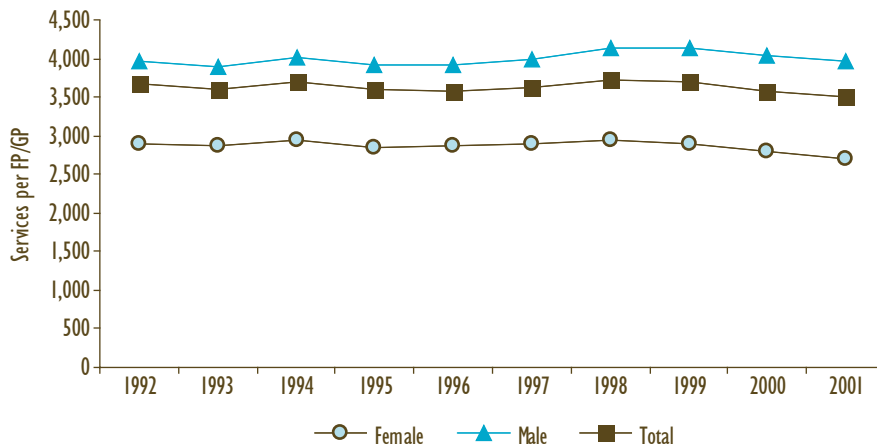
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.



Average Number of Office Assessment Services per Family Physician Providing Office Assessment Services, by Sex, Canada, 1992 to 2001

15



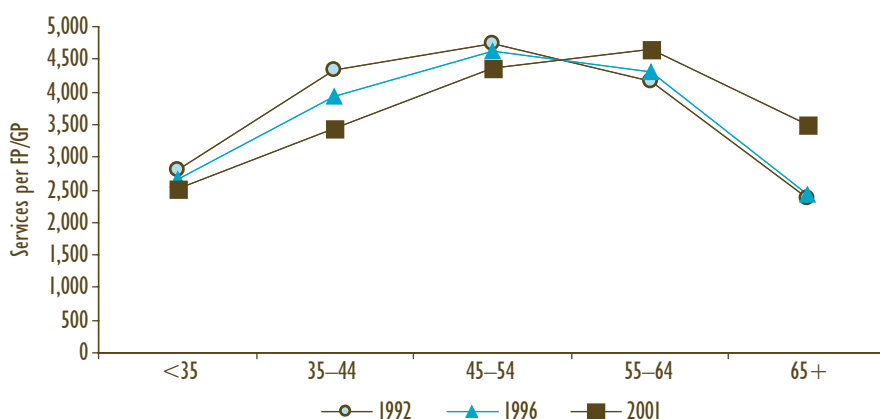
**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

The average number of office assessment services provided by family physicians traditionally peaked in the 45-to-54 age group and then declined. However, at the end of the study period, this pattern moved to the 55-to-64 age group, who then provided the highest average number of office assessment services. Over the 10-year period, the average number of office assessment services provided increased for the eldest age groups while declining in the younger age groups. This trend is seen in male and female family physicians, as shown in Figures 16 and 17.

Average Number of Office Assessment Services per Male Family Physician Providing Office Assessment Services, by Age Groups, Canada, 1992, 1996 and 2001

16

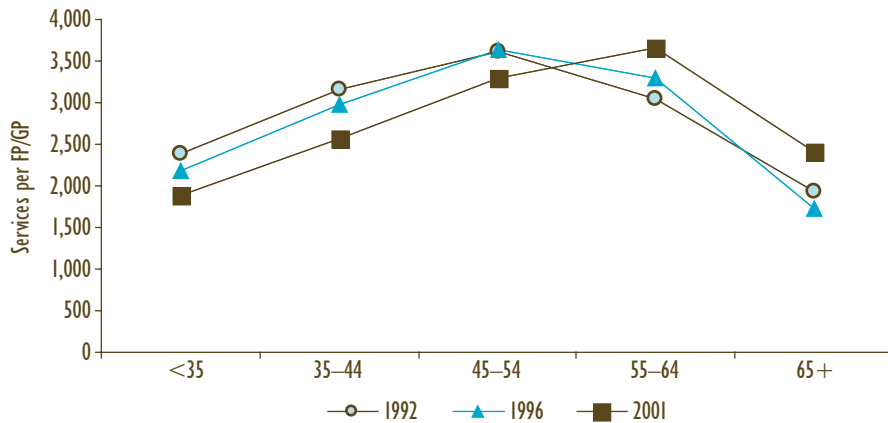


**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

Average Number of Office Assessment Services per Female Family Physician Providing Office Assessment Services, by Age Groups, Canada, 1992, 1996 and 2001

17



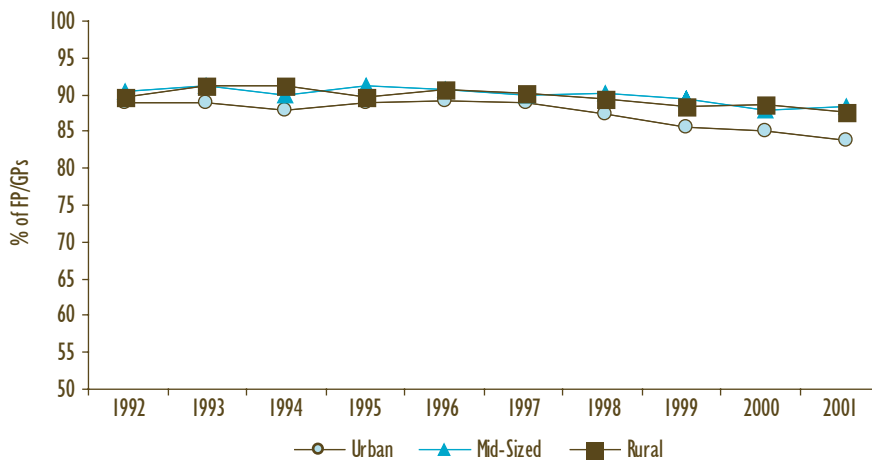
**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

As seen in Figure 18, there is fairly strong homogeneity among geographic settings. Rural and mid-sized settings had slightly (2% to 3%) higher participation rates than urban settings.

Percentages of Family Physicians Providing Office Assessment Services, by Geographic Location, Canada, 1992 to 2001

18



**Source:** National Physician Database, CIHI

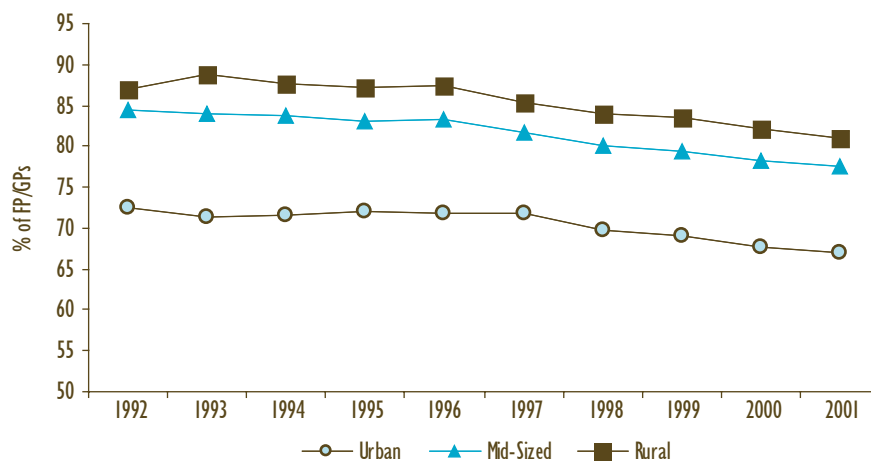
**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

### 6.3 Advanced Procedural Skills Services

Throughout the study period, most family physicians provided advanced procedural skills services. This was particularly true for family doctors in rural communities where no less than 81% of family physicians billed for advanced procedural skills services in each year (see Figure 19). Among rural family physicians, the participation rate in advanced procedural skills services was consistently about 20% higher than for family physicians serving urban communities. While participation rates in advanced procedural skills services declined only modestly, the decline became steeper after 1996 (see Figure 19). This trend was observed not only in all geographic locations, but also among male and female family physicians in all age groups.

Percentages of Family Physicians Providing Advanced Procedural Skills Services, by Geographic Location, Canada, 1992 to 2001

19



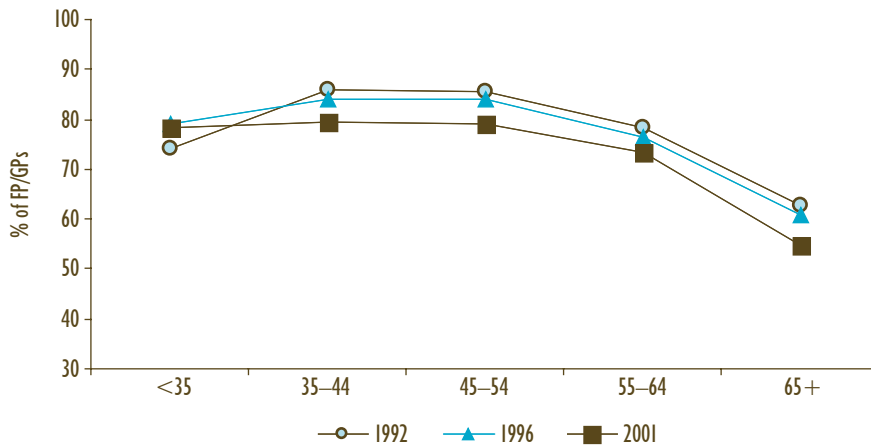
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Advanced procedural skills services results are based on data for all provinces, with the exception of Quebec. See Appendix B for details on provincial inclusion/exclusion criteria.

Throughout the study period, advanced procedural skills services tended to be performed by family doctors in younger age groups (see Figures 20 and 21). While participation rates were progressively lower for family physicians in age groups older than 35 to 44, a more marked decline in participation rates across age groups occurred among female family physicians.

Percentages of Male Family Physicians Providing Advanced Procedural Skills Services, by Age Groups, Canada, 1992, 1996 and 2001

20

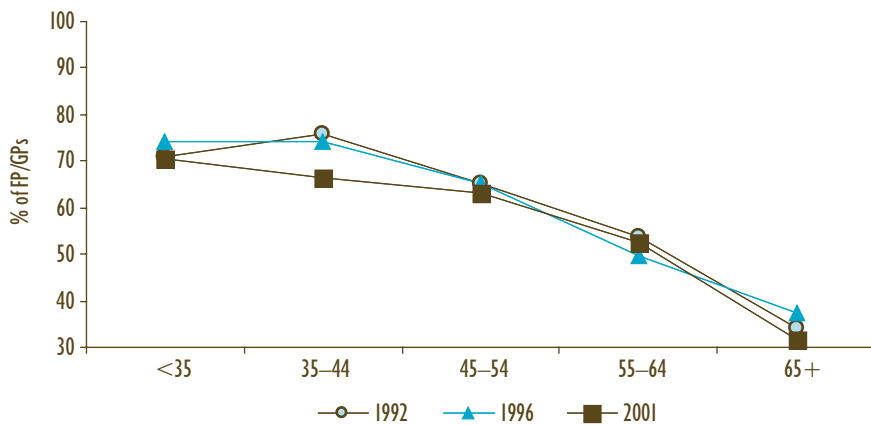


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Advanced procedural skills services results are based on data for all provinces, with the exception of Quebec. See Appendix B for details on provincial inclusion/exclusion criteria.

Percentages of Female Family Physicians Providing Advanced Procedural Skills Services, by Age Groups, Canada, 1992, 1996 and 2001

21



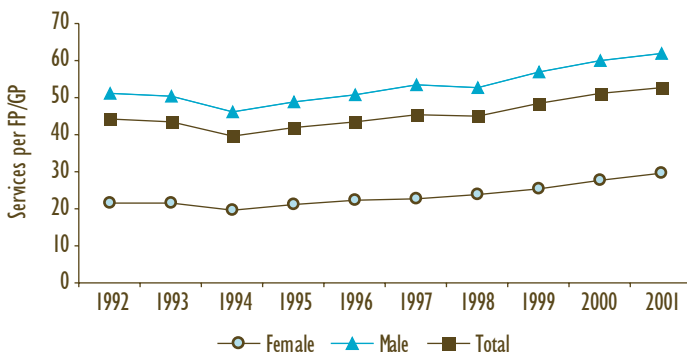
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Advanced procedural skills services results are based on data for all provinces, with the exception of Quebec. See Appendix B for details on provincial inclusion/exclusion criteria.

From 1994, there was a steady increase in the average number of advanced procedural skills services provided per family physician (see Figure 22). This was the case for both male and female family physicians. Throughout the study period, male family doctors provided more than twice as many advanced procedural skills services, on average, as female family physicians.

From 1994, there was a steady increase in the average number of advanced procedural skills services provided per family physician

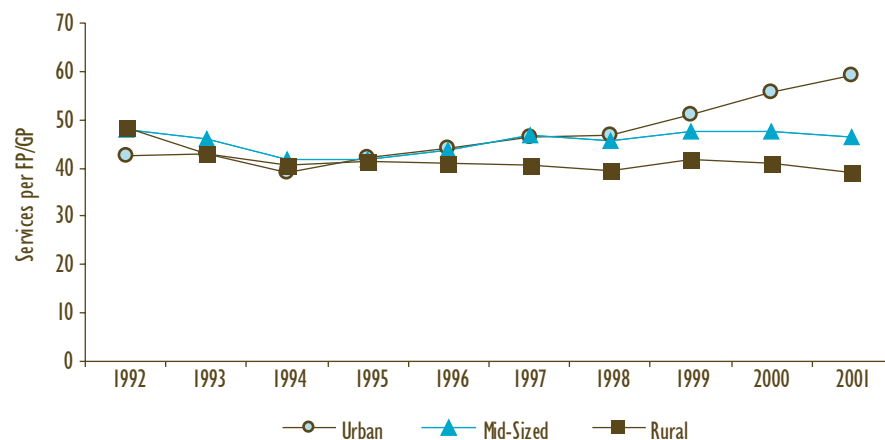
**Average Number of Advanced Procedural Skills Services per Family Physician Providing Advanced Procedural Skills Services, by Sex, Canada, 1992 to 2001** **22**



**Source:** National Physician Database, CIHI  
**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Advanced procedural skills services results are based on data for all provinces, with the exception of Quebec. See Appendix B for details on provincial inclusion/exclusion criteria.

From 1992 to 2001, family physicians serving urban, mid-sized and rural communities provided between 39 and 59 advanced procedural skills services on average (see Figure 23). The relative positions of rural and urban family physicians, with respect to the average number of advanced procedural skills services provided, gradually reversed and exhibited a widening gap during the study period. In 1992, rural family physicians provided more advanced procedural skills services, on average, compared to urban family physicians (48 versus 43, respectively). By 2001, urban family physicians billed for 59 advanced procedural skills services on average, compared to an average of 39 for rural family physicians.

**Average Number of Advanced Procedural Skills Services per Family Physician Providing Advanced Procedural Skills Services, by Geographic Location, Canada, 1992 to 2001** **23**



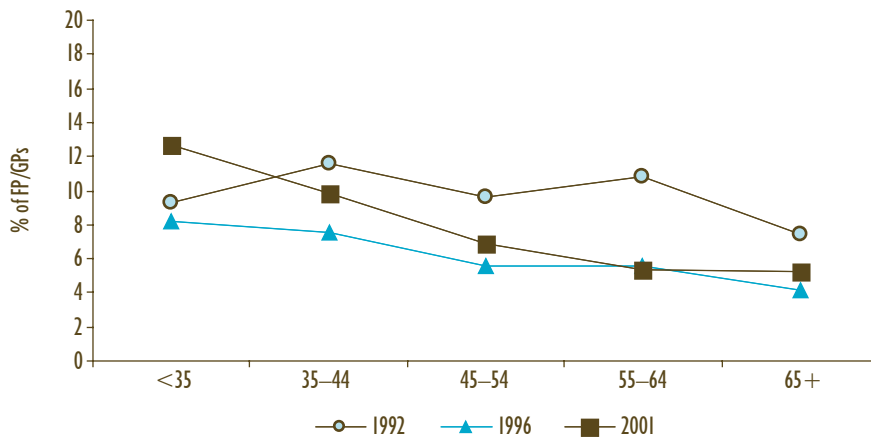
**Source:** National Physician Database, CIHI  
**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Advanced procedural skills services results are based on data for all provinces, with the exception of Quebec. See Appendix B for details on provincial inclusion/exclusion criteria.

## 6.4 Anaesthesiology Services

As shown in Figure 8b, family physician participation in providing anaesthesia services generally declined over the study period. The 9% participation rate recorded in 1992 dropped to less than 6% in 1993 and remained fairly constant from 1993 to 1999. In 2000 and 2001, the participation rate crept to just over 6%. Figures 24 and 25 illustrate the slight increase in participation rates among both sexes and most age groups in 2001 compared to 1996, particularly among family physicians aged less than 35. In 2001, male and female family doctors aged less than 35 demonstrated higher participation rates in providing anaesthesia services than their same-age group in 1992 and 1996.

Percentages of Male Family Physicians Providing Anaesthesia Services, by Age Groups, Canada, 1992, 1996 and 2001

24

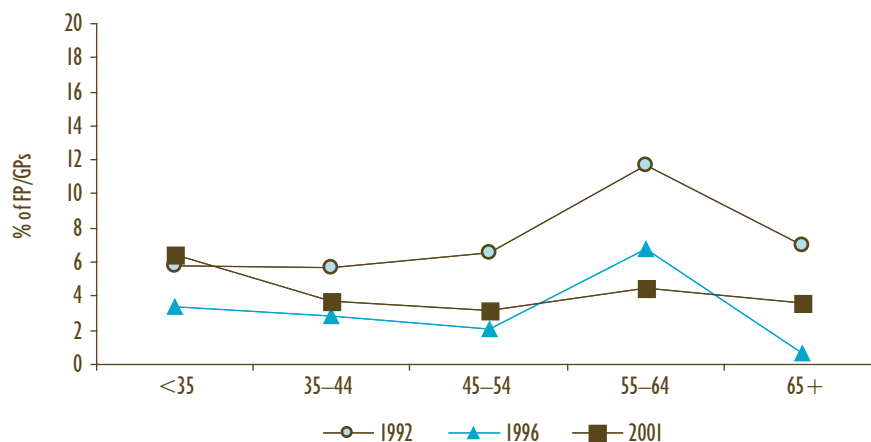


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Anaesthesia service results are based on data for all provinces, with the exception of Nova Scotia, Alberta and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

Percentages of Female Family Physicians Providing Anaesthesia Services, by Age Groups, Canada, 1992, 1996 and 2001

25



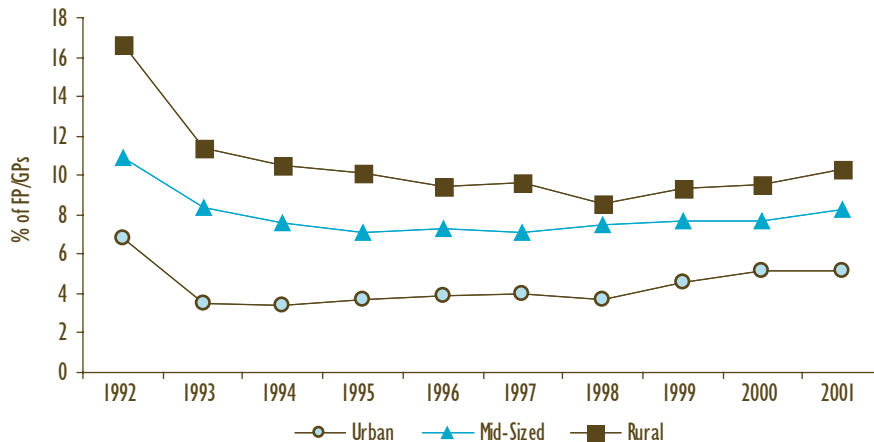
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Anaesthesia service results are based on data for all provinces, with the exception of Nova Scotia, Alberta and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

The downward and then slightly upward trend in anaesthesia service participation rates was manifest in all geographic settings (see Figure 26). Nevertheless, in 2001, 25%, 25% and 38% fewer family doctors were providing anaesthesia services in urban, mid-sized and rural communities, respectively, compared to the participation rates recorded in 1992. Throughout the study period, a greater percentage of family physicians was involved in providing anaesthesia services in rural areas than in urban and mid-sized communities.

Percentages of Family Physicians Providing Anaesthesia Services, by Geographic Location, Canada, 1992 to 2001

26



**Source:** National Physician Database, CIHI

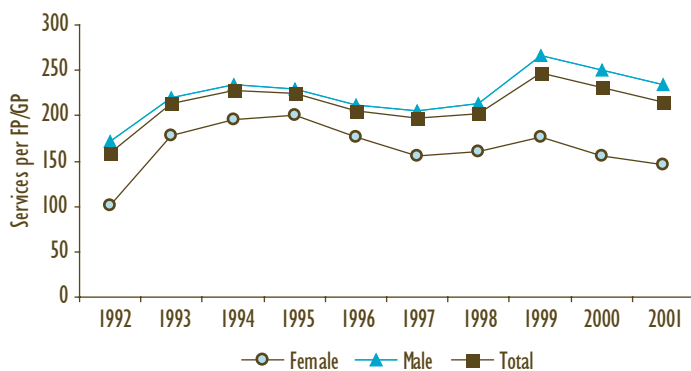
**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Anaesthesia service results are based on data for all provinces, with the exception of Nova Scotia, Alberta and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

Overall, the average number of anaesthesia services provided per family physician increased by 35% over the study time period; however, the trend was variable (see Figure 27). The average number of anaesthesia services provided increased for male and female family physicians in the initial study years (1992 to 1995), and then decreased until 1997. For both male and female family physicians, the average number of anaesthesia services increased in 1998 and 1999. In the final two years of the study (2000 and 2001), the average number of anaesthesia services provided decreased.

The average number of anaesthesia services provided per family physician increased by 35% over the study time period.

Average Number of Anaesthesia Services per Family Physician Providing Anaesthesia Services, by Sex, Canada, 1992 to 2001

27



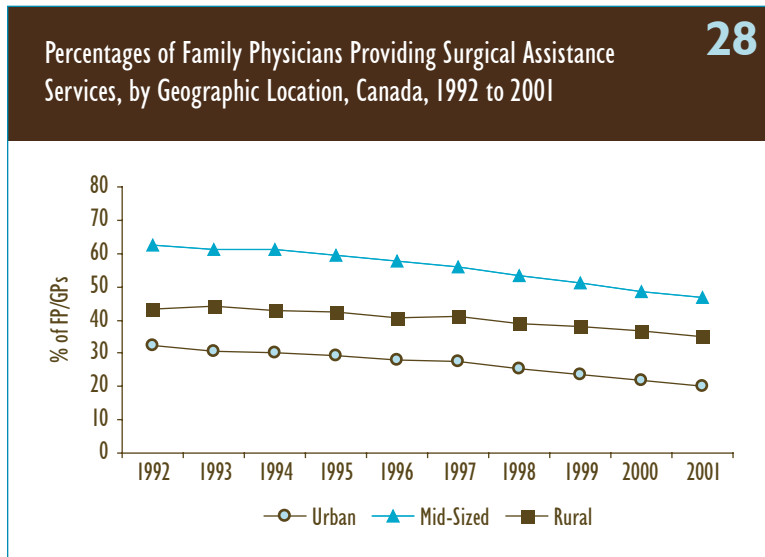
**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Anaesthesia service results are based on data for all provinces, with the exception of Nova Scotia, Alberta and British Columbia. See Appendix B for details on provincial inclusion/exclusion criteria.

## 6.5 Surgical Assistance Services

As seen in Figure 28, surgical assistance by family physicians was more common in mid-sized communities, least common in urban areas and decreased in all three geographic locations. Over the study period, participation rates in surgical assistance decreased by 38%, 25% and 19% for urban, mid-sized and rural places, respectively.

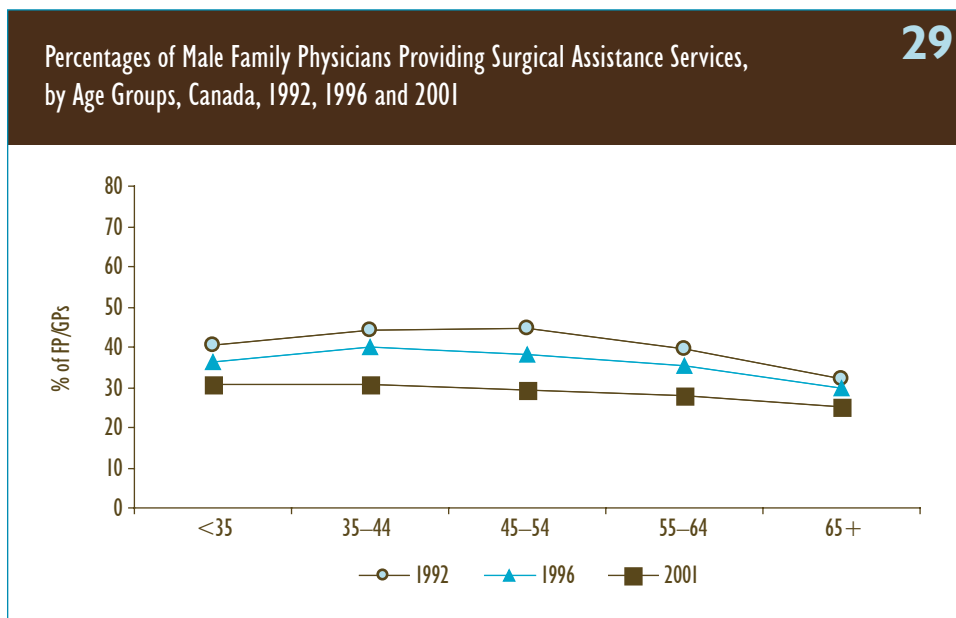
Surgical assistance by family physicians was more common in mid-sized communities, least common in urban areas and decreased in all three geographic locations.



**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Surgical assistance service results are based on data for all provinces.

While a greater percentage of male family physicians than female family physicians engaged in surgical assistance services, a decreasing trend held true for both genders across age groups. These trends are illustrated in Figures 29 and 30.



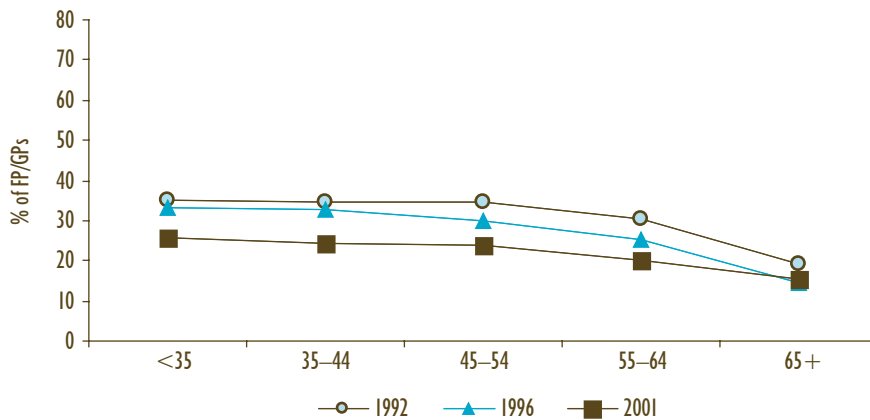
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Surgical assistance service results are based on data for all provinces.



Percentages of Female Family Physicians Providing Surgical Assistance Services, by Age Groups, Canada, 1992, 1996 and 2001

30



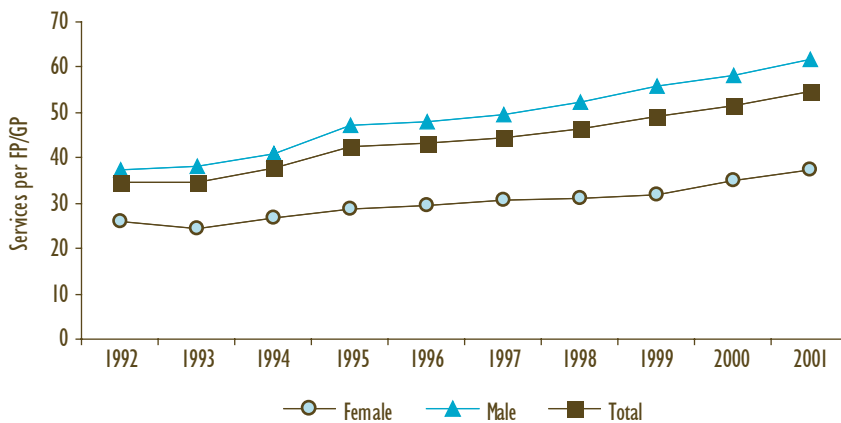
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Surgical assistance service results are based on data for all provinces.

The average number of surgical assistance services provided by family physicians increased over the study period, particularly for males (see Figure 31). The average number of services provided per family physician increased by 42% for females and by 68% for males.

Average Number of Surgical Assistance Services per Family Physician Providing Surgical Assistance Services, by Sex, Canada, 1992 to 2001

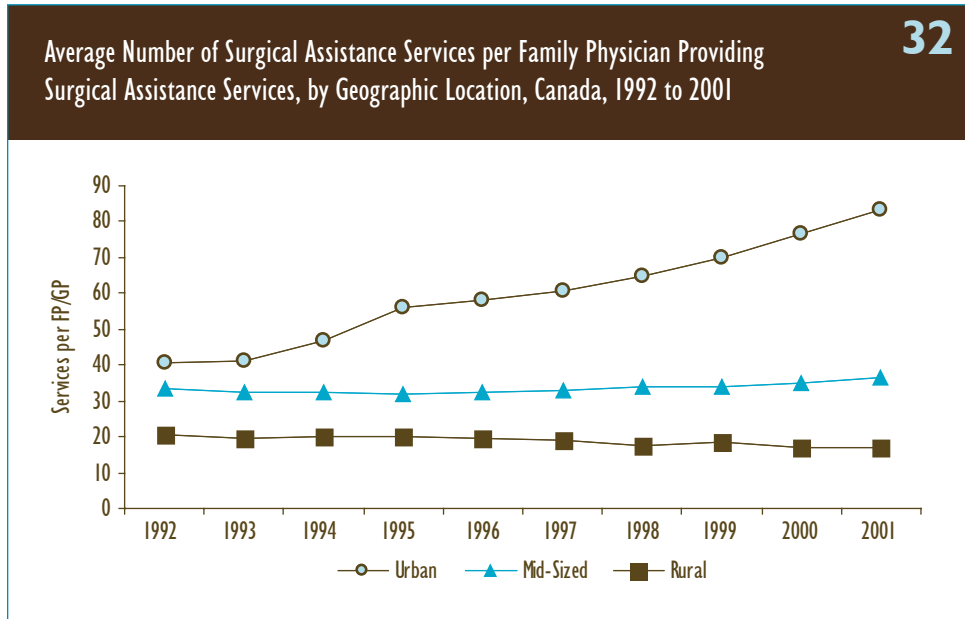
31



**Source:** National Physician Database, CIHI

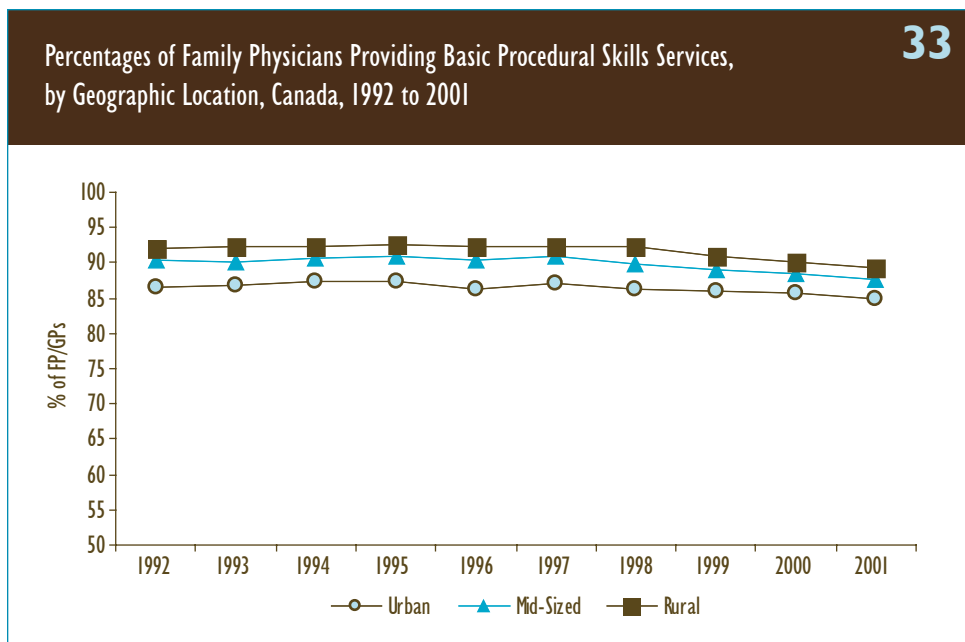
**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Surgical assistance service results are based on data for all provinces.

A comparison of Figures 28 and 32 shows that while urban family physicians were less likely to provide surgical assistance services than family physicians in mid-sized communities, urban family physicians who did provide surgical assistance services did so more intensively than family physicians serving mid-sized communities. In fact, over the study period, there was a marked increase in the intensity with which urban family physicians provided surgical assistance services. The average number of surgical assistance services provided by urban family physicians doubled during the study period.



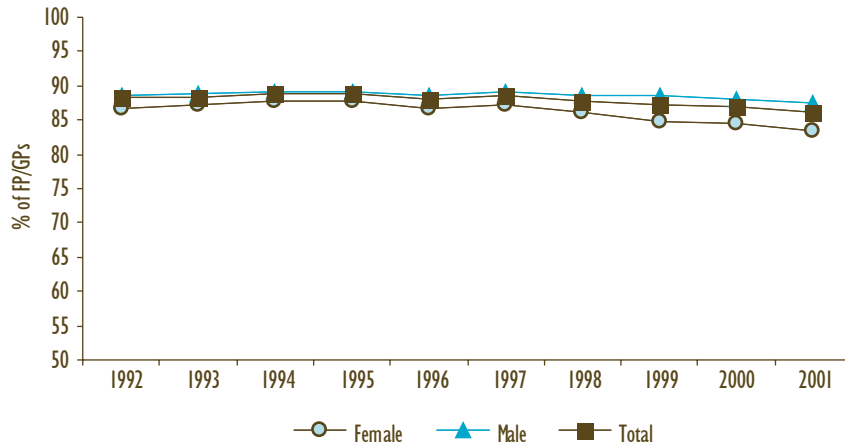
## 6.6 Basic Procedural Skills Services

As noted in Section 4.1, the provision of health care services that require basic procedural skills services remained constant in terms of family physicians' participation rate during the study period. This observation is true for female and male family physicians, as well as family physicians serving all types of communities (see Figures 33 and 34).



Percentages of Family Physicians Providing Basic Procedural Skills Services, by Sex, Canada, 1992 to 2001

34



**Source:** National Physician Database, CIHI

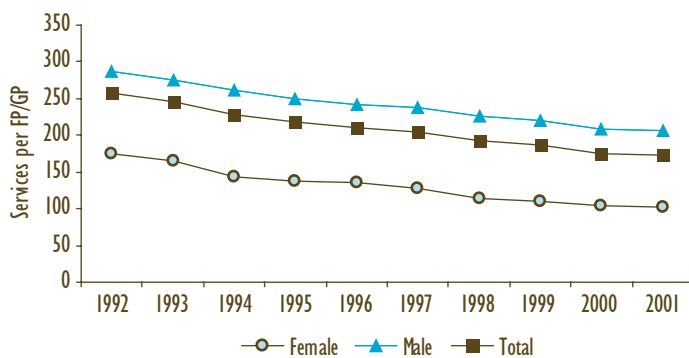
**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Basic procedural skills service results are based on data for all provinces.

While participation rates for services that require basic procedural skills remained stable, the average number of services provided per family physician declined steadily. The decline was steady for both male and female family physicians, although male family doctors continued to provide consistently more basic procedural skills services on average than female family physicians (see Figure 35).

While participation rates for services that require basic procedural skills remained stable, the average number of services provided per family physician declined steadily.

Average Number of Basic Procedural Skills Services per Family Physician Providing Basic Procedural Skills Services, by Sex, Canada, 1992 to 2001

35



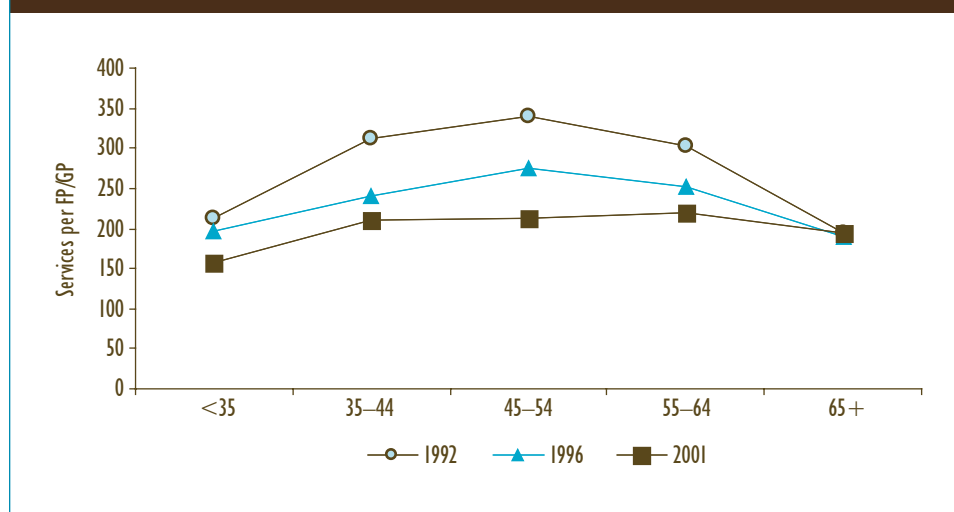
**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Basic procedural skills service results are based on data for all provinces.

Furthermore, the male and female patterns of decline were different. For males, the decline in the average number of services provided was most pronounced among family doctors in the 45-to-54 age group (see Figure 36). Average service levels declined by 33% for male family physicians aged 35 to 44 and 38% for those aged 45 to 54 between 1992 and 2001, compared to 28% and 26% for those aged 55 to 64 and less than 35, respectively. Service levels for male family doctors older than 65 remained virtually unchanged throughout the study period. A more constant decline in average service levels, ranging from 43 to 50%, was recorded for female family physician age groups below the age of 65 (see Figure 37). The data show that females aged 65 or up provided more basic procedural skills services, on average, in 1996 and 2001 compared to 1992. However, it is important to note that in 1992 there were only 153 female family physicians aged 65 or older in Canada. The year-to-year practice patterns of such a small group may be expected to vary widely.

Average Number of Basic Procedural Skills Services per Male Family Physician Providing Basic Procedural Skills Services, by Age Groups, Canada, 1992, 1996 and 2001

36

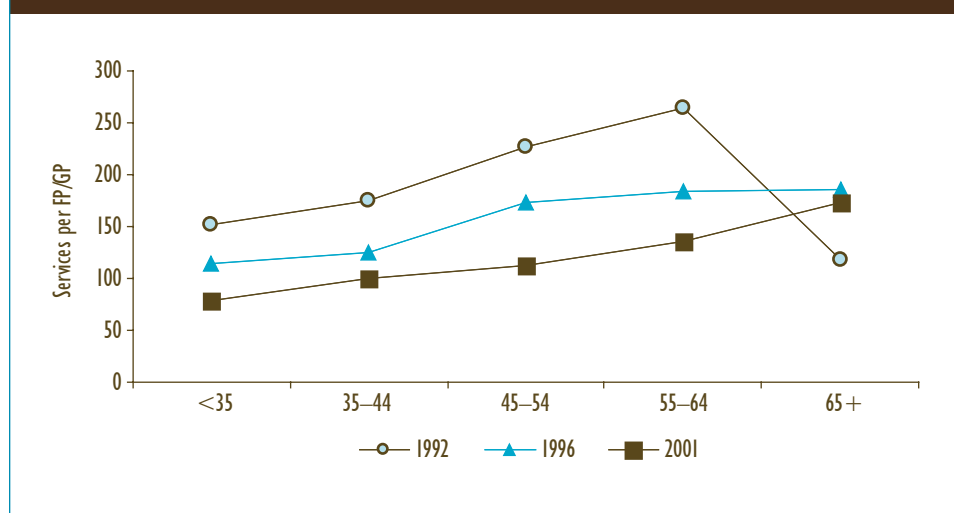


Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Basic procedural skills service results are based on data for all provinces.

Average Number of Basic Procedural Skills Services per Female Family Physician Providing Basic Procedural Skills Services, by Age Groups, Canada, 1992, 1996 and 2001

37



Source: National Physician Database, CIHI

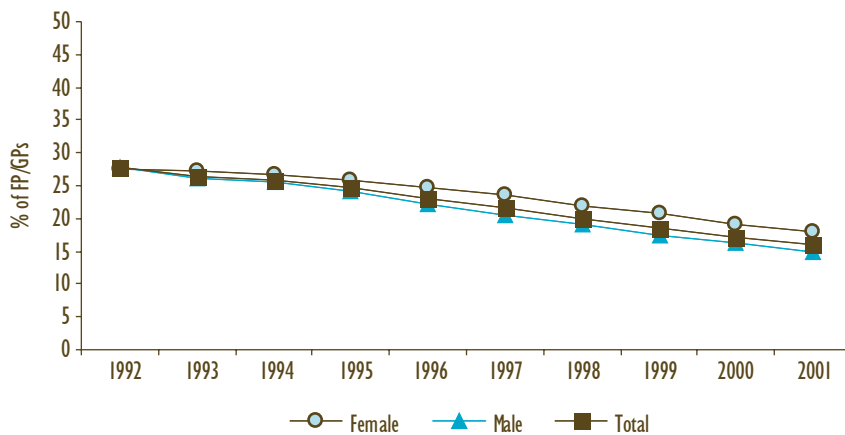
Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Basic procedural skills service results are based on data for all provinces.

## 6.7 Obstetrics

The percentage of family physicians involved in providing obstetrical services decreased steadily for both genders over the period of 1992 to 2001 (see Figure 38). However, this decline was slower for women who, after 1992, had a higher level of participation than men. In 2001, the most recent data year, 18% of female family doctors and 15% of males billed for obstetrical services, compared with 28% for both males and females in 1992.

Percentages of Family Physicians Providing Obstetrical Services, by Sex, Canada, 1992 to 2001

38



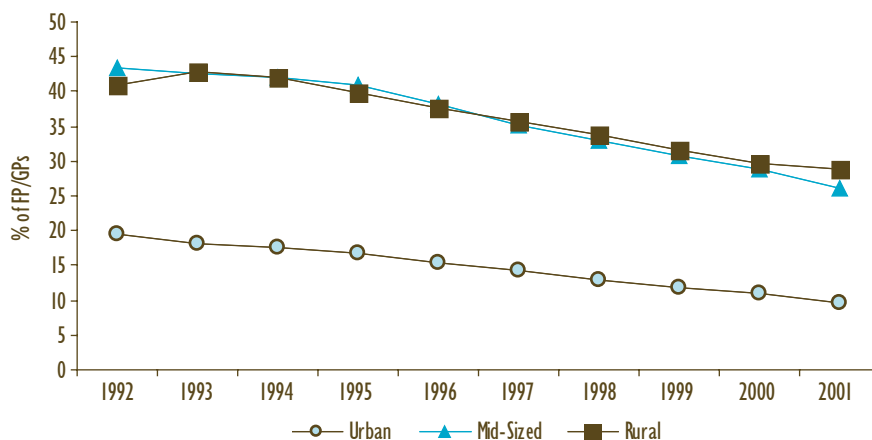
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

As seen in Figure 39, participation rates were very similar for family physicians serving rural and mid-sized communities and lower for urban family physicians. This pattern was found to be the same for male and female family physicians across geographic settings. During the study period, participation rates declined 29% for rural family physicians, 40% for those serving mid-sized communities and 50% for urban family physicians.

Percentages of Family Physicians Providing Obstetrical Services, by Geographic Location, Canada, 1992 to 2001

39



**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

Figure 41 shows that, throughout the study period, participation rates for obstetrical care services decreased steadily with age for women from the youngest age category on. In 1992 and 1996, men reached their peak level of participation between ages 35 and 44, with decreased participation among older age groups (see Figure 40). In 2001, the pattern of decline was similar for men and women, with steadily decreasing participation rates from the earliest age group on.

For the three years of data presented in Figures 40 and 41, participation rates dropped in each subsequent year in each age group for both men and women. For both sexes, the decline was greatest in the 45 to 54 age group. In 1992, 32% of males and 24% of females aged 45 to 54 participated in obstetrical care. In 2001, 16% of male and female family physicians aged 45 to 54 practised obstetrics.

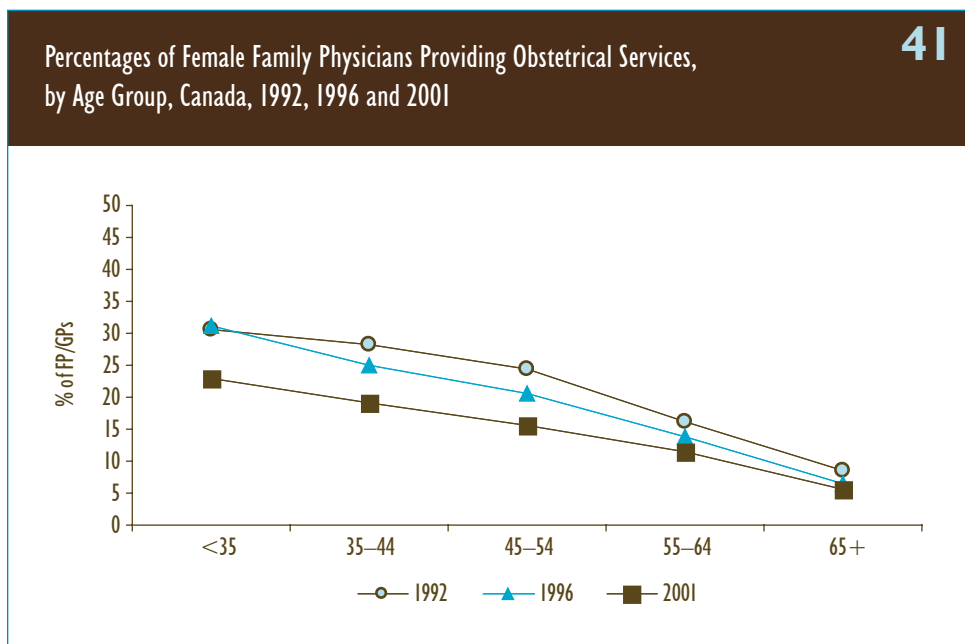
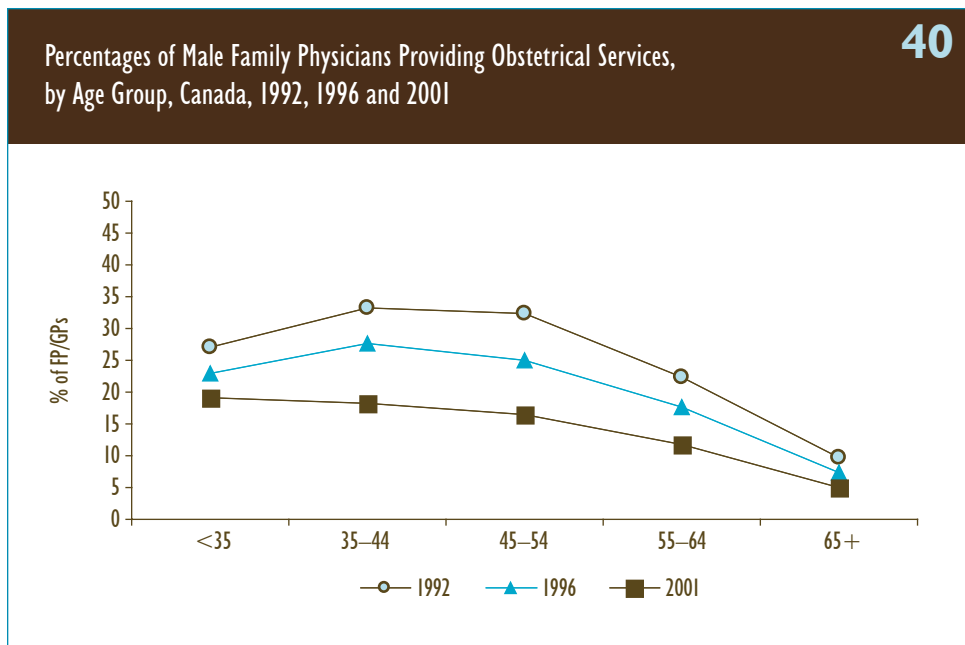
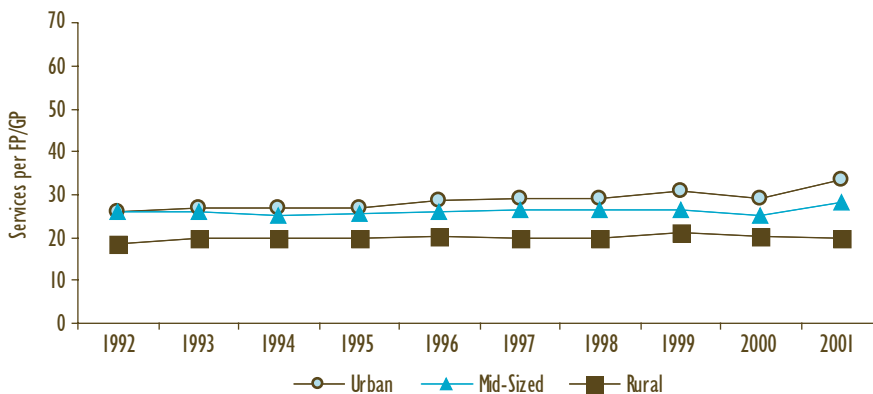


Figure 39 showed that urban family physicians were less likely to provide obstetrical care services than family physicians working outside of urban areas. As shown in Figures 42 and 43, however, urban family physicians who did practise obstetrics tended to do so more intensively than other family doctors. Over the study period, this pattern of practice became most pronounced for female family physicians working in urban places. In 1992, female family doctors serving urban communities provided, on average, 40 obstetrical services. This number increased 60% by 2001, when urban female family doctors provided 64 obstetrical services, on average.

In 1992, female family doctors serving urban communities provided, on average, 40 obstetrical services. This number increased 60% by 2001.

Average Number of Obstetrical Services per Male Family Physician Providing Obstetrical Services, by Geographic Location, Canada, 1992 to 2001

42

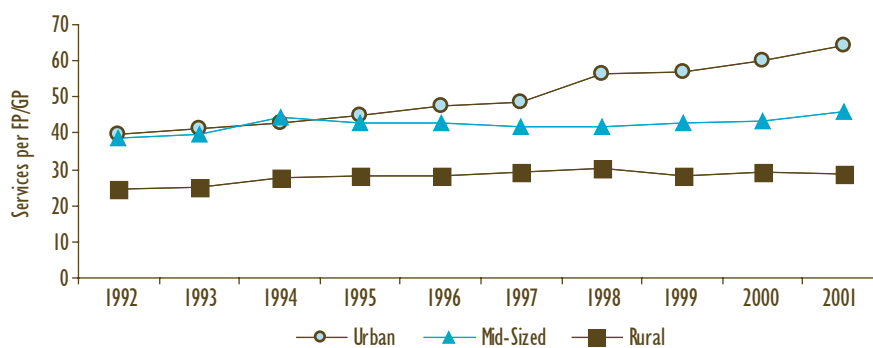


**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

Average Number of Obstetrical Services per Female Family Physician Providing Obstetrical Services, by Geographic Location, Canada, 1992 to 2001

43



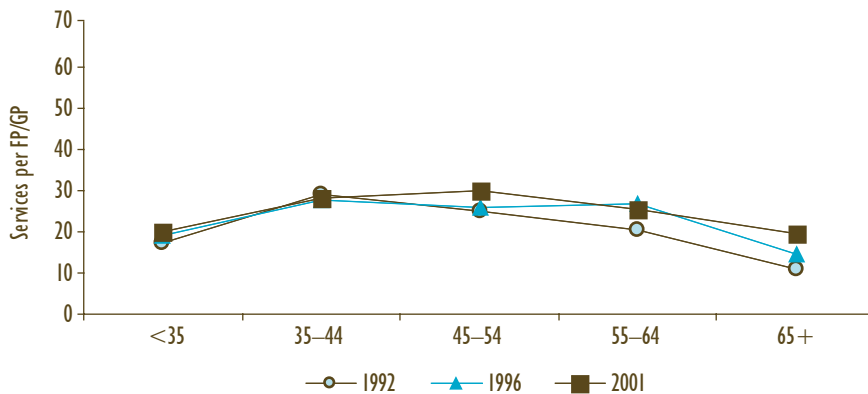
**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

Figures 44 and 45 illustrate how the intensification of obstetrical service provision manifested itself in female and male age groups over the study period. The average number of services provided by female family physicians in most age groups increased between 1992 and 2001 (see Figure 45). For females, the increases were particularly marked in the 35-to-44 and 55-to-64 age groups. For males, the increases were more modest and were observed among age groups older than 44 (see Figure 44). Figures 44 and 45 also show that, for both males and females, family physicians aged 65 or older tended to provide fewer obstetrical services, on average, than their younger colleagues, with the exception of females in 1996.

Average Number of Obstetrical Services per Male Family Physician Providing Obstetrical Services, by Age Group, Canada, 1992, 1996 and 2001

44

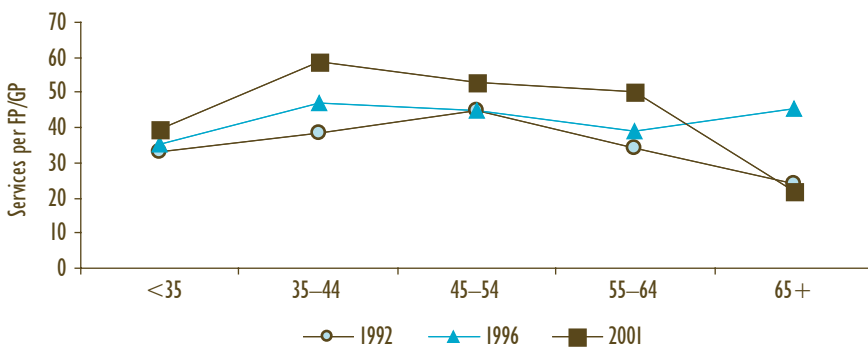


Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

Average Number of Obstetrical Services per Female Family Physician Providing Obstetrical Services, by Age Group, Canada, 1992, 1996 and 2001

45



Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Obstetrical service results are based on data for all provinces.

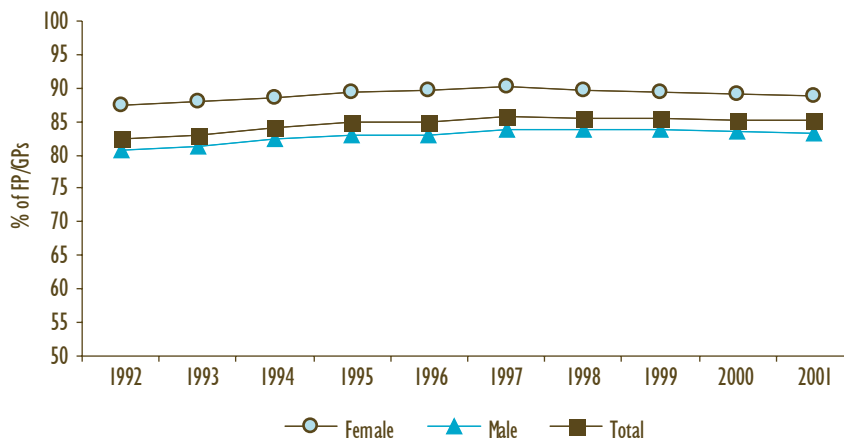


## 6.8 Mental Health Services

Family physician involvement in providing mental health care services remained high throughout the study period. Between 1992 and 2001, mental health care services participation rates increased slightly for male and female family doctors (see Figure 46) across all geographical locations (see Figure 47). Female participation was consistently higher than male participation throughout the study period.

Percentages of Family Physicians Providing Mental Health Services, by Sex, Canada, 1992 to 2001

46

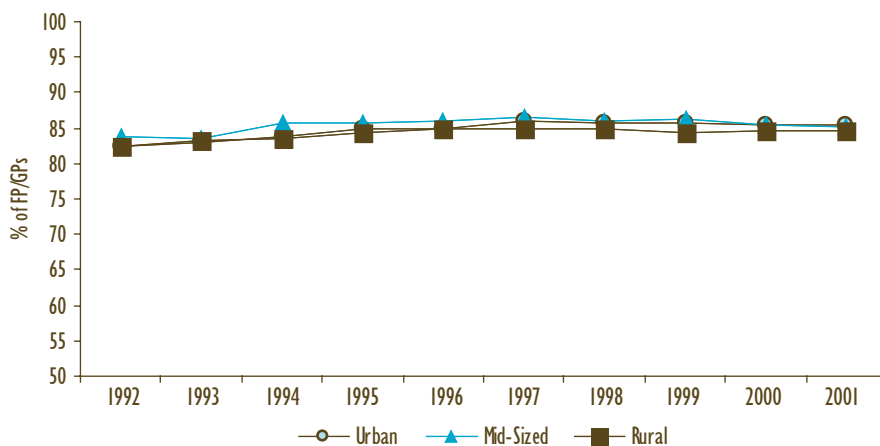


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Mental health care service results are based on data for all provinces.

Percentages of Family Physicians Providing Mental Health Services, by Geographical Location, Canada, 1992 to 2001

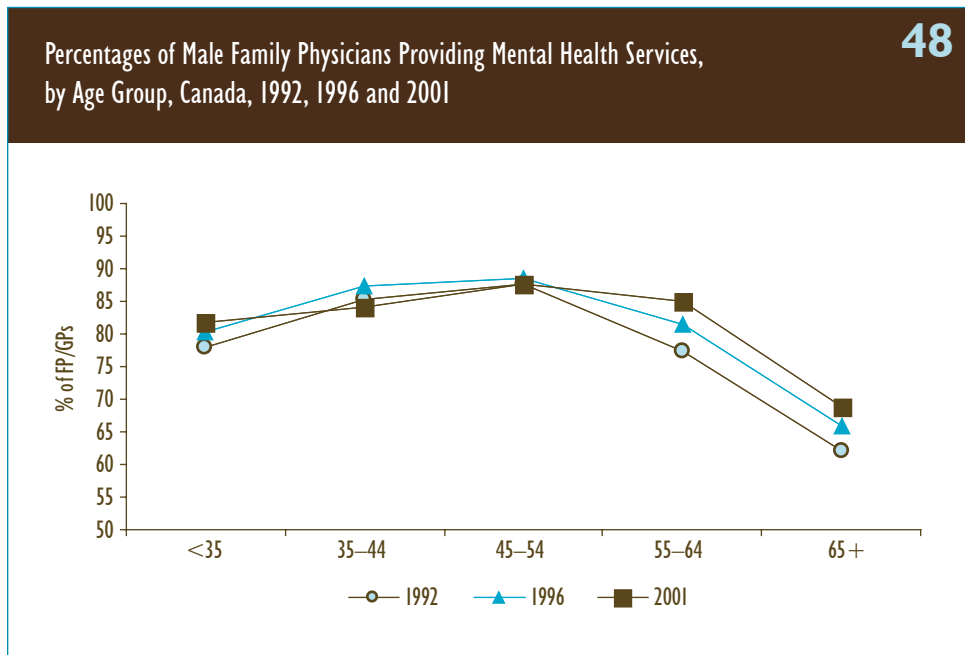
47



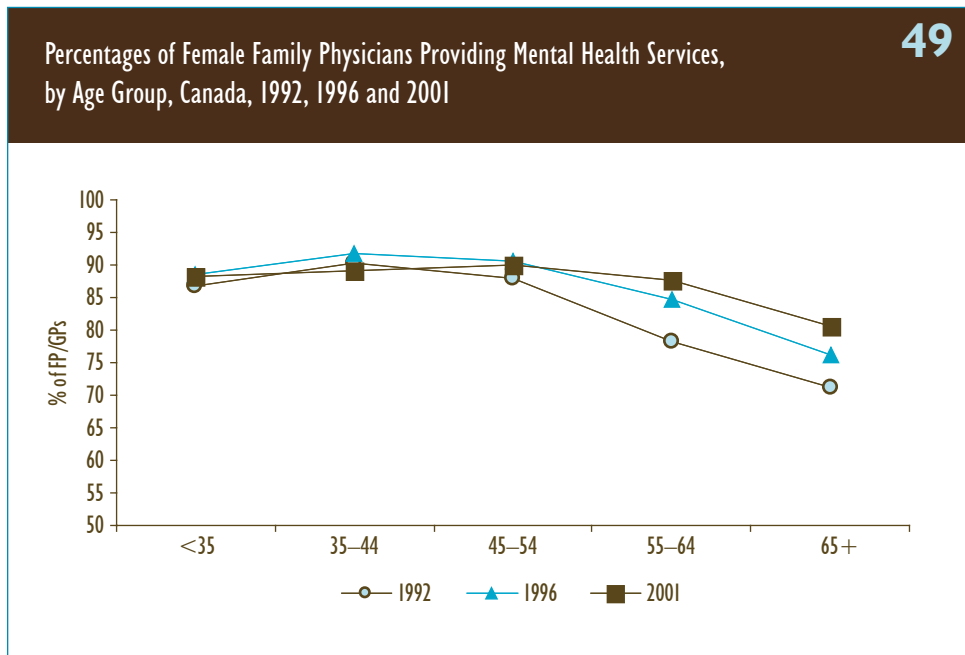
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Mental health care service results are based on data for all provinces.

The modest overall increase in participation rates illustrated in Figures 46 and 47 are due, primarily, to a change in practice among older family physicians. As shown in Figures 48 and 49, mental health care services participation rates increased most markedly for family physicians in the 55-to-64 and 65-or-older age groups. In 1992, 71% of female family physicians aged 65 or older billed for mental health care services. This figure increased to 81% by 2001.



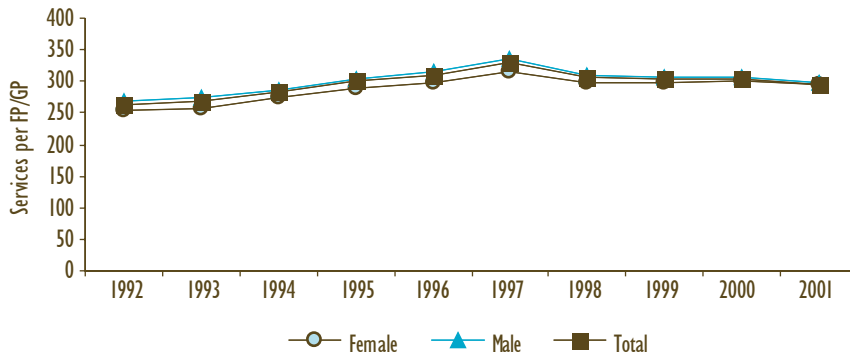
Mental health care services participation rates increased most markedly for family physicians in the 55-to-64 and 65-or-older age groups.



Increased participation rates in providing mental health care services were accompanied by increased levels of service provision as measured by average number of services per family physician. Between 1992 and 2001, the average numbers of mental health care services provided by male and female family physicians increased by 11% and 17%, respectively (see Figure 50).

Average Number of Mental Health Services per Family Physician Providing Mental Health Services, by Sex, Canada, 1992 to 2001

50



**Source:** National Physician Database, CIHI

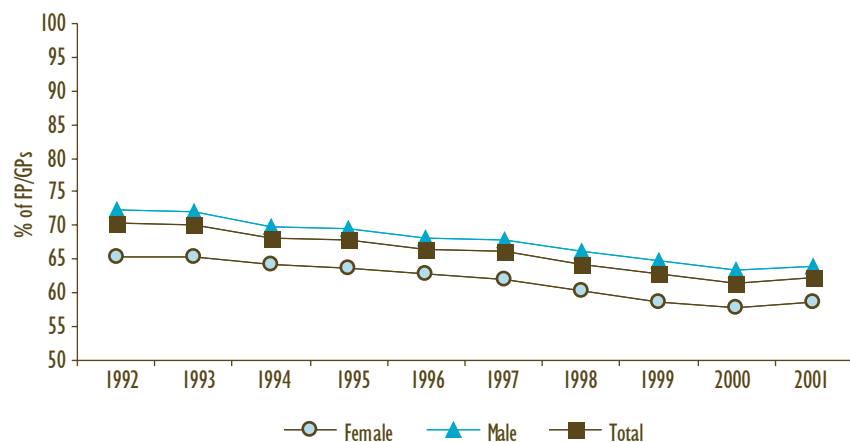
**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Mental health care service results are based on data for all provinces.

## 6.9 Hospital Inpatient Care

Family physician participation rates in providing hospital inpatient care services declined overall during the period of 1992 to 2001. This is true for male and female family physicians (see Figure 51), as well as for family physicians working in all geographical locations (see Figure 52). In 1992, 71% of family physicians provided hospital inpatient services, compared to 62% in 2001. As illustrated in Figures 51 and 52, the downward trend seems to have stabilized in the last three years, at around 62%.

Percentages of Family Physicians Providing Hospital Inpatient Services, by Sex, Canada, 1992 to 2001

51

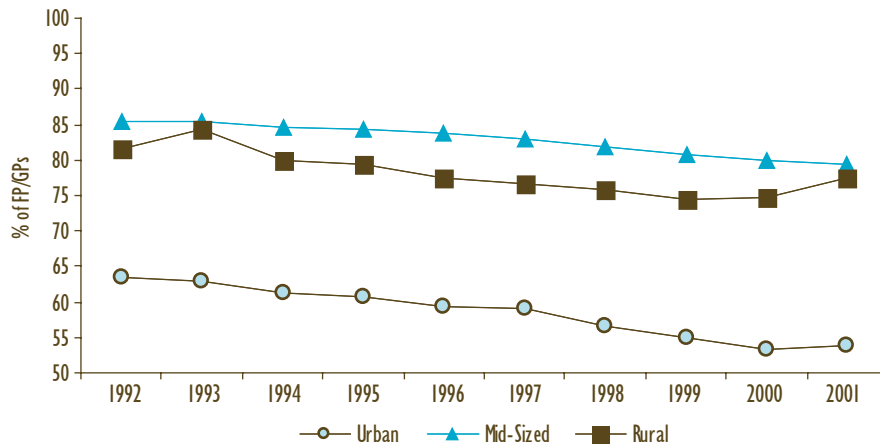


**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.

Percentages of Family Physicians Providing Hospital Inpatient Services,  
by Geographic Location, Canada, 1992 to 2001

52



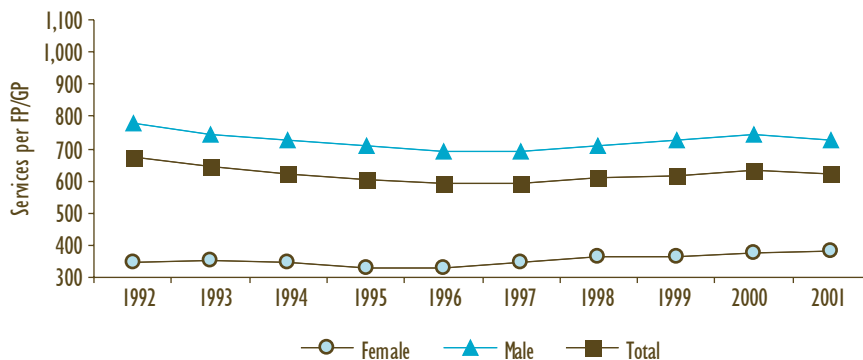
**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.

While overall participation rates in hospital inpatient care services declined for females and males in all geographic settings, mixed results were recorded for average numbers of hospital inpatient services provided (see Figures 53 and 54). The trend in average number of services provided was predominantly downward throughout the study period for family doctors in rural and mid-sized settings. After 1996, however, the trend was generally upward for doctors in urban settings (see Figure 54). There also was a steady increase in the average number of hospital inpatient services provided by female family doctors after 1996, a trend that is not so readily apparent among males (see Figure 53).

Average Number of Hospital Inpatient Services per Family Physician  
Providing Hospital Inpatient Services, by Sex, Canada, 1992 to 2001

53

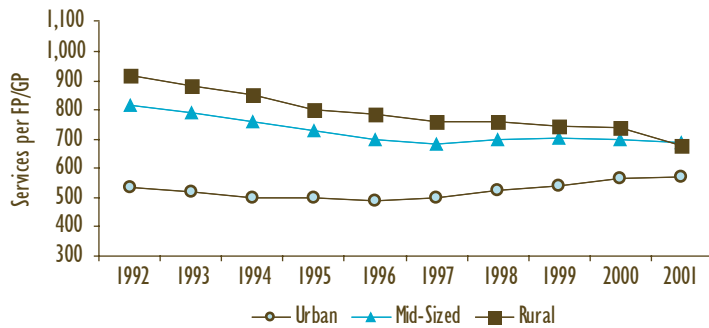


**Source:** National Physician Database, CIHI

**Notes:** Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.

Average Number of Hospital Inpatient Services per Family Physician Providing Hospital Inpatient Services, by Geographic Location, Canada, 1992 to 2001

54



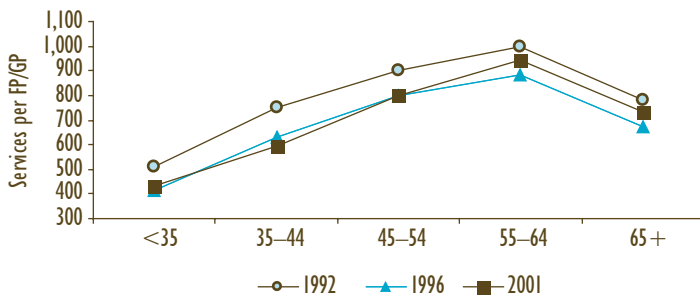
Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.

Figures 55 and 56 illustrate hospital inpatient care practice patterns across age/sex groups throughout the study period. Male family doctors tended to bill for more hospital inpatient services than female family doctors, and their average number of services provided was greatest among the 55-to-64 age group (see Figure 55). The results shown in Figure 56 suggest that the cohort of female family physicians who were aged 55 to 64 in 1992 may be unique among female family doctors with respect to the provision of hospital inpatient services. In 1992, this cohort of family physicians provided more hospital inpatient services, on average, than all other ages of female cohorts in the years shown.

Average Number of Hospital Inpatient Services per Family Physician Providing Hospital Inpatient Services, Males, by Age Group, Canada, 1992, 1996 and 2001

55

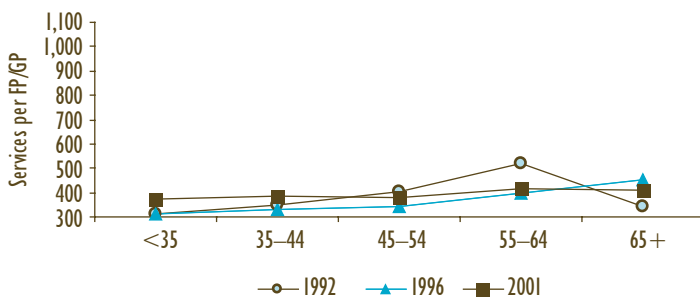


Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.

Average Number of Hospital Inpatient Services per Family Physician Providing Hospital Inpatient Services, Females, by Age Group, Canada, 1992, 1996 and 2001

56



Source: National Physician Database, CIHI

Notes: Includes only services provided through fee-for-service programs. See Appendix A for definitions of clinical service areas. Hospital inpatient service results are based on data for all provinces.





## 7. Discussion and Considerations

The preceding section provided a data summary of family physicians' practice changes in a number of defined clinical practice areas during the period from 1992 to 2001. Earlier,

Section 5 of this report offered a brief summary of the context of change during the same period, focusing on the health care delivery and training environment, as well as societal changes. The following section will discuss trends and considerations that flow from both the study results as well as the broader context of change. It is, unfortunately, beyond the scope of this single report to highlight the numerous observations, considerations and perspectives that are relevant to the study results. However, the following discussion will serve to inform and possibly encourage future research and dialogue.

### 7.1 Activity Patterns: An Important Factor in Health Human Resource Planning

Canadian family physicians appear to be a heterogeneous population with a dynamic pattern of clinical activity that varies by age, sex, location and time period. Health human resource planning efforts that consider one family physician as essentially the same as any other family physician will capture neither these differences nor the implications for service delivery.<sup>32</sup> The practice trends presented in this report may help to inform physician resource planning efforts.

Canadian family physicians appear to be a heterogeneous population with a dynamic pattern of clinical activity that varies by age, sex, location and time period.

#### CONSIDERATIONS

- Can the differences in service provision as reflected by sex, age and location be used to develop better health human resource planning?

## 7.2 Decreasing Participation

In almost all areas of clinical activity, there has been a consistent reduction in the participation of family physicians (that is, the percentage of family physicians who bill for service). This trend is seen on broad analysis and also tends to hold true across age and gender groups, as well as geographic settings. These findings are consistent with other studies that have indicated declining participation of family physicians in a number of clinical areas.<sup>19, 20, 21, 22, 23, 24, 25</sup>

The results bring forward important questions about the core conceptualization of family physicians and the role they play in the health care system.

A variety of complex circumstances may explain these declining trends. Declining participation rates are possibly a reaction to some of the system changes outlined in Section 5 of this report. For example, the decrease in hospital-based care, including hospital inpatient visits/assessments and surgical assistance services, may be related to the emergence of new health care models, characterized by increased community-based care. Practice changes may be influenced by remuneration models that favour a concentration of activity within the office setting—a clinical practice area that did not see a significant reduction in participation rates or intensity. Finally, as the breadth and complexity of medical knowledge and care expand, family physicians may see new opportunities to provide care in specialized areas rather than across a broad range of clinical areas. This concept is further explored below.

These possible explanations raise the question of whether having family physicians who provide the expected traditional broad range of skills is needed and/or feasible today. If the traditional breadth is determined to be both needed and feasible, then recent trends might be further explored to foster an improved understanding of how family physicians may re-enter and reassume these areas of clinical activity.

Achieving this goal may demand further analyses and an integrated set of strategies that address education and training systems; practice models; remuneration models and emphasis; and the perception of family medicine as held by the public, specialist physicians, physicians in-training and family physicians themselves. Moving forward, a broad perspective may encompass a view of patient needs, the context and environment in which care is provided, as well as the skill sets and expertise of a broad range of health care providers.

### CONSIDERATIONS

- The finding of a general decline in the participation of family physicians in a variety of clinical areas is congruent with past studies. This finding may suggest a need to further explore the causes and catalysts of change.
- Efforts to address patterns of clinical practice may require a comprehensive and integrated approach that uses a variety of strategies. Such an approach may demand attention to both the education and practice environment. Similarly, successful efforts may hinge upon consideration not only of family medicine, but also of other medical disciplines and the broad spectrum of health care provider groups.



### 7.3 Increasing Intensity of Service Provision

A reduction in the overall level of participation in several clinical practice areas, with an associated increase in the average number of services provided by those family physicians who remain involved, was the most common pattern. This was seen in five of the nine practice areas: obstetrical care, advanced procedural skills services, anaesthesia services, surgical services and surgical assisting.

A number of explanations for this trend are possible. The first is that those who remain involved in these clinical practice areas adopt a more intensive workload because they are compensating for the withdrawal of participation by other family physicians or a shortage of service provision by other physicians or health care workers. For example, the recent increased activity of family physicians providing anaesthesia may reflect a response to a reported shortage of anaesthesiologists who are certified by the Royal College of Physicians and Surgeons.<sup>67</sup> Similarly, the increasing provision of mental health care services by family physicians may reflect a response to reported geographic and overall shortages of psychiatrists.<sup>68, 69</sup>

A second possibility, alluded to above, is that family physicians, in response to the increasing complexity of medicine, may explore opportunities to focus their practice in limited clinical practice areas, characterized by high levels of service that promote a sense of competency. Some studies have suggested a relationship between high volumes of activity (particularly for surgical services) or delivery by subspecialists and improved outcomes.<sup>70, 71</sup> Similarly, there have been some reports of better management of common clinical conditions by specialists in specialty clinics where the focus will be primarily on just a few clinical conditions. However, the findings have not been consistent.<sup>72, 73</sup>

A third explanation is that there may be a variety of implicit or explicit incentives/disincentives to engage in certain clinical activities. These may relate to compensation structures, perceived prestige of certain practice areas or infrastructure features of the health care system.

#### CONSIDERATIONS

If individual family physicians are increasing their workloads to compensate for the reduced participation of other family physicians or health human resource (HHR) shortages in other disciplines, then:

- What has led other family physicians to withdraw from these areas?
- What are the characteristics of the physicians who have stayed involved even if doing so requires providing more services?
- How high can the workload for these remaining physicians rise?
- How long can these physicians maintain the higher level of activity?
- How can the HHR issues within family medicine or other disciplines be addressed?

### CONSIDERATIONS 7.3 CONTINUED

If this pattern is due to the increasing complexity and a desire of family physicians to achieve greater clinical comfort by focusing their practice, then:

- What is an appropriate and realistic range of skills to expect individual family physicians to acquire and exercise through their practice?
- Are there changes to the educational system that could assist family physicians in attaining and maintaining a broader set of skills despite the increasing complexity of medical practice?
- What is the level of “volume” or “experience” that confers and maintains competency?
- Should HHR planning consider the entire population of family physicians and the range of services they provide as a whole?
- How can the need for these increasingly focused practices be determined, and what changes to the number and type of training programs are needed to accommodate family physicians who are practising more narrowly, but at higher volumes?
- When should the more traditional comprehensive family medicine practices be encouraged, and how should they be supported in a manner to complement the decision by some family physicians to focus their practice?

If this pattern is primarily due to incentives and disincentives created by the system then:

- What policy changes are needed to support family physicians in traditional broad-based practices?

As noted previously, workload increases could be a statistical artefact. Family physicians who provide relatively fewer services may cease participation in a particular clinical area altogether, leaving behind those physicians who always provided high levels of care. This, in turn, would produce an apparent increase in the average number of services per physician. However, this possible explanation still warrants consideration of how to respond to potential health service gaps. A future study to explore this issue through use of a cohort approach is explored below.

## 7.4 Stable at the Core

Office assessments represent the core clinical activity of family physician activity. Over 85% of physicians in this study provided office care, and this service represented 60% to 70% of all billings. Study summary measures for office practice remained generally stable throughout the study period.

## 7.5 An Area of Sustained Growth

Mental health care services showed significant growth in almost every analysis. This may simply reflect fee schedule changes that permit improved descriptions of existing practice patterns. It may also reflect increasing education and awareness of the need for family physicians to recognize and treat mental health illness. Regardless, further research may be required to explore the reasons for the increasing interest levels.

### CONSIDERATIONS

- The apparent increasing participation in mental health could be explored to better understand the reasons behind this increase.

## 7.6 More Involvement and More Work by Older Physicians

Discussion has been made in health human resource forums about generational differences between physicians. The suggestion has been made that new physicians (starting in training programs) are trying to establish a different balance between their clinical careers and their other professional or personal activities.<sup>74</sup>

This report suggests that there are generational differences. While the general decreasing or increasing trends held across all age groups, older physicians were consistently more likely to continue their participation or even increase it. In addition, older physicians were more likely to increase their average workload as fewer doctors participated in a clinical area. This pattern was seen in office assessments where the average workload has increased in the 55-to-64 and 65-or-older categories, while dropping in all other age categories (see Figures 16 and 17). Male physicians in the 45-to-64 age group have consistently seen more patients annually than those in other age groups (see Figure 16). In mental health services, there were increases in all age groups, but particularly so for the older age categories, especially for older female physicians (see Figures 48 and 49). The decline in average number of procedures that require basic clinical skills might be in part due to reductions in activity of those physicians under 65 years of age (see Figures 36 and 37).

There were some exceptions to this pattern. For example, the number of obstetrical care services declined steadily with age (see Figures 40, 41, 44 and 45). Younger male physicians more commonly provided anaesthetic services (see Figure 24) and younger female physicians were more likely to provide services that require advanced procedural skills than older female physicians (see Figure 21).

### CONSIDERATIONS

- Will younger physicians adopt the practice patterns of the existing older physicians as they age?
- What is the sustainability of a pattern of service provision that relies significantly on older physicians?
- Are there certain clinical activities that correlate with certain stages in the career life cycle?
- In addition to a possible desire to seek a different work/personal balance, what policy or other changes have occurred to create this apparent generational difference?

## 7.7 Gender Differences

Women are entering the family physician workforce in numbers significantly higher than men, with an approximately 30% increase in the number of female physicians during the study period (and a sharp decline in new male graduates entering family medicine). These increases are occurring at the entry to the workforce, and female physicians represented only 16% of the 55-to-64 age group and 10% of the 65-or-older age group in 2001. This makes it more difficult to comment on the clinical practice of women throughout the life cycle.

In this study, men and women generally mirrored each other in terms of broad patterns of increase and decrease. However, there were differences in their level of participation and intensity of workload in different clinical areas.

Throughout the study period, female family physicians provided more surgical services on average than men (see Figure 11). Since 1993, a moderately greater percentage of female physicians has been involved in obstetrics (see Figure 38). Female physicians also provided significantly more obstetrical services on average from the beginning of the study period in all locations (see Figures 42 and 43). Finally, a greater percent of female physicians were engaged in mental health services, although men and women were very similar in terms of average number of mental health care services provided (see Figures 46 and 50).

In general, however, men participate more heavily and provide more services in almost all other clinical areas, regardless of age or geography—often significantly so. As noted earlier, in 2001, male family physicians billed for 46% more office assessment services than female family doctors. The trend was similar for the provision of services that require advanced procedural skills, where men provided approximately twice as many services (see Figure 22). Even in surgical services, where women provided more services on average, a greater percentage of men participated than women (see Figure 10).

### CONSIDERATIONS

- How will the practice patterns of women change as they move through the “physician life cycle” and their own “personal life cycle”?
- What are the factors that lead to these gender differences? Are there strategies that can be implemented to either minimize these differences or capitalize upon them?
- What other practice differences are related to gender?

## 7.8 Geographic Differences

Canada is defined and distinguished by its vast size and significant rural regions. Previous literature has identified the unique health needs of northern and rural communities<sup>75</sup> and the particular challenges that can face health professionals working in these areas. While 22% of the Canadian population lives in mid-sized communities, only 10% of the physician workforce is located there<sup>76</sup>—most of them family physicians. They care for communities that often have higher rates of morbidity and mortality for multiple health issues.<sup>77, 78, 79, 80</sup>

This study illustrates generally consistent patterns across geographic areas in terms of decreasing participation and increasing workloads. With few exceptions, gender patterns also largely held true across the three geographic regions studied.

However, rural physicians consistently had higher rates of participation in most clinical areas. Rural areas had the highest percentage of physician participation for surgical services, basic procedures (only slightly higher than mid-sized), advanced procedures and anaesthesia (see Figures 12, 33, 19 and 26, respectively). Mid-sized communities had the highest participation in surgical assistance services and hospital inpatient care (see Figures 28 and 52, respectively). Participation rates in obstetrical services for rural and mid-sized communities were almost identical (see Figure 39). Rural and mid-sized communities had slightly higher (2% to 3%) participation for office assessments and mental health delivery was similar in all settings (see Figures 18 and 47).

The use of average workload measurement may be more limited for comparing geographical settings, since the size of a population can influence the volume of service delivery. For example, a rural town of 5,000 people will have comparatively few babies delivered annually, regardless of the willingness of the family physicians to provide the service. Generally, average workloads increased over time in all geographic areas—except for basic procedures, where there was a decrease in all three areas. There was a decline in mid-sized and rural communities in average hospital inpatient care, while urban areas saw a steady increase after 1997 (see Figure 54). The average obstetrical workload saw significant increases in urban areas and only small increases in mid-size and rural (see Figures 42 and 43).

Relative to other regions, rural areas had a larger loss of participation in hospital-based services such as anaesthesia and surgical services. These regions may be particularly impacted by the broader health care system changes discussed throughout this report.

### CONSIDERATIONS

- How has regionalization, amalgamation and change in hospital service delivery influenced the breadth of activity family physicians can offer? Has this impact been equal across geographic regions?
- Although the trends towards decreased participation are similar across settings, are the reasons different depending on geographic setting?
- Do the trends of decreased clinical participation presented in this paper have greater implications in non-urban areas, possibly due to limited other physician and health professional resources in those areas?

## 7.9 System in Evolution

As outlined in Section 5, family physicians have faced a large number of changes in the last decade. The pace of this change is unlikely to slow as governments increasingly move towards reforming primary health care. For example, the recent well-publicized reports by Commissioners Kenneth J. Fyke, Roy J. Romanow and Senator Michael J. L. Kirby have all stressed the need for primary care reform.

The pace of this change is unlikely to slow as governments increasingly move towards reforming primary health care.

Despite, or perhaps related to, these changes, family physicians seem to be facing a number of challenges. In addition to a decline in medical students choosing to pursue a career in family medicine, several studies have reported patients having problems accessing family physicians and high levels of frustration and low morale among physicians.<sup>81,82</sup> A recent Statistics Canada report noted, “a total of 14% of Canadians, or 3.6 million people, are without an FP. Of that number, 1.2 million have searched unsuccessfully for an FP” (“FP” is used as an abbreviation for “family physician”).<sup>83</sup>

### CONSIDERATIONS

- To what degree do evolving activity patterns of family physicians reflect other changes in the system, such as availability of services provided by other physician groups?
- How have policy initiatives impacted family physicians? Are the trends seen in this paper independent of the recent changes? Are initiatives such as primary care reform or changes to training systems seen as positive steps by current and future family physicians, or do they introduce uncertainty and stress?
- Can greater involvement of family physicians and family physician leadership help the profession with modulating and positively influencing change?
- Is there a role for change management or knowledge transfer strategies to help family physicians adjust to their changing environment?



## 8. Limitations and Future Research

### 8.1 Assessing “Quality” of Care Delivery

This report moves beyond describing the number, location and basic demographics of the workforce to reflect a profile of a family physician’s clinical practice. A next step would be to capture issues around the quality of care provided by family physicians with different practice profiles. Future research might include evaluating clinical outcomes and patient views.

This research may be particularly warranted, given a number of educational and practice paradigm shifts for medicine in general and family medicine in particular. The patient-centred approaches to care, life-long learning (including continuing medical education and continuing professional development), transdisciplinary approaches to primary care and evidence-based medicine are all intended to improve the quality of care patients receive. However, the impact of these new approaches on a family physician’s practice have not been fully evaluated.

### 8.2 Additional Practice Areas and Settings

In addition to the nine areas covered here, there are a variety of other clinical settings that should be studied. These include home visits, walk-in clinics and nursing homes—all areas where family physicians have traditionally participated. There are also other clinical areas of activity that could be studied. These areas include sports medicine, women’s health, emergency medicine, addictions, palliative care and First Nation health.

### 8.3 Non-Clinical Activity

This study does not capture current or historical involvement in professional, non-clinical, areas of activity. In addition to direct patient care, family physicians may be engaged in research, education or administrative activities. These important professional activities may impact the amount of time available for direct clinical care.

## 8.4 Non Fee-for-Service Family Physicians

As outlined in the explanation of the methodology, this study captured only physicians working in fee-for-service models. Since the time of completion of this study, there has been increasing recruitment of family physicians into alternate payment systems (such as salary, capitation, per diems and sessional fees).<sup>26</sup> It is important to know if the demographic profile and activity profile of these physicians is different. Given that some of these new models of payment incorporate incentives to encourage certain types of clinical activity, some differences might be expected.

## 8.5 Impact of Health Policy

The data illustrate significant changes in practice patterns over a 10-year period. The report also highlights a wide range of policy initiatives that occurred during these years. These policies may have had an impact on some of the practice pattern changes observed over the study period. Efforts to try and evaluate the direct impact of specific policies (such as regionalization or certain models of primary care reform) may help better explain the trends seen in this study.

## 8.6 A Cohort Analysis

This study did not explore practice changes at the level of the individual family physician. Another approach would have been to track a particular group of individuals throughout the same time period. This would allow us to better understand whether the increasing average workload is being shared among a number of family physicians, each focusing on a specific area, or if there are some family physicians increasingly active across multiple areas.

Efforts to try and evaluate the direct impact of specific policies (such as regionalization or certain models of primary care reform) may help better explain the trends seen in this study.





## 9. Conclusion

Historically, family physicians have had a strongly defined role in the Canadian health care system. This role revolved around providing both a breadth of knowledge and skills across many clinical settings. In studying Canada's family physician workforce, this study moves beyond a discussion of the number and location of doctors to explore the nature of their clinical activity and whether the traditional understanding of the broad nature of family medicine remains valid.

This study indicates that over a 10-year period there was a decline in the participation of family physicians in a number of clinical areas. This trend generally held true across gender and age groupings, as well as geographic settings. In parallel with this decreasing level of participation was an increase in intensity, as measured by the average number of services provided per family physician. This increased average workload was often most notable among older physicians.

This study will help to inform discussions of the role Canada's family physicians play in today's health care system. Family physicians, governments, educators and a wide spectrum of stakeholders may consider the range of infrastructure and constructive policy initiatives that can be implemented to encourage family physicians to fill their role. Due consideration must be given to the wide range of changes that have already faced family physicians over the last decade and that might have already impacted their choices of clinical practice and led to the trends seen here.

This report has highlighted changes in family practice within the context of the broader health care landscape. It has touched upon how differences between family practices—reflected in participation rates, intensity of service, gender, age and location—might contribute to human resource planning for family doctors. Other questions, such as whether it is feasible to have family physicians provide an expected traditional broad range of skills, or when more traditional comprehensive family practices should be encouraged, highlight the need to define the roles of family doctors as we move into the future.

While it is tempting to view the study results negatively, this may be an unnecessary response. The evolution of a discipline can be a natural and healthy process resulting from a variety of innate and environmental pressures. Readers are encouraged to view the data, not as painting a negative picture, but as presenting a window of opportunity to help redefine, reinforce and renew the roles of family doctors in health care throughout Canada. Change and evolution can be embraced and possibly bring new excitement to family practice.



## Appendix A

### National Grouping System (NGS) Strata and Categories Used to Define Study Clinical Practice Areas

CIHI's National Grouping System (NGS) methodology provides a means to describe provision of physician services across provinces and time. The NGS methodology assigns all provincial/territorial fee-for-service billing codes to 120 categories that describe medical procedures and types of clinical service. These 120 categories are further grouped to the level of broad clinical service areas or strata (for example, obstetrics, major surgery, diagnostic and therapeutic services). Table A1 lists the NGS categories and strata that were used to define clinical practice areas presented in this report.

In addition to mapping fee codes to NGS categories/strata, the NGS methodology adjusts for provincial variations in service billings. In so doing, the NGS methodology standardizes fee code level data to facilitate analysis of payment and service count data at the level of the NGS category/stratum. Detailed NGS descriptions and methodologies, as well as payment and service statistical summaries, are published in CIHI's annual National Grouping System Categories Report.<sup>84</sup>

**Table A1:**  
**Definition of Study Clinical Practice Areas Based on National Grouping System Categories**

Study Clinical Practice Area	NGS Category Description	NGS Category ID
Office practice	Major assessment, office	003
	Other assessment, office	010
Hospital inpatient care	Hospital care days, up to 28–42 days	017
	Hospital care days, greater than 28–42 days	018
	Hospital care days, other	019
	Hospital inpatient major assessment, newborn	004
	Hospital inpatient major assessment, other	005
	Hospital inpatient other assessment	011
Mental health care	Counselling	024
	Group/family psychotherapy	023
	Individual psychotherapy	022
Basic procedural skills	Insertion of IUD	117
	Biopsy	113
	Cryotherapy	111
	Electrocardiogram	100
	Injection/aspiration of joint	099
	Allergy/hyposensitization test	098
	Excision of nail	068
	Suture wound	067
	Removal of foreign body	065
	Incision, abscess, etc.	064

**Table A1:**  
**Definition of Study Clinical Practice Areas Based on National Grouping System Categories**

Study Clinical Practice Area	NGS Category Description	NGS Category ID
Advanced procedural skills	Sigmoidoscopy	105
	Intensive care/resuscitation	097
	Nerve blocks	074
	Minor fractures	071
	Chalazion	069
	Excision tumour	066
	Vasectomy	053
	Varicose veins	040
	Rhinoplasty	034
	Fractures	028
Surgery	Dilatation and curettage	109
	Cystoscopy	104
	Colonoscopy	103
	Laryngo/bronchoscopy	102
	Oesophago/gastroscopy	101
	Therapeutic abortion	079
	Caesarean section	078
	Sterilization	057
	Hysterectomy	056
	Haemorrhoidectomy	049
	Colectomy	048
	Inguinal/femoral hernia	047
	Tonsillectomy	046
	Cholecystectomy	045
	Laparotomy	044
	Appendectomy	043
	Breast excision	026
Anaesthesia	Anesthesia services (excluding nerve blocks)	075
Obstetrical care	Delivery (excluding C-section)	077
	Services at time of delivery (e.g. laceration repair, removal of retained placenta)	076
	Other obstetrical services (e.g. stress test, foetoscopy)	080
Surgical assistance	Surgical assistance	073



## Appendix B

### Clinical Practice Area Provincial Exclusions Based on National Physician Database and National Family Physician Workforce Survey Data Comparisons

National Family Physician Workforce Survey (NFPWS) data was used in this study to cross-validate results based on National Physician Database (NPDB) billing data. The proportions of family doctors who bill for each clinical practice area according to NPDB data were compared to the proportions of family doctors who, through the NFPWS, indicated they provide similar services. Comparisons were made at the provincial level. Cross-validation was carried out to improve the comparability of results based on fee schedule billing information across provinces, as well as provincial variations in service coverage through alternative payment programs.

The NFPWS data elements used for cross-validation purposes are reported along with provincial inclusion/exclusion results in Table B I. Detailed information on the NPDB National Grouping System (NGS) categories used for the comparative analysis is reported in Appendix A.

Office assessment fee codes are not uniquely identified in the fee schedules of Prince Edward Island, Ontario, Saskatchewan and British Columbia. In these provinces, office assessments are remunerated using fee codes that cover service delivery in multiple settings (such as private offices, nursing homes and group homes). These provinces were, therefore, excluded from the analysis of office practice in this study. All other provincial exclusions, based on NFPWS-NPDB comparisons, are reported in Table B I.

**Table B I:**  
**Clinical Practice Areas, National Family Physician Workforce Survey Data Elements and Study Inclusion/Exclusion Results**

Study Clinical Practice Area	NFPWS Data Elements Used for Comparison	Provincial Inclusion/Exclusion Results
Hospital inpatient care	Hospital inpatient care—respondent had to indicate some number of hours per week spent providing hospital inpatient care	Include all provinces
Mental health care	Psychotherapy/counselling services provided to regular and/or other patients	Include all provinces
Basic procedural skills	IUD insertion, skin biopsy, suturing	Include all provinces
Advanced procedural skills	Flexible/rigid sigmoidoscopy, vasectomy/tubal ligation, mole removal, skin lesions, lumps and bumps, cysts, casting/splinting	Exclude Quebec; include all other provinces
Surgery	Performing major surgery in hospital (e.g. appendectomies, C-sections, hysterectomies, D. and C. aspiration, cystoscopy, colonoscopy, gastroscopy, bronchoscopy, C-section as primary surgeon)	Exclude Newfoundland and Labrador, Prince Edward Island and British Columbia; include all other provinces
Anaesthesia	Anaesthesia services provided to regular and/or other patients	Exclude Nova Scotia, Alberta and British Columbia; Include all other provinces
Obstetrics	Intrapartum care	Include all provinces
Surgical assistance	Surgical assistance services provided to regular and/or other patients	Include all provinces



## Appendix C

### Clinical Practice Area Data Summaries

**Table C1:**  
Surgical Service Participation Rates and Average Number of Surgical Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001

	SURGICAL SERVICE PARTICIPATION RATES (%)										
	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	13.5	8.5	10.5	14.1	13.2	11.6	8.4	8.6	14.8	20.7	12.2
1993	12.5	7.6	9.5	12.8	11.8	11.3	8.0	7.7	13.6	22.8	11.1
1994	12.6	7.6	10.7	12.4	11.7	10.5	7.7	7.8	13.6	22.6	11.2
1995	11.8	7.5	10.6	12.0	10.6	9.4	6.6	7.6	12.3	20.9	10.5
1996	10.9	6.9	10.5	10.8	9.5	9.4	5.4	7.1	11.0	19.1	9.7
1997	10.7	6.4	10.3	10.5	9.3	8.1	5.8	7.1	10.2	17.6	9.4
1998	10.9	6.5	10.8	11.0	9.0	8.3	5.6	7.1	11.0	17.6	9.5
1999	10.5	6.0	11.1	10.4	8.3	7.8	5.0	7.1	9.8	16.0	9.0
2000	10.3	5.8	11.8	9.6	8.6	7.0	5.1	7.0	9.9	14.6	8.8
2001	9.5	5.8	10.9	9.6	7.5	7.0	4.5	6.7	8.9	13.5	8.2

	AVERAGE NUMBER OF SURGICAL SERVICES PER FAMILY PHYSICIAN										
	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	27	34	11	22	41	51	44	30	31	20	28
1993	27	40	10	21	50	45	50	34	32	23	30
1994	29	39	8	24	50	46	52	33	35	26	31
1995	31	38	9	24	51	48	56	35	38	25	32
1996	34	47	14	28	58	51	55	41	42	28	37
1997	36	55	17	25	64	59	58	47	41	27	40
1998	37	59	21	29	61	56	69	52	38	27	42
1999	41	63	21	35	64	63	80	56	49	28	46
2000	45	61	20	37	65	75	84	59	46	32	49
2001	50	62	17	40	71	79	97	62	55	34	53

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.

Includes only services provided through fee-for-service programs.

See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.

See Appendix A for definitions of clinical service areas.

Surgical service results are based on data for all provinces, with the exception of Newfoundland and Labrador, Prince Edward Island and British Columbia.

See Appendix B for details on provincial inclusion/exclusion criteria.

**Table C2:**  
**Office Practice Participation Rates and Average Number of Office Assessment Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

<b>OFFICE PRACTICE PARTICIPATION RATES (%)</b>											
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	90.1	88.4	84.5	90.3	93.0	92.1	90.5	89.0	90.5	89.6	89.6
1993	90.1	88.2	84.3	90.1	93.2	91.3	91.0	88.8	91.2	91.1	89.6
1994	89.1	88.2	82.7	89.2	92.2	91.5	90.0	87.8	89.8	91.1	88.8
1995	89.7	88.5	82.8	89.8	92.7	91.5	89.7	88.9	91.1	89.6	89.3
1996	90.1	88.8	83.3	90.0	92.9	90.9	90.2	89.2	90.6	90.7	89.7
1997	89.4	89.0	82.9	88.7	92.8	91.6	88.8	88.9	89.9	90.2	89.3
1998	88.4	87.6	81.9	87.0	92.0	90.5	86.6	87.3	90.3	89.4	88.1
1999	87.3	85.8	78.9	85.6	91.1	90.4	83.1	85.7	89.3	88.3	86.8
2000	87.0	84.9	78.0	85.0	90.4	90.0	81.7	85.0	87.9	88.6	86.2
2001	86.4	83.5	75.9	83.2	89.6	91.1	81.7	83.9	88.3	87.6	85.3

<b>AVERAGE NUMBER OF OFFICE ASSESSMENT SERVICES PER FAMILY PHYSICIAN</b>											
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	3,965	2,887	2,609	3,947	4,569	4,051	2,333	3,644	3,663	3,687	3,665
1993	3,900	2,878	2,515	3,806	4,501	3,998	2,428	3,588	3,606	3,718	3,609
1994	4,020	2,950	2,585	3,841	4,587	4,161	2,452	3,678	3,826	3,701	3,702
1995	3,927	2,852	2,440	3,612	4,472	4,118	2,485	3,534	3,727	3,709	3,596
1996	3,909	2,872	2,403	3,545	4,406	4,215	2,357	3,555	3,696	3,615	3,583
1997	3,987	2,891	2,431	3,476	4,342	4,321	2,615	3,623	3,707	3,602	3,625
1998	4,141	2,939	2,486	3,422	4,408	4,628	3,119	3,760	3,726	3,646	3,725
1999	4,141	2,889	2,443	3,285	4,333	4,686	3,320	3,737	3,662	3,628	3,698
2000	4,028	2,792	2,302	3,123	4,168	4,597	3,350	3,645	3,557	3,478	3,586
2001	3,960	2,712	2,146	3,021	4,032	4,503	3,389	3,563	3,435	3,433	3,509

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
Includes only services provided through fee-for-service programs.  
See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
See Appendix A for definitions of clinical service areas.  
Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia.  
See Appendix B for details on provincial inclusion/exclusion criteria.



**Table C3:**  
**Advanced Procedural Skills (APS) Service Participation Rates and Average Number of APS Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

	<b>APS SERVICE PARTICIPATION RATES (%)</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	79.5	69.9	73.1	83.0	82.0	75.5	60.6	72.5	84.4	87.0	77.1
1993	78.8	69.2	72.1	81.6	81.9	74.7	60.1	71.3	84.0	88.7	76.3
1994	79.2	68.8	74.6	81.5	80.4	73.2	60.0	71.6	83.8	87.6	76.4
1995	79.6	68.4	75.8	80.6	80.6	73.4	59.7	72.0	83.1	87.2	76.4
1996	79.0	69.6	76.9	80.4	79.9	72.9	58.8	71.8	83.2	87.5	76.4
1997	78.5	69.1	77.7	79.4	78.7	73.1	57.5	71.7	81.8	85.3	75.8
1998	76.9	67.0	78.1	77.4	77.3	71.7	55.4	69.7	80.1	84.1	74.0
1999	76.5	66.1	75.9	76.7	76.7	70.4	54.4	69.0	79.4	83.5	73.4
2000	75.2	65.0	74.9	75.0	75.4	70.1	53.0	67.7	78.3	82.2	72.1
2001	74.7	63.8	74.5	74.3	74.2	69.8	52.3	67.0	77.4	81.0	71.3

	<b>AVERAGE NUMBER OF APS SERVICES PER FAMILY PHYSICIAN</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	51	21	31	46	53	53	40	43	48	48	44
1993	50	22	31	45	53	49	36	43	46	43	43
1994	46	19	28	42	47	44	32	39	42	40	40
1995	49	21	31	44	48	48	32	42	42	41	42
1996	51	22	33	45	47	52	32	44	44	41	43
1997	53	23	39	46	48	50	34	46	47	41	45
1998	53	24	44	46	46	49	32	47	45	40	45
1999	57	25	49	51	48	47	40	51	47	42	48
2000	60	28	54	55	50	45	48	56	47	41	51
2001	62	30	53	59	52	46	45	59	47	39	53

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.

Includes only services provided through fee-for-service programs.

See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.

See Appendix A for definitions of clinical service areas.

Office practice results are based on data for all provinces, with the exception of Prince Edward Island, Ontario, Saskatchewan and British Columbia.

See Appendix B for details on provincial inclusion/exclusion criteria.

**Table C4:**  
**Anaesthesia Service Participation Rates and Average Number of Anaesthesia Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

**ANAESTHESIA SERVICE PARTICIPATION RATES (%)**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	10.1	6.1	7.9	9.7	9.2	10.9	7.4	6.8	10.9	16.7	9.0
1993	6.4	3.2	4.8	5.7	6.2	6.8	3.7	3.5	8.4	11.4	5.5
1994	6.0	3.0	4.3	5.8	5.2	5.9	4.0	3.4	7.6	10.5	5.2
1995	6.1	3.1	5.2	5.5	5.1	5.7	4.6	3.7	7.1	10.1	5.3
1996	6.3	3.0	6.0	5.7	4.8	5.8	3.9	3.9	7.3	9.5	5.3
1997	6.3	3.3	6.9	5.9	4.6	5.5	3.4	4.0	7.1	9.7	5.4
1998	5.9	3.3	6.6	5.3	4.3	5.4	4.1	3.7	7.5	8.5	5.1
1999	6.8	3.9	7.5	6.3	5.2	5.3	4.5	4.5	7.7	9.3	5.8
2000	7.4	3.9	7.6	6.8	5.7	5.9	4.7	5.1	7.7	9.5	6.2
2001	7.6	4.2	9.3	7.2	5.7	5.2	5.0	5.1	8.2	10.3	6.5

**AVERAGE NUMBER OF ANAESTHESIA SERVICES PER FAMILY PHYSICIAN**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	172	101	54	109	216	341	232	132	290	120	159
1993	220	178	67	136	274	459	391	210	327	136	213
1994	234	195	78	135	311	464	418	208	374	155	228
1995	230	200	62	166	296	406	393	200	383	158	225
1996	212	176	54	134	291	393	399	173	333	166	206
1997	206	156	70	125	254	445	329	160	312	177	197
1998	213	161	104	136	225	383	390	168	284	193	202
1999	267	177	113	191	271	481	367	222	267	277	247
2000	251	156	136	161	253	366	466	194	295	262	231
2001	234	147	95	156	255	325	464	189	278	218	215

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.

Includes only services provided through fee-for-service programs.

See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.

See Appendix A for definitions of clinical service areas.

Anaesthesia service results are based on data for all provinces, with the exception of Nova Scotia, Alberta and British Columbia.

See Appendix B for details on provincial inclusion/exclusion criteria.

**Table C5:**  
**Surgical Assistance Service Participation Rates and Average Number of Surgical Assistance Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

	<b>SURGICAL ASSISTANCE SERVICE PARTICIPATION RATES (%)</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	41.4	34.1	38.3	41.1	43.1	38.5	31.1	32.2	62.4	43.1	39.5
1993	39.7	33.6	36.3	39.9	41.5	36.8	30.3	30.7	61.0	44.2	38.0
1994	39.0	33.2	36.5	39.4	39.8	35.6	29.9	30.0	61.2	43.1	37.4
1995	38.3	32.5	35.8	38.5	38.3	35.6	29.4	29.3	59.7	42.4	36.6
1996	36.7	31.3	34.8	37.0	36.2	34.0	28.3	27.8	57.8	40.6	35.1
1997	36.3	30.8	35.8	35.8	35.2	33.0	30.0	27.3	55.9	40.9	34.7
1998	34.2	29.1	33.9	33.8	33.0	32.1	28.0	25.5	53.4	38.8	32.6
1999	32.5	27.3	32.4	31.7	31.1	29.7	27.3	23.5	51.2	38.1	30.8
2000	30.7	25.4	29.7	30.1	29.1	28.1	25.9	21.7	48.4	36.6	29.0
2001	28.9	23.9	28.2	28.0	27.7	26.5	24.0	20.0	46.8	35.0	27.3

	<b>AVERAGE NUMBER OF SURGICAL ASSISTANCE SERVICES PER FAMILY PHYSICIAN</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	37	26	27	28	34	51	78	41	33	21	35
1993	38	24	28	28	32	52	80	41	32	19	35
1994	41	27	33	30	33	53	88	47	32	20	38
1995	47	29	48	32	33	55	95	56	32	20	42
1996	48	30	43	36	34	56	100	58	32	20	43
1997	50	31	44	35	38	55	104	61	33	19	44
1998	52	31	28	42	40	58	118	65	34	18	46
1999	56	32	23	46	42	57	133	70	34	18	49
2000	58	35	27	46	43	61	141	77	35	17	52
2001	62	37	26	48	49	62	145	83	37	17	55

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
 Includes only services provided through fee-for-service programs.  
 See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
 See Appendix A for definitions of clinical service areas.  
 Surgical assistance service results are based on data for all provinces.

**Table C6:**  
**Basic Procedural Skills (BPS) Service Participation Rates and Average Number of BPS Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

**BPS SERVICE PARTICIPATION RATES (%)**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	88.7	86.8	89.8	91.5	90.4	83.7	72.7	86.6	90.4	92.0	88.2
1993	88.7	87.1	90.4	91.4	90.5	83.3	72.4	86.9	90.2	92.4	88.3
1994	89.2	87.7	90.9	92.3	90.9	83.9	72.2	87.4	90.8	92.4	88.8
1995	89.2	87.9	91.0	92.4	91.0	84.6	71.7	87.4	91.0	92.5	88.8
1996	88.6	86.7	90.9	91.8	89.8	83.7	70.1	86.4	90.5	92.4	88.0
1997	89.1	87.3	92.6	91.3	90.0	84.6	72.3	87.0	90.8	92.2	88.5
1998	88.7	86.1	91.8	91.1	89.5	85.1	71.3	86.3	89.8	92.2	87.9
1999	88.5	84.9	89.9	90.3	88.9	85.1	70.3	85.9	89.1	90.9	87.3
2000	88.1	84.5	89.3	89.9	88.2	85.1	71.2	85.7	88.4	90.1	86.9
2001	87.5	83.3	88.9	88.8	87.2	85.6	70.1	84.8	87.7	89.3	86.1

**AVERAGE NUMBER OF BPS SERVICES PER FAMILY PHYSICIAN**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	287	174	188	270	324	300	189	263	260	250	258
1993	275	165	178	250	307	294	196	248	255	229	246
1994	261	144	167	223	285	269	204	231	231	215	229
1995	251	137	164	205	272	247	197	223	214	204	218
1996	241	135	160	197	254	245	190	216	209	191	210
1997	238	129	156	188	243	239	206	214	196	183	205
1998	227	115	145	170	219	237	224	201	182	173	192
1999	221	111	140	168	204	233	210	194	179	169	186
2000	209	104	127	159	190	219	194	182	168	160	175
2001	206	103	116	164	184	208	192	179	164	160	173

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
Includes only services provided through fee-for-service programs.  
See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
See Appendix A for definitions of clinical service areas.  
BPS service results are based on data for all provinces.

**Table C7:**  
**Obstetrical Service Participation Rates and Average Number of Obstetrical Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

	<b>OBSTETRICAL SERVICE PARTICIPATION RATES (%)</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	27.8	27.6	28.6	31.7	31.0	21.7	9.6	19.4	43.5	40.9	27.8
1993	26.2	27.1	27.4	30.3	29.8	19.7	8.5	18.3	42.5	43.0	26.4
1994	25.5	26.7	27.7	29.9	28.0	19.0	8.2	17.6	42.1	42.0	25.8
1995	24.2	25.9	27.0	29.1	26.1	18.3	7.4	16.8	40.9	39.7	24.7
1996	22.3	24.8	26.5	26.6	24.0	17.1	7.2	15.4	38.2	37.6	23.0
1997	20.6	23.7	25.4	24.7	22.5	15.9	6.7	14.3	35.2	35.6	21.6
1998	19.2	21.8	24.6	22.9	20.9	14.6	6.3	13.0	33.0	33.8	20.0
1999	17.5	20.8	23.4	21.3	19.3	13.4	5.8	11.9	30.8	31.6	18.6
2000	16.3	19.2	22.1	20.2	17.6	12.8	5.2	10.9	29.0	29.8	17.3
2001	14.9	17.9	21.1	18.6	16.2	11.7	5.2	9.7	26.1	29.0	15.9

	<b>AVERAGE NUMBER OF OBSTETRICAL SERVICES PER FAMILY PHYSICIAN</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	24	37	24	32	27	22	12	31	28	20	27
1993	25	38	25	33	27	23	13	32	29	21	28
1994	24	40	27	33	28	24	15	33	30	21	29
1995	24	41	28	33	28	26	17	34	30	22	29
1996	25	42	27	35	29	28	17	36	30	22	31
1997	25	43	29	35	30	26	18	37	30	22	31
1998	25	47	31	37	33	27	16	41	31	23	33
1999	26	47	31	38	33	29	17	43	31	23	34
2000	25	49	32	38	33	28	17	44	31	23	34
2001	27	52	31	42	37	29	20	49	34	23	36

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
 Includes only services provided through fee-for-service programs.  
 See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
 See Appendix A for definitions of clinical service areas.  
 Obstetrical service results are based on data for all provinces.

**Table C8:**  
**Mental Health Service Participation Rates and Average Number of Mental Health Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

**MENTAL HEALTH SERVICE PARTICIPATION RATES (%)**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	80.6	87.5	81.5	86.9	87.6	77.5	62.7	82.5	83.7	82.5	82.4
1993	81.2	87.9	82.3	87.6	87.3	78.2	63.6	83.0	83.6	83.1	83.0
1994	82.4	88.5	83.0	89.1	88.2	79.2	64.3	83.9	85.8	83.6	84.1
1995	83.0	89.3	84.0	89.2	88.7	81.3	65.6	84.9	85.7	84.4	84.8
1996	83.1	89.7	83.9	89.0	89.1	81.8	66.7	85.0	86.0	84.9	85.0
1997	83.9	90.3	85.2	88.7	89.1	83.4	69.7	85.9	86.5	84.9	85.8
1998	83.7	89.6	85.7	88.6	88.7	83.5	69.7	85.7	86.1	84.8	85.6
1999	83.7	89.4	84.2	88.3	88.9	83.6	69.4	85.7	86.4	84.4	85.6
2000	83.4	89.0	84.0	87.3	88.3	84.7	69.9	85.5	85.3	84.5	85.2
2001	83.4	88.8	85.2	86.4	88.3	85.5	70.1	85.4	85.2	84.7	85.2

**AVERAGE NUMBER OF MENTAL HEALTH SERVICES PER FAMILY PHYSICIAN**

	SEX		AGE					GEOGRAPHIC SETTING			
	Male	Female	<35	35-44	45-54	55-64	65+	Urban	Mid-Sized	Rural	Total
1992	268	253	165	255	335	363	293	306	208	167	264
1993	274	257	162	266	341	359	284	309	215	162	269
1994	287	274	177	274	352	374	283	326	230	168	283
1995	305	289	190	286	369	380	299	344	246	182	300
1996	314	298	202	292	369	386	313	355	253	187	309
1997	336	314	210	304	390	415	335	378	269	203	329
1998	310	297	188	276	356	391	338	352	245	192	305
1999	308	298	171	274	348	397	338	352	244	187	304
2000	307	300	164	271	344	405	336	351	243	196	305
2001	297	295	159	260	341	368	340	339	242	190	296

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
Includes only services provided through fee-for-service programs.  
See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
See Appendix A for definitions of clinical service areas.  
Mental health service results are based on data for all provinces.

**Table C9:**  
**Hospital Inpatient Service Participation Rates and Average Number of Hospital Inpatient Services per Family Physician, by Sex, Age Group and Geographic Setting, Canada, 1992 to 2001**

	<b>HOSPITAL INPATIENT SERVICE PARTICIPATION RATES (%)</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	72.3	65.3	68.3	73.0	74.8	69.4	59.3	63.5	85.5	81.7	70.5
1993	72.1	65.3	67.3	73.5	74.7	68.4	58.7	63.0	85.6	84.2	70.2
1994	69.9	64.3	65.9	71.2	71.9	66.9	57.1	61.3	84.6	80.0	68.3
1995	69.5	63.8	65.6	71.4	70.4	66.5	55.5	60.7	84.3	79.3	67.8
1996	68.0	62.8	66.2	69.1	68.6	65.3	54.1	59.4	83.7	77.4	66.5
1997	67.9	62.0	68.2	68.3	67.0	64.8	54.6	59.0	83.0	76.7	66.1
1998	66.2	60.3	67.4	66.5	65.1	64.4	51.2	56.6	81.9	75.8	64.3
1999	64.9	58.7	65.4	65.0	63.4	63.0	49.1	55.0	80.9	74.5	62.9
2000	63.4	57.8	65.4	63.8	62.3	60.3	47.2	53.2	79.8	74.6	61.5
2001	64.1	58.7	70.6	65.1	62.1	60.4	44.9	53.7	79.4	77.4	62.3

	<b>AVERAGE NUMBER OF HOSPITAL INPATIENT SERVICES PER FAMILY PHYSICIAN</b>										
	<b>SEX</b>		<b>AGE</b>					<b>GEOGRAPHIC SETTING</b>			
	<b>Male</b>	<b>Female</b>	<b>&lt;35</b>	<b>35–44</b>	<b>45–54</b>	<b>55–64</b>	<b>65+</b>	<b>Urban</b>	<b>Mid-Sized</b>	<b>Rural</b>	<b>Total</b>
1992	776	348	429	638	831	958	754	533	815	918	672
1993	745	355	417	603	798	905	744	522	790	881	647
1994	724	344	399	571	759	866	728	501	762	854	624
1995	709	330	373	538	738	847	727	498	731	799	606
1996	693	331	367	524	713	829	660	491	697	784	592
1997	691	344	368	514	714	799	672	502	686	760	592
1998	711	362	391	523	706	836	701	525	699	758	608
1999	726	366	412	521	703	857	678	541	703	745	618
2000	744	376	418	525	704	887	705	565	700	739	630
2001	728	384	404	510	688	874	707	570	690	680	620

**Source:** National Physician Database, CIHI

**Notes:** Includes fee-for-service family physicians only.  
 Includes only services provided through fee-for-service programs.  
 See Section 2.5, Statistical Measures and Definitions, for detailed descriptions of study measures.  
 See Appendix A for definitions of clinical service areas.  
 Hospital inpatient service results are based on data for all provinces.





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