



Putting Away the Stethoscope for Good?  
Toward a New Perspective on Physician Retirement

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## Who We Are

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## List of Abbreviations

CIHI	Canadian Institute for Health Information
CMA	Canadian Medical Association
FPs/GPs	family physicians/general practitioners
FFS	fee for service
FTE	full-time equivalent
GPs	general practitioners
NPDB	National Physician Database
NPS	National Physician Survey
OHIP	Ontario Health Insurance Plan
SMDB	Scott's Medical Database

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# Executive Summary

Health workforce issues, especially the future supply of physicians and other health workers, have become a major preoccupation among health policy-makers and administrators. The apprehension about not having enough physicians to meet future medical care needs has been reinforced by the realization that the medical workforce is aging, with the possibility that many physicians will exit the medical workforce in the coming years. It is commonly assumed that as more and more physicians approach the traditional retirement age of 65, the number of doctors retiring will grow. But does this mean that most physicians will put away their stethoscopes for good at age 65?

This study is an attempt to understand how aging affects physicians' work, including staying in or leaving clinical practice. The study begins with a review of the pertinent literature, which seeks to find out what is known about retirement in general and physician retirement in particular. This is then followed by three interrelated sets of empirical analysis: estimating the extent of physician retirement; estimating the number of older physicians who are minimally active and could, therefore, be considered retired from a health workforce planning perspective; and exploring an alternative approach to understanding how aging affects physicians' clinical practice.

The study uses data from several sources—the 2007 National Physician Survey (NPS), Scott's Medical Database (SMDB), the National Physician Database (NPDB) and the Canadian Medical Association (CMA) Master File—to paint a composite and more complete picture of the practice profile of older physicians. This is also an attempt to ensure that the findings are based on multiple sources of information because, without a uniform definition of retirement, each database may have captured retirement information somewhat differently and counted the number of active or retired physicians somewhat differently. The study also examines both retirement intentions and behaviours, without assuming that they are the same phenomenon.

Do physicians typically retire when they turn 65? Are physicians increasingly opting for early retirement? Evidence from existing studies suggests that Canadian physicians tend to quit work later than average workers. Also, as far as physicians are concerned, retirement is anything but an either/or issue. Instead of dropping out of the medical workforce abruptly and completely at age 65, many older physicians choose to remain in clinical practice, though they do not necessarily maintain the same activity level or do the same kind of work as when they were younger.

Depending on the source of data used, one gets different rates of physician retirement. Most likely this is because various databases define retirement differently, count the number of retired physicians differently and/or have

different criteria for including physicians in or excluding them from the base population. On the basis of self-reported retirement intentions obtained from the 2007 NPS, about 3.2% of all physicians planned to retire in each of the two years following the survey. On the other hand, the estimated average annual retirement rates were 0.54%, based on three years of SMDB data (including semi-retirement), and 0.79%, based on data from the CMA Master File for the same three-year period. The estimated retirement rate based on retirement intentions (using 2007 NPS data) was substantially higher than those derived from administrative databases (using NPDB and CMA Master File data). If one uses these estimated retirement rates as projection parameters to forecast the size of the medical workforce 25 or 30 years into the future, one is likely to obtain substantially different workforce projections, when all other variables are held constant. On the basis of these projections, one could come to very different conclusions about the future sufficiency of physician supply in Canada.

An attempt was then made to estimate the number of older physicians who were minimally active in clinical practice. Depending on what “older physicians” refers to and where the full-time equivalent (FTE) threshold is set, different proportions of older physicians could be considered minimally active. For 2007, if the FTE threshold was set at 33% or less of previous workload, the proportion of physicians considered minimally active would range from 7.3% of physicians age 55 and older to 11.9% of physicians age 65 and older. If the FTE threshold was set at 15% or less of previous workload, the range of those considered minimally active would be 3.3% to 4.9% for physicians age 55 and older and those age 65 and older, respectively. Whether these minimally active physicians should be considered retired for the purpose of medical workforce projections or planning is not just a technical issue but also a policy matter that needs further consideration and deliberation by stakeholders.

Because retirement is a fuzzy concept, especially for physicians, and since there is as yet no consensus on what physician retirement means and how it should be measured, this study has suggested a different way of understanding how aging affects the way physicians work. If retirement is understood to mean the complete cessation of medical practice, it should be seen as the end point of a continuum of changes in medical practice as a physician gets older. But prior to exiting the medical workforce through retirement or death, many other changes in medical practice may have taken place, such as reduction in workload, scope-of-practice compression or greater involvement in non-clinical work, which may also have implications for medical care provision and physician workforce planning.



While physicians in the baby-boom generation will exit the medical workforce in greater numbers in the coming years, many physicians age 65 and older are likely to remain active in clinical practice, based on trends from the recent past. But their workload, as measured by FTE values from physicians' fee-for-service payments, is likely to decline as they become older. Also, their scope of practice will tend to narrow, as older physicians relinquish some types of clinical work while retaining others. The case of older family physicians/general practitioners (FPs/GPs) was used as an illustration. Although there were no major differences between FPs/GPs in different age groups with respect to such core clinical activities as office assessment and mental health care, the older the FPs/GPs became, the less likely they were to engage in such activities as hospital inpatient care, obstetrics, anesthesia and services requiring advanced procedural skills.

The study concludes by examining the implications of the findings from a physician workforce planning perspective and by identifying several knowledge gaps. It argues that knowing what older physicians do and how much they do is just as important as figuring out how many doctors retire each year. The latter task will continue to be a challenge as administrative rules and social norms regarding retirement become increasingly fluid. Also, the task of deciding who is or is not retired will not be easy until there is an agreed-upon definition of retirement and until the right kinds of data are collected for analysis.





**Chapter 1**  
Introduction

## 1.1 The Context

Population aging has been getting a lot of attention. We have been told that the Canadian population, similar to populations in other developed nations, is getting older. This has a lot to do with the post–World War II baby boom, the subsequent baby bust and the fact that people are living longer than in previous generations. The very first wave of the baby-boom cohort is expected to reach the age of 65 by 2011, and the size of the population 65 and older will be considerably larger in the foreseeable future. Although longer life expectancy is a desirable development, population aging will affect Canadian society in many ways, ranging from expected declining crime rates and changing consumer preferences to potential labour shortages, rejigged government spending priorities and shifting social values.

Concerns expressed by health policy-makers about population aging have mostly been on two interrelated issues: expected rising demands for health and medical care, particularly in the areas of long-term care, chronic disease management and disability; and possible shortages of health care personnel. It is a common belief that elderly people tend to use health services more heavily than younger people.<sup>1,2</sup> At the same time, the health workforce is getting older and there will be greater attrition as a result of retirement and death. There is also a concern that Canadian workers, including those in the health care sector, are increasingly inclined to opt for early retirement—the Freedom 55 phenomenon. Will there be enough doctors, nurses, physiotherapists and other practitioners to look after the rapidly growing number of increasingly frail and sick senior citizens? Not surprisingly, physicians have been the focus of much of the attention and debate. Mass media reports about family physicians not accepting new patients and long waits for specialist services are increasingly common and have been compounded by a growing unease about the aging of the medical workforce. The public has been reminded that physicians age 65 and older will make up 20% of the medical workforce in 2026.<sup>3</sup>

Concerns about physicians giving up medical practice due to retirement appear to be a fairly recent phenomenon in Canada. From the early 1980s to the early 1990s, there were worries, at least among federal and provincial ministries of health, about an over-supply of physicians, resulting in the introduction of various measures to regulate their numbers. While many of those measures targeted medical students (such as reductions in medical school enrolment), some were designed to trim the number of aging doctors. Several provinces, such as New Brunswick, Nova Scotia and Quebec, offered retirement buyout packages for older physicians, and British Columbia introduced mandatory retirement for physicians at age 75.<sup>1,4</sup> But there was a change of official position by the late 1990s. The more recent view is that Canada needs more physicians to meet present and future medical

care needs. This is reflected by a substantial expansion of medical school enrolment in recent years (including the opening of a new medical school in northern Ontario in 2005), attempts to repatriate Canadian physicians who have gone abroad and efforts to enable more foreign medical graduates to practise medicine in Canada.

These demographic trends and emerging public perceptions have caused considerable unease among policy-makers and health human resources planners. For instance, various medical organizations have attempted to raise public awareness about the implications of large-scale physician retirement. In releasing the results of the 2004 National Physician Survey (NPS), the Royal College of Physicians and Surgeons of Canada, the College of Family Physicians of Canada and the Canadian Medical Association (CMA) drew attention to the issue in a joint press release:

The NPS identified two other significant shifts in the physician population that are changing the face of medicine in the country. First, a large number of physicians are reaching retirement. If the survey data is translated to the physician population as a whole, as many as 3,800 doctors plan to retire entirely in the next two years alone. This is more than double the current rate of retirement.<sup>5</sup>

The release of the 2007 NPS results prompted similar expressions of concern:

First, 6% of NPS 2007 respondents plan to retire from clinical practice over the next 2 years as the baby-boom generation begins leaving the work force with a vengeance . . . If 4,000 physicians retire, the number of new physicians the country is producing will barely be large enough to replace them.<sup>6</sup>

Are such concerns justified? What do we know about physician retirement in Canada? Do most physicians quit working at the traditional retirement age of 65? Are more and more physicians opting for early retirement? Do physicians' retirement patterns mirror those of other workers? This study is an attempt to better understand physician retirement in Canada, a phenomenon that has not received policy and research attention commensurate with growing concerns about the future supply of physicians.

## 1.2 Organization of the Study

The next chapter discusses what retirement means, particularly where physicians are concerned. Are physician retirement patterns similar to those of other Canadian workers? By means of a review of the relevant literature, Chapter 2 examines what is known about physician retirement and discusses whether conventional notions of retirement are applicable to medical practitioners. It should be noted that although physicians do a variety of things, the focus of this study is on the provision of clinical services and the potential impact aging of the physician workforce may have on medical care. (Moreover, existing physician databases have little or no information on other aspects of physicians' work like education, research and administration.) The data analysis part of the study begins in Chapter 3 with a description of the sources of data used in the analysis. This is followed in Chapter 4 by an examination of physician retirement, using secondary data from several sources. The purpose is to determine whether different sources of data yield consistent estimates of physician retirement. As will be shown later on, many physicians continue to work past age 65, albeit at lower activity levels. Thus, Chapter 5 is an attempt to estimate the number of older physicians who are minimally active. The question is whether they should be counted as retired. The study then explores, in Chapter 6, an alternative approach to understanding physicians' transition from active to non-active status as a result of aging. It is argued that this new perspective represents a more realistic understanding of the impact of aging on the physician workforce and a more viable workforce planning approach. Bringing the study to a close, Chapter 7 summarizes the major findings, points out the limitations of the study and concludes by noting the implications of the study and possible future actions.

In the following chapters, data is presented mostly in the form of graphs. Tables containing more detailed data appear in the appendices.



**Chapter 2**  
Physician Retirement: Known, Unknown  
and Questions

## 2.1 How Do We Know Whether Someone Is Retired?

There is not a universally accepted or officially sanctioned definition of retirement in Canada. It is generally assumed that most Canadians retire at age 65 but, as will be shown later on, this assumption has increasingly been called into question. Consequently, measuring retirement is not as simple a task as one might think. Those studying retirement are likely to ask, as Gower did, “How does one decide who is retired and who is not? Is it necessary to be in receipt of a pension? Can a person who has a part-time job still be considered retired?”<sup>7</sup> Retirement has been variously defined. For instance, some understand retirement as complete withdrawal from the labour force. Deschênes and Stone consider a person retired when he or she leaves the labour market for good and receives retirement income from the Canada Pension Plan, the Quebec Pension Plan or a private pension plan.<sup>8</sup> According to Bowlby, Statistics Canada has a standard definition of retirement, which refers to someone who is age 55 or older, is not in the labour force and receives 50% or more of his or her total income from retirement-like sources.<sup>9</sup> Others are somewhat more lenient and willing to consider a person retired when his or her gainful employment is reduced. But reduced to what level?

In a comprehensive review of retirement studies, Denton and Spencer noted different criteria or measures used to determine retirement.<sup>10, 11</sup> One is the complete absence of labour force participation. A person could also be considered retired when time worked (and, by extension, income earned) is reduced. Another possibility is being in receipt of retirement income. Alternatively, retirement status can be based on self-assessment. If individuals describe themselves as retired, they are retired, regardless of what others think. The authors have grouped retirement definitions into two major categories: those that are based on a single criterion and those that use multiple criteria to determine whether a person is retired. Among the former, the defining characteristics most commonly used are non-participation in the labour force, a reduction in work hours or income and self-assessed retirement status. Most definitions based on multiple characteristics include receipt of pension income in combination with earnings or hours worked below a specified threshold or a reduction in labour force participation, including non-participation. Needless to say, the way retirement is defined affects the size of the retired population.

As noted earlier, there are concerns that Canadians are retiring at an increasingly younger age. A study by Ibbott, Kerr and Beaujot examined declining labour force participation among older Canadians.<sup>12</sup> Some research has documented a gradual decline in the median retirement age of Canadian workers in recent decades, from 64.9 between 1976 and 1980, to 62.2



between 1991 and 1995, to 61.0 between 1996 and 2000.<sup>13</sup> Gower has reported similar trends based on his research.<sup>7</sup> However, there are indications that the trend may have shifted in the last several years. A more recent study by Schellenberg and Ostrovsky, which compared retirement intentions using data from the 1991 Survey of Aging and Independence and the 2002 and 2007 General Social Surveys, showed that older workers are pushing back their retirement plans.<sup>14</sup> Between 1991 and 2007, the proportion of Canadians age 45 to 49 planning to retire before age 60 decreased by four percentage points, while the proportion planning to retire at age 65 or older increased by about seven percentage points. Similar patterns are found among those age 50 to 54 but not among those age 55 to 59. The authors also noted that evidence from the Labour Force Survey points in the same direction: the average retirement age of male employees in the private sector reached a low of 61.4 in 2000, and then rose to 62.3 by 2007. The average retirement age of female employees increased from 60.7 to 61.7 in the same period. This suggests that declining age of retirement may not be an inexorable trend. A host of factors may shape how people view retirement and their retirement decisions.

Questions concerning what retirement means for physicians are even more difficult to answer, for several reasons. First of all, compulsory retirement requirements are gradually becoming a thing of the past. As early as 1978, the General Council of the CMA passed a resolution urging the abolition of mandatory retirement at age 65.<sup>15</sup> In 1982, the Manitoba Court of Appeal ruled unanimously that the bylaw requiring physicians to retire at age 65 was invalid because it violated the provisions of the *Manitoba Human Rights Act* on age discrimination in employment.<sup>15</sup> In December 2006, Ontario's *Ending Mandatory Retirement Statute Law Amendment Act, 2005* became law and the definition of age in the *Ontario Human Rights Code* was amended to prohibit discrimination against an employee who is 65 or older.<sup>16</sup> As a result, mandatory retirement bylaws and policies in relation to physicians are now considered a human rights violation. Manitoba and Quebec have also abolished compulsory retirement requirements, and other provinces are likely to follow suit. What all this means is that one can no longer assume that workers, including physicians, automatically retire when they turn 65.<sup>i</sup>

Second, self-employed persons often exhibit retirement patterns that are quite different from those of employees. According to Bahrami and associates, at any given age, self-employed individuals are more likely than wage-earners to continue working full time and, when they do decide to retire, are less likely to leave the labour force in one move.<sup>17</sup> Gower has likewise reported that self-employed people tend to retire later than employees and that those with unincorporated businesses are likely to be the last to retire.<sup>7</sup> Since most

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i. It should be noted that hospital privileges can still be denied to physicians at any age based on performance and competence.

physicians are independent, self-employed practitioners, their retirement patterns are likely to be more complex than those of salaried workers. This may have prompted Foot and colleagues to caution that “because there is no rule that physicians retire at a certain age, such as 65, it is always difficult to project retirement.”<sup>18</sup>

Finally, the transition from gainful employment to retirement is not necessarily a quick one. As Deschênes and Stone have observed, retirement is not so much an event as a process that may extend over many months or even years.<sup>8</sup> They call this the “transition to retirement” process, which comes to an end when retiree status is permanently established. Similarly, Denton and Spencer have pointed out that there is often a long period of time during which a person can be described as both “retired” and “working.”<sup>10</sup> According to McDaniel, “the transition from employment to retirement . . . is far from the smooth transition that . . . has long been presumed . . . . Multiple transitions occur into and out of employment and into and out of the labour force.”<sup>19</sup> All this complicates the analysis of retirement behaviours.

Because mandatory retirement at a certain age is no longer a requirement in some provinces, and since most physicians are self-employed, it is quite possible that their transition-to-retirement process takes longer or tends not to follow a set pattern. In other words, the road to retirement for many physicians may not be a well-charted pathway. This situation may also be true for an increasing number of other workers as employment conditions and social institutions become more fluid. Chappell and colleagues described the retirement scene in the 21st century this way: “In short, retirement does not always represent an abrupt transition from work to nonwork: it can be gradual, it can involve multiple exits, and it may never happen.”<sup>20</sup> Likewise, it is the view of Denton and Spencer that “retirement can be voluntary or involuntary; it can be gradual or sudden; and it can be temporary or permanent.”<sup>11</sup>

## 2.2 What Is Known About Physician Retirement?

The short answer to this question is that we do not know very much.<sup>ii</sup> To be more exact, we know quite a bit about the aging of the physician workforce but not much about physician retirement. Much of the discussion about physician retirement and its workforce implications involves inferences based on the changing age structure of the physician population. For instance, Tyrrell and Dauphinee have predicted that physician retirement will accelerate

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ii. This is true not just in Canada but in other parts of the world. *The World Health Report 2006*, published by the World Health Organization, notes that “information about the retirement rate of health workers is very scarce.”<sup>21</sup>

over the coming years because the number of physicians older than 55 is expected to increase from about 26% in 1999 to about 43% by 2021.<sup>2</sup> Some studies assume that physicians retire at age 65, with little or no supporting evidence.<sup>22, 23</sup> The rest focus on the legal aspects of mandatory retirement rules as applied to physicians or the practical aspects of preparing for retirement.<sup>4, 15, 24, 25</sup>

If the extent of retirement is strictly a function of the number of physicians reaching age 65, the task of projecting retirement trends is quite straightforward, as the changing age structure of the physician population has been well documented. Chan, for example, pointed out that the physician workforce was at its most youthful in 1988, when 22% of all physicians were younger than 35.<sup>1</sup> There was a gradual decline in the proportion of physicians younger than 35 from 1988 to 1993, and a steeper decline from 1993 onwards. By 2000, only 13% of all physicians were younger than 35.<sup>iii</sup> Conversely, the number of physicians age 60 and older has continued to climb. According to the Canadian Institute for Health Information, the average age of physicians in Canada increased from 47.0 to 49.6 between 1998 and 2007.<sup>26</sup> On average, female physicians are younger than their male counterparts. During the same 10-year period, the average age of male physicians increased from 49.0 to 51.9, and the average age of female physicians increased from 42.0 to 45.4.

But do physicians typically put away their stethoscopes for good when they reach age 65? Are physicians more likely to take early retirement in the coming years? Although there are few systematic studies of physician retirement in Canada, evidence gleaned from related studies suggests that physicians tend to retire later than the general working population. There were indications as early as the mid-1960s that many physicians delayed their retirement. Studies conducted on behalf of the Royal Commission on Health Services suggested that the average age of retirement among Canadian physicians at that time was close to 70.<sup>27</sup>

In her study on seniors at work in Canada, using data from the 1996 Canadian census, Duchesne found that 20 occupations accounted for half of the total employment among workers age 65 and older.<sup>13</sup> Farmers and farm managers made up 17.7% of this total, with 45,205 employed seniors in 1996. Family physicians and general practitioners (FPs/GPs) were among the 20 occupations, accounting for 1.1% of all seniors at work in 1996. Additionally, there were 22 occupations with at least 6% of workers age 65 and older in each of the occupations. Judges topped the list; one in five judges was at

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iii. The decline in the proportion of younger physicians could also be due to the elimination of rotating internships in the early 1990s. As a result, it takes longer for medical school graduates to become family physicians, and specialists can no longer practise until they reach full certification in their specialties.

least 65 years old. In 1996, there were 1,625 physician specialists age 65 and older, accounting for 7.6% of all specialists, and there were 2,820 FPs/GPs age 65 and older, accounting for 7.5% of all FPs/GPs in Canada.

According to the 2002 Baseline Study of the CMA, 85% of physicians age 55 to 64 were working full time, 9% were working part time and 4% were retired. In comparison, 42% of physicians age 65 and older were working full time, 28% were working part time and 28% were retired.<sup>28</sup> Other studies using different sources of data have come to a similar conclusion: many physicians are working beyond the traditional retirement age of 65. A study by Chan showed that the average retirement age of physicians in Canada was 70.8 and that the retirement age remained relatively constant during the period from 1981 to 2000.<sup>1</sup>

Analyzing the work patterns of older physicians in Ontario, Trent reported that older physicians represented a sizeable portion of the medical workforce.<sup>25</sup> Slightly more than 2,000 physicians older than 65 billed the Ontario Health Insurance Plan (OHIP) for about \$225 million in professional fees each year. About 1,100 physicians between the age of 65 and 69 billed a total of \$150 million; the 600 physicians age 70 to 74 billed another \$50 million; and the 350 doctors age 75 and older billed OHIP for about \$25 million annually. A study by Chan and associates of physicians who billed fee for service (FFS) in Ontario showed that in 1995–1996, there were 20,149 physicians in Ontario, of whom 2,055 (or about 10%) were 65 and older.<sup>29</sup> There were 18,841 full-time equivalent (FTE) doctors, of whom 1,321 (or 7.0%) were age 65 and older. These figures suggest that many older physicians were still active in clinical practice, though they tended to take on a lighter workload (as reflected by the fact that the 2,055 physicians who billed FFS translated to 1,321 FTEs).<sup>iv</sup>

A survey of 107 Saskatchewan physicians age 70 and older who were registered with the College of Physicians and Surgeons of Saskatchewan found that 93% of the 102 respondents were still medically active in 2004. Of those 102 physicians, 87% were between age 70 and 79, and 13% were 80 and older. Because of the way the survey was conducted, the study cannot tell us the proportions of older physicians who had or had not retired, but it does show that many physicians in Saskatchewan who were past the traditional retirement age were still active in medical practice.<sup>30</sup>

Retirement deferral by older physicians is not a uniquely Canadian phenomenon. Studies have shown that many physicians in the United States also delay their retirement.<sup>27</sup> In the case of Australia, a study by Fletcher and Schofield showed that most Australian psychiatrists continue to work until late in life, with only 18% retiring before age 65.<sup>31</sup> Another study, by Schofield and

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iv. A discussion of full-time equivalence can be found in Section 3.3 in Chapter 3.

Beard, reported that Australian general practitioners tend to work beyond the traditional retirement age of 65, though they are likely to work fewer hours than their younger counterparts.<sup>32</sup>

What are the reasons behind physicians' desire to postpone retirement? As noted earlier, studies conducted for the Royal Commission on Health Services documented postponement of retirement by some doctors; they further speculated that this might be due to inadequate savings and pension.<sup>27</sup> According to Bahrami et al., those physicians whose identity is closely linked to their profession may continue to work indefinitely.<sup>17</sup> Collier similarly concluded that some older Canadian doctors who define themselves by their profession can be notoriously averse to retirement.<sup>3</sup> A very old doctor interviewed by the author was quoted as saying, "I think a doctor is like a clergyman. This is my calling. As long as I can keep going, I'll keep going."<sup>3</sup> In 2000, the CMA Physician Resource Questionnaire asked physicians what might prevent them from retiring at their planned age of retirement. Insufficient personal savings was the most frequently cited reason, mentioned by two-thirds of the respondents. Slightly more than 16% of those surveyed said that failure to find a suitable replacement could impede their retirement plans. Not surprisingly, more rural physicians than urban doctors mentioned this reason.<sup>33</sup>

It thus appears that while many physicians are expected to exit the Canadian medical workforce in the coming years based solely on age, it is unlikely that most physicians will retire at age 65 or before, given past and current trends. In fact, the studies reviewed suggest that many physicians will continue to work beyond the age of 65, though they may take on a less demanding workload.

## 2.3 Data Issues

Two types of data are typically used to document or estimate the extent of physician retirement: data on retirement intentions based on surveys and secondary data from administrative, registration or FFS billing databases. The former includes such sources as the CMA Physician Resource Questionnaire and the NPS. More will be said about the nature of each of these databases in the next chapter.

Some surveys ask physicians when they plan to retire. For instance, Maguiness and colleagues conducted a Canadian dermatology workforce survey, in which they asked dermatologists about their retirement plans.<sup>34</sup> The survey results showed that the average dermatologist planned to retire at age 64, and 13% of the survey respondents planned to retire within the next five years. Similarly, Macadam and associates conducted a Canadian plastic surgery workforce survey in 2004–2005.<sup>35</sup> On average, the respondents planned to retire at age 63. Twenty-eight percent of the surveyed plastic

surgeons indicated that they planned to retire within five years. In 2000, the CMA Physician Resource Questionnaire asked physicians to indicate the age at which they planned to retire. The average age of planned retirement was 63. Interestingly, the average age of planned retirement increased progressively by age group. Those younger than 35 said they planned to retire, on average, at age 58; the average ages of planned retirement were 63 for those age 45 to 54 and 66 for those age 55 to 64. Those age 65 and older planned to retire, on average, at age 72.<sup>33</sup> It appears that the older the physician, the more likely he or she is to plan a later retirement. Another survey that contains physician retirement information is the NPS, which asks physicians, among other things, if they plan to retire in the next two years (data on retirement plans from the 2007 survey is presented and discussed in the next chapter).

But to what extent should credence be given to anticipated age of retirement obtained from surveys? Although no Canadian studies can be found that compare physician retirement intentions with actual retirement behaviours, studies conducted in the United States suggest that caution is needed when interpreting survey data on retirement plans. For instance, Bahrami and associates have warned that expected retirement age is not a perfect proxy for actual retirement age, though it is widely used by researchers.<sup>17</sup> Likewise, having compared data from the 1997 Physician Worklife Survey with data from follow-up surveys and the 2003 American Medical Association Physician Master File, Konrad and Dall have come to the conclusion that physicians' retirement intentions are not accurate predictions of their future retirement behaviours.<sup>36</sup> This does not imply that physicians are not truthful when answering questionnaires. Discrepancies between intentions and actions may be due to a variety of factors, such as changes in personal circumstances or the external environment.<sup>v</sup>

Retirement estimates can also be made using secondary data from such sources as Scott's Medical Database (SMDB), the CMA Master File and registration databases of various provincial/territorial colleges of physicians and surgeons. But such estimates also come with their own methodological challenges. First, none of the data sources in Canada are specifically designed to capture information on retirement; therefore, retirement estimates typically have to be inferred or derived. Second, different data sources may define retirement differently, thus making comparisons difficult. Finally, because the retirement rate is obtained by dividing the number of individuals retiring by the number of individuals in the base population, the rate is a

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v. For instance, the economic downturn in 2008–2009 appears to have had an impact on Canadian physicians' retirement plans, as an article in *The Medical Post* suggested: "*The Medical Post* has heard from many doctors, particularly those nearing retirement, who say as a result of the financial meltdown they have seriously re-calibrated their retirement plans. The majority say they are taking on more work, putting in longer hours at the office or even effectively starting second careers in medicine."<sup>37</sup>

function of how retirees are counted and who is included in or excluded from the base population. Typically, different databases have different inclusion or exclusion criteria, again making comparisons of retirement rates based on different data sources problematic.

Other sources of data that are not exclusively about physicians may also be used to study some aspects of physician retirement. For example, the Canadian censuses conducted by Statistics Canada have some information about occupations and labour force activities of Canadians, including physicians. The aforementioned study by Duchesne is an example of census data-based research, which sheds some light on physician retirement.<sup>13</sup> However, the usefulness of such sources of data for studying physician retirement tends to be limited.

All this suggests that difficulties encountered in studying physician retirement in Canada stem not just from lack of agreement about how retirement is understood or defined but also from the quality of data available for analysis. Generally speaking, existing sources of data are less than adequate in analyzing the extent of physician retirement. More will be said about this in the following chapters.







**Chapter 3**  
Data Sources

Data from several sources was used to paint a complex picture of the changes that take place when physicians grow older. Four databases were used: the 2007 National Physician Survey (NPS), Scott's Medical Database (SMDB), the CMA Master File and the National Physician Database (NPDB). A brief description of each appears below.

## 3.1 2007 National Physician Survey

The most recent triennial NPS with data available for analysis was conducted in 2007. The 2007 NPS was jointly conducted by the College of Family Physicians of Canada, the CMA and the Royal College of Physicians and Surgeons of Canada. It surveyed all practising physicians, second-year residents and medical students in Canada about what they were doing or intended to do in their practice. Only data from practising physicians was used in this analysis. The 2007 NPS used multiple questionnaires: a core questionnaire and two versions of the detailed questionnaire—one for FPs/GPs and one for specialists. All of the content captured on the core questionnaire was also captured on the detailed questionnaires.

Physicians were assigned to strata based on their province/territory, broad specialty (family medicine/general practice or other specialties) and sex. For Alberta, British Columbia, Ontario and Quebec, one in three physicians in each stratum received the detailed questionnaire, while all other physicians received the core (shorter) questionnaire. For the other provinces and the territories, two out of three physicians in each stratum received the detailed questionnaire, while all others received the core questionnaire. Respondents had the option of completing the survey electronically or on paper. Of the 60,811 eligible physicians surveyed, 19,239 completed the survey, for an overall response rate of 31.6%.

When a sample is selected for a survey with unequal probabilities (as was the case for the 2007 NPS detailed questionnaire sample), weights are typically used when making estimates so the weighted sample is representative of the population. Censuses (a census was attempted for the 2007 NPS core questions) are subject to non-response, and weights are used in estimation to reduce possible non-response biases. In the case of the 2007 NPS, Canada-level estimates for the detailed questions for the entire population of physicians are within 3.2 percentage points, 19 times out of 20.<sup>vi</sup>

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vi. For a more detailed discussion of the survey and weighting methodologies, visit the NPS website at [www.nationalphysicianssurvey.ca/nps/2007\\_Survey/pdf/2007.NPS.Methodology.and.Generalizability.of.results.FINAL.pdf](http://www.nationalphysicianssurvey.ca/nps/2007_Survey/pdf/2007.NPS.Methodology.and.Generalizability.of.results.FINAL.pdf).

Some of the 2007 NPS data was used to identify the proportion of physicians who said they planned to retire within the next two years and the proportion of FPs/GPs who said they had reduced their scope of practice in the two years before the survey and who said they planned to reduce their scope of practice in the next two years (see Appendix A for questions used in the 2007 NPS).

## 3.2 Scott's Medical Database

The SMDB (formerly known as the Southam Medical Database) provides information on the demographic and other characteristics of Canadian physicians. Researchers and health care planners can use SMDB data to examine the supply, distribution and migration patterns of physicians and historical changes in the Canadian medical workforce.

Scott's Directories maintains a database on physicians to produce the *Canadian Medical Directory* and mailing lists for commercial purposes. Each year, the Canadian Institute for Health Information (CIHI) acquires a copy of this database for the purpose of maintaining and updating the SMDB. The database contains information on physicians' name, sex, year of birth, province/territory, activity status, specialty, hospital affiliation status and so forth. All data collection and updates are done by Scott's Directories. Information and updates are collected from organizations such as physician licensing authorities, the 17 medical schools in Canada, the Royal College of Physicians and Surgeons of Canada, the College of Family Physicians of Canada, the Collège des médecins du Québec and hospitals. In addition, an annual questionnaire is sent by Scott's Directories to all active physicians and all new medical school graduates to confirm or update the information on record. Physicians may also contact Scott's Directories throughout the year to provide new information. At CIHI, once the file has been received from Scott's Directories, it is processed through a series of edit checks on the database.

Scott's Directories is interested in collecting information on all physicians in Canada, regardless of their type of practice, as long as sufficient information is available. The SMDB defines physicians as active if they have a medical doctorate (MD) degree and a valid mailing address, but semi-retired and retired are not formally defined. These variables are subjective in nature as they are self-reported by physicians.

## 3.3 National Physician Database

The NPDB provides information on the demographic profiles of physicians and their levels of activity within the Canadian medicare system. The NPDB is managed by CIHI, but data on demographic characteristics and activity levels of physicians is provided by provincial and territorial health care insurance

plans. Information such as demographic characteristics and activity levels of physicians is used by CIHI to generate derived variables like total FFS payments, total services, average FFS payments per physician and an FTE physician measurement. These derived variables are currently based solely on FFS information.

FTE values are calculated for all physicians contained in the NPDB and are used as a measure of relative workload. FTE values are calculated by comparing the total annual FFS payments of individual physicians with defined FTE payment benchmarks. Unique upper and lower national FTE benchmarks are defined for each provincial medical specialty group. FTE values, therefore, take into consideration variations in average FFS payments across specialty groups and across provincial and territorial health care insurance plan fee schedule prices. Physicians' individual FTE values are calculated using the following formula:

$$\text{FTE} = \begin{cases} B / B_{40} & \text{If the physician's total FFS payments (B) are below the total FFS payment value at the 40th percentile (B}_{40}) \text{ for the physician's province-specific specialty group, then } < 1 \text{ FTE.} \\ 1 & \text{If the physician's total FFS payments (B) are between the total FFS payment values at the 40th and 60th percentiles for the physician's province-specific specialty group, then } = 1 \text{ FTE.} \\ 1 + \log(B / B_{60}) & \text{If the physician's total FFS payments (B) are above the total FFS payment value at the 60th percentile (B}_{60}) \text{ for the physician's province-specific specialty group, then } > 1 \text{ FTE.} \end{cases}$$

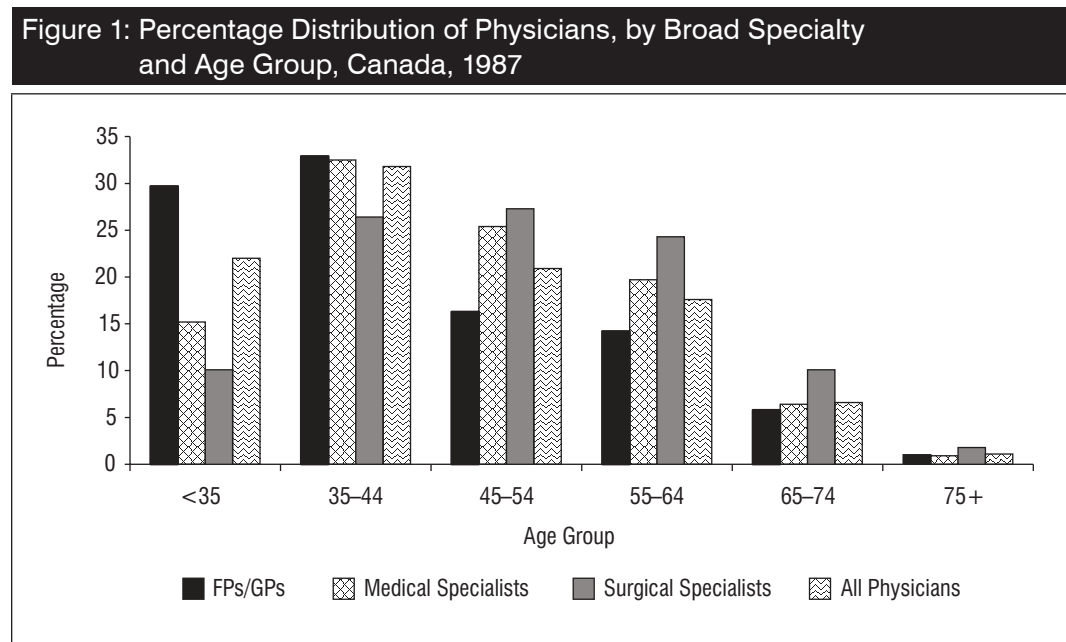
### 3.4 Canadian Medical Association Master File

The CMA collects demographic information from individual physicians, both CMA members and non-members. This is supplemented with information provided by provincial/territorial associations that, in turn, receive data from the jurisdictional licensing bodies. The CMA also receives information from the Canadian certifying bodies for family medicine and other specialists. The CMA Master File is an anonymized annual extract of this file that is used for research and planning purposes, such as providing data for physician workforce forecasting.



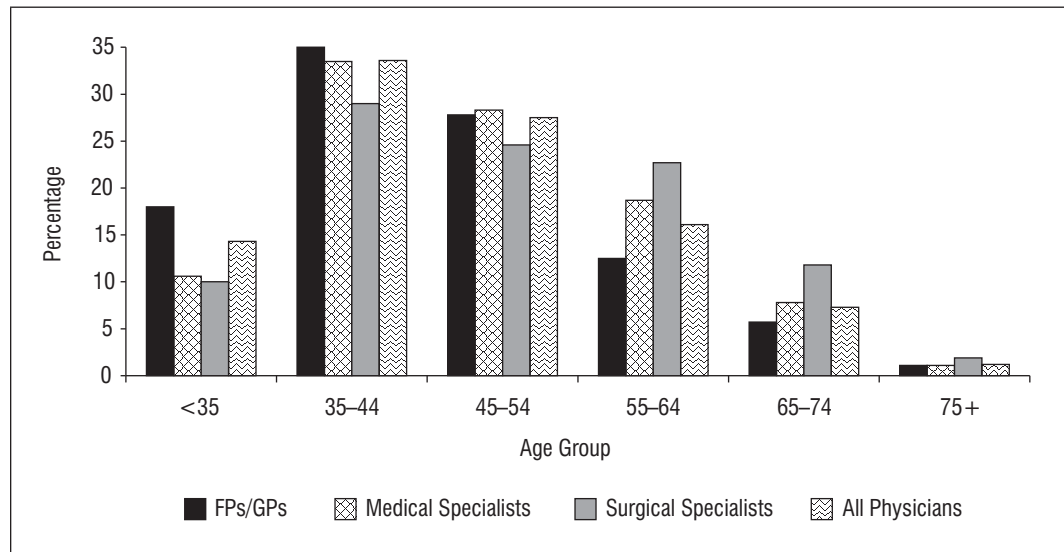
**Chapter 4**  
Extent of Physician Retirement

The extent of physician workforce attrition due to retirement and death is very much related to the age structure of the physician population. A growing proportion of older physicians typically means greater attrition from the medical workforce through retirement and death. The changing age structure of the population of active physicians in Canada based on data from the SMDB is shown in figures 1 to 3. Over a period of two decades, the proportion of physicians age 55 and older increased from 25.4% in 1987 to 33.2% in 2007. The proportion of physicians age 65 and older was 7.8% in 1987 and 10.8% in 2007; conversely, the proportion of those younger than 35 dropped from 21.9% in 1987 to 9.8% in 2007. Medical and surgical specialists, as a group, were slightly older than those in family or general practice (specialties grouped under the broad categories of Family Physicians and General Practitioners, Medical Specialists and Surgical Specialists can be found in Appendix B).



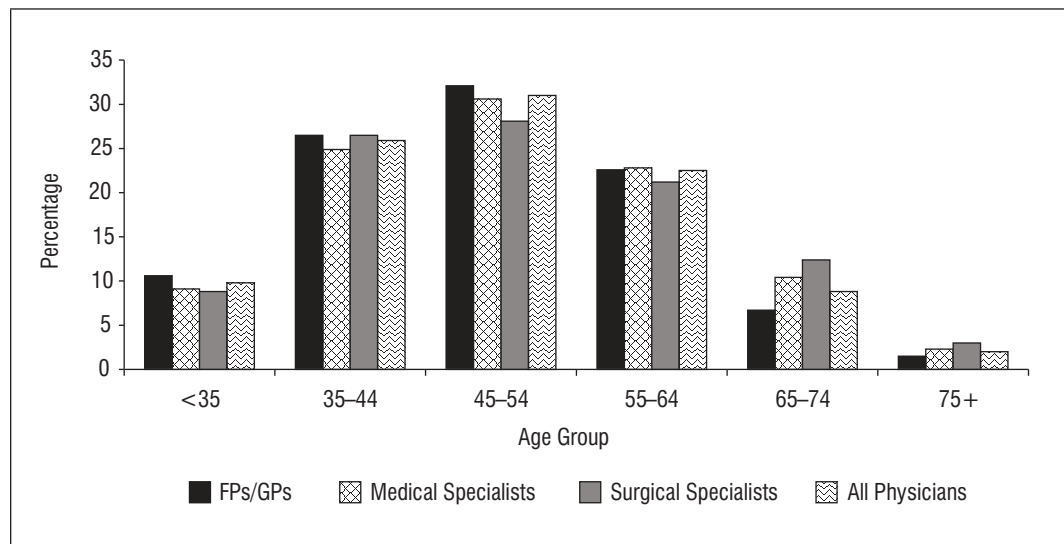
**Source**  
Scott's Medical Database, Canadian Institute for Health Information.

**Figure 2: Percentage Distribution of Physicians, by Broad Specialty and Age Group, Canada, 1997**



**Source**  
Scott's Medical Database, Canadian Institute for Health Information.

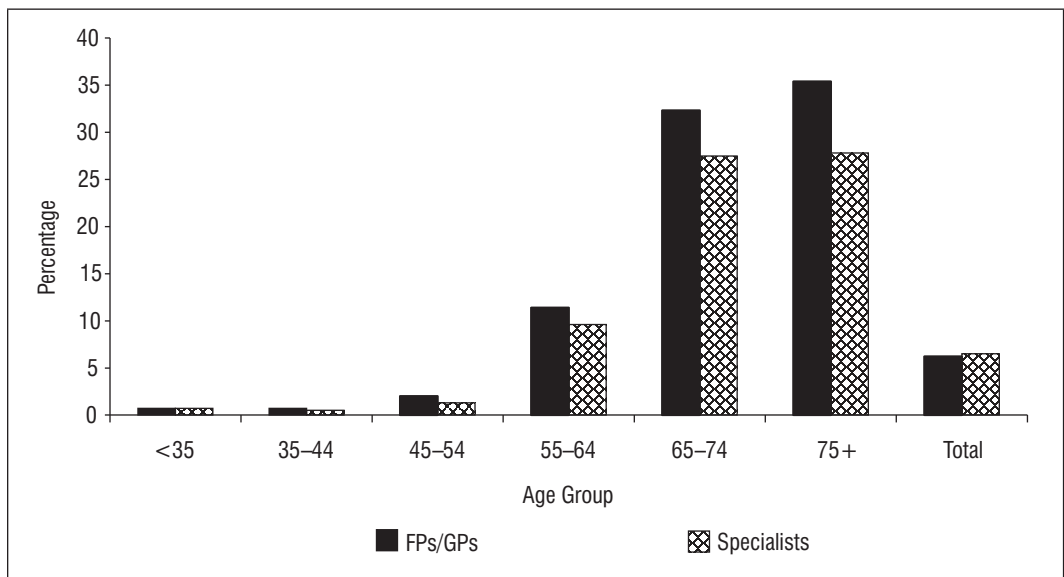
**Figure 3: Percentage Distribution of Physicians, by Broad Specialty and Age Group, Canada, 2007**



**Source**  
Scott's Medical Database, Canadian Institute for Health Information.

The following presents findings about retirement intentions and behaviours using different sources of data. Information about physicians' intention to retire was obtained from the 2007 NPS. Estimates of actual retirement were derived from the CMA Master File and the SMDB, assuming that incidents of retirement are accurately reported and recorded.

**Figure 4: Percentage of Family Physicians/General Practitioners and Specialists Planning to Retire From Clinical Practice in the Next Two Years, by Age Group, Canada, 2007**



**Source**  
CFPC/CMA/RCPC National Physician Survey Database, 2007. "Protected by Copyright."

Figure 4 (more detailed data can be found in Table C1 in Appendix C) shows that 6.2% of FPs/GPs and 6.5% of all specialists indicated in the 2007 NPS that they planned to retire in the two years following the survey. If intentions translated into action, on average, about 3.2% of all physicians would have retired from clinical practice in each of the two years following the survey. Generally speaking, the difference between male and female physicians with respect to intention to retire was not substantial. FPs/GPs age 55 and older were somewhat more likely than older specialists to express an intention to retire within the next two years.

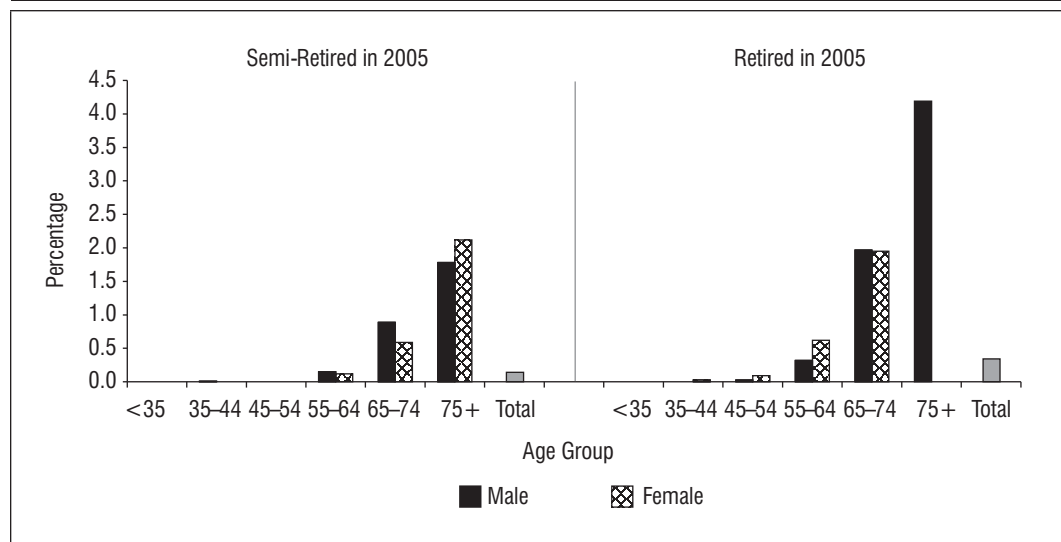
The data above is self-reported, prospective information indicating retirement intentions in the near future. What about retirement behaviours? Actual retirement rates can be estimated from the SMDB, which contains information



about semi-retirement and retirement, and the CMA Master File, which provides information about retirement. Three years of data were used in each of the following analyses to even out possible random variations from year to year.

Figures 5 to 7 provide the estimated actual retirement rates derived from SMDB data (detailed data can be found in Table C2 in Appendix C). Three years of data—2007, 2006 and 2005—are presented. As shown in the second part of Table C2 in Appendix C, of those physicians who were active in 2005, 114 (or 0.19%) became semi-retired, 333 (0.56%) retired and 96 (0.16%) passed away in 2006. Similarly, the first part of the table shows that of those physicians who were active in 2006, 65 (0.11%) changed their activity status to semi-retired, 177 (0.29%) retired and 84 (0.14%) died in 2007. If the semi-retired and retired physicians are combined,<sup>vii</sup> 242 (or 0.40%), 447 (or 0.75%) and 286 (or 0.48%) physicians captured by the SMDB exited the medical workforce through retirement in 2007, 2006 and 2005, respectively. These actual overall retirement rates, derived from SMDB data, are substantially lower than the overall rates of intended retirement (an average of 3.2% of all physicians in a year) obtained from the 2007 NPS.

**Figure 5: Percentage of Semi-Retired and Retired Physicians Who Were Active in 2004, by Age Group and Sex, Canada, 2005**



**Source**

Scott's Medical Database, Canadian Institute for Health Information.

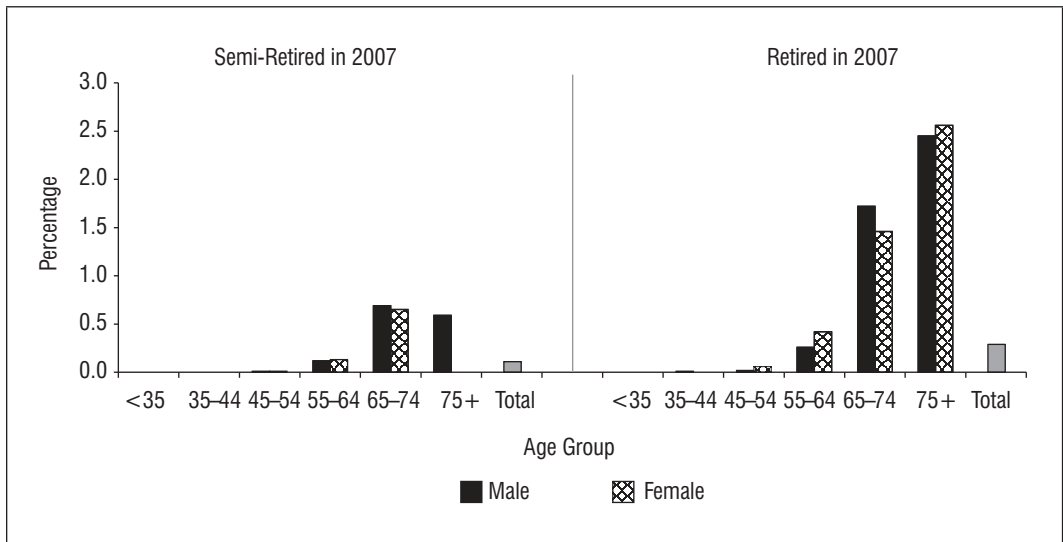
vii. Since retired and semi-retired are self-defined and self-reported by physicians in the SMDB, there is no clear-cut demarcation between the two categories. To be more conservative in estimating the extent of physician retirement, it was decided to consider semi-retired as retired.

**Figure 6: Percentage of Semi-Retired and Retired Physicians Who Were Active in 2005, by Age Group and Sex, Canada, 2006**



**Source**  
Scott's Medical Database, Canadian Institute for Health Information.

**Figure 7: Percentage of Semi-Retired and Retired Physicians Who Were Active in 2006, by Age Group and Sex, Canada, 2007**



**Source**  
Scott's Medical Database, Canadian Institute for Health Information.

Actual retirement rates can also be derived from CMA Master File data. Figure 8 shows the estimated retirement rates for each of three years: 2005, 2006 and 2007 (more detailed data can be found in Table C3 in Appendix C). The base population of physicians is the total count of physicians on the CMA Master File at the beginning of each calendar year. The number of retired and deceased physicians is as of the end of that calendar year (that is, the number of physicians who retired or died between January 1 and December 31 of the year). While the overall death rates were quite consistent over the three years, the overall retirement rates fluctuated considerably from year to year. Similar to the results based on SMDB data, the actual overall annual retirement rates derived from CMA Master File data are considerably lower than the estimated overall rates of intended retirement (an average of 3.2% of all physicians in a one-year period) obtained from the 2007 NPS.<sup>viii</sup>

**Figure 8: Percentage of Physicians Retiring in 2005, 2006 and 2007, by Age Group and Sex, Canada**



**Source**

Canadian Medical Association Master File, Canadian Medical Association.

viii. It should be noted that whereas the retirement rates derived from the SMDB and CMA Master File data are for 2005, 2006 and 2007, the estimated retirement rates derived from the 2007 NPS are for 2008 and 2009, as the survey asked respondents to indicate whether they planned to retire in the two years following the survey.

The SMDB and the CMA Master File yielded different estimated retirement rates. The estimated overall retirement rates based on the SMDB were 0.40% in 2007, 0.75% in 2006 and 0.48% in 2005, with an average overall retirement rate of 0.54% per year. The estimated overall retirement rates based on the CMA Master File were 0.77%, 1.06% and 0.53% in 2007, 2006 and 2005, respectively, with an average overall retirement rate of 0.79% per year, which was somewhat higher than that based on the SMDB. But both estimates pale in comparison to the overall rate of intended retirement over a one-year period—about 3.2%—based on responses to the 2007 NPS. An inevitable question arises from these disparate findings: Why such differences?

The answer to this question may be due to differences between the databases. As noted earlier, data sources understand or define retirement differently. Retirement information in the CMA Master File is based on information provided by physician licensing bodies across the country, either directly to the CMA or indirectly through one of the provincial/territorial medical associations. In addition, the CMA uses responses to the screening questions on its surveys to alter the status of a physician on the CMA Master File to “retired” if he or she has indicated retirement or has reported no activities. With respect to the base physician population, the CMA Master File includes every person with an MD degree who is licensed and has a valid Canadian address but who is not a medical student or resident and is not age 80 or older. Also excluded are non-CMA members who are older than 70 and who do not have a business address in the public directory of their province of residence. The CMA information may include someone who has left medicine for a sufficiently long period of time to let their licence lapse and female physicians who are taking an extended maternity leave. As well, without information on semi-retirement, it is difficult to determine how active many of the licensed physicians are.<sup>38</sup>

The SMDB, on the other hand, has several medical activity codes, such as active, retired and semi-retired. A physician is deemed active if he or she is registered with a provincial college of physicians and surgeons, has provided the SMDB with a mailing address and is listed in the directory. However, there are no formal definitions for retired or semi-retired. These classifications are what physicians have indicated in the annual questionnaire sent to them by Scott’s Directories.<sup>39</sup> What separates active from semi-retired and what distinguishes between semi-retired and retired may be entirely subjective, and there are no clear demarcation lines between the activity categories. A more detailed analysis comparing the CMA Master File and the SMDB is required to fully understand why retirement figures differ between these two databases.<sup>ix</sup>

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ix. It can be observed from tables C2 and C3 in Appendix C that the SMDB and the CMA Master File also differ considerably in the numbers and percentages of deceased (20% or more)—a status that is more clear-cut and less subject to individual interpretations—suggesting that the two databases are quite different in the way they capture information.

The difference between the SMDB and the CMA Master File on the one hand and the 2007 NPS on the other is much more substantial with respect to estimated retirement rates. The most important difference is the fact that whereas the former are based on the actual number of physicians retiring (regardless of what retiring means), the latter reflects prospective behaviours based on self-reported intentions. As pointed out earlier, there are concerns about the extent to which stated intentions translate into actual behaviours. Another possible difference is that, whereas the 2007 NPS refers to “plan to retire from clinical practice,” the SMDB and the CMA Master File refer to “retired.” It is possible that some of those who planned to retire from clinical practice would continue to be active in other types of medical work, but those who were retired according to the SMDB and the CMA Master File were no longer involved in any medically related activity. Further investigation is needed to ascertain the extent to which this is true.

One could ask another question: If a physician works a few hours or sees a few patients a week, should he or she be considered active, retired or semi-retired? Since there is not a uniform definition of retirement that is universally accepted, some physicians who are minimally active may not consider themselves retired. This may inflate the number of active physicians in some medical workforce databases. This factor is examined in the next chapter.





**Chapter 5**  
Older Physicians Who Were Minimally Active

This chapter is about older physicians who continue to do clinical work but on a very limited scale. The purpose of this analysis is to find out how many more physicians could be considered retired if those who work below a certain activity threshold were no longer deemed active from a medical workforce planning perspective. It has been suggested that retirement rates based on data from such sources as the SMDB and the CMA Master File are low because they include many older physicians who keep their medical licences and continue to work at a very low activity level. The argument is that if those minimally active older physicians were counted as retired, a more accurate picture of physician retirement would emerge.

There are many reasons why some physicians limit their clinical practice. For instance, some young doctors may work fewer hours to raise a family. Others may focus on administration or may be pursuing further training. Still others may minimize their clinical work due to poor health. If older physicians begin to work fewer hours, it is quite possible that they are transitioning to full retirement. But should older physicians who have a very limited practice be counted as active physicians? This is not just an academic debate about when active medical practice ends and when retirement begins. A large number of minimally active older physicians may bias medical workforce statistics (by over-counting the number of active physicians) and, as a result, skew workforce projections.

To gain a better understanding of this problem, data from the NPDB was used to estimate the number of older physicians who had decreased their workload and consequently had an FTE that was 33% or less of what it used to be. Physicians' active FTE values were calculated by taking the average of all their FTE values for the consecutive years they were above the "active" threshold (see Appendix D for more details). For the purpose of this analysis, older physicians are those who were 55 and older. Three age groups were used in the analysis: 55 and older, 60 and older and 65 and older. In addition, three FTE thresholds were specified: those whose FTE value for at least three consecutive years was 15% or less, 25% or less or 33% or less of the average FTE values of their average active FTE values. The specification of three consecutive years was used to avoid mislabelling as retired those physicians who took some time off for family, health or other reasons but returned to regular work subsequently. The analysis was done separately for male and female physicians and separately for FPs/GPs, medical specialists and surgical specialists, using 2007 and 2006 as the reference years. Two years—2007 and 2006—of data were analyzed to show that the results are generally consistent across years.

For physicians in New Brunswick, Newfoundland and Labrador and Prince Edward Island, both FFS and alternative payments were included in the FTE calculations. Physician-level alternative payment data was combined with FFS payment data to generate a new FTE value, using FFS benchmarks as



an estimate. For physicians in the other provinces, only FFS payments were included in the FTE calculations. Physicians in the three territories were not included in this analysis. Appendix D provides further methodological details.

The numbers of older FPs/GPs, medical specialists and surgical specialists who could be considered retired in the 2007 reference year are presented in Table 1.

**Table 1: Number of Older Physicians Who Were Minimally Active, by Specialty and Full-Time Equivalent Threshold, Canada, 2007**

Specialty	FTE Threshold	Age 55+*	Age 60+*	Age 65+*
FPs/GPs	15% or Less of FTE	225	131	87
	25% or Less of FTE	364	227	153
	33% or Less of FTE	500	334	217
Medical Specialists	15% or Less of FTE	125	76	50
	25% or Less of FTE	196	129	90
	33% or Less of FTE	284	200	140
Surgical Specialists	15% or Less of FTE	133	110	96
	25% or Less of FTE	284	175	156
	33% or Less of FTE	275	237	211
<b>Total Number of Physicians in Age Group</b>		<b>14,460</b>	<b>9,044</b>	<b>4,792</b>

**Note**

\* Age 55+ refers to all physicians who were 55 and older; age 60+ refers to all physicians who were 60 and older; and age 65+ refers to all physicians who were 65 and older.

**Source**

National Physician Database, Canadian Institute for Health Information.

Table 1 shows that if “older physicians” refers to those age 55 and older and if “minimally active” means physicians’ clinical activities over a minimum of three years, including the 2007 reference year, were at 33% or less of their previous average active FTE value, then 1,059 physicians (500 FPs/GPs, 284 medical specialists and 275 surgical specialists) could be considered retired, even though they were still included in the NPDB. This represents 7.3% of all physicians age 55 and older in the NPDB in 2007. On the other hand, if “older physicians” is understood to mean those age 65 and older and if “minimally active” refers to physicians’ clinical activities that were at 15% or less of their previous average active FTE values, then only 233 physicians (87 FPs/GPs, 50 medical specialists and 96 surgical specialists) could be considered retired. This represents 4.9% of all physicians age 65 and older in the NPDB in 2007. The numbers of minimally active physicians who could be considered retired vary between these two extremes, depending on how the term “older physicians” is interpreted and where the FTE threshold is set.

**Table 2: Number of Older Physicians Who Were Minimally Active, by Specialty and Full-Time Equivalent Threshold, Canada, 2006**

Specialty	FTE Threshold	Age 55+*	Age 60+*	Age 65+*
FPs/GPs	15% or Less of FTE	169	99	69
	25% or Less of FTE	287	175	126
	33% or Less of FTE	399	267	187
Medical Specialists	15% or Less of FTE	96	55	36
	25% or Less of FTE	171	109	76
	33% or Less of FTE	252	172	120
Surgical Specialists	15% or Less of FTE	111	93	82
	25% or Less of FTE	178	150	134
	33% or Less of FTE	236	203	181
<b>Total Number of Physicians in Age Group</b>		<b>13,673</b>	<b>8,357</b>	<b>4,362</b>

**Note**

\* Age 55+ refers to all physicians who were 55 and older; age 60+ refers to all physicians who were 60 and older; and age 65+ refers to all physicians who were 65 and older.

**Source**

National Physician Database, Canadian Institute for Health Information.

Table 2 presents similar data for the 2006 reference year. It shows that if “older physicians” refers to those age 55 and older and if “minimally active” means physicians’ clinical activities over a period of at least three years, including the 2006 reference year, were at 33% or less of their previous average FTE values, then 887 physicians (399 FPs/GPs, 252 medical specialists and 236 surgical specialists) could be considered retired. This represents 6.5% of all physicians age 55 and older in the NPDB in 2006. But if “older physicians” is understood to be those age 65 and older and if “minimally active” means physicians’ clinical activities were at 15% or less of their previous average FTE values, then only 187 physicians (69 FPs/GPs, 36 medical specialists and 82 surgical specialists) could be considered retired. This represents 4.3% of all physicians age 65 and older in the NPDB in 2006. The numbers of minimally active physicians who could be considered retired vary between these two extremes, depending on how the term “older physicians” is interpreted and where the FTE cut-off is set.

Whether these minimally active physicians should be considered retired for the purpose of medical workforce projections or health human resources planning is a decision that requires further consideration and deliberation by stakeholder groups. However, it should be noted that these figures are merely estimates because the FTE conversions were based only on FFS billing information, with the exception of physicians in three Atlantic provinces. More and more physicians, especially FPs/GPs and medical specialists, are shifting to alternative payment programs or blended remuneration schemes.

There could be a sizeable number of physicians who are getting a salary, sessional or capitation payment, plus some FFS income as top-up, and it is only the FFS top-up that has been captured by the NPDB and converted into FTEs. In other words, the number of minimally active physicians is likely to be smaller than what was estimated in the above analyses. This scenario is more likely to be true for the younger aging physicians (those younger than 65). Thus, when estimating the number of minimally active physicians who could be considered retired, it is safer to examine physicians who are 65 and older, as they are less likely to receive both FFS payments and alternative forms of reimbursement.<sup>38, x</sup> If this more cautious strategy is followed, the numbers of minimally active physicians who could be considered retired are not substantial.

Differences between male and female physicians and differences between the three broad specialty groups were then examined with respect to their likelihood of being minimally active. Given that the two criteria, with three categories for each, generate nine possible scenarios, for reasons of parsimony and for illustration purposes, only one scenario—using the middle category of each of the two criteria—is presented as follows. When the age group of 60 and older and 25% of previous average FTE as activity threshold were used for the analysis, it was found that, in the 2007 reference year, there was no major difference between males and females (male physicians: 6.0%; female physicians: 5.0%). Differences between the three broad specialties, particularly between FPs/GPs and medical specialists on the one hand and surgical specialists on the other, were somewhat more pronounced: 5.2%, 4.3% and 10.7% of FPs/GPs, medical specialists and surgical specialists, respectively, could be considered retired because their clinical activities during a minimum of three consecutive years, including the 2007 reference year, were at 25% or less of their previous average FTE values. Data for the 2006 reference year reveals a similar pattern. The difference between male and female physicians who were minimally active was not substantial (male physicians: 5.3%; female physicians: 4.4%). There were greater differences between the three categories of physicians: 4.4% of FPs/GPs, 3.9% of medical specialists and 9.5% of surgical specialists could be considered retired because their clinical activities during a minimum of three consecutive years, including the 2006 reference year, were at 25% or less of their previous average FTE values.

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x. There is some recent data to back up this suggestion. Results from a CIHI study on the demographic profile of physicians on different payment programs in three Atlantic provinces show that the proportion of physicians receiving 90% or more of their income from alternative payment programs declined with age, from 57.6% among those younger than 40 to 41.1% among those age 40 to 59 and to 28.3% among those age 60 or older.<sup>40</sup>





**Chapter 6**  
An Alternative Perspective

After examining retirement patterns of Canadian workers, Bowlby has resignedly come to the conclusion that “the concept of retirement is fuzzy.”<sup>9</sup> The fuzziness problem may be particularly true for physicians, most of whom are independent, self-employed practitioners, and many of whom continue to work beyond the traditional retirement age of 65, as other studies have found and as data presented in the previous chapters has shown. The problem is made more intractable by the fact that existing physician databases do not provide adequate information to study physician retirement because they define retirement loosely or inconsistently and because they lack uniformity in gathering retirement-related information. As well, the base populations in different databases may not be the same due to different inclusion or exclusion criteria. Not surprisingly, estimated retirement rates derived from different databases vary considerably, and physician supply forecasts using these retirement rates as projection parameters may produce quite divergent results years into the future. This leads one to wonder how useful the concept of retirement is, as far as medical workforce planning is concerned. Maybe a different perspective on physician aging and medical practice is needed.

It is suggested that retirement should be seen as just one aspect in a continuum of changes in medical practice as old age sets in. Retirement—in the sense of complete cessation of medical practice—represents the end point of this continuum, which may or may not occur at age 65. But prior to full retirement, many other changes could have occurred, which may also have implications for medical care provision and physician workforce planning. It may be more meaningful, for example, to measure how much work physicians do when they become older. It is because of the recognition of the importance of activity levels that some health workforce researchers and planners have shifted to using FTEs, as well as head counts, in their analysis, since FTEs take into account different levels of clinical activity, as reflected by FFS billing volume.<sup>xi</sup> Changes in FTE value in different stages of a physician’s medical career reflect changing levels of clinical activity as he or she gets older.

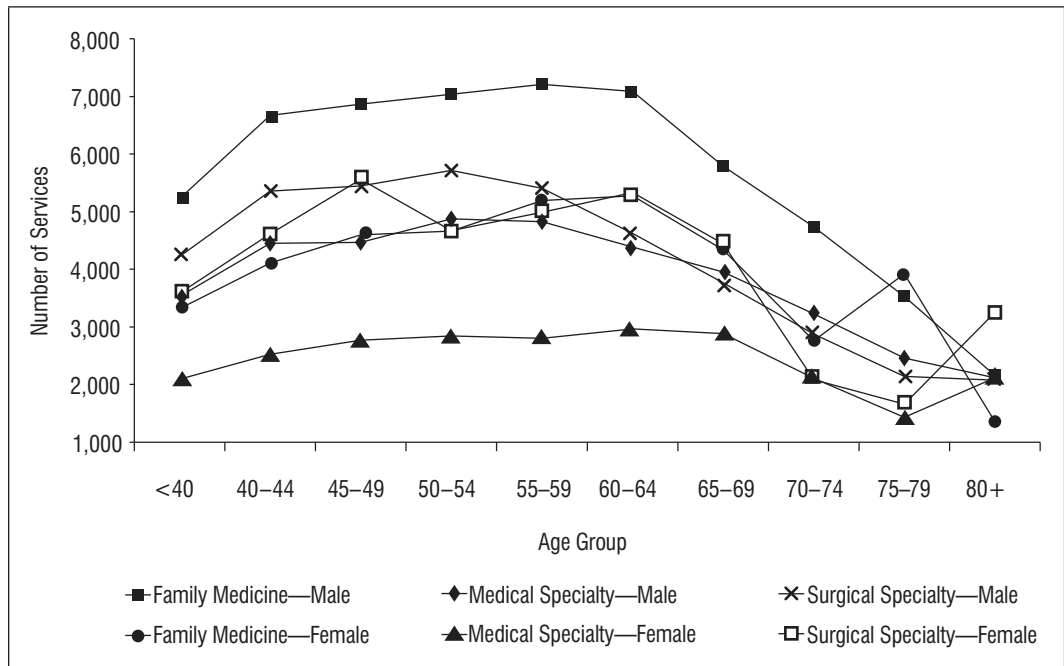
## 6.1 Changing Activity Level

The NPDB makes it possible to use two measures to gauge a physician’s clinical activity level: number of clinical services provided and FTEs. The two are related because the former measures the volume of work and the latter determines the monetary value of that work as reflected by FFS payments.

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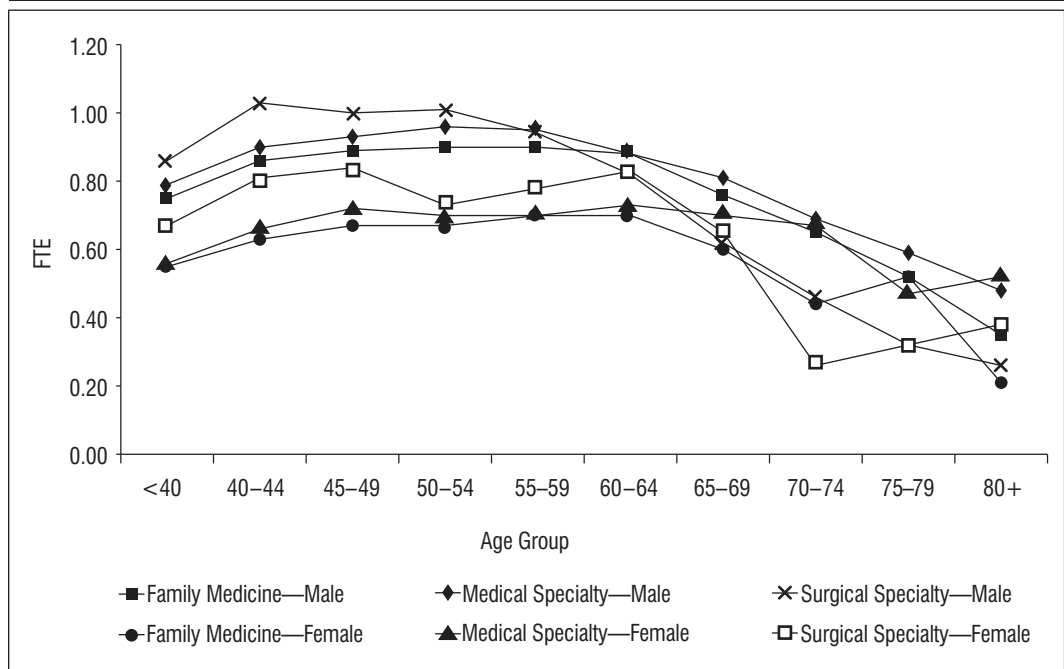
xi. It should be noted that the methodology for calculating FTEs is still being refined. Additionally, the current FTE methodology includes only those physicians who are on FFS reimbursement (about 78% of physicians); the proportion of physicians, especially FPs/GPs and medical specialists, who are not on FFS is growing.

**Figure 9: Average Number of Services Provided by Physicians Who Billed Fee for Service, by Sex, Specialty and Age Group, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 10: Average Full-Time Equivalent Values for Physicians Who Billed Fee for Service, by Sex, Specialty and Age Group, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

Figure 9 shows the average numbers of FFS services provided by physicians by age, sex and broad specialty in 2006, and Figure 10 shows the average FTE values of physicians who billed FFS by age, sex and broad specialty in the same year (more detailed data can be found in tables E1 and E2 in Appendix E).

It can be seen from Figure 10 that the average FTE values of physicians who billed FFS varied by age, sex and specialty. Male physicians tended to have higher FTEs than female physicians. In only a few instances did female physicians surpass their male counterparts in FTE value (such as female surgical specialists age 60 to 69). Generally speaking, both medical and surgical specialists generated higher FTE values than physicians in family or general practice. A comparison of age groups revealed that physicians who were younger than 40 tended to have lower average FTE values. The age at which a physician achieves his or her highest FTE value is a function of both sex and specialty. For instance, male FPs/GPs generated their highest average FTE values between ages 50 and 59. The average FTE values then tended to decline progressively as physicians got older. But for those FPs/GPs age 75 to 79 who stayed clinically active, their average FTE values were still at 0.52 for both males and females. Medical and surgical specialists followed a similar pattern, but they achieved their peak FTE values at a younger age; this was especially true for surgical specialists. Male surgical specialists had very high average FTE values between ages 40 and 54 (for example, the average FTE value of those age 40 to 44 reached 1.03), but they tended to have much lower average FTE values after age 64 relative to medical specialists and FPs/GPs. In 2004, 52,813 physicians (excluding unknowns) billed FFS and were included in the calculation of FTE values. Of the total number of physicians who billed FFS, 5,461 were age 65 and older.

### 6.1.1 First Case Study

One way to illustrate the impact of aging on the production of medical services is to examine how a cohort of physicians who billed FFS changed over time with respect to the number of physicians remaining in clinical practice and the amount of FFS-billable work they performed. This case study involves six age–specialty cohorts: male internists age 50 to 54 in 1989 ( $n = 483$ ), male internists age 55 to 59 in 1989 ( $n = 391$ ), male general surgeons age 50 to 54 in 1989 ( $n = 267$ ), male general surgeons age 55 to 59 in 1989 ( $n = 276$ ), male obstetricians/gynecologists age 50 to 54 in 1989 ( $n = 182$ ) and male obstetricians/gynecologists age 55 to 59 in 1989 ( $n = 159$ ). These three specialties were chosen because they were among the largest specialties. Female physicians were not included in this analysis because there were very few older female specialists. For example, there were only 17 female internists age 55 to 59 in 1989 who billed FFS, and the number dwindled to fewer than



5 by 2005. Similarly, there were fewer than 5 female general surgeons age 50 to 54 in 1989 who billed FFS. Small numbers present the potential problem of privacy infringement and the possibility of distortion by a few outliers.

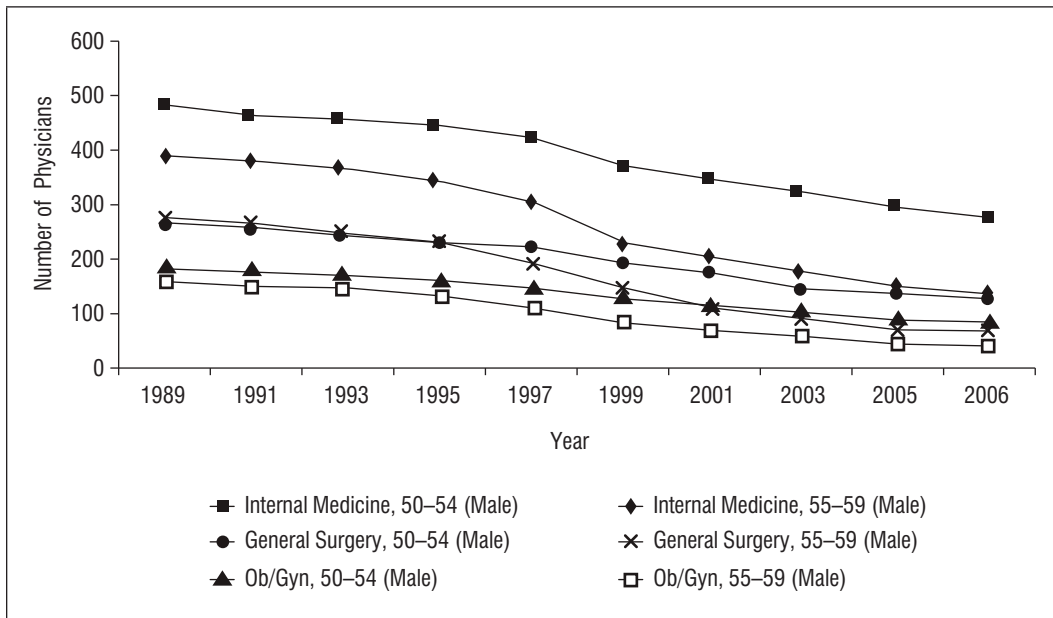
The analysis entails tracking these six cohorts of physicians<sup>xii</sup> over an 18-year period, from 1989 to 2006 (for presentation reasons, data for only 10 years is shown in Table E3 in Appendix E), to see how many individuals remained in FFS clinical practice until the end of the study period and how the average FTE value of the still-active cohort members changed over time. General surgeons who billed FFS for more than zero dollars and who were age 50 to 54 in 1989 were included in the General Surgery, 50 to 54 cohort; internists who billed FFS for more than zero dollars and were age 55 to 59 in 1989 were included in the Internal Medicine, 55 to 59 cohort; and so forth. The tracking involved identifying the number of physicians in a particular cohort who billed for more than zero dollars in 1989 and in each of the subsequent years up to 2006. It should be pointed out that clinically active, in the present context, means billing FFS for clinical work. Those cohort members who had given up clinical work after 1989 but were involved in other activities, such as administration, research or teaching, were no longer tracked, as the NPDB contains no information on such activities. As well, some could still have been clinically active but have moved to alternative payment programs (non-FFS) and were, therefore, no longer captured by the NPDB.

The findings are presented in figures 11 and 12. The Internal Medicine, 50 to 54 cohort provides an illustration. There were 483 internists in this cohort in 1989. By 1997, when this cohort of physicians reached the age range of 58 to 62, 423 (or 87.6%) were still in FFS clinical practice. By 2006, when the cohort reached age 67 to 71, 276 members of the original group (or 57.1%) were still billing FFS for the clinical services they provided (see Figure 11). The average FTE value changed from year to year (see Figure 12). Already at a high level of 0.94 in 1989, the average FTE value climbed slowly to 1.00 in 1997. After that year, the FTE value dropped fairly rapidly to 0.73 in 2006. In other words, in 2006, slightly more than half of the original cohort of 483 FFS internists, who were already beyond the traditional retirement age of 65, were still clinically active, but the average workload (as reflected by FTE values) of those still billing FFS was slightly more than 25% lower than that in 1997. A few of those who had dropped out might have died; others might have left Canada, retired or stopped practising as a clinician but were otherwise medically active. Some might still have been clinically active but were reimbursed in a way other than FFS.

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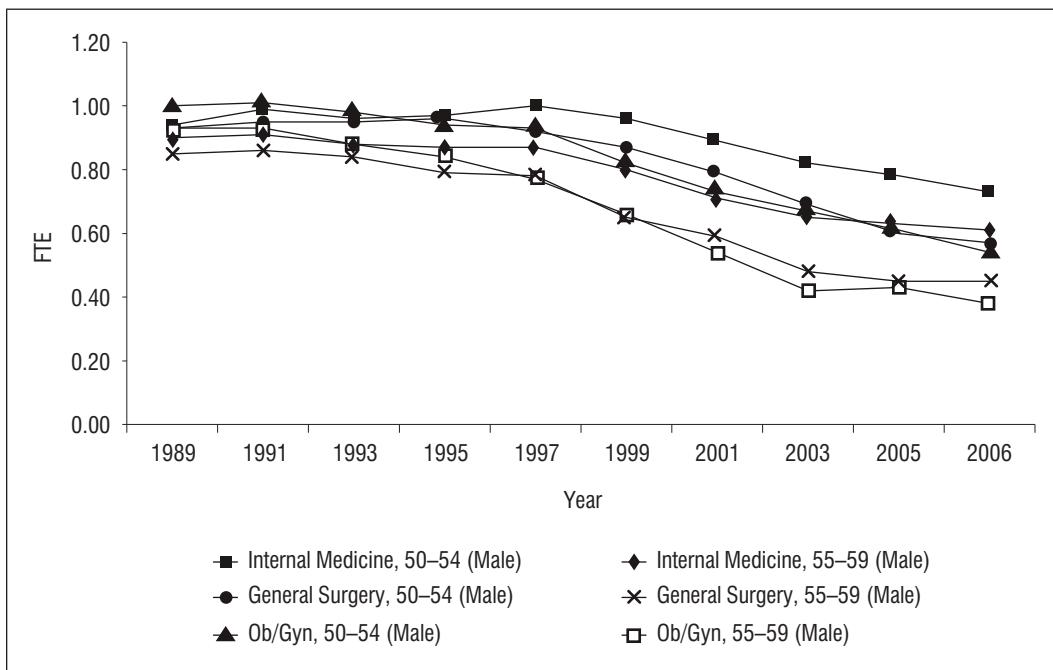
xii. Individual physicians within a cohort were tracked over time. In other words, all physicians who were tracked in years after 1989 were part of the 1989 cohort. Physicians age 50 to 54 or 55 to 59 who started practising or re-entered the Canadian medical workforce after 1989 (such as newly licensed international medical graduates or Canadian physicians returning from overseas) were excluded from this analysis.

**Figure 11: Number of Active Physicians Who Billed Fee for Service, Six Age-Specialty Cohorts, Canada, 1989 to 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 12: Average Full-Time Equivalent Values of Physicians Who Billed Fee for Service, Six Age-Specialty Cohorts, Canada, 1989 to 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

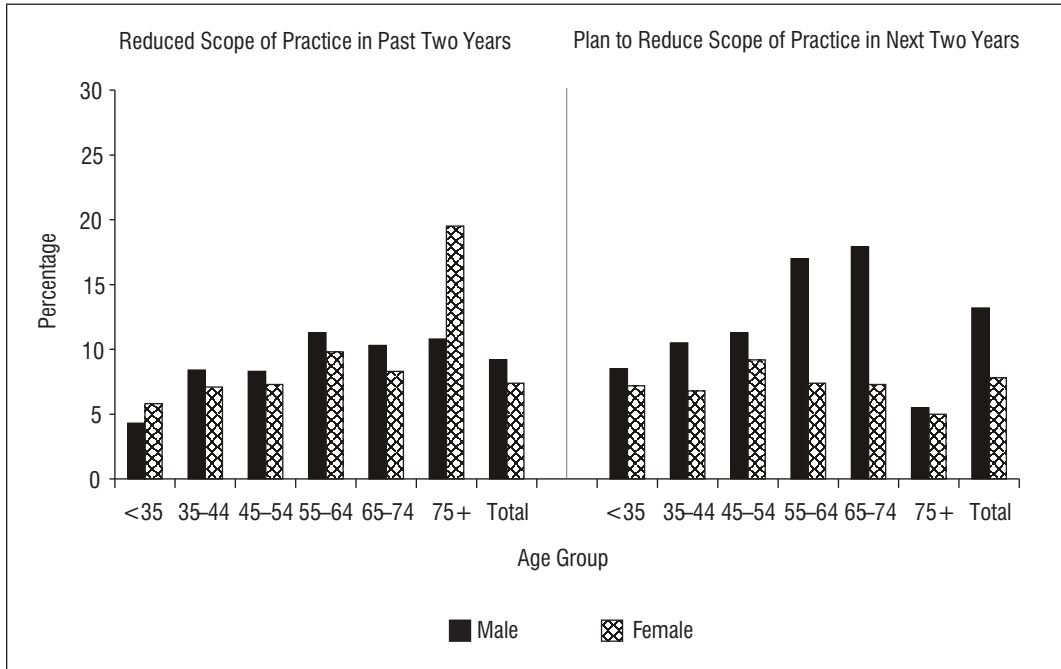
As would be expected, those age 55 to 59 exited the medical workforce at a faster rate than those age 50 to 54, and the average FTE values of the former declined much faster than those of the latter. Those age 55 to 59 in 1989 were 72 to 76 years old at the end of the study period. By 2006, only 68 of the original 276 members of the General Surgery, 55 to 59 cohort were still clinically active and billing FFS, and the average FTE value had dropped from a high of 0.86 in 1991 to 0.45 in 2006. Viewing the results from another angle, one can see that about a quarter of the original members of this cohort were still in FFS clinical practice at age 72 to 76. With an average FTE value of 0.45, the 68 clinically active physicians were more or less equivalent to 30.6 general surgeons working full time.

## 6.2 Changing Clinical Practice Profile

Other changes also take place as a physician gets older. It is equally important to know what older physicians do and how their medical practice profiles differ from those of their younger counterparts. Thus, another aspect that deserves attention is scope of practice, which refers to the comprehensiveness of a physician's clinical practice or the basket of clinical services he or she provides. This is especially relevant for FPs/GPs since, as primary care practitioners, their scope of practice can be very broad and they have more leeway in expanding or contracting their scope of practice. Past studies on differences in scope of practice have also focused mostly on FPs/GPs. For instance, Chan and Tepper documented a trend of declining comprehensiveness of services provided by Canadian FPs/GPs over the years.<sup>1, 41</sup> Using survey data, Hutten-Czapski and associates and Pong and Pitblado have shown that rural FPs/GPs tend to have a much broader scope of practice than their urban counterparts, possibly to fill some of the service gaps resulting from a lack of rural specialists.<sup>42, 43</sup> Rural FPs/GPs are more likely to provide services or perform clinical procedures that would typically be done by specialists in larger urban centres. Similar findings have been reported in other countries. Humphreys and associates, for example, found that Australian GPs tend to have more complex practice patterns if they work in more remote areas.<sup>44</sup> A more recent study by Australian researchers reaffirmed the importance of rural GPs providing procedural medical services.<sup>45</sup>

The hypothesis is that, as doctors age, they are more likely to limit their scope of practice, just as they tend to work fewer hours or see fewer patients. The 2007 NPS provides some indications of an inverse relationship between aging and scope of practice. The survey asked FPs/GPs if they had reduced their scope of practice in the two years prior to the survey and if they planned to reduce their scope of practice in the coming two years (survey questions are shown in Appendix A). The survey results are presented in Figure 13.

**Figure 13: Proportion of Family Physicians/General Practitioners Indicating Reduction in Scope of Practice in Past Two Years and Plans to Reduce Scope of Practice in Next Two Years, by Age Group and Sex, Canada, 2007**



**Sources**

CFPC/CMA/RCPC National Physician Survey Database, 2007. "Protected by Copyright."

The proportions of FPs/GPs indicating that they had reduced their scope of practice in the past two years were not large (with the exception of female FPs/GPs age 75 and older), but those who were older were somewhat more likely to report scope-of-practice reduction in the past two years (male: younger than 35, 4.3%; 75 or older, 10.8%; female: younger than 35, 5.8%; 75 or older, 19.5%). On average, 9.2% of male and 7.4% of female FPs/GPs reported a reduction in scope of practice in the previous two years. When it comes to plans for the future, the data shows a relationship between aging and scope-of-practice reduction, but only for male physicians. With the exception of those age 75 and older, as male FPs/GPs got older, they were more likely to indicate an intention to trim their scope of practice (younger than 35: 8.5%; 65 to 74: 17.9%). There were no clear patterns among female FPs/GPs. On average, 13.2% of male and 7.8% of female FPs/GPs indicated an intention to narrow their scope of practice in the next two years.<sup>xiii</sup>

xiii. The 2007 NPS also showed that older specialists, similar to FPs/GPs, were more likely to report that they had reduced their scope of practice in the previous two years and that they planned to reduce their scope of practice in the next two years. The relationships between aging and scope-of-practice reduction were more evident among male than female specialists.

The above is self-reported information from a survey. What does FFS billing data from the NPDB tell us about the practice patterns of younger and older FPs/GPs? Figures 14 to 21 show the percentages of FPs/GPs providing selected clinical services by age group and sex. The types of services selected for this analysis are similar to those used in the study by Tepper.<sup>41, xiv</sup> Physicians in different age groups did not differ substantially with respect to some common primary care services, such as office assessments, services requiring basic procedural skills and mental health services. Between 62.9% and 76.6% of male FPs/GPs in age groups ranging from younger than 40 to 65 to 69, and between 65.2% and 76.2% of female FPs/GPs in age groups ranging from younger than 40 to 60 to 64, provided office assessments. Likewise, between 77.3% and 89.9% of male and female physicians in age groups ranging from younger than 40 to 65 to 69 offered mental health services.

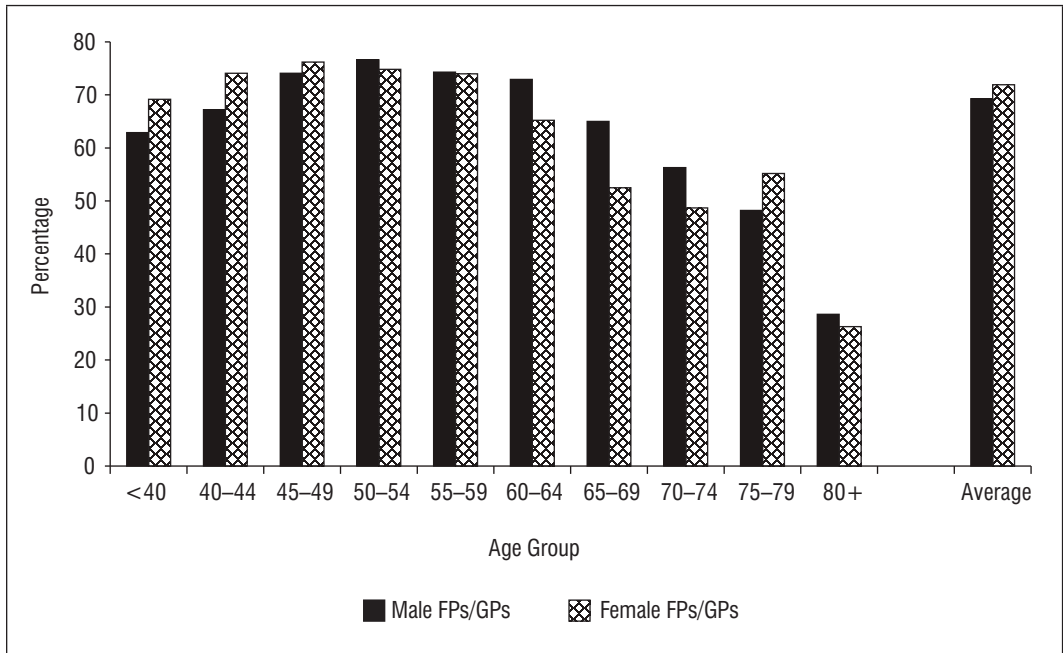
However, for other types of service, age does appear to be inversely related to the likelihood of service provision. For example, fewer than 35% of female FPs/GPs age 65 to 69 provided hospital inpatient care, compared with 58.8% of those younger than 40. Similarly, 56.4% of male FPs/GPs age 65 to 69 provided services requiring advanced procedural skills, compared with 77.4% of those age 40 to 44. It also appears that the progressive narrowing of scope of practice happened in a more intensive manner among female physicians. For instance, there was a difference of 10.4 percentage points between male FPs/GPs who were younger than 40 and those who were 60 to 64 with respect to providing hospital inpatient care, but there was a difference of 20.9 percentage points between female FPs/GPs who were younger than 40 and those who were 60 to 64. This suggests that age-related scope-of-practice compression occurred faster among female physicians than among their male counterparts.

Although not too many FPs/GPs were involved in providing obstetrical services, surgical assistance and anesthesia services, similar age-related scope-of-practice reduction trends were discernible. For instance, while 18.7% of female FPs/GPs who were younger than 40 provided obstetrical services, only 6.3% of those age 60 to 64 were still involved. Similarly, while 19.0% of FPs/GPs younger than 40 provided anesthesia services, only 5.8% of those age 65 to 69 still provided such services.

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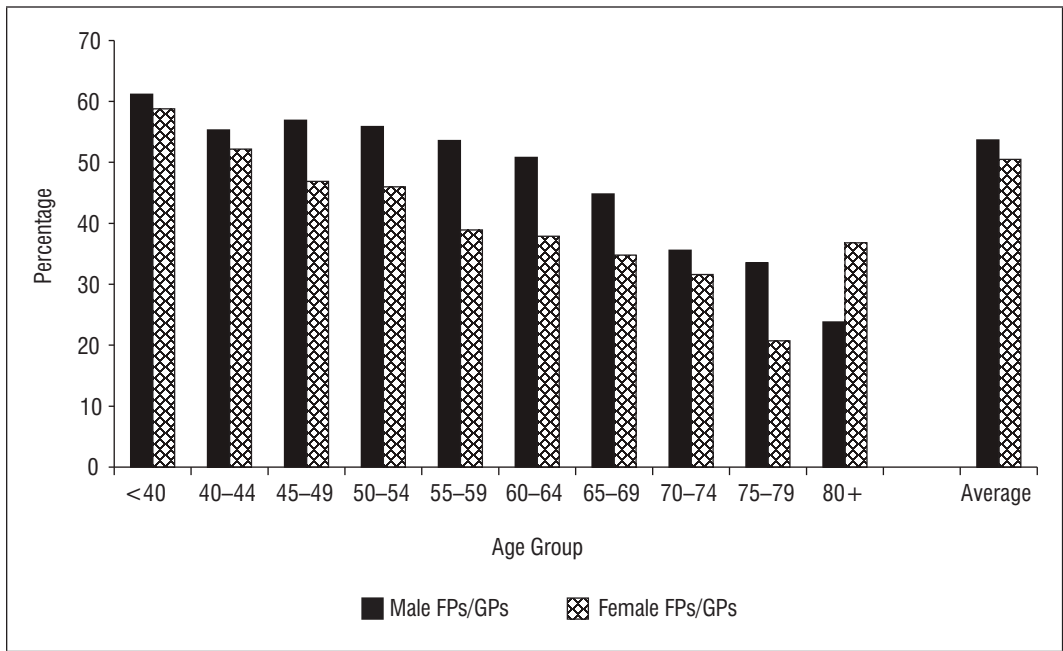
xiv. For details about the types of service and their National Grouping System category descriptions, see Appendix A in Tepper.<sup>41</sup>

**Figure 14: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Office Assessment Services, by Age Group and Sex, Canada, 2006**



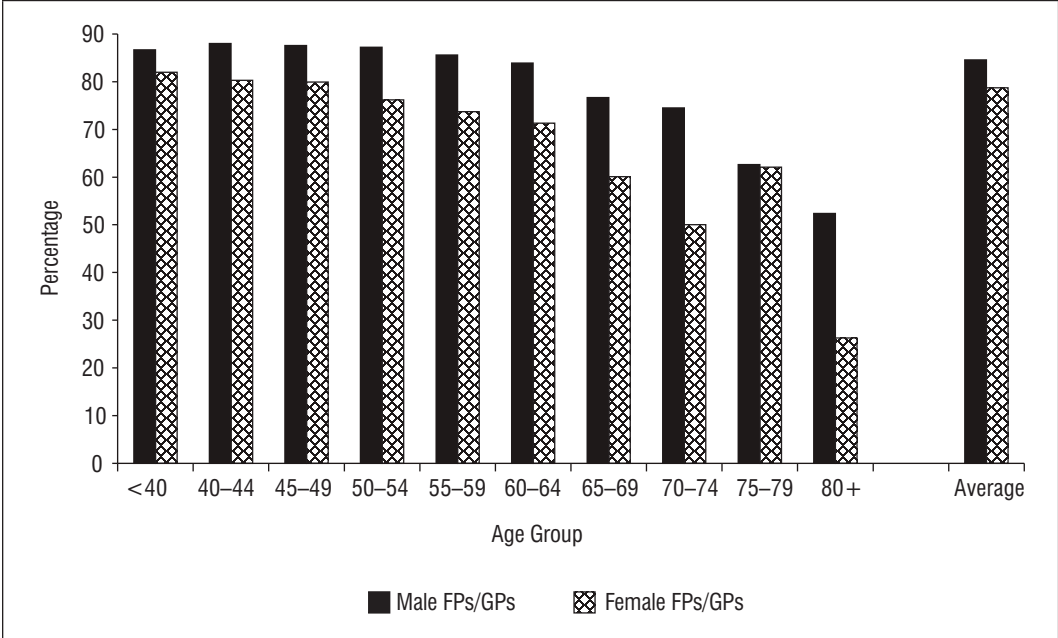
**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 15: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Hospital Inpatient Services, by Age Group and Sex, Canada, 2006**



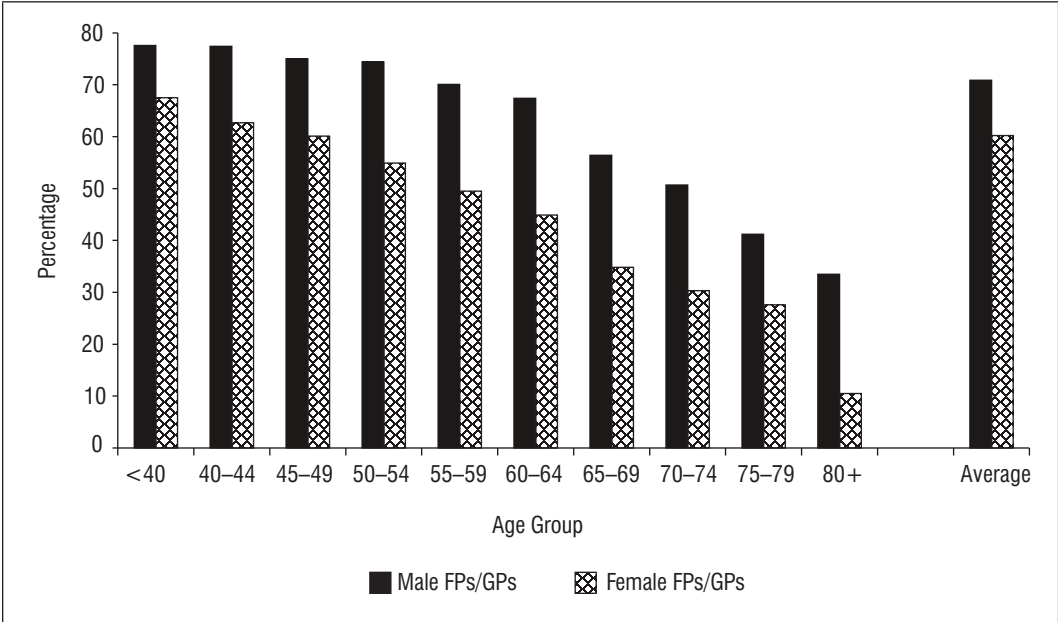
**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 16: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Basic Procedural Skills Services, by Age Group and Sex, Canada, 2006**



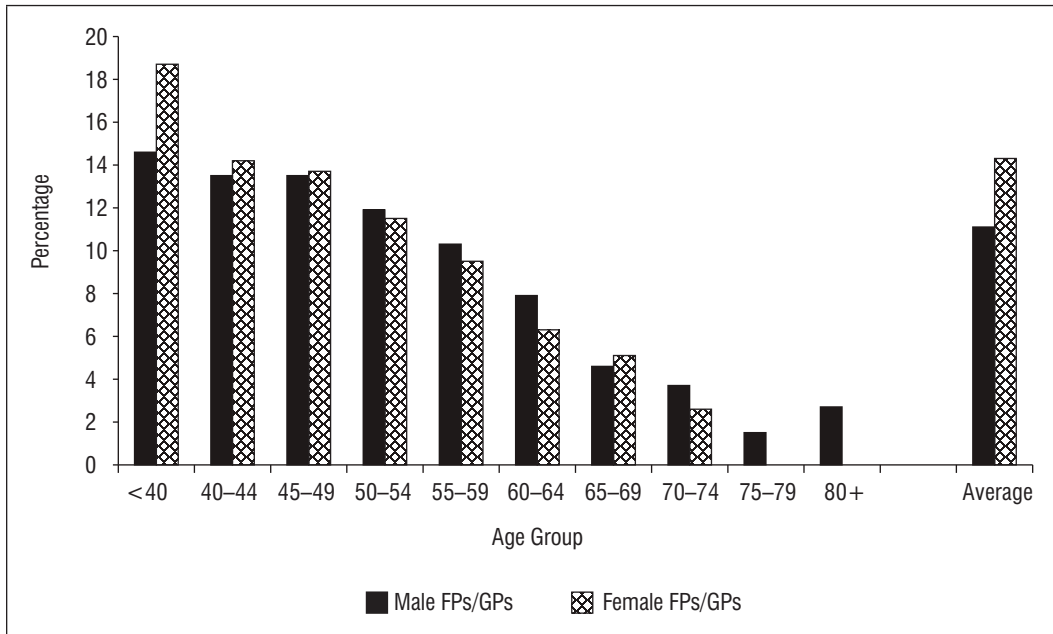
**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 17: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Advanced Procedural Skills Services, by Age Group and Sex, Canada, 2006**



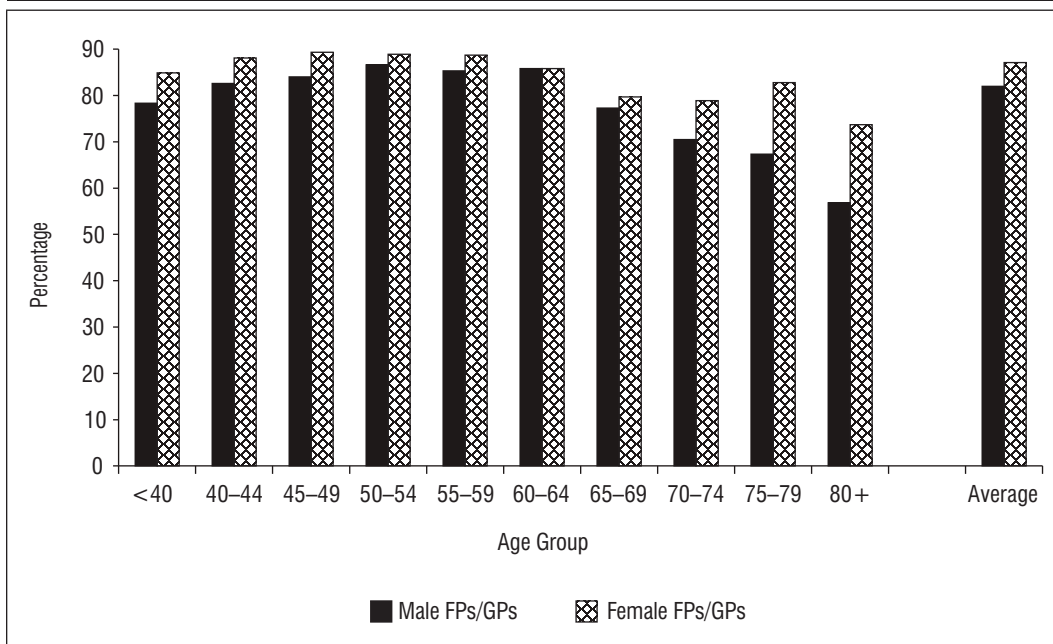
**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 18: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Obstetrical Services, by Age Group and Sex, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

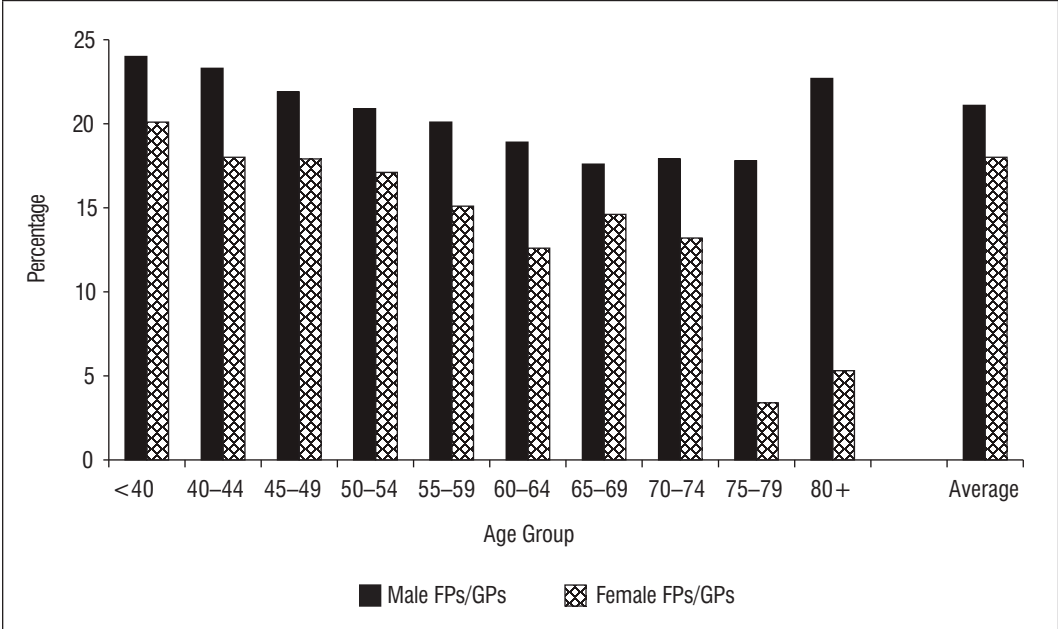
**Figure 19: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Mental Health Services, by Age Group and Sex, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

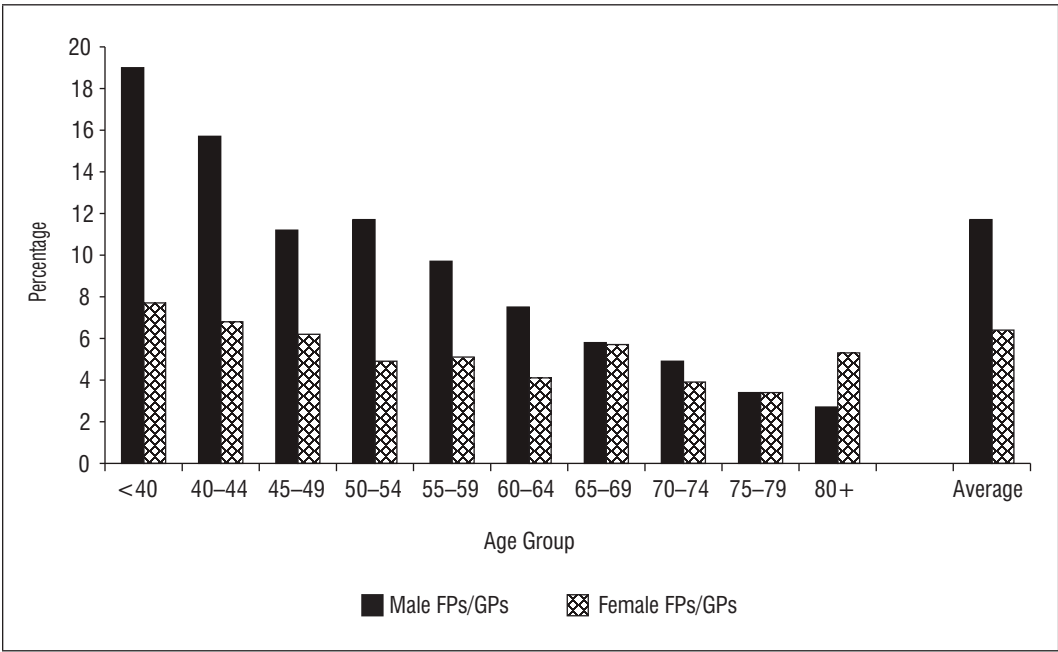


**Figure 20: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Surgical Assistance Services, by Age Group and Sex, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 21: Percentage of Family Physicians/General Practitioners Who Billed Fee for Service and Were Providing Anesthesia Services, by Age Group and Sex, Canada, 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

## 6.2.1 Second Case Study

The above analysis (figures 14 to 21) relies on cross-sectional data to demonstrate the relationships between age and the likelihood of engaging in various types of FFS clinical service by FPs/GPs. A second case study was conducted using longitudinal data to show how the practice profiles of FPs/GPs who billed FFS changed as they grew older. The approach is similar to that used in the first case study, except that the second case study focuses not just on changes in numbers of active physicians and their FTEs but also on changes in what they did. Four cohorts of FPs/GPs—males age 50 to 54 ( $n = 1,527$ ), males age 55 to 59 ( $n = 1,388$ ), females age 50 to 54 ( $n = 201$ ) and females age 55 to 59 ( $n = 167$ ) in 1989—were identified and followed over an 18-year period from 1989 to 2006 (for presentation reasons, data for only 10 years is shown in tables E4 to E7 in Appendix E). For each year, the number of FPs/GPs in each cohort who still billed FFS was obtained. Also recorded were the average FTE values for those physicians who billed for more than zero dollars in the service categories included in this analysis. Physicians from the territories were not included in the analysis. If physicians billed in more than one province, they were counted as one physician and their FTE values were summed.

The tracking involves identifying the number of FPs/GPs in a particular age–sex cohort who billed for more than zero dollars in 1989 and in each of the subsequent years up to 2006. In addition to showing changes from year to year in the number of physicians remaining in the cohort and their FTEs, the tracking involved quantifying the extent to which FPs/GPs engaged in certain clinical activities, such as providing hospital inpatient care, services requiring advanced procedural skills and surgical assistance. The results are presented in figures 22 to 25.

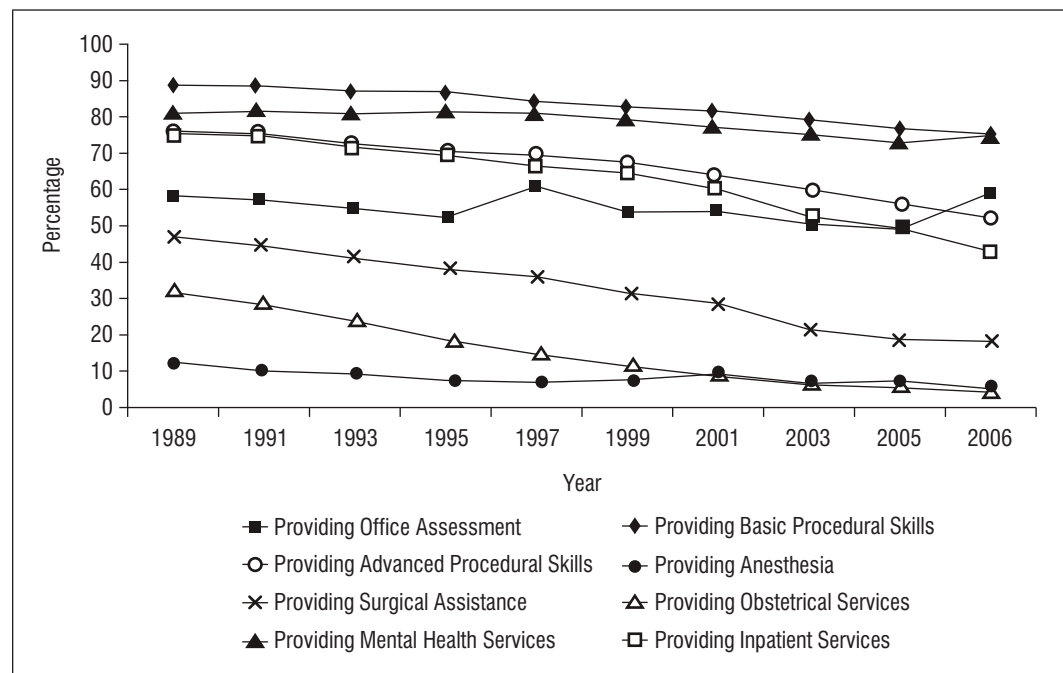
Figure 22 (and Table E4 in Appendix E) presents findings in relation to the cohort of male FPs/GPs age 50 to 54 in 1989. There were 1,527 FPs/GPs in this cohort in 1989. By 2006, when they were age 67 to 71, 785 (or 51.4%) were still clinically active and billing FFS for more than zero dollars. The average FTE value of those who were still in clinical practice declined from a high of 1.02 in 1991 to 0.73 in 2006, representing a 28.4% reduction in billable clinical activities. These findings are similar to those for specialists, as shown in the first case study. Equally important are the changes, or lack thereof, over time in the extent to which physicians engaged in certain clinical activities. For instance, it can be seen in Figure 22 that there were no major changes in the provision of care requiring basic procedural skills and mental health services. There was a slight progressive decline in the provision of hospital inpatient services and services requiring advanced procedural skills. However, there

was a more substantial progressive decline in the provision of obstetrical services, from 31.6% in 1989 to 11.4% in 1999 and to 4.2% in 2006, though the proportion of FPs/GPs doing obstetrics was relatively small at the outset.

Figure 23 (and Table E5 in Appendix E) focuses on the cohort of male FPs/GPs age 55 to 59 in 1989. About one-third of the cohort members were still clinically active in 2006, when they reached the age of 72 to 76, and the average FTE value of those who were still in clinical practice and billing FFS was 0.59 at the end of the study period. With respect to the relationship between aging and scope of practice, the findings are similar to those in the 50-to-54 age cohort.

Figures 24 and 25 (and tables E6 and E7 in Appendix E) present findings for the cohort of female FPs/GPs age 50 to 54 in 1989 and age 55 to 59 in 1989, respectively. Generally speaking, the patterns are similar to those for their male colleagues, but a few differences are worth noting. First, the female cohorts were much smaller in size than the male cohorts. As a result, random variations or outlier effects may explain some of the year-to-year fluctuations in the proportions of physicians engaging in some medical services, particularly those involving relatively few physicians (such as anesthesia and obstetrical services). Second, the FTE values of female FPs/GPs were consistently smaller than those of their male counterparts.

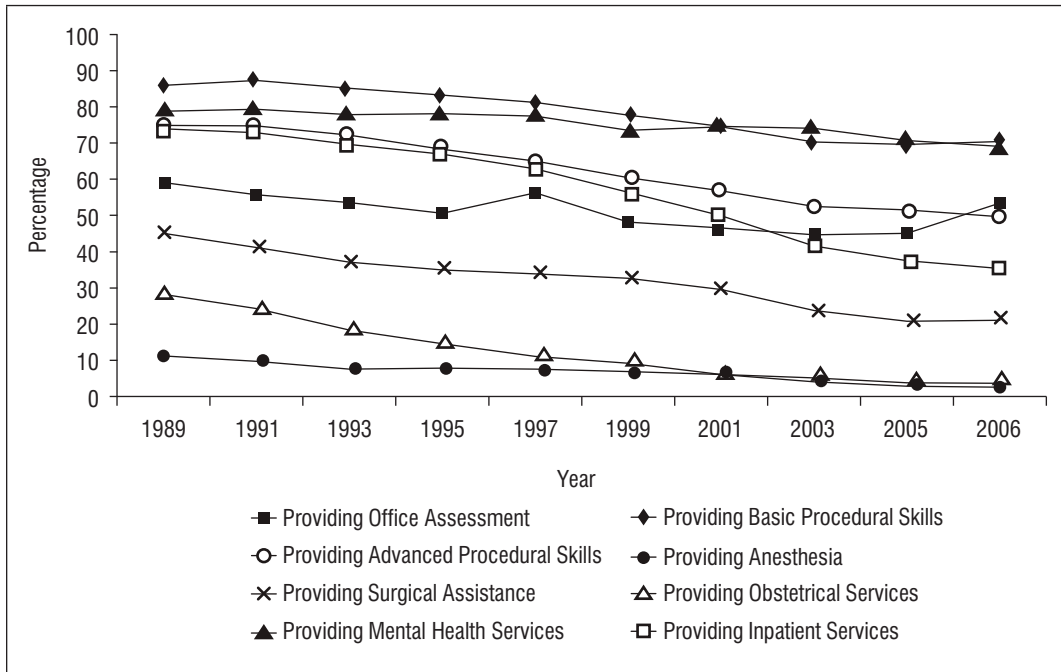
**Figure 22: Percentage of Active Male Family Physicians/General Practitioners Age 50 to 54 in 1989 Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**



**Source**

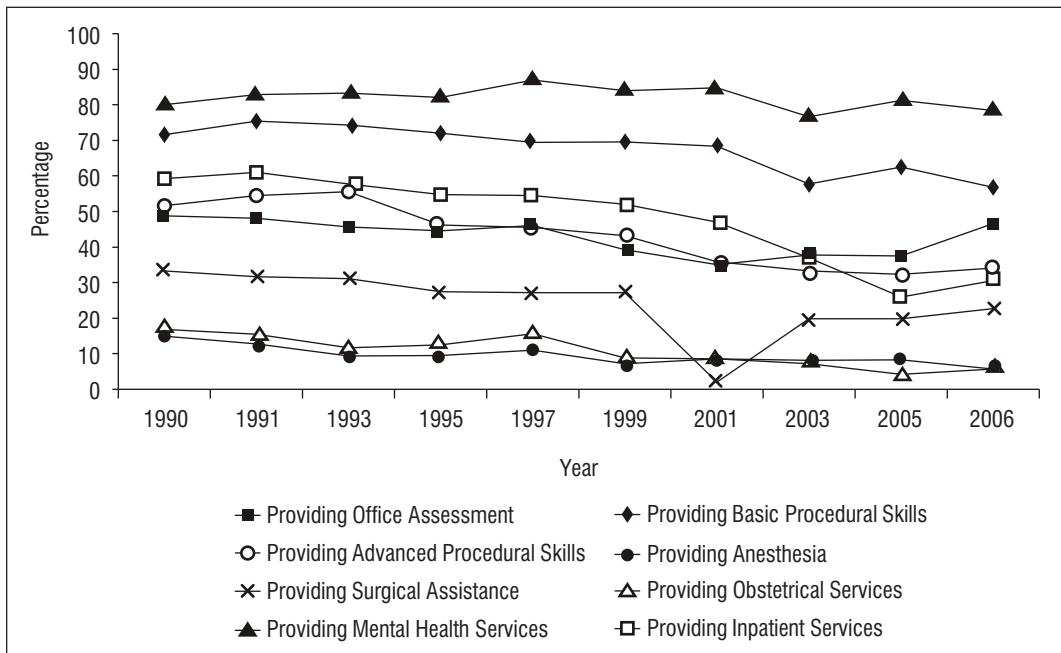
National Physician Database, Canadian Institute for Health Information.

**Figure 23: Percentage of Active Male Family Physicians/General Practitioners Age 55 to 59 in 1989 Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**



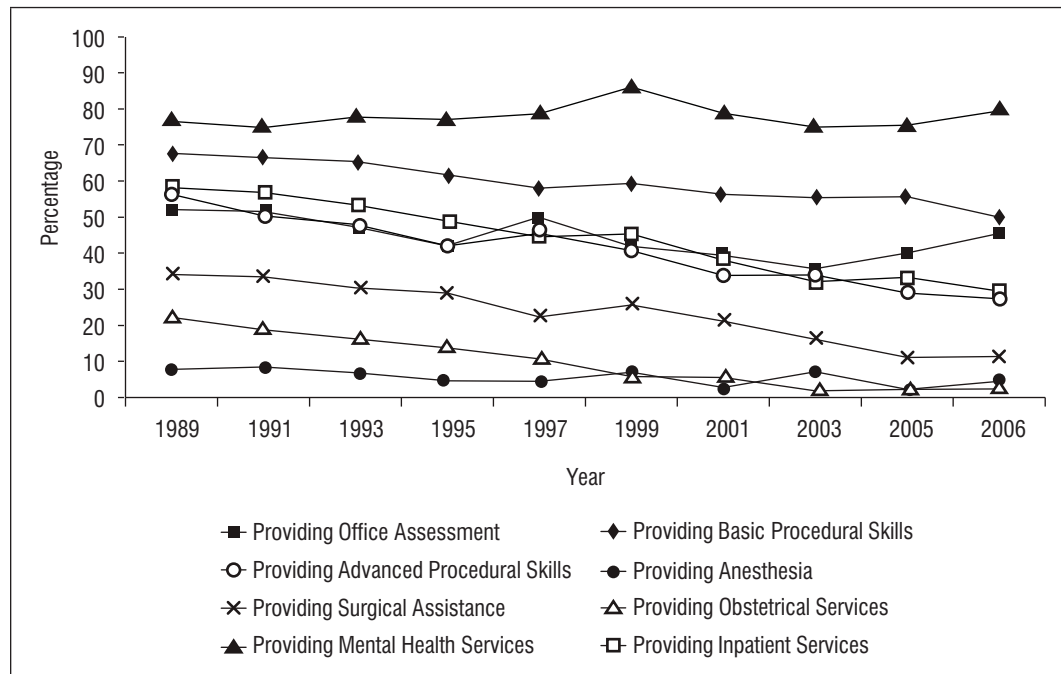
**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 24: Percentage of Active Female Family Physicians/General Practitioners Age 50 to 54 in 1989 Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**



**Source**  
National Physician Database, Canadian Institute for Health Information.

**Figure 25: Percentage of Active Female Family Physicians/General Practitioners Age 55 to 59 in 1989 Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**



**Source**

National Physician Database, Canadian Institute for Health Information.

This case study shows that while some FPs/GPs were no longer clinically active (or no longer billing FFS) before they reached age 65, significant proportions of physicians in their late 60s and in their 70s were still clinically active and billing FFS, though their FTE values declined progressively as they got older. On the whole, there is considerable empirical evidence to support the hypothesis that as FPs/GPs get older they are more likely to limit what they do. Although the provision of some core primary care services remained largely unaffected over the entire study period, the likelihood of a physician providing other types of service was very much related to age. As physicians grew older, they were increasingly less likely to provide such services as hospital inpatient care, obstetrics and services requiring advanced procedural skills. The implications of these findings are discussed in the next chapter.





**Chapter 7**  
Discussions and Conclusion

## 7.1 Summary of Major Findings

Policy-makers and health workforce planners have identified aging of the health workforce, especially the medical workforce, as an important health human resources issue that deserves close attention. It is commonly believed that as more and more physicians approach the traditional retirement age of 65, the number of physicians retiring will grow. But does this mean that most physicians will put away their stethoscopes for good at age 65? This study is an attempt to go beyond the conventional notion of retirement to understand the complexity of the way older physicians work. Starting with a review of the relevant literature, the study is built on what is known about retirement in general and physician retirement in particular. It used data from several sources—the 2007 NPS, SMDB, CMA Master File and NPDB—to paint a more complete picture of the medical practice profile of older physicians and to ensure that the findings are not an artefact of a single data source because, without a uniform definition of retirement, each database may have captured retirement information somewhat differently and counted the number of active or retired physicians somewhat differently. It examined both retirement intentions and behaviours, without assuming that they are the same phenomenon. As well, it tried to estimate the number of minimally active older physicians and asked if it would make a significant difference if they were counted as retired. Most important of all, the study proposed an alternative approach to understanding the impact of aging on medical practice.

Do physicians typically retire when they turn 65? Are physicians increasingly opting for early retirement? Evidence from existing studies suggests that Canadian physicians tend to quit work later than average workers. Also, as far as physicians are concerned, retirement is anything but an either/or issue. Instead of dropping out of the medical workforce abruptly and completely at age 65, many older physicians choose to remain in clinical practice, though not necessarily maintaining the same activity level or doing the same kind of work as when they were younger.

Depending on the source of data used, one gets different estimates of the extent of physician retirement. This may be due to the fact that various databases define retirement differently, capture the number of retirees differently and/or have different criteria for including physicians in or excluding them from the base population. On the basis of self-reported retirement intentions from the 2007 NPS, about 3.2% of all physicians planned to retire in each of the two years following the survey. On the other hand, the estimated average annual retirement rates were 0.54%, based on three years of SMDB data (including semi-retirement), and 0.79%, based on data from the CMA Master File for the same three-year period. If one uses these estimated retirement rates as projection parameters to forecast the size of the Canadian medical workforce 25 or 30 years into the future, one is likely to obtain



substantially different medical workforce projections, assuming that all other variables remain constant. On the basis of these projections, one could come to different conclusions about the future sufficiency of physician supply in Canada.

An attempt was then made to estimate the number of older physicians who were minimally active in clinical practice. Depending on what “older physicians” refers to and where the FTE threshold is set, different proportions of older physicians can be considered minimally active—ranging from 4.9% of those age 65 and older to 7.3% of those age 55 and older, with 2007 as the reference year. Whether these minimally active physicians should be considered retired for the purpose of medical workforce projections or planning is not just a technical but also a policy issue that needs further consideration and deliberation by stakeholders.

Because the concept of retirement is not clearly defined, especially for physicians, and since there is as yet no consensus on what physician retirement means and how it should be measured, this study suggested a different way of understanding how aging affects the way physicians work. If retirement is understood to mean the complete cessation of medical practice, it should be seen as the end point of a continuum of changes in medical practice as a physician gets older. But prior to exiting the medical workforce, many other changes in medical practice may have taken place, such as reduction in workload, scope-of-practice compression or greater involvement in non-clinical work, which may also have implications for medical care provision and physician workforce planning.

While physicians in the baby-boom generation will exit the medical workforce in greater numbers in the coming years, many physicians age 65 and older are likely to remain active in clinical practice, if trends from the recent past continue. But data presented in Chapter 6 shows that their workload, as measured by average FTE values among physicians who billed FFS, tends to decline as they become older. Also, the scope of their practice tends to become narrower, as older physicians relinquish some types of clinical work while retaining others. The case of older FPs/GPs was used as an illustration. Although there were no major differences between FPs/GPs in different age groups with respect to such core clinical activities as office assessments and mental health care, the older FPs/GPs became, the less likely they were to engage in such activities as hospital inpatient care, obstetrics, anesthesia and services requiring advanced procedural skills. Similar findings have been reported by other researchers. For example, Chan and associates found that Ontario FPs/GPs age 65 and older were less likely than those younger than 65 to perform obstetric deliveries (4.6% versus 16.9%), house calls (38.7% versus 60.4%), minor procedures (38.7% versus 62.3%) and emergency department work (1.1% versus 14.8%).<sup>29</sup>

## 7.2 Limitations and Future Actions

This study has several limitations, which are discussed as follows. Many of the limitations are related to inadequate data and/or lack of conceptual clarity or consistency. Each identified limitation calls for remedial actions or may offer opportunities for further research.

- a. Although three sets of estimated retirement rates were produced, each based on a different source of data, there is no way of knowing which one is closer to the true physician retirement situation. This is because there is as yet no consensus on what physician retirement means, and no existing physician database has come up with a foolproof way of identifying and counting retired or retiring physicians. Thus, existing data on retirement and retirement projections should be used with caution and treated as tentative. It is for this reason that this study has proposed an alternative perspective on physician retirement, one that takes into account the complexity of medical practice in the later years of a physician's career.
- b. This study used data from administrative databases (the SMDB and CMA Master File) and a survey (the 2007 NPS) to estimate the extent of physician retirement and found that estimated retirement rates based on the latter are substantially higher than those based on the former. Although it is premature to recommend which type of data should be used, since retirement intentions are often taken to mean actual retirement, there is a need to examine the extent to which intentions translate into behaviours. It would be useful to conduct studies in Canada similar to those carried out in the United States by Konrad and Dall and by Rittenhouse and associates.<sup>36, 46</sup> Their findings show that self-reported intentions to quit clinical practice do not necessarily correspond with actual behaviours. Studies of a similar nature in Canada would help health workforce planners more accurately interpret survey data about retirement intentions or plans. As Rittenhouse and colleagues warned,

increasing reliance on proxy variables for physician attrition such as intention-to-quit is equally concerning in light of research that suggests that “intention to . . .” variables are not strongly correlated with actual behavior. The possibility that current measures of physician attrition are not valid has important policy implications, particularly if these data are used in forecasting models that inform policy decisions regarding physician supply.<sup>46</sup>

At the same time, there is a need to assess the veracity of retirement variables in databases such as the SMDB and the CMA Master File. It is not known at this time the extent to which retired or retiring physicians have been captured by these and other databases. It is also not known whether retirement in one database is equivalent to retirement in another database

with respect to definition and data capture. Also, although these sources of data are usually called administrative databases, with the impression that the data is objectively derived, their retirement information may actually be subjective in nature. For instance, retirement status in the SMDB is self-defined and self-reported by physicians, and there is no way of knowing how they determine whether they are active, semi-retired or fully retired. As a result, rather than reflecting retirement behaviours, the data may simply be physicians' own perceptions of their work status.

- c. Much of the discussion in chapters 5 and 6 concerning older physicians who are minimally active and changing practice profiles is based on FFS billing information. But not all physicians bill FFS, and a growing number of physicians are shifting to alternative payment schemes or blended reimbursement models. This study has also not addressed the possibility that physicians who bill FFS and physicians who do not bill FFS may have different practice patterns. Moreover, FFS billing and FTE information from the NPDB tells us something about billable clinical services but nothing about other activities, such as administration, teaching, consulting and research.

However, it is worth noting that the NPDB is meant to be a multi-phase project. Phase I, which has been completed, is intended to capture, among other things, information on activity levels of and FFS payments to physicians. Phase II, which is currently under way, will add data on clinical activities paid under alternative remuneration schemes (such as salaries and sessional fees), and Phase III will further augment the database with information about non-clinical activities, such as administration, teaching and research.<sup>47</sup> Thus, when phases II and III are fully implemented, the NPDB should be able to shed more light on more aspects of medical practice for more physicians. At that time, we should be able to get a more complete picture of what physicians do and how much they do throughout their entire medical careers.

- d. This study has shown that the practice profile of FPs/GPs tends to become narrower as they get older, but it is not known if there are similar changes to the practice patterns of aging medical and surgical specialists. Other researchers are encouraged to fill this knowledge gap by examining possible differences between younger and older specialists with respect to the way they practise.
- e. Similarly, this study has not explored the implications of scope-of-practice contraction. For example, it is possible that rural Canadians will feel the impact much more than urban residents because, as Pong and Pitblado and others have found, rural Canada relies mostly on FPs/GPs, and rural FPs/GPs tend to have a broader scope of practice than their urban counterparts.<sup>43</sup> If many rural FPs/GPs reduce their practice scope as well

as the amount they work as a result of aging, the effects on medical care provision in rural Canada could be severe. The implications, especially for special populations such as rural residents, of an aging physician workforce and concomitant changes in the way medicine is practised should receive greater policy and research attention.

- f. This study has alluded to the fact that some aging physicians may give up clinical work but not other related activities, such as administration, research, teaching and consulting. However, it has not examined these other activities in any detail, mostly because no reliable data is available on physicians' work other than clinical practice. This is also an area that deserves research attention. Furthermore, if information about non-clinical activities is deemed important for health care planning purposes, efforts will have to be made to collect such information in a systematic manner and on a national basis.

## 7.3 Conclusion

The findings of this study suggest that the impact of an aging medical workforce should be examined from the broader perspective of changing medical practice patterns rather than from the narrow focus on retirement. Aging will impact not only the number of physicians reaching age 65 or exiting the medical workforce but also what older physicians do and how much they do. The conventional notion of retirement may no longer be very useful in medical workforce planning, as there is still no consensus on what it means and no reliable measurements of the extent of retirement. This is borne out in this study by the fact that different databases yield different retirement rates. Likewise, the traditional approach of projecting future physician supply, which is based in part on unproven retirement assumptions and possibly unreliable retirement figures, is no longer adequate. As the proportion of older physicians increases, understanding what they do, how much they do, how long they stay active and so forth is becoming increasingly important and urgent.

While it is tempting to suggest that the concept of retirement be retired, it may be premature or unrealistic, as the notion of retirement is so deeply ingrained in our thinking and daily discourse and so firmly entrenched in social and administrative arrangements. Thus, the following actions are suggested as interim measures:

- Physician data gathering agencies and those involved in physician workforce planning and research need to work together to clarify what retirement means as far as physicians are concerned. They may even have to adopt an arbitrary definition of retirement—like deciding whether a 70-year-old doctor who spends a morning each week seeing patients should be considered retired—to achieve a more or less uniform

measurement until a better or more permanent solution is found. An attempt has been made in this study to assess the number of older physicians who are minimally active. It is hoped that the initial findings will stimulate more research and discussions.

- As this study has shown, existing sources of data, regardless of whether they are administrative or survey data, tend to be inconsistent and problematic in how they capture retirement information and are likely to be less than adequate in generating reliable counts of retiring physicians and retirement rates. Ways need to be found so that databases are as consistent as possible in how they define retirement and how they count retirees, notwithstanding the fact that different databases serve different purposes.
- In addition to assessing the adequacy of retirement rates used in current physician workforce projections, researchers need to develop a strategy to transition from traditional physician workforce planning and projection methods that focus on head counts to a new approach that takes into consideration the changing practice patterns of aging physicians.

The subtitle of this study is *Toward a New Perspective on Physician Retirement*. The word “toward” implies that the study serves as a point of departure, rather than the end point. Adopting a new perspective on physician retirement will require more than collecting better data and conducting more investigations, even though such activities are important and urgently needed. There are other equally critical issues that need to be addressed.

Physician workforce enhancement efforts in Canada have tended to focus on supply issues by increasing medical school enrolments and enabling more international medical graduates to practise in Canada. It is argued that much more should be done to encourage older physicians to remain in the medical workforce. Hall surveyed senior academic pediatricians to find out the extent to which they wished to carry on working after the usual age of retirement.<sup>48</sup> The survey, conducted in both the United States and Canada, found that many of the respondents wanted to continue to use their skills and experience and identified several areas of work that they were interested in pursuing, such as editing and writing, international health, working with research networks, teaching and consulting. It appears that creating more flexible practice opportunities is worth considering. As a first step, it may be useful to survey older physicians in Canada to determine what would motivate them to stay in clinical practice longer. Would they be willing to continue to work if there were less onerous on-call requirements, lighter patient loads, greater flexibility for vacation, easier access to skills-maintenance programs or more opportunities for teaching or research?

As noted earlier, more and more physicians are giving up FFS and opting for alternative payment models. It also appears that physicians are becoming increasingly open to the idea of participating in government-sponsored

pension plans.<sup>xv</sup> Will such policies have unintended consequences? Will the introduction of alternative payment programs or government pension plans change physicians' retirement behaviours in the future? Although it is beyond the scope of the present study to explore such issues, they are clearly important for policy-makers to consider and for researchers to monitor and assess.

The present study focused exclusively on physicians. But physicians do not practise in isolation. They work with and are supported by other health care providers, many of whom face similar population-aging and workforce-attrition challenges,<sup>xvi</sup> though they may respond differently to such challenges. It is thus critical to examine the future supply and practice patterns of physicians in the broader context of the aging of the Canadian health workforce in general.

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xv. Several news items and opinion pieces provide some indications of an emerging interest in public pensions for physicians.<sup>49, 50, 51</sup>

xvi. A series of analyses on the geographic distribution and internal migration of health care workers by Pitblado showed that many health care occupations are aging faster than the general Canadian workforce.<sup>52</sup>

## Appendix A: Questions Regarding Changes to Medical Practice in the 2007 National Physician Survey

The 2007 National Physician Survey asked the following questions regarding changes to medical practice:

With reference to the last 2 years, please check all of the following changes you have already made. With reference to the next 2 years, please check all of the following changes that you are planning to make:

- Reduce weekly work hours (excluding on-call) [asked in both short and long questionnaires]
- Increase weekly work hours (excluding on-call) [asked in both short and long questionnaires]
- Retire from clinical practice [asked in both short and long questionnaires]
- Reduce scope of practice [asked in long questionnaire only]





# Appendix B: NPDB Physician Specialty Categories

## Family Physicians and General Practitioners

- 01 Family Medicine**
  - 010 Residency
  - 011 General Practice
  - 012 Family Practice
  - 013 Community Medicine/  
Public Health
  - 014 Emergency Medicine

## Medical Specialists

- 02 Internal Medicine**
  - 020 General Internal Medicine
  - 021 Cardiology
  - 022 Gastroenterology
  - 023 Respiratory Medicine
  - 024 Endocrinology
  - 025 Nephrology
  - 026 Hematology
  - 027 Rheumatology
  - 028 Clinical Immunology  
and Allergy
  - 030 Oncology
  - 031 Geriatrics
  - 032 Tropical Medicine
  - 035 Genetics
- 04 Neurology**
  - 040 Neurology and EEG
  - 041 Neurology
  - 042 EEG
- 05 Psychiatry**
  - 050 Psychiatry and Neuropsychiatry
  - 051 Psychiatry
  - 052 Neuropsychiatry
- 06 Pediatrics**
  - 060 Pediatrics
- 07 Dermatology**
  - 065 Dermatology

## 08 Physical Medicine/Rehabilitation

- 070 Physical Medicine and  
Rehabilitation
- 071 Electromyography

## 09 Anesthesia

- 075 Anesthesia

## Surgical Specialists

### 10 General Surgery

- 080 General Surgery

### 11 Thoracic/Cardiovascular Surgery

- 086 Thoracic Surgery
- 087 Cardiovascular Surgery
- 088 Cardiovascular/  
Thoracic Surgery

### 12 Urology

- 090 Urology

### 13 Orthopedic Surgery

- 095 Orthopedic Surgery

### 14 Plastic Surgery

- 100 Plastic Surgery

### 15 Neurosurgery

- 110 Neurosurgery

### 16 Ophthalmology

- 115 Ophthalmology
- 116 Ophthalmology/  
Otolaryngology

### 17 Otolaryngology

- 120 Otolaryngology

### 18 Obstetrics/Gynecology

- 126 Obstetrics
- 127 Gynecology
- 128 Obstetrics/Gynecology

#### Note

Although genetics is no longer a subspecialty of internal medicine, it is included in the internal medicine category because the number of physician records assigned to this specialty is relatively small.



## Appendix C: Data for Chapter 4

**Table C1: Percentage of Family Physicians/General Practitioners and Specialists Planning to Retire From Clinical Practice in the Next Two Years, by Age Group and Sex, Canada, 2007**

Age Group	FPs/GPs			Specialists		
	Male	Female	Total	Male	Female	Total
<35	1.1%	0.5%	0.7%	1.1%	0.3%	0.7%
35–44	0.7%	0.7%	0.7%	0.7%	0.2%	0.5%
45–54	1.8%	2.1%	2.0%	1.0%	1.9%	1.3%
55–64	11.4%	11.6%	11.4%	9.8%	10.2%	9.6%
65–74	33.5%	26.5%	32.3%	27.5%	29.6%	27.5%
75+	33.1%	*	35.4%	28.2%	*	27.8%
<b>Total</b>			<b>6.2%</b>			<b>6.5%</b>

**Note**

\* Responses suppressed; column number is less than 30.

**Sources**

2007 National Physician Survey, College of Family Physicians of Canada, Canadian Medical Association and Royal College of Physicians and Surgeons of Canada.

**Table C2: 2007, 2006 and 2005 Activity Status of Physicians Who Were Active in 2006, 2005 and 2004, Respectively, by Age Group and Sex, Canada**

Age Group	Active in 2006	Active in 2007	Semi-Retired in 2007	Retired in 2007	Deceased in 2007
<b>&lt;35</b>					
Male	2,412	2,352	0 (0.00%)	0 (0.00%)	0 (0.00%)
Female	2,727	2,658	0 (0.00%)	0 (0.00%)	0 (0.00%)
<b>35–44</b>					
Male	8,901	8,789	0 (0.00%)	1 (0.01%)	3 (0.03%)
Female	7,075	7,005	0 (0.00%)	0 (0.00%)	2 (0.03%)
<b>45–54</b>					
Male	12,426	12,332	1 (0.01%)	2 (0.02%)	8 (0.06%)
Female	7,055	6,995	1 (0.01%)	4 (0.06%)	1 (0.01%)
<b>55–64</b>					
Male	11,191	11,018	13 (0.12%)	29 (0.26%)	25 (0.23%)
Female	3,109	3,062	4 (0.13%)	13 (0.42%)	1 (0.03%)
<b>65–74</b>					
Male	5,141	4,908	35 (0.69%)	87 (1.72%)	27 (0.53%)
Female	634	604	4 (0.65%)	9 (1.46%)	1 (0.16%)
<b>75+</b>					
Male	1,208	1,130	7 (0.59%)	29 (2.45%)	16 (1.35%)
Female	119	114	0 (0.00%)	3 (2.56%)	0 (0.00%)
<b>Total</b>	<b>61,998</b>	<b>60,967</b>	<b>65 (0.11%)</b>	<b>177 (0.29%)</b>	<b>84 (0.14%)</b>

**Table C2: 2007, 2006 and 2005 Activity Status of Physicians Who Were Active in 2006, 2005 and 2004, Respectively, by Age Group and Sex, Canada (cont'd)**

	Active in 2005	Active in 2006	Semi-Retired in 2006	Retired in 2006	Deceased in 2006
<b>&lt;35</b>					
Male	2,482	2,341	0 (0.00%)	0 (0.00%)	0 (0.00%)
Female	2,743	2,642	0 (0.00%)	0 (0.00%)	1 (0.04%)
<b>35-44</b>					
Male	9,230	9,045	0 (0.00%)	2 (0.22%)	4 (0.44%)
Female	7,029	6,924	2 (0.02%)	2 (0.02%)	0 (0.00%)
<b>45-54</b>					
Male	12,523	12,342	1 (0.00%)	7 (0.06%)	10 (0.08%)
Female	6,771	6,649	2 (0.03%)	12 (0.18%)	2 (0.03%)
<b>55-64</b>					
Male	11,031	10,735	18 (0.17%)	45 (0.42%)	29 (0.27%)
Female	2,790	2,697	10 (0.37%)	17 (0.62%)	2 (0.07%)
<b>65-74</b>					
Male	4,927	4,485	53 (1.12%)	169 (3.57%)	28 (0.59%)
Female	596	540	6 (1.07%)	14 (2.50%)	0 (0.00%)
<b>75+</b>					
Male	1,119	960	21 (1.98%)	59 (5.57%)	20 (1.89%)
Female	107	92	1 (1.01%)	6 (6.06%)	0 (0.00%)
<b>Total</b>	<b>61,348</b>	<b>59,452</b>	<b>114 (0.19%)</b>	<b>333 (0.56%)</b>	<b>96 (0.16%)</b>
	Active in 2004	Active in 2005	Semi-Retired in 2005	Retired in 2005	Deceased in 2005
<b>&lt;35</b>					
Male	2,557	2,458	0 (0.00%)	0 (0.00%)	1 (0.04%)
Female	2,803	2,720	0 (0.00%)	0 (0.00%)	1 (0.04%)
<b>35-44</b>					
Male	9,420	9,254	1 (0.01%)	0 (0.00%)	2 (0.02%)
Female	7,039	6,940	0 (0.00%)	2 (0.03%)	2 (0.03%)
<b>45-54</b>					
Male	12,726	12,569	0 (0.00%)	4 (0.03%)	14 (0.11%)
Female	6,487	6,396	0 (0.00%)	6 (0.09%)	5 (0.08%)
<b>55-64</b>					
Male	10,566	10,366	16 (0.15%)	33 (0.32%)	25 (0.24%)
Female	2,487	2,415	3 (0.12%)	16 (0.62%)	2 (0.08%)
<b>65-74</b>					
Male	4,746	4,473	41 (0.89%)	91 (1.97%)	26 (0.56%)
Female	537	498	3 (0.59%)	10 (1.95%)	1 (0.20%)
<b>75+</b>					
Male	985	881	17 (1.78%)	41 (4.19%)	16 (1.67%)
Female	99	92	2 (2.12%)	0 (0.00%)	0 (0.00%)
<b>Total</b>	<b>60,452</b>	<b>59,062</b>	<b>83 (0.14%)</b>	<b>203 (0.34%)</b>	<b>95 (0.16%)</b>

**Note**

Not shown in this table are numbers in the Other category, which includes physicians who were abroad, in the military, not in practice, on sabbatical, on a leave of absence, temporarily not in practice or unknown.

**Source**

Scott's Medical Database, Canadian Institute for Health Information.

**Table C3: Total Number of Physicians and Number of Retired and Deceased Physicians, by Age Group and Sex, Canada, 2007, 2006 and 2005**

	Total Count of Physicians at Beginning of Year	Number Retired at End of Year	Number Deceased at End of Year
<b>2007</b>			
<b>&lt;35</b>			
Male	1,964	1 (0.05%)	0 (0.00%)
Female	2,246	6 (0.27%) <sup>†</sup>	0 (0.00%)
<b>35-44</b>			
Male	9,319	12 (0.13%)	6 (0.06%)
Female	7,015	13 (0.19%) <sup>†</sup>	5 (0.07%)
<b>45-54</b>			
Male	12,751	17 (0.13%)	16 (0.13%)
Female	7,062	15 (0.21%)	1 (0.01%)
<b>55-64</b>			
Male	11,403	72 (0.63%)	28 (0.25%)
Female	3,251	39 (1.20%)	6 (0.18%)
<b>65-74</b>			
Male	5,647	241 (4.27%)	40 (0.71%)
Female	730	29 (3.97%)	1 (0.14%)
<b>75+*</b>			
Male	1,201	34 (2.83%)	20 (1.67%)
Female	110	6 (5.45%)	0 (0.00%)
<b>Missing Age</b>			
Male	777	0	1
Female	343	1	1
<b>Total<sup>†</sup></b>	<b>62,699</b>	<b>485 (0.77%)</b>	<b>123 (0.20%)</b>
<b>2006</b>			
<b>&lt;35</b>			
Male	2,060	1 (0.05%)	1 (0.05%)
Female	2,323	13 (0.56%) <sup>†</sup>	1 (0.04%)
<b>35-44</b>			
Male	9,526	7 (0.07%)	4 (0.04%)
Female	6,955	27 (0.39%) <sup>†</sup>	1 (0.01%)
<b>45-54</b>			
Male	12,772	17 (0.13%)	9 (0.07%)
Female	6,753	10 (0.15%)	1 (0.01%)
<b>55-64</b>			
Male	11,177	77 (0.69%)	30 (0.27%)
Female	2,883	19 (0.66%)	1 (0.03%)
<b>65-74</b>			
Male	5,497	302 (5.49%)	38 (0.69%)
Female	684	50 (7.31%)	2 (0.29%)
<b>75+*</b>			
Male	1,201	122 (10.16%)	20 (1.67%)
Female	108	13 (12.00%)	1 (0.93%)
<b>Missing Age</b>			
Male	718	1	0
Female	315	2	0
<b>Total<sup>†</sup></b>	<b>61,939</b>	<b>658 (1.06%)</b>	<b>109 (0.18%)</b>

**Table C3: Total Number of Physicians and Number of Retired and Deceased Physicians, by Age Group and Sex, Canada, 2007, 2006 and 2005 (cont'd)**

	Total Count of Physicians at Beginning of Year	Number Retired at End of Year	Number Deceased at End of Year
<b>2005</b>			
<b>&lt;35</b>			
Male	2,159	0 (0.00%)	0 (0.00%)
Female	2,364	14 (0.59%) <sup>‡</sup>	0 (0.00%)
<b>35-44</b>			
Male	9,597	7 (0.07%)	4 (0.04%)
Female	6,922	33 (0.48%) <sup>‡</sup>	2 (0.03%)
<b>45-54</b>			
Male	12,924	21 (0.16%)	10 (0.08%)
Female	6,429	16 (0.25%)	7 (0.11%)
<b>55-64</b>			
Male	10,682	69 (0.65%)	31 (0.29%)
Female	2,544	23 (0.90%)	3 (0.12%)
<b>65-74</b>			
Male	5,191	117 (2.25%)	30 (0.58%)
Female	590	17 (2.88%)	1 (0.17%)
<b>75+*</b>			
Male	980	5 (0.51%)	14 (1.43%)
Female	102	1 (0.98%)	1 (0.98%)
<b>Missing Age</b>			
Male	763	1	2
Female	335	1	1
<b>Total<sup>†</sup></b>	<b>60,484</b>	<b>323 (0.53%)</b>	<b>103 (0.17%)</b>

**Notes**

\* Excludes all physicians older than 80.

† Total number of physicians less number of physicians with missing age.

‡ Some of the retired female physicians may have taken an extended maternity leave and may return to active practice later on.

**Source**

Canadian Medical Association Master File, Canadian Medical Association.

# Appendix D: Estimating the Number of Older Physicians Who Were Minimally Active

Physicians are considered minimally active if their full-time equivalent (FTE) value falls from active to below a designated lower threshold for a period of at least three years.

## Age

Physicians' age is calculated as the difference between their birthdate and the final day of the fiscal year being analyzed (March 31).

## Active

Active FTE thresholds were calculated for both male and female physician groups of family medicine, medical specialists and surgical specialists for each fiscal year. The active FTE thresholds were based on the 40th percentile FTE value of each designated group for each specific data year. When a physician's FTE value was equal to or greater than the calculated active threshold, for a minimum of three consecutive years, that physician was classified as active. A single physician's active FTE value was calculated as the average of the most recent consecutive active years.

## Minimally Active

For physicians to be considered minimally active, they must be considered active first and then have their FTE value fall below a calculated lower FTE threshold. The lower FTE threshold was calculated by selecting a proportion of the active FTE value for a physician. There were three proportional levels used in calculating a physician's lower FTE threshold: 15%, 25% and 33%. The lower threshold would mean that a physician's workload had dropped below 15%, 25% or 33% of what his or her average FTE value was during the active period. A physician's FTE value would need to be at or below the lower FTE threshold for at least two consecutive years immediately preceding the reference year of the analysis for him or her to be considered minimally active.

## Data Gaps

Any physicians with data gaps between their active period and minimally active period were excluded. A physician had to have data in each consecutive year between active status and the reference year of the analysis to be included.

## Multiple Provinces and Specialties

Physicians working in multiple provinces had their FTE values summed to ensure that each physician had only one FTE value for each year. If the physician had FTE values under different specialties, the FTE values were summed and the physician was assigned the specialty of the greater FTE value.

## Total Clinical Payments

Newfoundland and Labrador, New Brunswick and Prince Edward Island each submit physician-level alternative payment data to the National Physician Database. The physician-level alternative payment data was combined with physician-level fee-for-service payment data to calculate a total clinical payment value for physicians in these three provinces. Fee-for-service benchmark values were used to estimate an FTE value based on total clinical payments. These estimated FTE values were used for physicians in these three provinces.

Visual representations of the methodology are below.

Figure D1 displays an example of a physician's FTE records, using 2007 as the reference year for analysis. In this situation, the physician would be included in the analysis and considered retired because he or she had met the minimum three-year active period (1989 to 1996), had FTE values below the lower FTE threshold for the reference year and at least two immediate preceding years (1997 to 2007) and had no data gaps between the active period and the reference year (1996 to 2007).

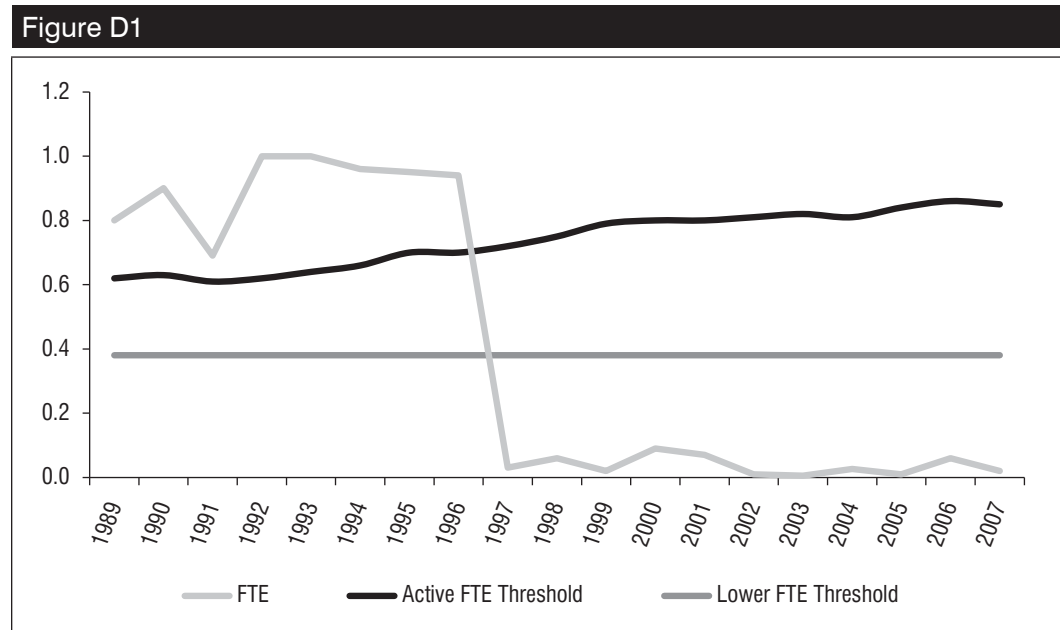




Figure D2 displays an example of a physician's FTE records, using 2007 as the reference year for analysis. In this situation, the physician would be included in the analysis and considered retired. This graph highlights the fact that this physician has two time periods of activity above the active cut-off (1991 to 1994 and 1999 to 2003). The most recent active time period (circled) is used in calculating the average active FTE value. This most recent average active FTE value is used when setting the lower benchmark (15%, 25% or 33%).

Figure D2

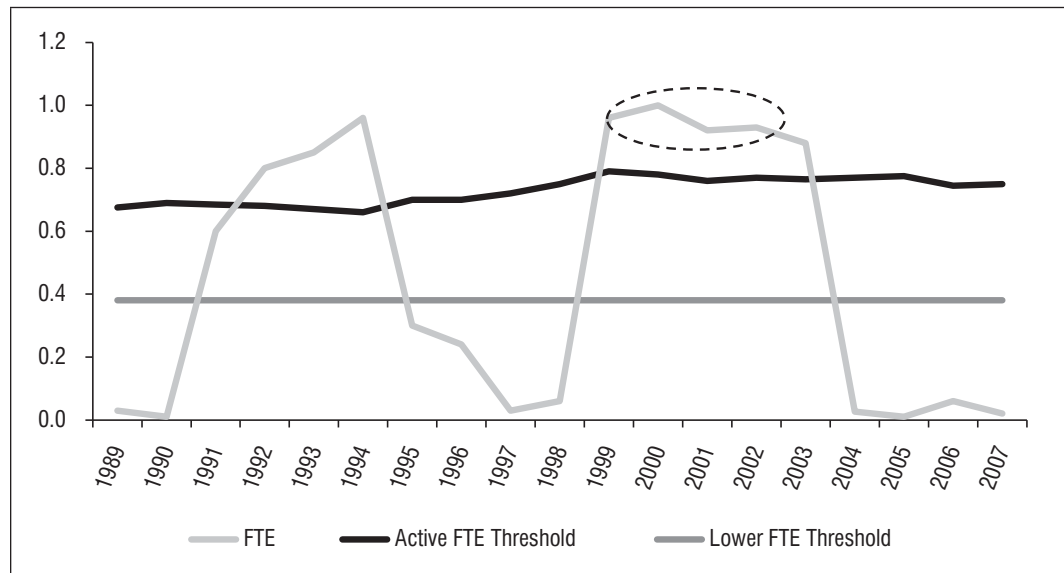
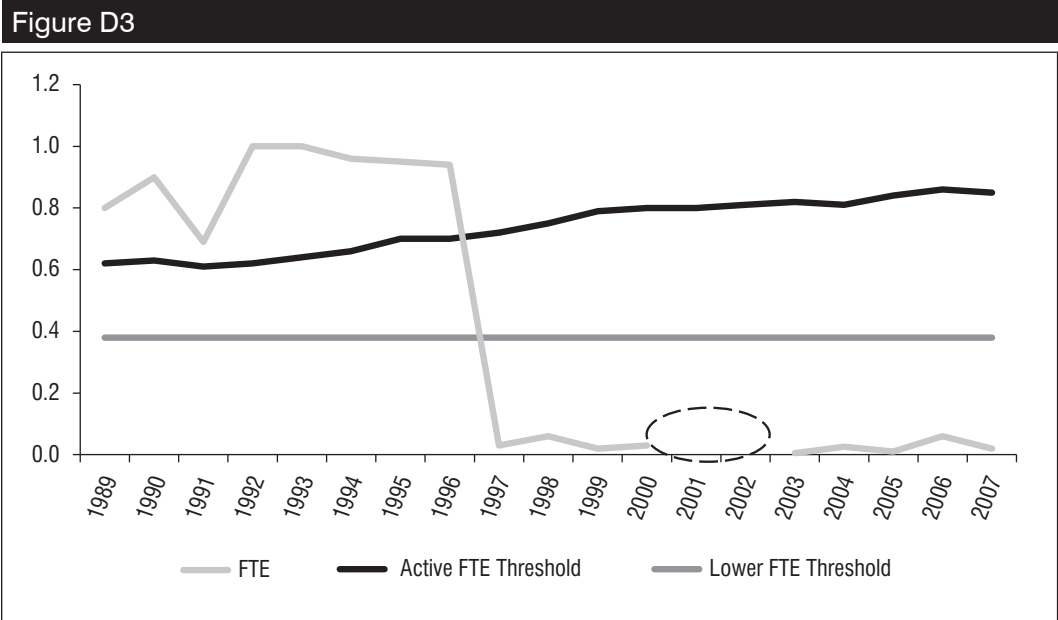


Figure D3 displays an example of where a physician would not be included in the analysis because of data gaps, using 2007 as the reference year for analysis. Although he or she met the minimum active period and retired period, there were data gaps (in circle) between the two periods. Any physician without data in consecutive years between the active period and the reference year was removed from the analysis.



## Appendix E: Data for Chapter 6

**Table E1: Average Number of Fee-for-Service Services Provided by Physicians, by Sex, Specialty and Age Group, Canada, 2006**

Age Group	Family Medicine Male	Family Medicine Female	Medical Specialty Male	Medical Specialty Female	Surgical Specialty Male	Surgical Specialty Female
<40	5,231	3,313	3,532	2,088	4,225	3,583
40–44	6,670	4,111	4,455	2,526	5,357	4,612
45–49	6,867	4,601	4,471	2,769	5,444	5,559
50–54	7,044	4,663	4,876	2,842	5,718	4,676
55–59	7,212	5,197	4,825	2,799	5,409	4,992
60–64	7,091	5,276	4,387	2,962	4,620	5,330
65–69	5,794	4,338	3,953	2,887	3,763	4,445
70–74	4,735	2,763	3,229	2,104	2,875	2,085
75–79	3,530	3,919	2,462	1,432	2,139	1,663
80+	2,156	1,358	2,116	2,113	2,074	3,254
<b>Average Number of Services</b>	<b>6,400</b>	<b>4,122</b>	<b>4,214</b>	<b>2,512</b>	<b>4,696</b>	<b>4,347</b>

**Source**

National Physician Database, Canadian Institute for Health Information.

**Table E2: Average Full-Time Equivalent Values for Physicians Who Billed Fee for Service, by Sex, Specialty and Age Group, Canada, 2006**

Age Group	Family Medicine Male	Family Medicine Female	Medical Specialty Male	Medical Specialty Female	Surgical Specialty Male	Surgical Specialty Female
<40	0.75	0.55	0.79	0.56	0.86	0.67
40–44	0.86	0.63	0.90	0.66	1.03	0.81
45–49	0.89	0.67	0.93	0.72	1.00	0.84
50–54	0.90	0.67	0.96	0.70	1.01	0.73
55–59	0.90	0.70	0.95	0.70	0.94	0.78
60–64	0.88	0.70	0.88	0.73	0.82	0.83
65–69	0.76	0.60	0.81	0.70	0.62	0.65
70–74	0.65	0.44	0.69	0.67	0.46	0.26
75–79	0.52	0.52	0.59	0.47	0.32	0.32
80+	0.35	0.21	0.48	0.52	0.26	0.38
<b>Average FTE Value</b>	<b>0.83</b>	<b>0.62</b>	<b>0.86</b>	<b>0.65</b>	<b>0.86</b>	<b>0.74</b>

**Source**

National Physician Database, Canadian Institute for Health Information.

**Table E3: Number of Active Physicians Who Billed Fee for Service, Six Age–Specialty Cohorts and Corresponding Average Full-Time Equivalent Values, Canada, 1989 to 2006**

Age–Specialty Cohort		1989	1991	1993	1995	1997	1999	2001	2003	2005	2006
<b>Internal Medicine, 50–54 (Male)</b>	<i>N</i>	483	463	456	445	423	372	346	322	295	276
	<i>FTE</i>	0.94	0.99	0.96	0.97	1.00	0.96	0.89	0.82	0.78	0.73
<b>Internal Medicine, 55–59 (Male)</b>	<i>N</i>	391	381	366	343	305	230	203	176	150	136
	<i>FTE</i>	0.90	0.91	0.88	0.87	0.87	0.80	0.71	0.65	0.63	0.61
<b>General Surgery, 50–54 (Male)</b>	<i>N</i>	267	258	243	230	223	193	174	145	137	127
	<i>FTE</i>	0.93	0.95	0.95	0.96	0.92	0.87	0.79	0.69	0.60	0.57
<b>General Surgery, 55–59 (Male)</b>	<i>N</i>	276	265	247	231	193	148	110	90	70	68
	<i>FTE</i>	0.85	0.86	0.84	0.79	0.78	0.65	0.59	0.48	0.45	0.45
<b>Ob/Gyn, 50–54 (Male)</b>	<i>N</i>	182	176	170	161	147	127	115	102	88	85
	<i>FTE</i>	1.00	1.01	0.98	0.94	0.93	0.82	0.73	0.67	0.61	0.54
<b>Ob/Gyn, 55–59 (Male)</b>	<i>N</i>	159	150	147	133	111	83	69	58	44	41
	<i>FTE</i>	0.93	0.93	0.88	0.84	0.77	0.66	0.54	0.42	0.43	0.38

**Source**

National Physician Database, Canadian Institute for Health Information.

**Table E4: Number of Active Male Family Physicians/General Practitioners Age 50 to 54 in 1989 Who Billed Fee for Service, Average Full-Time Equivalent Values and Percentage Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**

	1989	1991	1993	1995	1997	1999	2001	2003	2005	2006
<b>Number of FFS Billings, FPs/GPs</b>	1,527	1,456	1,391	1,326	1,243	1,057	972	915	841	785
<b>Average FTE Value</b>	1.01	1.02	0.99	0.98	0.97	0.95	0.90	0.83	0.78	0.73
<b>Providing Office Assessments (%)</b>	58.3	57.1	54.7	52.3	60.9	53.8	53.9	50.6	49.0	59.1
<b>Providing Basic Procedural Skills (%)</b>	88.8	88.5	87.1	87.0	84.3	82.8	81.5	79.2	76.8	75.3
<b>Providing Advanced Procedural Skills (%)</b>	76.1	75.3	72.6	70.5	69.4	67.5	63.9	60.1	56.1	52.2
<b>Providing Anesthesia (%)</b>	12.5	10.0	9.2	7.5	6.9	7.6	9.2	6.6	7.3	5.2
<b>Providing Surgical Assistance (%)</b>	47.0	44.4	41.0	38.1	36.0	31.5	28.7	21.4	18.8	18.2
<b>Providing Obstetrical Services (%)</b>	31.6	28.3	23.7	18.6	14.6	11.4	8.5	6.3	5.4	4.2
<b>Providing Mental Health Services (%)</b>	81.0	81.5	80.8	81.4	81.0	79.2	77.1	75.2	72.8	74.9
<b>Providing Inpatient Services (%)</b>	75.4	74.7	71.6	69.5	66.5	64.6	60.1	52.6	49.3	42.9

**Source**

National Physician Database, Canadian Institute for Health Information.

**Table E5: Number of Active Male Family Physicians/General Practitioners Age 55 to 59 in 1989 Who Billed Fee for Service, Average Full-Time Equivalent Values and Percentage Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**

	1989	1991	1993	1995	1997	1999	2001	2003	2005	2006
<b>Number of FFS Billings, FPs/GPs</b>	1,388	1,312	1,253	1,163	983	795	678	606	509	470
<b>Average FTE Value</b>	0.96	0.96	0.90	0.88	0.84	0.78	0.72	0.66	0.63	0.59
<b>Providing Office Assessments (%)</b>	59.1	55.7	53.6	50.6	56.3	48.2	46.5	44.7	45.0	53.4
<b>Providing Basic Procedural Skills (%)</b>	86.0	87.3	85.2	83.3	81.3	77.7	74.6	74.1	70.7	69.1
<b>Providing Advanced Procedural Skills (%)</b>	74.9	74.8	72.2	68.3	65.1	60.5	56.8	52.5	51.5	49.6
<b>Providing Anesthesia (%)</b>	11.2	9.7	7.6	7.8	7.5	6.9	6.0	5.1	3.7	3.6
<b>Providing Surgical Assistance (%)</b>	45.0	41.2	37.1	34.9	33.9	32.6	29.5	23.8	20.8	21.1
<b>Providing Obstetrical Services (%)</b>	28.2	24.3	18.4	14.5	11.1	9.1	6.0	4.0	2.8	2.6
<b>Providing Mental Health Services (%)</b>	78.8	79.3	77.9	78.2	77.4	73.6	74.5	70.3	69.7	70.4
<b>Providing Inpatient Services (%)</b>	73.9	72.9	69.6	66.9	62.9	56.4	49.9	41.6	37.5	35.3

**Source**  
National Physician Database, Canadian Institute for Health Information.

**Table E6: Number of Active Female Family Physicians/General Practitioners Age 50 to 54 in 1989 Who Billed Fee for Service, Average Full-Time Equivalent Values and Percentage Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**

	1989	1991	1993	1995	1997	1999	2001	2003	2005	2006
<b>Number of FFS Billings, FPs/GPs</b>	201	187	180	168	154	125	117	111	96	88
<b>Average FTE Value</b>	0.74	0.80	0.78	0.78	0.79	0.75	0.69	0.61	0.59	0.57
<b>Providing Office Assessments (%)</b>	48.8	48.1	45.6	44.6	46.1	39.2	35.0	37.8	37.5	46.6
<b>Providing Basic Procedural Skills (%)</b>	71.6	75.4	74.4	72.0	69.5	69.6	68.4	57.7	62.5	56.8
<b>Providing Advanced Procedural Skills (%)</b>	51.7	54.5	55.6	46.2	45.5	43.2	35.9	33.3	32.3	34.1
<b>Providing Anesthesia (%)</b>	14.9	12.8	9.4	9.5	11.0	7.2	8.5	8.1	8.3	5.7
<b>Providing Surgical Assistance (%)</b>	33.3	31.6	31.1	27.4	27.2	27.2	2.05	19.8	19.8	22.7
<b>Providing Obstetrical Services (%)</b>	16.9	15.5	11.7	12.5	15.6	8.8	8.5	7.2	4.2	5.7
<b>Providing Mental Health Services (%)</b>	80.1	82.9	83.3	82.1	87.0	84.0	84.8	76.6	81.2	78.4
<b>Providing Inpatient Services (%)</b>	59.2	61.0	57.8	54.8	54.5	52.0	47.0	36.9	26.0	30.6

**Source**

National Physician Database, Canadian Institute for Health Information.

**Table E7: Number of Active Female Family Physicians/General Practitioners Age 55 to 59 in 1989 Who Billed Fee for Service, Average Full-Time Equivalent Values and Percentage Involved in Eight Types of Clinical Service, Canada, 1989 to 2006**

	1989	1991	1993	1995	1997	1999	2001	2003	2005	2006
<b>Number of FFS Billings, FPs/GPs</b>	167	155	148	131	112	86	71	56	45	44
<b>Average FTE Value</b>	0.73	0.74	0.67	0.67	0.65	0.62	0.55	0.53	0.52	0.45
<b>Providing Office Assessments (%)</b>	52.1	51.6	47.3	42.0	50.0	41.9	39.4	35.7	40.0	45.5
<b>Providing Basic Procedural Skills (%)</b>	67.7	66.5	65.5	61.8	58.0	59.3	56.3	55.4	55.6	50.0
<b>Providing Advanced Procedural Skills (%)</b>	56.3	50.3	48.0	42.0	45.5	40.7	33.8	33.9	28.9	27.3
<b>Providing Anesthesia (%)</b>	7.8	8.4	6.8	4.6	4.5	7.0	2.8	7.1	2.2	4.5
<b>Providing Surgical Assistance (%)</b>	34.1	33.5	30.4	29.0	22.3	25.6	21.1	16.1	11.1	11.4
<b>Providing Obstetrical Services (%)</b>	22.2	18.7	16.2	13.7	10.7	5.8	5.6	1.8	2.2	2.3
<b>Providing Mental Health Services (%)</b>	76.6	74.8	77.7	77.1	78.6	86.0	78.8	75.0	75.5	79.5
<b>Providing Inpatient Services (%)</b>	58.1	56.8	53.4	48.9	44.6	45.3	38.0	32.1	33.3	29.5

**Source**  
National Physician Database, Canadian Institute for Health Information.



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