

**Looking into the Canadian crystal ball: “Who are the  
doctors of tomorrow and what will they do?”**

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### **Preamble**

Experience has long demonstrated that the only sure thing about physician resources forecasting is that forecasts will be wrong. Numerous uncontrollable factors that impact the medical workforce make accurate predictions about future workforce needs an impossible task. The effects of aging on the general population and providers, advances in diagnosis and treatment modalities, the constant flux in the policy and fiscal landscapes, and attitudinal changes in both providers and the public, to name a few factors, make any conjectures on the “doctors of tomorrow” about as predictable as a roll of the dice.

That being said, we do have mounting information and abundant intuition that may help sketch out a likely picture of tomorrow’s doctors and what they might be doing.

### **The changing medical workforce profile**

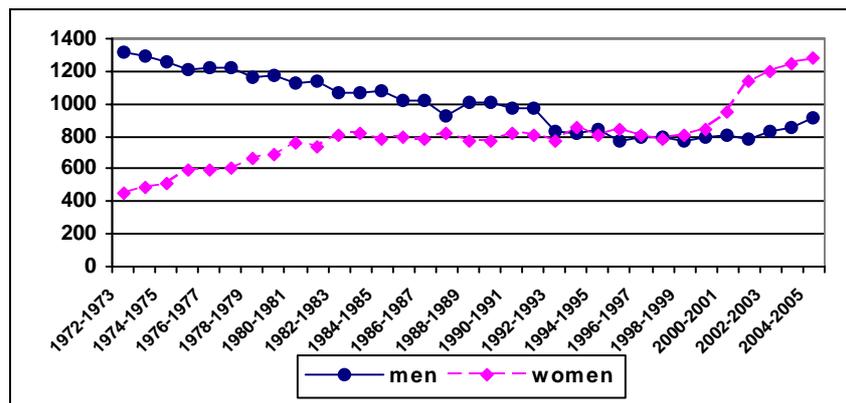
New technology is not only changing the delivery of health care, it is also enabling the collection of a vast array of information on the providers who are at the core of this vast enterprise, the physicians and surgeons of our country. From this information, researchers, analysts, commentators and planners try to understand the current lie of the land and prognosticate how this complex landscape may shift in time. This quest to better understand the now, and to better inform the future, was the prime motivating factor to develop yet another source of data on Canada’s physicians. The National Physician Survey<sup>1</sup> (NPS), first conducted in 2004 and scheduled to occur every three years, complements the myriad of data sources on the 60,000 physicians and surgeons in this vast and most often sparsely populated land of some 31 million inhabitants. Unlike the long-established national data sources — such as those on the existing physician population developed by the Canadian Institute for Health Information (CIHI), the Canadian Medical Association (CMA) and provincial/territorial databases, and those of the Association of Faculties of Medicine of Canada (AFMC) and the Canadian Post-MD Education Registry (CAPER) on the physicians in training — which predominantly collect demographic and salary information about this nation’s physician population, the NPS sought to gather qualitative information to complement existing holdings.

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<sup>1</sup> The National Physician Survey (NPS) is a collaborative project of the College of Family Physicians of Canada, the Canadian Medical Association and the Royal College of Physicians and Surgeons of Canada. It is funded by the Canadian Institute for Health Information, Health Canada and the partner organizations. The NPS was carried out as a self-reported survey sent to all 61,751 licensed physicians in Canada’s provinces and territories. The estimated eligible population was reduced to 59,933 as a number of physicians in the original pool were retired, in residency programs or reported being abroad. In total, 21,296 physicians replied to the survey (11,041 of 30,903 eligible general practitioners/family physicians and 10,255 of 28,496 eligible specialists.)

With this mosaic of information, it is becoming somewhat easier to piece together an image of the now present and of what the future may be. Data from the AFMC and CAPER show us that tomorrow's medical workforce will increasingly be composed of women. Since the year 1993-94, enrolment in Canadian medical schools has been at least fifty percent female (Figure 1) and since 2000 women have come to comprise nearly half of the postgraduate medical educational programs (49.7% in 2005-2006). Their representation is highest in family medicine (65%), pediatrics (73.5%) and lowest in surgical specialties where, overall, women fill just over one third of residency positions (35.9%), except for obstetrics and gynecology (78.4%)<sup>2</sup>.

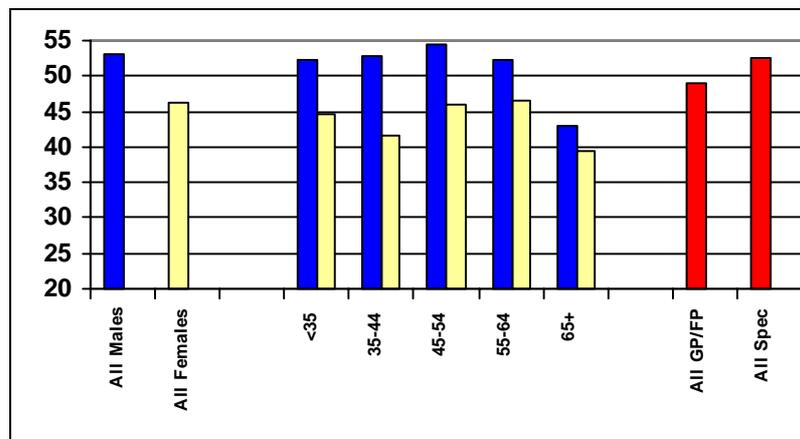
Figure 1: Gender Differences in First-Year Medical School Enrolment: 1972-2005



Source: Canadian Medical Education Statistics, 2004, Association of Faculties of Medicine of Canada

What does this mean for the future? The NPS showed that overall female physicians average about seven hours less per week than men, a trend that is maintained regardless of whether they are working in family medicine or specialty care and their age group (Figure 2). This difference is due to a number of factors such as the additional responsibilities placed on young women doctors who are also caring for their young children. The NPS revealed that while women physicians with children less than 6 years old reported, on average, 13 hours per week less professional activity than male physicians with children the same age, the gap narrowed between men and women without dependents (Figure 3).

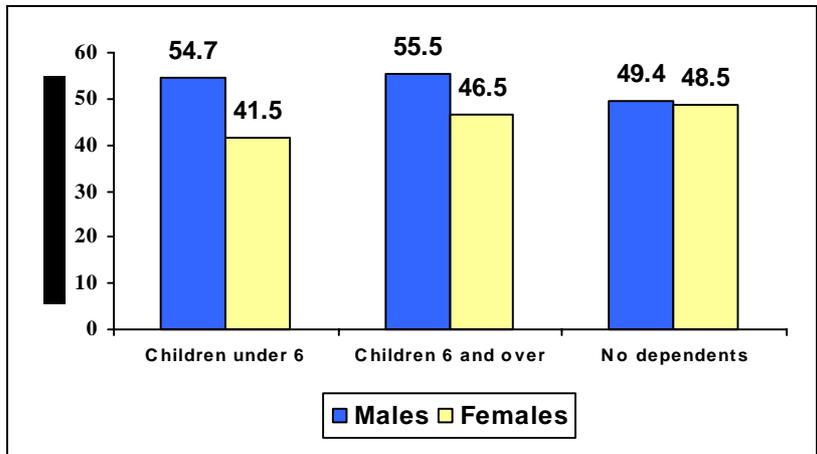
Figure 2: Hours/week, excluding on call by Sex, by Age/Sex and Broad Specialty



Source: 2004 National Physician Survey

<sup>2</sup> Source: Canadian Post-MD Education Registry, "Annual Census of Post-M.D. Trainees: 2004-2005". Ottawa 2005

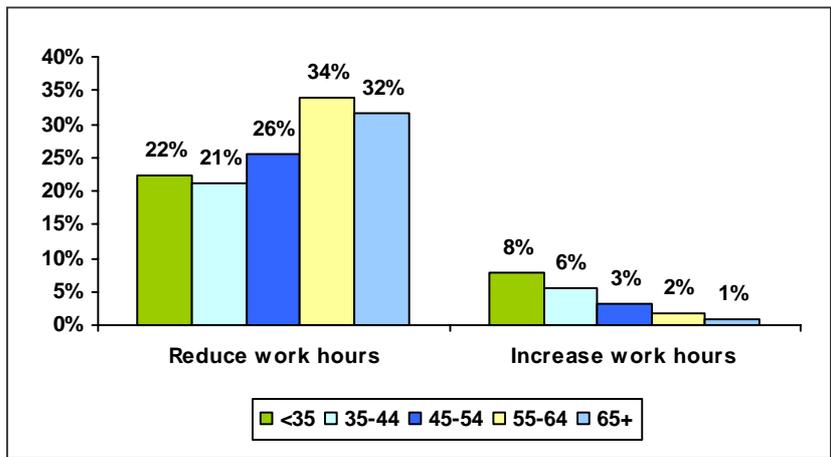
Figure 3: Hours/week, By Sex (excluding on call) by Dependents



Source: 2004 National Physician Survey

The NPS confirmed another trend in practice patterns that warrants attention. While 16% of doctors polled indicated they have reduced their weekly work hours in the past two years, fully one quarter reported they plan to reduce their weekly work hours in the coming two years. The survey respondents identified reducing the number of hours they worked as the most significant change in their practices, both over the past two years and for the coming two years (Figure 4).

Figure 4: Percent of Physicians Planning to Reduce Work Week (excluding on call) Within Next Two Years



Source: 2004 National Physician Survey

Another finding that impacts on physician supply in Canada is the significant number of physicians planning to retire in certain specialties. The survey indicates that while 6.3% of all physician respondents stated they plan to retire in the next two years, this rate is more than doubled for general internists (14%). Similarly high rates are also reported for pathologists, general surgeons and otolaryngologists where at least one in 10 specialists reporting plans to retire in the next two years. For all physicians, this would translate to a 3.1% annual rate of retirement, significantly higher than the actual average annual retirement rate of 1-2% per year for at least a decade.

The stated intentions of many physicians to reduce their work week or retire, and the increasing percentage in the overall workforce of female doctors who tend to work fewer hours give just cause to reflect on the effects of this growing reduction in the effective supply of physicians, and how this will impact on the delivery and organization of health care. In addition to the factors delineated above, the NPS hints of a very different landscape in the future as 14% of physicians reported intentions to reduce their scope of practice, while only 4.7% stated they plan to expand it.

International medical graduates (IMG) have always made up a significant part of the Canadian practising physician pool. For decades, nearly 25% of the Canadian medical workforce has been composed of IMGs. There are, however, some very significant regional differences. According to the Canadian Medical Association masterfile, over 40% of physicians in Newfoundland and Labrador and over 50% of MDs in Saskatchewan are IMGs. Just over half (54%) are GP/FPs and 46% are specialists. It should be noted that some of the IMGs classified as GP/FPs are actually non-certified specialists so the true proportion is probably higher.<sup>3</sup>

The NPS shows that although many IMGs who migrated to Canada in recent years may have begun their practices here in rural settings, the majority are serving primarily urban (63%) or small town (14.5%) populations. The NPS also elucidated on some of the differences in practice patterns between Canadian graduates and IMGs. For example, 16% of IMGs reported inner city practices compared to 10% of Canadian graduates. In selecting a career in medicine, factors such as influence of the family, prestige and availability of training opportunities feature more prominently for IMGs than they do with Canadian graduates. When asked to select the most important factor that led to current career choice, 7.2% indicated “influence of the family” compared to only 3.6% of Canadian graduates. In terms of time spent providing direct patient care and total hours worked in a week, IMGs providing primary care reported 3.2 more hours per week spent on direct care and 3.9 hours more for all professional activities combined.<sup>4</sup>

The contribution made by IMGs to medicine in Canada is well appreciated. Although active recruitment of IMGs is greatly frowned upon, there are many initiatives under way to facilitate their integration into the Canadian medical workforce, such as: the establishment of a national credentials verification agency, expanding access for IMGs to the Medical Council of Canada exam which is a first step in the licensing process, and the development of alternative pathways to certification. The Government of Canada is also funding numerous initiatives, as part of a multi-faceted strategy to improve recruitment and retention of health care professional in Canada. These latter initiatives are described in the final section of this paper.

It is increasingly evident from the data that the manner in which medicine is being practiced is changing and will continue to do so. This likelihood is further assured with current talks of important changes in postgraduate medical education (PGME). The two national certifying colleges – the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada – are actively discussing the development of a core competency model for PGME. The long term goal of the Core Competency Project is to improve the structure of PGME in order to facilitate: optimal flexibility in PGME training, appropriate timing of career choice, and high quality residency education in alignment with societal need. The impact of any changes to the medical educational system on the quality of health care, the make-up of the medical workforce, and timely access to the appropriate provider are being

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<sup>3</sup> Buske, L. “Abstract: CERF Conference on Health Human Resources”, May 2005. [www.nsp-snm.ca](http://www.nsp-snm.ca) (last accessed October 11, 2005)

<sup>4</sup> Ibid

carefully studied before any changes are implemented. Care not to destabilize further this country's health care system is particularly important given the clear signs of shifting practice patterns among the current and future medical workforce, and the definitive impact this will have on the effective supply of physicians and surgeons who are trying to better balance their personal and professional lives at a time when their services are increasingly in demand. Also, the growing trend toward interprofessional care and the need to train Canada's future physicians to function in these dynamic settings will require the medical educational system to make adjustments. Thus, changes can be expected not only in curricular content and the manner in which training is organized and delivered, but also in the number and type of trainees.

Looking to the more distant future, of all medical students who responded to the NPS (first to fourth year students) 83% stated that debt load will not or will only slightly affect their choice of specialty while 48.5% reported earning potential as a moderate or very important factor in choice of specialty. More than 75% of physicians in training and those in practice reported in the NPS that intellectual challenge/stimulation was one of the factors that led them to their career, and just under 64% of practicing physicians identified the doctor-patient relationship as an important factor. Also respectively ranked first and second among the most important factors that led to physicians' career choice, the NPS shows that the marriage of science (intellectual stimulation) and art (relationship with patients) continues to prevail as a prime motivator for those who chose a career in medicine.

### **Physicians in 2020 - remodelled and relevant?**

The physician traditionally has been an expert in both the science and the art of medicine. The skilled clinician is adept, as well, in understanding how illness affects the person as he or she copes with life. The physician hears complaints and symptoms, examines for changes and signs, investigates, diagnoses, prognosticates and provides care and therapy to achieve the best outcome possible for the patient, the sufferer. The goal is to restore health or, at the very minimum, to alleviate suffering.

However, while today's physician will claim to practice both aspects of this role, in fact many have focused their activity by developing expertise in a single system, a specific area of knowledge and/or a set of procedures and the rise of the specialist has shaped the system in particular ways. The generalist has come to rely on specialist expertise for increasingly larger proportions of his or her patient population. The public has learned to demand this expertise. We now need a consortium of physicians to provide care for the patient with chronic recurring or multi- system disease. Specialist care is often supported by other health professionals in order to deliver care in a team-like environment.

The concept of interprofessional care is seen as an essential component of primary health care renewal. Health care outside the hospital has always been a combination: medical care, often through the private office of a family physician and health care; promotion and disease prevention, often through public health offices and nursing systems. Now new approaches to primary health care are encouraging the development of interprofessional teams to provide a broad range of health care services in the community.

New medical and general technology also will change the way physicians practice. Computers with extensive data bases and consensus-derived algorithms for investigation, diagnosis and therapy are far superior to the knowledge base of even the best "medical expert". Voice recognition and analysis can be expected to identify

critical symptoms. Every electrical impulse or image can be digitized and therefore analysed. Diagnosis of single gene abnormalities is being complemented by an understanding of multi-gene determinants of health and disease. Early detection of specific risk factors will lead to lifestyle advice and early preventative interventions. DNA and RNA technology will assist in early diagnosis of all aspects of medical illness from microbiologic disease to malignancy. Pharmaco-genomics will permit tailor-made therapies for individuals, predicting the best drug and lifestyle combinations for the least adverse effects.

What roles will the physicians fulfil in 2020? Will “clinical acumen” and the integration of symptoms, signs and investigations by the experienced clinician be seen as dangerous or irrelevant when compared to data analysis linked to the latest research enabled through computer technology? Or will new technologies, physician attitudes, and policy-makers’ approach to primary care give rise to a system where both patient-oriented and technology-oriented practitioners have a respected place? Will new physicians find there a mode of practice that satisfies their professional and personal aspirations?

It seems probable that the primary health care generalist will be a significant partner in a team whose role will be to focus on the empathetic care of the person, the family, the community and the population. They will retain the expertise to inform communities, develop health care programs and manage specific community health problems. Working with the patient in a multi-professional team, the clinician of the future will have developed the expertise, skills and attitudes to be a communicator, an advisor and an interpreter of the vast array of information that will flow from information systems and databases collected on each patient. The team will listen to the individual, help manage their health issues, coordinate their long term care and assist their interaction with and navigation through the many computer based data and information systems. The team will also manage their passage through each of the systems of care, whether home, ambulatory, or institutional.

If current approaches in PGME and the overall organization of care continue to prevail, the majority of specialist physicians will become more and more focused, technically oriented and research-based. She or he too will work in teams, discovering and translating new knowledge into diagnostic computer software, developing clinical algorithms and managing macro and micro robotics. The role will be less patient-centred and the medical interaction predominantly with the generalist management team.

The maintenance of quality, competence and patient safety will be managed as an ongoing program through information technology-based real-time audits which will be measured against global standards. Continuing professional development will be continuous and directed by the work experience and quality measures rather than decided individually. Lifestyle considerations will be optimized for each professional based on personal needs, family commitments and health issues. As a result there will be very little income differential among the various professionals who comprise either generalist or specialist health care teams. Performance, productivity and competency will become the major determinants of income and status.

As physicians and the profession embrace “the new”, as they must – new knowledge, new technologies and new patterns of practice – it will be their ability to provide personal, empathetic care for the patient, that vulnerable, fearful, complex individual who is at the core of what we do, that will ultimately determine success.

## **Strategies to reshape the health workforce, and the role and work of doctors of tomorrow**

The government of Canada recognizes the vital role that physicians play within the Canadian health care system. Physician issues such as physician supply, maldistribution in rural, remote, and urban areas, incentives, and student debt repayment all have a significant impact on access to, and delivery of health care services in Canada. While important resources have been committed to aide the provinces, territories, and stakeholders to relieve some of the pressures physician issues create, the federal government's goal is to utilize a broader perspective which considers a wider range of health care professions to enhance HHR in Canada.

Health Canada's Pan-Canadian HHR Strategy seeks to respond to commitments, set by the First Ministers of Health in 2003 and 2004 Accords, by securing and maintaining a stable and optimal health workforce in Canada, and supporting overall health care renewal. Three initiatives are encompassed under this strategy:

- Pan-Canadian Health Human Resource Planning;
- Interprofessional Education for Collaborative Patient-Centred Practice; and
- Recruitment and Retention of Health Care Providers.

Planning for HHR in Canada has traditionally been a jurisdictionally-led activity. In recent years, it has become clear that appropriate Pan-Canadian data, forecasting models, and research on HHR are still wanting. In the case of existing data, there are gaps and a lack of consistency concerning how and what data is currently collected across jurisdictions. In addition, the traditional method of HHR planning in Canada has not encouraged collaboration between the federal, provincial, and territorial governments with respect to addressing the supply and demand issues of Canada's health care workforce.

Based on past experience and current demand, Health Canada is working to develop the capacity for ongoing pan-Canadian planning through a number of initiatives. Recently federal/provincial and territorial jurisdictions have approved of a framework for collaborative pan-Canadian HHR planning. In order to plan effectively, planners, policy and decision-makers require sufficient and accurate data. To this end, Health Canada has acquired the services of CIHI to develop minimum data sets. These data sets will be used to inform the planning process and will guide the collection of HHR supply data in Canada. CIHI is also involved in a project to develop databases for health professional groups, beginning with five key groups identified by the provinces: pharmacists, occupational therapists, physiotherapists, medical laboratory technologists, and medical radiation technologists). Health Canada has also entered into an agreement with Statistics Canada to collect education data regularly. These data will provide information on the education system's capacity to produce a sufficient supply of health providers. Health Canada is working with the provinces and territories to generate an inventory of HHR models and to develop a network for sharing. Finally, the above mentioned work is being informed by the research collected through Industry Canada sector studies on nursing, pharmacy, health executives and physicians-Task Force. These initiatives will have a significant impact on Canada's planning for its HHR, including activities that incorporate changes in workforce composition and work-life balance.

Recent trends towards interprofessional team-based care suggest that the roles and responsibilities of various health care providers are evolving. It is widely acknowledged that the way we educate health providers is key to achieving system change and ensuring that health providers have the necessary knowledge, skills, attitudes and training to work effectively in interprofessional teams within the evolving health care system. Interprofessional care may have a profound impact on the way

physicians practice in the future. Growing scopes of practice for other health care providers will allow physicians to see a greater number of patients in a similar amount of time, improving patient access to care.

Health Canada is working to assist the jurisdictions in developing a training capacity which fosters interprofessional teams. Health Canada has created a national expert committee (27 members) to provide expert advice on the development, promotion and implementation of its initiative for interprofessional education for collaborative patient-centred practice (IECPCP). To date, it has completed a literature review and environmental scan to determine what programs already exist in this area, and a series of commissioned papers exploring key concepts. Eleven projects have been funded to support innovative initiatives in the area of IECPCP. Proposals are under review for a second funding cycle as well as complementary projects on liability, and legislation and regulation issues.

There are current and impending imbalances in the supply of health care providers across a wide variety of disciplines. As the health workforce continues to age, as demand for certain services increases, and as the workplace becomes increasingly global, the need to appropriately recruit and retain HHR becomes progressively more essential. This need is often exacerbated in more remote geographical areas of Canada where undersupply of providers is a significant challenge. This imbalance threatens the system's capacity to deliver health services to Canadians.

Health Canada is undertaking work to help improve recruitment and retention of health care professionals in Canada through four streams:

#### Healthy Workplace Initiative (HWI)

Currently, there are eleven funded projects through HWI to expand existing initiatives.

#### Promotion of the professions

Health Canada, in collaboration with the Canadian Medical Association and the Canadian Nurses Association, has funded a television and radio campaign to promote health care careers. Further projects are planned to help promote health careers in general and family physicians in particular.

#### Effective Deployment of Personnel

A research paper that provides an outline of current deployment practices in Canada has been completed and a "deployment conference" to profile innovative practices was held in September 2005.

#### Integration of Internationally Educated Health Professionals

The Internationally Educated Health Professionals initiative aims to promote innovative approaches, and build an effective and efficient foundation for the assessment, clinical placement and integration of internationally trained health care professionals, both through direct support of Canada-wide activities and through contributions to provinces and territories.. While this initiative is expanding to include other health care providers, the majority of work to date has centered on IMGs. Through this multi-faceted initiative, a number of projects have already come to fruition or are well on their way to completion:

- sizeable funding (approximately \$3 million) has been provided to provincial and territorial IMG assessment projects;
- the National Assessment Collaboration has been established to standardize assessment criteria across the country;
- an orientation program is being developed to provide immigrants with an understanding of cultural, legal, ethical and organisational aspects of medicine in Canada;

- a faculty development program for teachers of IMGs is nearing completion, and;
- a national IMG information website has been developed to provide immigrants with information on obtaining licensure to practice medicine in Canada (<http://www.img-canada.ca>).

Preliminary work has begun to model the work done for IMGs with internationally trained nurses and five other health professions identified as priority by the provinces (pharmacists, occupational therapists, physiotherapists, medical laboratory technologists, and medical radiation technologists).

Improved recruitment and retention of health care professionals will have a significant impact on the way physicians practice in the future, and will ease the pressures on this country's highly demanded but limited medical supply. Health Canada's recent work has laid the groundwork for continued success in health care renewal through the enhanced planning and management of Health Human Resources. Furthermore, successful collaboration between Health Canada, other federal departments, provinces, territories and stakeholder organizations has set the stage for an ongoing and united approach to addressing Canada's challenges with respect to HHR.

### **Conclusion**

As is described in this paper, much information exists about Canada's physician workforce and its overall HHR, and more is forever sought. This paper also gives a flavour of the intensity of planning, research, investment and discussion that is occurring throughout the land as Canada continues to strive to ensure that the health care needs of its citizens are met. One thing is certain in this uncertain business of speaking about the future – change is afoot across the country. It is with great optimism that many of us anticipate the fruits of all these labours.