# TASK FORCE ON PHYSICIAN SUPPLY IN CANADA

**Prepared by Lorne Tyrrell and Dale Dauphinee**
**on behalf of the**
**Canadian Medical Forum Task Force**

Co-chaired by
Dr. Hugh Scully, President of Canadian Medical Association (CMA)
And Dr. Lorne Tyrrell, President of the Association of Canadian Medical Colleges (ACMC)

November 22, 1999

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**Canadian Medical Forum Task Force on Physician Supply in Canada**

**Co-chaired by**
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## Executive Summary

This paper has been prepared by the Canadian Medical Forum Task Force on Physician Supply to assist stakeholders to make timely and strategic decisions to address Physician Supply in Canada. A second Task Force of the Canadian Medical Forum has been mandated to examine Health Care Delivery Models. The Canadian Medical Forum is an umbrella organization which includes the Association of Canadian Medical Colleges, the Association of Canadian Teaching Hospitals, the Canadian Association of Internes and Residents, the Canadian Federation of Medical Students, the Canadian Medical Association, the College of Family Physicians of Canada, the Federation of Medical Licensing Authorities of Canada, the Medical Council of Canada, and the Royal College of Physicians and Surgeons of Canada. The Task Force on Physician Supply comprises one representative from each of the above organizations and also includes representation of the Consumers' Association of Canada, the Canadian Nurses Association, two lay members, and a guest from Health Canada.

This paper briefly examines the history of physician supply in Canada. Following the Hall Commission of 1964 and the introduction of universal medical care, there was a significant increase in medical school enrolment and four new medical schools were opened (Sherbrooke, McMaster, Memorial, and the University of Calgary). In addition, Canada's physician supply depended heavily in the 1960s and 1970s on international medical graduates (IMGs). By 1975, Canada had removed the "preferred status" of physicians immigrating to Canada. This decreased physician supply from the IMG pool. In 1991, Barer and Stoddart recommended a decrease in medical school enrolment by 10%. These actions decreased physician supply from a peak of 2,640 in 1974 to a low of 1,822 by 1997. During this interval, Canada's population grew from 22 million to 30.5 million.

The stresses of physician shortages are apparent in Canada. Physician shortages are reported in urban as well as rural and remote areas. Many specialties are reporting shortages (e.g. Anesthesia, Psychiatry, Radiology, Obstetrics, Radiation Oncology), and physician morale is low. Waiting lists have grown. The single most objective sign of a physician shortage has been the significant increase in physicians recruited on "temporary employment authorization" (202 in 1995, 582 in 1996, 790 in 1997).

The current physician supply will not keep pace with the need for physicians. Barer and Stoddart in 1991 indicated that the ratio of physicians/population should not decrease from 1.9/1000. Today it is 1.85/1000. It will decrease to 1.4/1000 by 2021 based on the current physician supply. This will occur at a time when the need for physicians will increase as a result of increased knowledge and technology, the emergence of new diseases (i.e. AIDS and hepatitis C), aging of the population, and increased expectations of the population. Other

factors affecting physician supply include an increase in physician retirement beginning in 2005 as a result of enrolment and recruitment of IMGs in 1960s and 1970s, feminization of the physician workforce, changing lifestyle expectations of physicians, and regionalization with increased office workloads with changing hospital practices.

There are 56,000 physicians licensed in Canada. At a steady state, 3.5% will retire, die, emigrate or leave practice each year (replacement 1960). Population growth will continue between 300,000 to 350,000 per year requiring between 540 to 600 new physicians. To maintain our physician population ratio of 1.8 to 1.9 per 1000, Canada needs a physician supply of approximately 2500 per year. Our current supply is less than 2000. Canada's medical school enrolment of 1570 for a population of 30.5 million (1 per 19,000), is far below the UK at 5600 positions for 61 million (1 per 12,200) and Australia at 1400 positions for 19 million (1 per 13,500).

We recognize and acknowledge the complexity of health care delivery and the interrelationship between work force issues and health care delivery models. We acknowledge that increasing enrolment in medical schools and postgraduate training (residency) programs is not the only solution to this complex problem. Nevertheless, it is our position that there are sufficient data and evidence to justify a rational managed increase in enrolment in Canadian medical schools at both the undergraduate and residency levels for the following reasons: first, increasing enrolment and residency positions are logical components of short- and long-term strategies; and second, if we delay the decision to increase enrolment, Canada will sacrifice the principle of self-sufficiency in physician workforce supply. As a result, we will deny outstanding Canadian students positions in medical schools and we will be faced with increasing our reliance on IMGs to meet an inevitable shortage of physicians.

To address this issue we are making five recommendations:

1. **Increase medical school enrolment from 1,577 to 2,000 by the year 2000. This increase in medical school enrolment needs to be appropriately funded and free of coercion.**

2. **Increase efforts to retain and repatriate Canadian physician graduates.**

3. **Increase government-funded residency positions from 100/100 to 120/100 medical school graduates. This will provide short- and long-term relief and enhance our ability to integrate IMGs into the physician supply.**

4. **Develop a formal and continuing process involving the Canadian Medical Forum, other health care providers, and federal/provincial/territorial governments to monitor and make recommendations on the number of entry positions for Canada's medical schools and postgraduate training programs on a regular (2–3 year) basis.**

5. **Address the issues of distribution and new models of delivery through co-operation of governments, health authorities, and educators.**

## 1. Mandate, Membership, and Purpose

- This paper has been prepared on behalf of the Canadian Medical Forum as part of the Task Force on "Physician Supply." The purpose is to assist stakeholders to make timely and strategic decisions to address physician work force issues in Canada. This Task Force is co-chaired by Drs. Hugh Scully, President of the Canadian Medical Association (CMA) and Lorne Tyrrell, President of the Association of Canadian Medical Colleges (ACMC).

- The Canadian Medical Forum is an umbrella organization formed to discuss future directions in coordinating approaches and activities among national medical organizations in Canada. It is a forum for consultation, concensus building, strategy development, and joint action. The Canadian Medical Forum does not infringe upon the mandate of individual participating organizations.

- The participating organizations are:
  - Canadian Medical Forum – Dr. N. Busing (Chair)
  - Association of Canadian Medical Colleges – Dr. Lorne Tyrrell
  - Association of Canadian Teaching Hospitals – Dr. Hugh Scott
  - Canadian Association of Interns and Residents – Dr. Derek Puddester
  - Canadian Federation of Medical Students – Mr. Marc Zerery
  - Canadian Medical Association – Dr. Hugh Scully
  - College of Family Physicians of Canada – Dr. Cal Gutkin
  - Federation of Medical Licensing Authorities of Canada – Dr. Gary Johnson
  - Medical Council of Canada – Dr. Dale Dauphinee
  - Royal College of Physicians and Surgeons of Canada – Dr. James Hickey

  In addition to members from each of the participating organizations, the Task Force on Physician Supply added representatives of:
  - Consumers' Association of Canada – Mr. Ed Koen
  - Public Representatives – Ms Louise Simard and Hon. Ray Hnatyshyn
  - Canadian Nurses Association – Ms Carole Presseault

  Guests to the Task Force include:
  - Dr. Jean Parboosingh – Health Canada
  - Ms Dianne Thurber – Canadian Post-MD Education Registry
  - Ms Lynda Buske – CMA

  Support:
  - Dr. Fleur-Ange Lefebvre, Director of Education, CMA

- A second Task Force has been mandated by the Canadian Medical Forum to develop recommendations on "Health Care Delivery Models." This second Task Force is co-chaired by Drs. Michel Brazeau and Peter Newberry. This second Task Force will look at issues including distribution of physicians and alternative health care delivery models which may impact the physician supply. Physician distribution is recognized as an extremely important issue for patients, governments, and providers.

- We recognize and acknowledge the complexity of health care delivery and the interrelationship between work force issues and health care delivery models. We acknowledge that increasing enrolment in medical schools and postgraduate training (residency) programs is not the only solution to this complex problem. Nevertheless, it is our position that there is sufficient data and evidence to justify a rational managed increase in enrolment in Canadian Medical Schools at both the undergraduate and residency levels for the following reasons. First, increased enrolment is a logical component of a short-term and long-term strategy. Second, if we delay the decision to increase enrolment, Canada will sacrifice the principle of self-sufficiency in physician workforce supply. We will deny outstanding Canadian students positions in medical schools and we will be faced with increasing our reliance on international medical graduates (IMG) to meet an inevitable shortage of physicians.

## 2. Background/History

The following table summarizes the key historical events in physician workforce planning in Canada from 1964 to 1999.

### Table I

**Key historical events leading to current Canadian Workforce Policies**

| | |
|---|---|
| • 1964 | Royal (Hall) Commission of Health Services: increase supply of physicians[(1)] |
| • 1966 | Health Resources Fund: support medical research and education facilities |
| • 1975 | National Committee on Physician Manpower: self-reliance – meet needs with Canadian medical graduates |
| • 1980 | Hall Commission (second): reduce number of medical students – (not done) |
| • 1984 | Federal-Provincial Advisory Committee on Health Manpower: reductions in medical students and post-graduate programs – (not done) |
| • 1991 | Barer-Stoddart Report: 10% reduction in medical students but maintain physician to population ratios[(2)] |
| • 1992 | Conference of Provincial-Territorial Ministers of Health: reduce undergraduate medical enrollment by 10% in 1993; reduce reliance on international graduates; reduce postgraduate trainees; and maintain or reduce physician to population ratio |
| • 1996-98 | Work of Eva Ryten at ACMC: questioning medical workforce predictions – calls to increase enrollment at undergraduate medical level |
| • 1999 | Canadian Medical Forum: Task Force on Physician Workforce (short-term – co-chairs Tyrrell and Scully) and Task Force on Health Care Delivery Models (co-chairs Brazeau and Newberry) |

- In summary, medical school capacity was increased to meet the needs of universal health care that was recommended by the 1964 Royal Commission on Health Services (Hall Report). This included the opening of four new medical schools by 1972 (Universities of Calgary, McMaster, Memorial and Sherbrooke). Between 1968 and 1976, the number of medical school graduates in Canada increased from 1016 to 1714, reaching a peak of 1,835 in 1985.

- In 1975, the National Committee on Physician Manpower reiterated the goal of self-reliance for future physician needs. This was accompanied by the decision to eliminate the "preferred status" for immigrating physicians. This had a significant effect on the number of IMGs coming to Canada and the total number of physicians added to the physician workforce (Table II).[3]

**Table II**

**Landed Immigrants Indicating Medicine as Their Intended Occupation and Graduates of Canadian Medical Schools**
**1967 – 1997**

| Year | Landed Immigrant | GOCMS | Total |
|---|---|---|---|
| 1967 | 1213 | 918 | 2131 |
| 1968 | 1277 | 1016 | 2293 |
| 1969 | 1347 | 1018 | 2365 |
| 1970 | 1113 | 1074 | 2187 |
| 1971 | 987 | 1133 | 2120 |
| 1972 | 988 | 1278 | 2266 |
| 1973 | 1170 | 1328 | 2498 |
| 1974 | 1090 | 1560 | 2650 |
| 1975 | 806 | 1544 | 2350 |
| 1976 | 401 | 1714 | 2115 |
| 1977 | 307 | 1691 | 1998 |
| 1978 | 261 | 1755 | 2016 |
| 1979 | 300 | 1760 | 2060 |
| 1980 | 380 | 1742 | 2122 |
| 1981 | 382 | 1765 | 2147 |
| 1982 | 462 | 1756 | 2218 |
| 1983 | 352 | 1794 | 2146 |
| 1984 | 337 | 1773 | 2110 |
| 1985 | 342 | 1835 | 2177 |
| 1986 | 417 | 1758 | 2175 |
| 1987 | 426 | 1766 | 2192 |
| 1988 | 335 | 1781 | 2116 |
| 1989 | 459 | 1722 | 2181 |
| 1990 | 445 | 1708 | 2153 |
| 1991 | 487 | 1704 | 2191 |
| 1992 | 462 | 1749 | 2211 |
| 1993 | 523 | 1704 | 2227 |
| 1994 | 351 | 1686 | 2037 |
| 1995 | 313 | 1739 | 2052 |
| 1996 | 339 | 1685 | 2024 |
| 1997 | 245 | 1577 | 1822 |

**(Source: E Ryten, ACMC Forum 1998, 31, 8–17)**

- Between 1980 and 1992, recommendations were made from a number of sources to reduce undergraduate enrolment and the training of primary care physicians and specialists. In 1992, a decision was made at the Conference of Provincial and Territorial Ministers of Health to reduce the undergraduate medical enrolment by 10% starting in 1993 based on the recommendations of the Barer-Stoddart report.[1] With the peak enrolment of 1,835 in 1985 and the decrease to 1,516 in 1999, the net effect has been a decrease in undergraduate enrolment of 17.3%.

- The number of Canadian medical school graduates fell to 1,577 in 1997 and to 1,516 in 1999. The physician to population ratio had started to fall from a peak of 1.91 in 1995 to 1.83 in 1999. This fall is not a result of the 10% cut as the cohort from the 1993 class did not enter practice until 1999. The decline in the physician to population ratio is multi-factorial and complex. However, shortly after the recommendation to decrease medical enrolment by 10% in 1993, the Association of Canadian Medical Colleges (ACMC), led by Eva Ryten, began raising concerns that the medical school enrolment suggested by Barer and Stoddart and enacted by the provincial governments would not maintain an adequate physician workforce to deliver health care in Canada.[3, 4] These increasing concerns have compelled the Canadian Medical Forum to establish the two Task Forces to address the short-term and long-term issues of physician supply and health care delivery.

## 3. Environmental Scan

There is growing evidence of physician shortages in Canada. Some examples include:

- **The Janus Project**[5] surveyed 5283 family physicians/general practitioners in Canada. Of those surveyed, 30.4% reported insufficient numbers of family doctors and 36.7% reported insufficient specialists. Locations identified with problems of access were:

    - Urban
        - inner city 38.4%
        - urban 50.3%
        - suburban 49.5%

    - Small Town 62.9%
    - Rural 58.0%
    - Remote 69.6%

- **An Angus Reid survey** done for the Canadian Medical Association in July/August 1999 showed 61% of Canadians felt there were not enough doctors practicing in Canada to meet the health care needs and 45% felt there were insufficient numbers of physicians in their community.

- **There is growing evidence of physician shortages in numerous specialties and family medicine.** A few examples include:

- an estimated 150 vacancies in anesthesiology[6, 7]

- There are currently 105 vacancies in Radiology and the rate of retirement is greater than the rate of production. The proposed ideal ratio of radiologists to population is 1:13,000. It is currently 1:17,000 (Source Canadian Association of Radiologists)

- Press reports of cancer patients being sent to the U.S. for radiation treatment due to shortages of radiation oncologists in Ontario and Alberta.

- Shortages of psychiatrists and obstetricians in many regions.

- Physician shortages in rural and remote regions have been well documented in many studies.[8-11]

- **Increased Recruitment of International Medical Graduates**

  The recent need to increase recruitment of international medical graduates to Canada through **"temporary employment authorization"** is evidence of recognition by governments and health authorities of physician shortages. This number increased quite dramatically in recent years:

| | | |
|---|---|---|
| 1993 | – | 388 |
| 1994 | – | 270 |
| 1995 | – | 202 |
| 1996 | – | 582 |
| 1997 | – | 790 |

In summary, there are a number of indicators of a current physician workforce shortage. The recent indicators of physician workforce shortage include increasing workloads, decreasing physician morale, increased waiting lists, and difficulty with access. These stresses are also evident by increased recruitment of foreign physicians through the "temporary employment authorization" process.

## 4. Factors Affecting Physician Supply

- **Increased Knowledge and Technology**

  There are increased demands for physician services arising from increased knowledge and new technology. Research and health promotion have enhanced the health care needs of the population. Examples include orthopedic surgery where joint replacement has become common and wait list pressures are increasing. Similar pressures exist for by-pass surgery for coronary artery disease. The rapid expansion of new knowledge is increasing the demand for new therapeutic interventions in areas such as neurological diseases (stroke, demyelination, epilepsy and dementia), renal failure (dialysis and transplantation), and cardiology (angioplasty and the use of clot-bursting drugs). In addition, a number of new

diseases have increased demands on the physician supply, e.g. AIDS and hepatitis C. Finally, the improved treatment and outcomes in areas such as trauma and cancer have increased the demand for health care providers and other resources.

- **Regionalization and Changes in Health Care Delivery**

  Recent changes in health care delivery have resulted in shorter hospital stays, increased same-day surgery and a greater reliance on physicians and home care nurses to provide follow-up care. This has increased the physician office visits and telephone consultation and advice to patients, families, and home care nurses. This effect has been particularly noted by the primary care providers.

- **Demographic Factors (Aging Population and Population Increases)**

  - Population growth in Canada is continuing at approximately 300-350 thousand per year. The physician workforce supply increased faster (3.7% annually) than the population growth (1.5% annually) in the 1970s and 1980s. In the 1990s the population growth and physician workforce increased at almost equal rates. However, Canada's physician workforce supply will not keep pace with population growth given current medical school enrolment, population growth, and projected physician retirements.

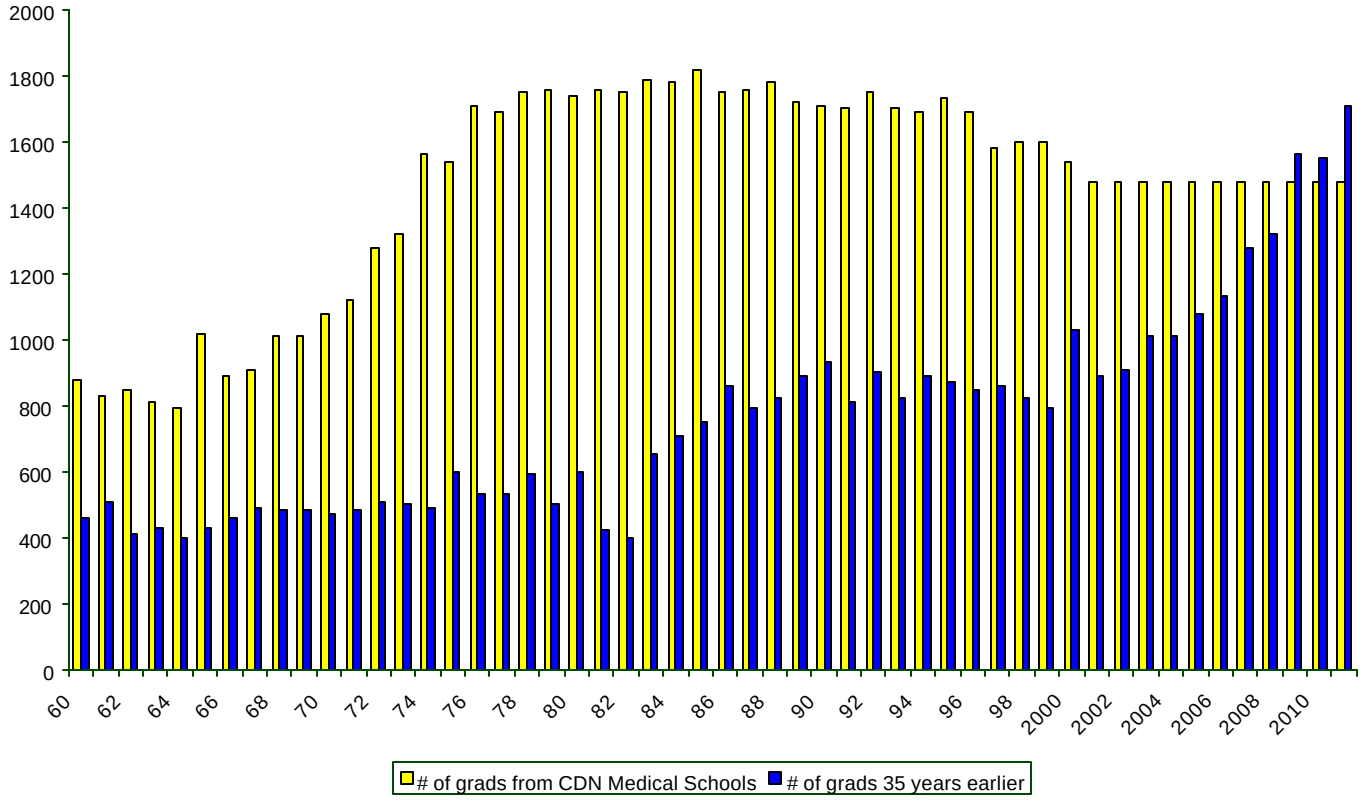
  - The aging of Canada's population will also significantly impact the health care system including the demand on physicians. Patients over the age of 65 years consume approximately 70% of the health care budget. In 1994, the total health expenditures by age in dollars per capita was less than $2,000 for individuals less than 64 years and greater than $8000 for individuals 65 years and older. In 1999, approximately 12.5% of Canada's population is over 65, by the year 2015 it will increase to 16.5% and by the year 2030 more than 25% of the population will be over 65.

- **Predicted Retirement and Aging of the Physician Population**

  - It is predicted that retirements of Canadian physicians will accelerate over the next 10 to 15 years. This is based on the bulge of IMGs and increased medical school enrolment in the 1960s and 1970s. That bulge is now reaching retirement age. The net effect is that by the year 2008 there will be more retirees than medical school graduates. The prediction of physician retirements in Canada compared to the number of graduates in Canadian medical schools is shown in Figure 1.[3]

**Figure 1**

**Number of Graduates of Canadian Medical Schools, 1960 to 2011 and Number of Graduates 35 years earlier**




**Source: E. Ryten, ACMC Forum 1998, 8-17**

- Another important factor to consider is the trend to an aging of our physician population. The prediction is that the number of the physicians over the age of 55 will increase from approximately 26% in 1999 to approximately 43% by the year 2021. Not only will the patient population grow older but the physicians supplying health care to this population will also be aging. There is evidence that physicians in their 60s and 70s are having significant difficulty finding new colleagues to assume their practices.
  (See Table III)

**Table III – Aging of the Physician Population**

| Year | Total Physicians | Population Per Physician | % Age 55+ |
|---|---|---|---|
| 1999 | 56,775 | 548 | 25.7 |
| 2001 | 56,189 | 560 | 26.3 |
| 2006 | 57,089 | 590 | 30.4 |
| 2011 | 57,004 | 621 | 36.5 |
| 2016 | 56,002 | 663 | 41.5 |
| 2021 | 53,914 | 718 | 43.5 |

**Source: Lynda Buske, CMA**

- **Increased Number of Women in the Physician Workforce**

  - Fortunately, women are increasingly represented in the physician workforce. In 1960, 9.4% of the enrolling medical students were women. The proportion of women entering medical schools has increased steadily—1970–17.8%, 1980–36.2%, and 1990–44.4%. Since 1995, more than 50% of the new medical students are women. By 2015, women will make up 40% of the physician supply. Women have tended to enter Family Medicine (55.6%), Pediatrics (54.5%), Obstetrics and Gynecology (73.3%), and Laboratory Medicine (60%) (based on 1998 postgraduate enrolments). They make up 43.2% of medical specialty trainees and 28.9% of surgical specialty trainees.

  - Data indicates that female physicians practice fewer hours than their male counterparts. Women physicians practice an average of 48.2 hours/week whereas male physicians average 55.5 hours/week. Women frequently carry the major responsibilities of co-ordinating and providing home support and child care. Medical school enrolment should be increased 4-5% to adjust for the effects of increased enrolment of women in medical schools.[12]

- **Lifestyle Changes of Physicians**

  - The pattern of practice is changing for all physicians—male and female. Increasingly, physicians are recognizing the need to balance work with family and community needs. The long hours that housestaff have traditionally worked are being questioned. These efforts have resulted in changes in employment contracts for residents. These trends are discussed in the Canadian Medical Association Policy Summary on Physician Health and Well-Being and the Canadian Association of Interns and Residents (CAIR) position papers on resident well-being. [13, 14]

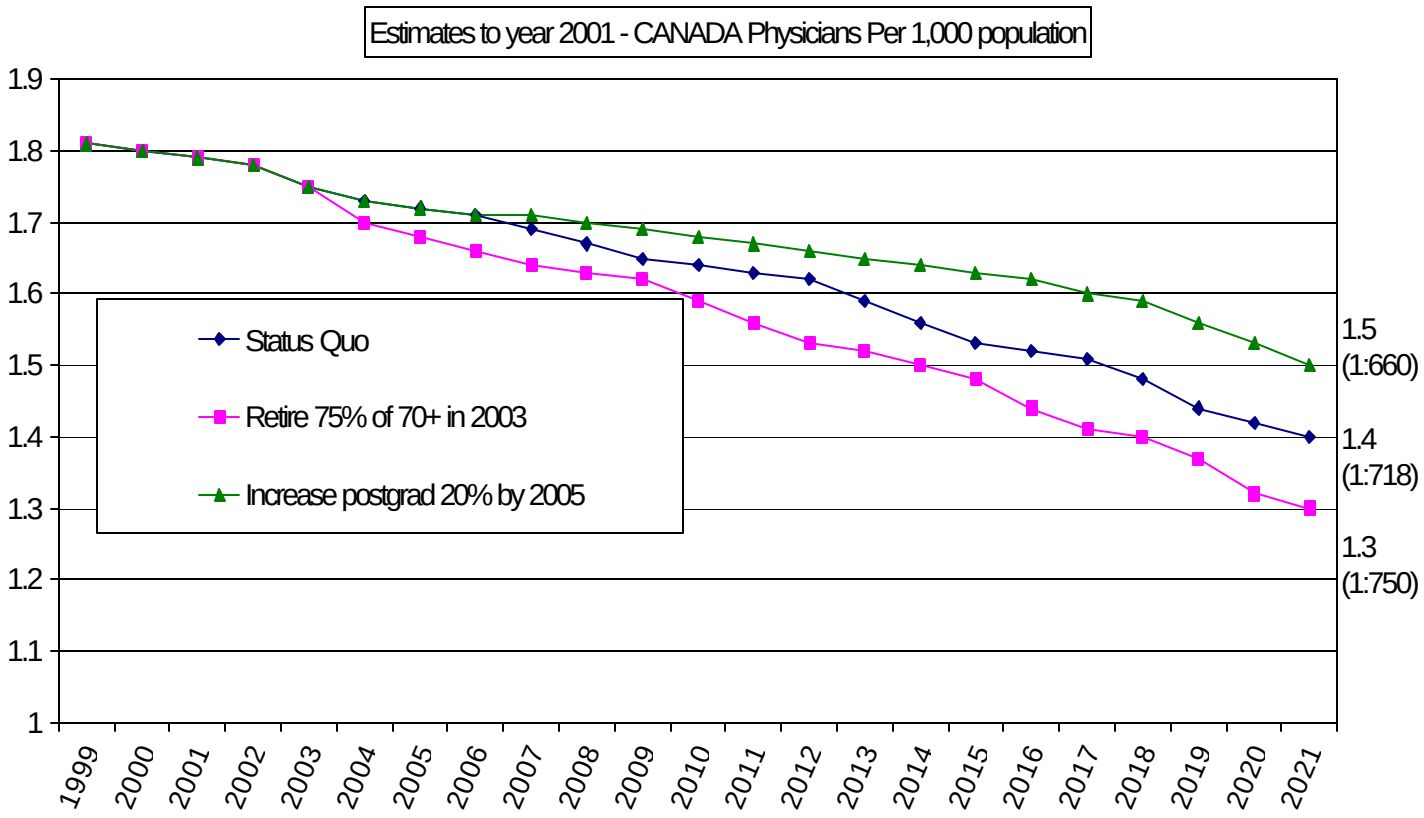
  - The public are beginning to question the appropriateness of medical care being delivered by physicians working excessive hours. Australia recently enacted legislation to limit the number of continuous hours worked by physicians be limited to 16, similar to legislation limiting hours of work for pilots, truck drivers, etc.

## 5. Need and Supply

- **Analysis of Need and Supply**

  - Canada has a population of approximately 30,500,000 served by 56,000 physicians. The number of physicians per 1,000 population has decreased from 1.91 in 1995 to 1.85 in 1999. The projections to 2021 suggest this ratio will decrease to 1.4/1000 based on current medical school enrolments and immigration of IMGs. Furthermore, these projections indicate that the number will decrease to 1.3/1000 if 75% of the physicians over the age of 70 begin to retire by the year 2003. Even with an increase of 20% in the enrolment in Canadian medical schools, this will be inadequate to maintain our current physician to population ratios (see Figure 2).

**Figure 2**




**Source: Lynda Buske, CMA**

- We agree that predicting physician needs in a country as diverse as Canada is a very complex and difficult task. There are many factors that should be taken into consideration. However, we are making our predictions and recommendations based on four assumptions. These assumptions are:

    1. Canada should retain a ratio of 1.8 to 1.9 physicians/1000 population to maintain an adequate healthcare delivery system. The Barer and Stoddart Report in 1991 recommended that **"undergraduate enrolments should be adjusted so as to maintain approximately current population:physician ratio; further reductions are not warranted."** This report was accepted by the provincial governments and at that time our ration of physician:population was 1.9/1000. The Task Force on Physician Supply accepts the recommendation of 1.8 to 1.9 physicians/1000 population and uses these numbers to develop reasonable and timely recommendations.

    2. "Self-sufficiency" means that Canada will produce 80 to 90% of the physicians needed for our health care system.

    3. At a steady state, approximately 3.5% of practicing physicians will leave the practice of medicine annually. This estimate is based on the study of the UK health system.[15] This number includes retirement, deaths, emigration and career change.

    4. Canada's population will continue to grow at approximately 300,000 – 350,000/year.

- Based on these assumptions, the annual need for physicians in Canada can be calculated.

| | | | | |
|---|---|---|---|---|
| 56,000<br>(current number) | x | 3.5%<br>(number leaving practice per year at a steady rate) | = | **1,960** |
| 300,000 | x | 1.8/1000 | = | **540** |
| **Total requirement** | | | | **2,500** |

This is a conservative number as population growth has averaged 347,000/year over the last 10 years. In addition, we have used 1.8/1000 rather than 1.9/1000.

Increasing medical school enrolment in 2000 would increase physician supply beginning in 2006 and be fully in effect in 2011. This is based on four years in medical school and residency training programs that are 2 (family medicine) to 7 years for some surgical subspecialties.

Increasing the positions in residency programs in 2000 would begin to have an effect on physician supply by 2002 if these positions could be filled by IMGs who have passed Medical Council of Canada Qualifying Exams and are landed immigrants, but unable to practice without experience in a Canadian training program. There are many IMGs in this position in Canada.

The numbers used to estimate physician workforce needs and supply in 2010 are based on similar numbers for emigration and returns, loss of postgraduates who leave upon completion of their training and conservative population growth estimates. The estimates have not considered increased demands as a result of an aging population or new technologies. These conservative estimates allow for development of new health delivery models.

- **The Current and Future Attrition and Gains in the Physician Supply**

  The following chart is based on current physician losses and gains and an attempt to predict the loss and gain in 2010.

| **1998 – ATTRITION** (Approximate) | | **2010 – ATTRITION** (Estimate) | |
|---|---|---|---|
| Retirement | 1000 | Retirement | 1300[c] |
| Deaths | 200 | Deaths | 300 |
| Emigration | 600 | Emigration | 600 |
| Postgraduate Reduction | 175 | Postgraduate Reduction | 175 |
| | 1975 | | 2375 |
| Required for Population Growth | 540 | Required for Population Growth | 600 |
| | 2515 | | 2975 |
| **GAINS** | | **GAINS** | |
| Postgraduate Exits | 1750[a] | Postgraduate Exits | 1750 |
| Returns to Canada | 250 | Returns to Canada | 250 |
| IMGs with Prearranged Employment | 100 | IMGs with Prearranged Employment | 100 |
| **Total** | 2100 | **Total** | 2100 |
| **Deficit** | -415[b] | **Deficit** | –875 |

a. This is approximately 250 more than Canadian medical schools graduate and represents residents supported on non-ministry funds.
b. Temporary employment authorization of foreign medical graduates has increased significantly in 1996 (582) and 1997 (790) to compensate for this shortage.
c. See Figure 2.

- **Distribution of Physician Workforce**

  - Canada not only has a shortage of physicians but also a problem with physician distribution. There are problems of access to family physicians and specialists in urban, rural, and remote communities. Physician shortages are now common in urban as well as rural communities and in a number of specialties as well as family medicine. Shortages of physicians in urban centres almost certainly aggravate the chronic problem of undersupply of physicians to rural communities. A recent report by Barer-Stoddart on "Improving Access to Needed Medical Services in Rural and Remote Canadian Communities: Recruitment and Retention Revisited" focuses on the challenging aspect of distribution and reviews most of the attempted solutions to distribution.[8]

  - There is a common perception that IMGs service rural Canadians better than Canadian medical graduates and are less likely to migrate to the U.S. than Canadians. The evidence does not support this perception. IMGs currently make up 23.8% of Canada's physician workforce. In 1998, IMGs made up 26% of physicians practicing in rural Canada – a ratio similar to the total IMGs to the total physician supply. IMGs made up approximately one quarter of the Canadian Physician Workforce and between 1986 and 1998 made up between 25% and 31% of the physicians migrating to the U.S. The conclusion from this data is that IMGs are no more likely to serve rural and remote regions of Canada than graduates of Canadian medical schools. In addition, they are at least as likely as Canadian graduate to migrate to the U.S. (Data – CMA and CIHI) The problem of distribution of physicians within a country is not unique to Canada. Geographic distribution of physicians is a frequent policy preoccupation in Australia, France, Germany, New Zealand, and the United States. There are three major problems in trying to address regional maldistribution.[8]

    **1. Concentration in large urban centres**

    - Physicians tend to concentrate in areas of larger populations with greater range of educational, religious, cultural, and recreational opportunities for families and opportunities for work for a spouse.

    **2. Demands of rural practice**

    - Professional practice considerations including heavy "on-call" and "burn-out" factors in rural communities

    **3. Increasing opportunities in urban centres**

    - Increasing opportunity in urban settings as the shortage of physicians in Canada increases in urban communities.

- There have been numerous papers on the issue of recruitment and retention of physicians to rural Canada.[8-11] Issues that need to be addressed include recruitment of students with backgrounds that may be suited to a rural or remote practice, support of physicians in rural or remote locations (locum), improved use of telehealth, and increasing the exposure of trainees to rural and remote practices. While voluntary return for service contracts are acceptable, coercive measures to force physicians into rural or remote practices are discouraged.

- Another issue that needs to be addressed is the adequacy of the preparation of family physicians for practice in rural and remote areas of Canada. Training of a family physician in Canada is 2 years, in the U.S. is 3 years, in the UK internship + 4 years (5 years total).

- **Balance of Specialists, Subspecialists, and Family Physicians**

  A recent report of the NCCPMT dealing with specialists training in Canada is timely and raises a number of concerns.[16] This report highlights, particularly, the decline in general specialists in Surgery and Medicine. It also highlights the aging of specialists, particularly in these areas. There is considerable discussion about the balance between sub-specialists, specialists, and family medicine practitioners and whether we are maintaining the correct balance. In Canada, we have maintained a better balance of family physician/general practitioners relative to specialists. The delivery of primary care by physicians and non-physicians and new payment models will require a careful evaluation of this balance. However, for this task force, the overall need to increase the physician supply is paramount to address shortages of family physicians in rural and urban settings as well as shortages of specialists and subspecialists.

## 6. Solutions

- Canada's physician supply has fallen behind many countries with publicly-funded health care systems (Table IV).

**Table IV**

**Comparison of Physicians/1000 Population**

| | | | | | |
|---|---|---|---|---|---|
| **Canada** | **1.83** | **Austria** | **2.1** | **Sweden** | **2.9** |
| **United Kingdom** | **1.7** | **Belgium** | **3.4** | **Switzerland** | **2.9** |
| **Australia** | **1.9** | **Denmark** | **2.8** | **Finland** | **2.4** |
| **U.S.A.** | **2.3** | **France** | **2.7** | **Italy** | **3.9** |
| **New Zealand** | **1.9** | **Germany** | **3.1** | **OEDC average** | **2.6** |

- We recognize the complexity of health care delivery and the difficult task of predicting future physician supply. There are many factors that have an effect on physician supply needs including distribution (geography), productivity, attrition, substitution, technology, demographics, access, and economics. Other factors include governance and delivery models that address costs and volume controls and health care delivery by non-physicians.

- There is a need for long-range strategic planning by stakeholders that integrates these factors. However, there is evidence for immediate action to address physician supply which is a logical component of both short- and long-term strategies. These solutions are:

1. Increase medical school enrolment
2. Retain and repatriate Canadian physicians
3. Increase the number of postgraduate training positions.

## 1. Increase Medical School Enrolment

There are two major reasons to support the principle of "self-sufficiency" in the supply of Canadians physicians. These are: the outstanding quality of Canadian graduates and the value of building Canadian infrastructure by providing educational and work opportunities to Canadians.

- **Opportunities for Canadian Students**

  - Young Canadians continue to view careers in medicine as highly desirable. This is evident from the large number of outstanding applicants for entry positions in medicine. Most medical schools interview approximately 4-5 highly qualified students for each available position. With increased enrolment there will be no difficulty filling the additional positions. If the entry positions are not increased to live up to our commitment of "self-sufficiency" in physician supply and we rely on IMGs to fill the need. This will be difficult to justify to the public and to Canadian students who have been denied positions. Canada is one of the most difficult countries for a student to gain entrance to medical school. The first year enrolment positions in Canada are 1570 for a population of 30.5 million (1 per 19,000 citizens). This is far below the UK at 5600 positions, an increase from 4600 in 1998, for 61 million (1 per 12,200 citizens)[15, 17] and Australia at 1400 positions for 19 million (1 per 13,500).

  - Canadian students will require more readily available loans and bursaries with increasing costs of education – particularly in Ontario with de-regulation of tuition fees for medical students. The preliminary data from one medical school (the University of Western Ontario (UWO)) has shown that deregulation may be affecting the accessibility to medical school. This survey showed that the average parental income of students entering medicine prior to deregulation of tuition was approximately

$80,000. In the first year after deregulation it was approximately $120,000. The average expected debt load of students is rapidly rising (for example, at UWO, the projected average debt loads are $62,000, $76,000, and $82,000 for the classes of 2001, 2002, and 2003 respectively.

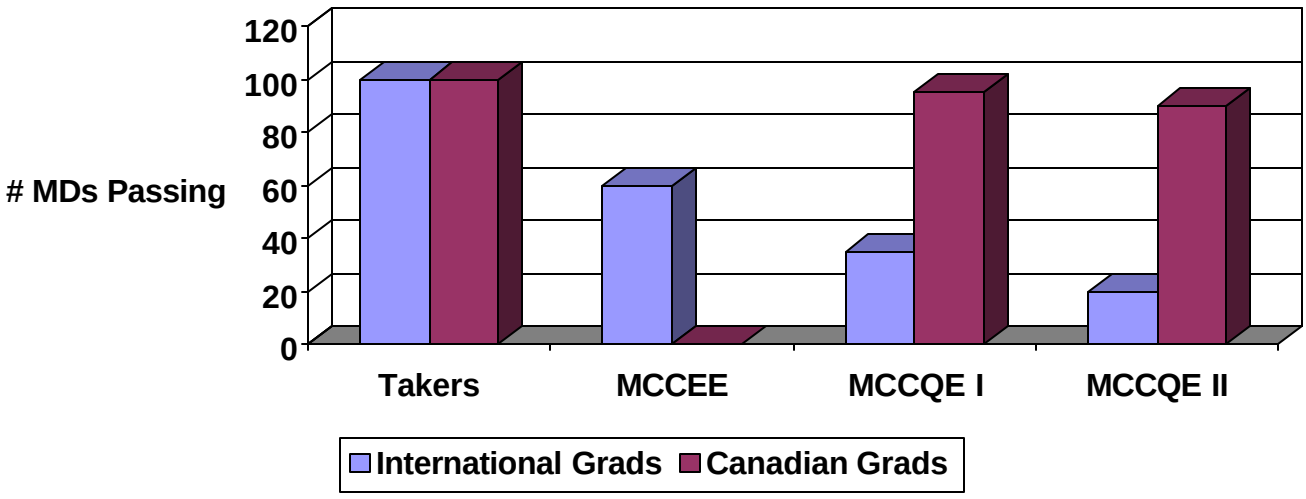
- **Quality of the Canadian Medical Graduate**

  - It is important to recognize that many IMGs have provided excellent medical service to Canadians. On an individual basis many IMGs do as well as Canadian graduates on qualifying examinations. However, as a group, they do not do as well as Canadian graduates. This may be due to several factors, including the age (time from medical school until they challenge the exam), language and cultural issues, and differences in the quality of the medical school training.

  - International medical graduates challenging the Canadian Qualifying Examinations have a considerably lower success rate than Canadian graduates. Of the 100 hypothetical international medical graduates challenging the examinations for the first time, approximately 21% will have passed the three levels. In contrast, the success rate for Canadian medical graduates is approximately 95%. Clearly, Canadian graduates are better prepared for our examination system which we believe also reflects their ability to practice medicine. (Figure 3)

**Figure 3**

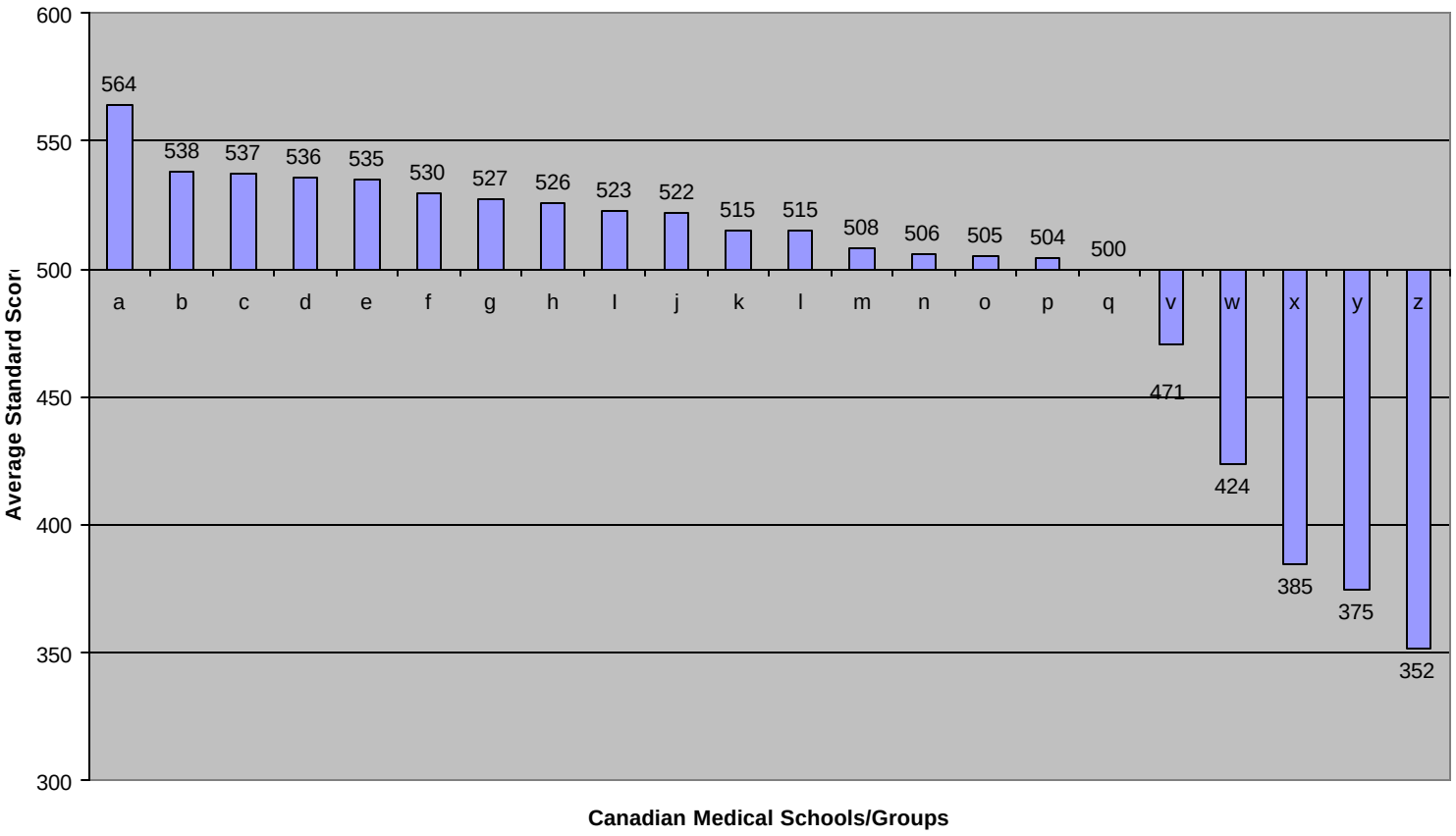
Comparative Passing Rates on MCC Qualifying Examinations for Representative Sample of First Time Canadian and International Medical Graduates Based on 1998 Results




**Source: D. Dauphinee – MCC**

- Canada and the United States have a joint demanding accreditation process for their medical schools. Few other countries have such a demanding and uniformly high standard of accreditation. Many medical schools listed in the World Health Organization list of medical schools do not have a review of programs or any form of vigorous accreditation. It is not surprising that the success rate of IMG challenging the examinations in Canada would be variable. (Figure 4)

**Average Total Standard Score Across CDN Medical Schools/Groups**
**1998 Part I - MCCQE**




Columns a to p represent the 16 medical schools and their average scores.
Column q represents the mean score of all candidates taking the exam.
Column v represents Canadian students trained in the U.S.
Columns x, y, and z represent IMGs without training in Canadian medical schools.

- Not only does Canada have a demanding accreditation for its medical schools, but through the College of Family Physicians and the Royal College of Physicians and Surgeons, Canada has vigorous accreditation for its postgraduate training programs. There are only 16 entry sites for postgraduate medical education in Canada – the 16 medical schools. This control over the quality of the postgraduate medical training is unique in the world and produces graduates of a very high quality.

## 2. Retention and Repatriation of Canadian Medical Graduates

- Retention and repatriation of Canadian graduates is a very desirable part of a broad solution. It satisfies the principle of Canadian self-sufficiency. It is cost effective to retain graduates in whom Canada has invested.

- From 1992 to 1997, Canada had a net annual loss of approximately 450 Canadian physicians to the United States. However, as indicated on the following table, the recent data shows a reduction in the number of doctors leaving Canada. (Table V)

**Table V Migration to and Return from the U.S.**

| | Moving Abroad | Returning | Net Loss |
|---|---|---|---|
| 1992 | 689 | 259 | 430 |
| 1993 | 635 | 278 | 357 |
| 1994 | 777 | 296 | 481 |
| 1995 | 674 | 256 | 418 |
| 1996 | 731 | 218 | 513 |
| 1997 | 659 | 227 | 432 |
| 1998 | 569 | 321 | 248 |

**Source CIHI**

- This recent trend may be a reflection of dissatisfaction with many aspects of practicing in Health Management Organizations which are common in the United States. There are approximately 8,000 Canadian medical graduates practicing in the United States. Of these, 2440 maintain active licenses in Canada. This is an indication that increased efforts to repatriate Canadian medical graduates from the U.S. would be an important strategy to address the shortfall in our physician supply.

## 3. Increase the Number of Residency Positions

Increasing the number of postgraduate training positions would be an important part of short- and long-term strategies to increase physician supply. Canada currently has 100 provincially-funded postgraduate positions for each 100 medical graduates. Many countries have more flexibility in postgraduate training programs, (e.g. US – 129/100 medical graduates and the UK nearly 140/100). There are many benefits to increasing postgraduate training positions as described below:

- **Enhance Opportunities for International Medical Graduates (IMGs)**

  - IMGs have made significant contributions to Canadian health care. They will continue to be a component to the future need for physicians. However, they should not be the primary solution to physician supply at the expense of the goal of Canadian self-sufficiency. They should complement the primary source of Canadian graduates.

  - IMGs should meet the same standards as Canadian graduates to be licensed for practice in Canada on a permanent basis. Enrolment in a residency program will enhance their chances of success.

  - The evidence shows that IMGs are no more likely to practice in rural or remote regions of Canada than Canadian graduates and their likelihood to migrate to the U.S. is comparable to the Canadian graduate. However, in some provinces IMGs make up greater than 24% (national average) of practicing physicians. For example, Saskatchewan (50%), Newfoundland (30%), and Manitoba (30%) rely heavily on IMGs for their physician supply.

  - Increasing residency positions would enhance opportunities for IMGs who have passed exams, but do not have the opportunity to enter residency positions in the present tightly-controlled system. Many of the IMGs that are landed immigrants would enjoy this opportunity. This may decrease our current dependency on IMGs being recruited through the "temporary employment authorization" route.

  - Recruiting physicians on "temporary employment authorization" is not as desirable as training Canadians or increasing opportunities to retrain IMGs with landed immigrant status. Canada should respect the United Nations Resolution (#2417) that discourages "poaching" of educational resources by developed countries from developing countries. It is unconscionable to solve our problem at the expense of developing countries.

- **Enhance Opportunities for Re-entry**

  - Re-entry positions allow family physicians to practice for a few years and then return to postgraduate training in a specialty. A common perception of the graduating physician and many family physicians is that there is little opportunity to enter a residency program after choosing a career as a family physician. In a survey in Alberta of new graduates leaving the province for the U.S., a common reason given by physicians leaving was the increased opportunity to enter a residency in the US after practicing as a family physician for a few years.

  - Re-entry positions would make additional training to acquire special skills easier for both family physicians and specialists. Given the popularity of family medicine as a choice of graduating medical students, it should be possible to adjust postgraduate training positions in family medicine and specialties to maintain the desired ratio of 50-50 even with increased opportunity for re-entry. Prior to decreasing the flexibility in our residency programs (1982-1992), between 11 – 14% of residents had prior experience in family medicine. This has decreased to approximately 3% (1998).

- **Opportunities to Train Clinician Scientists (Knowledge Transfer)**

  - A clinician scientist refers to training with unique skills to practice and continue research. Such individuals are important in translating discoveries into practice (translational research).

  - There is evidence showing that "clinician scientists" are decreasing in academic medicine. In Canada, this has been a result of a number of factors including difficulty in obtaining competitive grants, inability to protect research time, inadequate remuneration and increasing work loads. However, governments in Canada are making significant changes in the research environment through the Canadian Foundation for Innovation (CFI), the creation of the Canadian Institutes of Health Research (CIHR) and the recent announcement of the Research Scientist Program. We will need more clinician scientists to adequately take advantage of these opportunities.

  - A factor in the decrease in the numbers of clinician scientists is the inability to support young clinicians beyond the minimal training to complete a residency. Training of a "clinician scientist" requires 2–3 years of salary support beyond the minimal residency requirements. By increasing the postgraduate positions, the ability to train a young clinician scientist for an additional 2–3 years of training required would improve. This is particularly important at this time as Canada has expanded its research commitment through CIHR and the Research Scientist program.

- **Flexibility in Career Choice**

  With the current system of 100 postgraduate training positions for 100 medical graduates, there are relatively few opportunities for a resident to change training programs once they enter a residency. The early career choice has been repeatedly identified as a problem for medical students (CFMS reports to Deans at ACMC – 1997, 1999). With an increase in postgraduate positions, some "flexibility" would be reintroduced into the system which might allow for change in training programs during a residency. This would alleviate some of the stress associated with early career choices facing medical students today.

## Recommendations

1. **Increase medical school enrolment from 1,577 to 2,000 by the year 2000. This increase in medical school enrolment needs to be appropriately funded and free of coercion.**

2. **Increase efforts to retain and repatriate Canadian physicians.**

3. **Increase provincially-funded residency positions from 100/100 to 120/100 medical school graduates. This will provide short- and long-term relief and enhance our ability to integrate IMGs into the physician supply in Canada.**

4. **Develop a formal and continuing process involving the Canadian Medical Forum, other health care providers, federal and provincial governments to monitor and make recommendations on the number of entry positions for Canada's medical schools and postgraduate training programs on a regular (2–3 year) basis.**

5. **Address the issues of distribution and new models of delivery through co-operation of governments, health authorities, and educators.**

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