The Overlapping Roles of Primary Care Physicians, General Specialists and Subspecialists – The Canadian Perspective

7th International Medical Workforce Conference
Oxford, United Kingdom
September, 2003

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INTRODUCTION

This paper should be read in conjunction with the preamble provided as a template for submissions from individual countries. The research questions relate to adequate definition of the unique contributions to patient care by physicians in serving each of the following three roles - primary care, general specialists and subspecialists; and whether educational institutions are adequately involved in helping to clarify these roles.

It is relevant to indicate a background scenario of a) deficient numbers of physicians in all sectors of the workforce[1], and b) strikingly reduced enrolment in "general" specialties and Family Medicine at the postgraduate medical education level. Interest in Family Medicine reached an all-time low in the PGY-1 entry match for the 2003-2004 term. For those choosing training as specialists, the trend appears to be toward subspecialization in more narrowly defined segments of the discipline rather than work as a traditional general specialist**.** This seems most prevalent in the broad fields of Internal Medicine and General Surgery but appears to be also emerging in other general specialties such as psychiatry, radiology and pathology.

While the paper is organized in accordance with the eight "perspectives" requested of individual authors, its main content will report some new Canadian data regarding:

1. preliminary results of a research study by the authors in response to concern about the rapidly depleting numbers of Internal Medicine residents opting for careers as traditional general internists (Section B below), and

2. the reduced enrolment by medical students into Family Medicine programs (Section D below).

A. Public Access To Primary Care And Specialist/Consultant Services

The public has generally unrestricted access to primary care services, though experiments with rostered group practices are evolving in several parts of the country. There is however, increasing difficulty in finding family physicians/general practitioners who will accept new patients, particularly in urban areas. In Canada, primary care is done predominantly by family physicians/general practitioners with most specialists, including general internists, working on a referral-only basis in relation to their office practices.

There is comparable frustration for both referring physicians and patients in accessing specialist and subspecialist consultant services for elective or semi-urgent problems,

even in urban centers where all specialty and subspecialty services are available. Input from patients is important in resolving this issue[2].

Studies to determine the causes and dynamics of such long waiting lists are required. It is particularly important to determine the extent to which these are due to over-referral of cases that might be competently managed by a primary care physician or a general specialist.

B. Trends Toward Sub-Specialization Among Residents In Various 'General" Specialty Training Programs

"Generalism" and Subspecialization Within Internal Medicine in Canada

In Canada, certification in General Internal Medicine (GIM) requires a minimum of four years of training. After the third (R3) year all Internal Medicine residents must make an important decision to either continue with the fourth (R4) year in GIM, thereby ending their specialty training; or commit to the additional two (three for Cardiology) years of training required for certification in one of thirteen accredited subspecialties. As all subspecialists must have prerequisite certification in GIM, one year of subspecialty training can be double-counted toward meeting the training requirements of both the subspecialty and GIM.

With support from Health Canada, we studied the extent of subspecialization among Internal Medicine residents who entered the workforce from1992 to 2000. We used the Canadian Post-M.D. Education Registry (CAPER) to identify and track a cohort of 1523 second year residents (R2's) registered in Internal Medicine training programs. 1311 (86%) eventually qualified as general internists and 75% of that group became certified as subspecialists by the appropriate Canadian or American examination boards.

Following determination of this initial data, the study cohort was sent a questionnaire designed to address two issues. These were:

1) irrespective of formal training certificates, what is the current scope of practice, and

2) what factors influenced the decision to subspecialize or terminate training after qualifying as a general internist?

Responses were received from 735 (58%) of 1268 delivered questionnaires. With regard to scope of practice, each specialist was asked to indicate which of four scenarios most accurately reflected their clinical practice. These were:

1. Exclusively GIM
2. Predominantly GIM
3. Predominantly Subspecialty
4. Exclusively Subspecialty

Given some possible variation in the definition of GIM, we provided a suggested response guideline which indicated an assumption that "*the practice of General Internal Medicine involves the investigation and treatment of the full range of diseases that*

comprise the traditional content of this broad discipline, and that the majority of general internists will respond by checking option #1. The intent of options 2, 3, and 4 was to identify those who, even in the absence of official subspecialty certification, formally identify a particular interest in a specific branch of Internal Medicine and are recognized by colleagues as subspecialists in these areas." In this respect, it is relevant to indicate that, in contrast to the USA, Canadian general internists work in their offices as consultants, not as primary care physicians. However, in hospitals they are being increasingly thrust into a primary care role because of the decreasing presence of family physicians in acute care hospitals**.**

726 (165 general internists and 571 subspecialists) responded to this question. Of the subspecialists, 549 (96%) reported working exclusively or predominantly in their subspecialty area, with 62% not practising any GIM. By contrast, only 53 (34%) of the general internists reported working exclusively in GIM as defined above. (Therefore, we were wrong in our assumption that the majority of general internists would choose option #1). 72 (47%) worked predominantly as general internists, but identified an area of subspecialty interest, and 30 (19%) indicated working exclusively or predominantly in a subspecialty area, even without formal certification.

Another significant contrast between the subspecialty and GIM cohorts involved location of practice. Whereas 91% of subspecialists worked in cities with populations over 100,000, 38% of general internists were in communities with populations below 100,000.

Comparing the relative importance of factors that influenced career decisions in the two cohorts, we found that lifestyle, remuneration, research opportunities, and encouragement from faculty were rated as "moderately" or "very important" significantly more frequently by subspecialists. While the first three were predictable, the "encouragement" toward subspecialization indicates that supervising faculty are a significantly influential factor in this career decision.

The questionnaire also included a supplementary optional segment requesting narrative comments that might

> *"add a personal perspective on any other factors you considered important in your career, and on the basis of your experience to date, comment on the relative merits of practising as a generalist vs. subspecialist, including the advice you would give to a student inquiring about career options in Internal Medicine".*

We were surprised by a 60% return to this optional segment. 409 internists (98 from the GIM cohort and 311 from the subspecialty group) provided a rich volume of narrative from a relatively young workforce. Though detailed analysis exceeds the scope of this discussion, some general themes follow.

Obviously, most made career choices for a variety of positive reasons, being attracted by the broad scope of work available as a generalist, or the narrower focus provided by various individual subspecialties. However, the dominant messages that emerged from both groups reconfirmed areas of concern that might be summarized as general internists being underappreciated, especially by subspecialist colleagues, and inadequately remunerated in relation to volume and type of work.

The area of major concern from the physicians in the GIM cohort appeared to be their ever-increasing workload in relation to caring for complex hospitalized patients, many of

whom are admitted as undesignated patients from the Emergency Room. They are also stressed by the complexity of discharge and follow-up planning that has become their responsibility because of the increasing withdrawal of family physicians from hospital practice in large cities.

Examples of specific quotes that reflect this follow:

- *"Most subspecialists know GIM as 'anything that doesn't' fit in my category'"*
- *"General internists have become the attending physicians for patients nobody else wants"*
- *"Internal Medicine is defined by other specialties, i.e., what they don't want to do. All other specialties define themselves. It is unrewarding to fill in the gaps, to treat overflow, and to be asked your opinions depending on the time of day……..."*
- *"….GIM in the academic hospital setting has become very primary care with little or no support from family practice, other services and subspecialties…"*

The latter quote reflects a sense of being "exploited" from two directions, by family physicians whose work in the acute care hospital is progressively diminishing and by subspecialty colleagues who are disinclined to look after patients with multisystem problems, even though their training requirements mandate full training and certification as a general internist.

Comments from subspecialists confirmed a lack of appreciation for the work of general internists. Both cohorts recognized that the most satisfying work for generalists would be in smaller communities. The discomfort with maintaining competence in the vast subject matter of GIM and becoming a *"jack of all trades and master of none"* were concerns that tipped the balance toward subspecialization as a career choice among many of those who responded.

The above data, which relate to a cohort of younger specialists and subspecialists that began practice only since 1992, must be examined in the context of the total Internal Medicine workforce in Canada. According to the 2002 Canadian Medical Association (CMA) database, which collects annual information from each of the provincial licensing authorities, 61% of registered internists in Canada were certified as subspecialists, an increase from 54% in 1995. During the same interval, the number of all internists increased from 5359 to 6200. While this represented a total increase of 841, the absolute numbers of general internists actually decreased from 2453 to 2426. In effect all growth in the last 7 years in the Internal Medicine workforce has been in the subspecialty fields. Details are provided in Table 1.

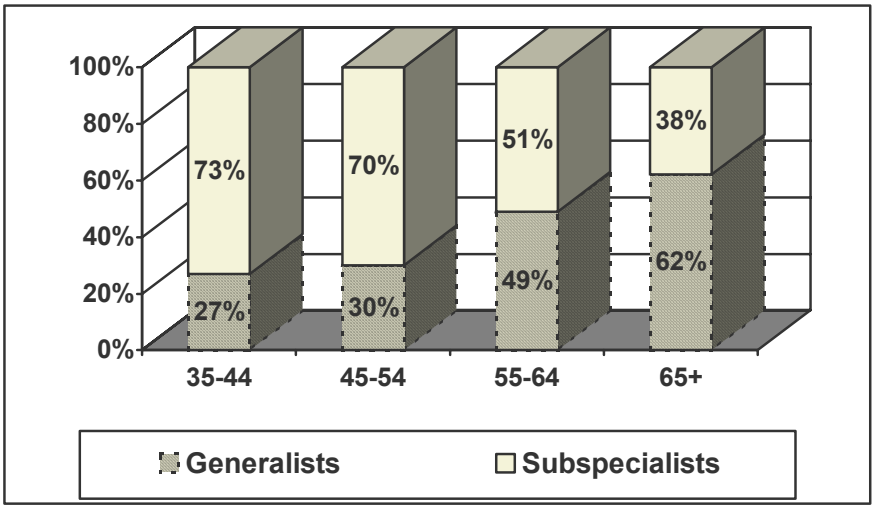
Table 1

General Internists and Subspecialists in Canada CMA Masterfile-2002		
	Year	
	1995	**2002**
General Internal Medicine	2453 (46%)	2426 (39%)
Cardiology	736	922
Immunology/Allergy	93	115
Endocrinology/Metabolism	255	309
Gastroenterology	335	416
Geriatric Medicine	107	183
Hematology	216	259
Infectious Diseases	99	160
Medical Oncology	211	305
Nephrology	217	327
Respiratory Medicine	400	484
Rheumatology	237	294
Total Subspecialists	**2906 (54%)**	**3774 (61%)**
Total General Internists and Subspecialists	**5359 (100%)**	**6200 (100%)**

The trend toward subspecialization among the younger workforce is further demonstrated in Figure 1 below giving a breakdown of the Internal Medicine workforce by age group.

Figure 1

GENERAL INTERNISTS AND SUBSPECIALISTS IN CANADA BY AGE GROUP (CMA MASTERFILE, 2002)



Note: 42% of General Internists are over 55 years of age.

Though the above data show a marked reduction in the GIM workforce over the past decade, an examination of residents currently in training adds substantially to this concern. Each year Internal Medicine residents in their third year of training (R3's) make the choice of applying to a subspecialty training program. These applications for R4 training are centrally co-coordinated with agreed dates of offers and acceptances among each of the training programs. In the most recent competition for residencies to begin in July 2003, 164 of 175 applicants to the anglophone schools opted for subspecialty training programs with only 11 choosing to terminate their training as general internists. The results of this competition for the past three years are indicated in Table 2.

Table 2

Internal Medicine R4 Match				
	Year			Totals
	2000	2001	2002	
General Internal Medicine	14	12	11	37 (7%)
Subspecialties	155	150	164	469 (93%)
Totals	**169**	**162**	**175**	**506 (100%)**

(Source: National Internal Medicine R4 Match)

The frequency of application into individual subspecialties over the past three years is summarized in Table 3.

Table 3

Internal Medicine R4 Subspecialty Applications- 2000, 2001 and 2002	
Subspecialty	**#'s of Applicants**
Cardiology	88
Nephrology	69
Gastroenterology	68
Respiratory Medicine	48
Medical Oncology	46
General Internal Medicine	37
Hematology	34
Endocrinology/Metabolism	29
Rheumatology	23
Infectious Diseases	21
Critical Care	19
Geriatric Medicine	11
Clinical Immunology/Allergy	8
Clinical Pharmacology	5
Total	**506**

(***Source: National Internal Medicine R4 Match)***

These data confirm that trends toward subspecialization are even more pronounced among Internal Medicine residents currently in training. Clearly some of the eloquent messages cited by respected educators in the early 1990's have not been heeded [3,4,5].

A parallel study involving General Surgery, also supported by Health Canada, is in an early phase. Initial data analysis indicates a similar trend toward subspecialization, thereby confirming concern about the future provision of general surgical services, especially in smaller communities that could not support a surgical subspecialist.

C. The Extent To Which Access To Consultant Services Influence The Scope Of Practice Of Primary Care Physicians

While patients requiring urgent medical attention are accommodated in a timely fashion, others are faced with long waiting times. The general increased difficulty in accessing consultation services together with an apparent declining level of comprehensiveness of care by some family physicians[6] provides more reason to review the unique contributions to patient care provided by primary care physicians and various specialists.

D. Trends Toward Family Medicine Training Among Graduating Medical Students

The one-year rotating internship as a route to licensure was abolished in 1993. Since 1994, graduates of Canadian medical schools are required to choose between two streams of postgraduate training, one leading to certification as a family physician and the second to certification as a specialist. These are accessed in an annual PGY-1 match carried out for medical schools by the Canadian Resident Matching Service (CaRMS). Slightly fewer than 40% of available positions are allocated for Family Medicine and the remainder for a variety of specialties.

Since 1994, the percentage of graduates selecting Family Medicine as a first choice has gradually decreased, reaching a low of 25% in the most recent match. This has occurred despite the percentage of available positions remaining constant[7]. The declining numbers are indicated in Table 4.

Table 4

Year	% Graduates Choosing Family Medicine as First Choice	% Of Total Positions
1992	44%	38% (499)
1993	38%	37% (606)
1994	32%	40% (507)
1995	34%	38% (504)
1996	33%	38% (485)
1997	35%	39% (469)
1998	32%	38% (454)
1999	32%	37% (440)
2000	29%	38% (451)
2001	28%	39% (476)
2002	30%	39% (489)
2003	25%	38% (494)

(Source: CaRMS PGY-1 Match Report-2003)

E. Duration And Content Of Family Medicine Training

The standard Family Medicine training program is two years in duration and must include a minimum of eight months in an outpatient Family Medicine unit. The mandatory specialty rotations are Internal Medicine, surgical specialties, Obstetrics, Geriatrics, Psychiatry, Pediatrics and Emergency Medicine. All are intended to include some experience in acute care settings. An additional one year of accredited training leading to certification may be taken in Emergency Medicine, Care of the Elderly or Palliative Care Medicine. There is also provision in several programs for a personally designed third year. During the 2002-2003 term 23% of the previous year's graduates from Family Medicine programs took the additional third year of training, a steadily increasing percentage. Of these, one third used the third year to acquire a variety of additional skills training, usually in preparation for work in rural/remote regions, but the largest group (59%) took a year of additional training in Emergency Medicine[8]. Many of the latter are taking full-time jobs in emergency rooms and not practising traditional Family Medicine. The net result is that approximately 13% of graduates from Family Medicine programs may not be working as family physicians, thereby aggravating the problem of the rapidly depleting workforce.

The current two-year Family Medicine training program in Canada is shorter than the minimum training required in all countries with comparable undergraduate curricula. There is dialogue about an increase to three years, with current plans for implementation at two schools in Quebec. The content of a required third year should ideally be developed collaboratively with the specialist community within a context of agreed guiding principles concerning the roles of family physicians, general specialists and subspecialists, particularly in fields such as Internal Medicine, Pediatrics and Psychiatry.

F. The Extent To Which The Content, Culture And Location Of Postgraduate Training Reflects The Various Working Environments For Which Residents Are Being Prepared

During the past 30-40 years two important, but independent, events occurred within the administrative structure of organized medicine and its educational component. These were the establishment of Family Medicine departments and training programs within academic medicine and the division of the traditional specialties into many subspecialties. During this same interval, many schools introduced pre-clinical problem-based curricula for undergraduates that promote a multidisciplinary approach to problem solving. However, this collaborative approach has not yet significantly influenced patient-related clinical education at both the undergraduate and postgraduate level. This continues to follow a pattern of assigned rotations to specific Family Medicine, specialty or subspecialty services. Recognition that the traditional tertiary care teaching hospital may not be the ideal site for the training of family physicians or general specialists[9] has been popular with residents in these programs, but serves to accentuate their separation from subspecialty colleagues and faculty.

These changes, together with the more recent Canadian decision to force graduating medical students to select a Family Medicine or specialty postgraduate stream directly from medical school, has served to further separate Family Medicine, general specialties

and subspecialties from one another, and to isolate the teachers and learners within each into individual "silos". This jeopardizes a broad understanding of the critical role each discipline contributes to a patient-centred health care delivery system or in role-modeling a collaborative and respectful environment. The differences in prestige, lifestyle and remuneration that are easily perceived by medical students and residents within their learning environments tend to influence career choice to an extent that threatens the replenishing of a well-balanced medical workforce in which all segments are recognized as important and treated with comparable respect.

G. The Extent To Which Remuneration And Lifestyle Influence Career Choice

While other factors also prevail, it is not surprising that medical careers which best combine advantages of lifestyle and remuneration have a greater attraction. Among the narrative comments received from both the GIM and subspecialty cohorts referred to above, many indicated the more attractive lifestyle and remuneration of subspecialists draw individuals away from a GIM career.

H. Primary Care Done By Specialists And Subspecialists

Though not yet a major problem, there are indications that some subspecialists may be undertaking primary care activities, either voluntarily or by default. Commonly cited examples include Infectious Diseases physicians looking after patients with HIV/AIDS or nephrologists caring for chronic dialysis patients. This may increase as more single disease specialty clinics emerge. While there will clearly be exceptions, it is probable that most subspecialists will not maintain primary care skills. The net result may be sub-optimal fragmented care, often resulting in over-referral and excessive costs. The increasing primary care role of general internists in the acute care hospitals has been discussed previously. These are important areas for further research.

DISCUSSION AND SUMMARY

Primary care physicians, "general" specialists and subspecialists comprise three broad groups of physicians whose roles must be complementary. Though all are critically important in both the education and service sectors of health care delivery in Canada, their numerical proportions relative to one another are clearly changing in favor of subspecialization.

The advent of subspecialization that resulted from the recognition and support of the clinician scientist in the 1960's has resulted in enormous scientific and technical advances in the diagnosis, treatment and prevention of human disease. The opportunity to enable the clinician to function as an expert at both the bedside and laboratory bench must continue to be supported. The obvious advantages of such subspecialty expertise must, however, be balanced with the consequences of fragmentation of care that results from the more limited scope of practice and need to involve an increasing number of subspecialists in the care of a single patient. This is particularly relevant to hospitalized patients in large cities where the involvement of the family physician may be absent or "peripheral". In relation to Internal Medicine, logic dictates that well trained general specialists may be quite capable of caring for many of the same patients that are now

referred to subspecialists. The reality, however, is that GIM is struggling to survive as evidenced by career choices of Canadian medical students.

This raises another important research question in the Canadian context, specifically whether the existing two year training program in Family Medicine provides adequate acute care experience to allow future family physicians to more confidently interact with subspecialists in the care of patients with multisystem problems. This obviously important function in the interests of better comprehensive and continuous care may become critical if the GIM workforce continues to decrease.

Our studies suggest that one of the factors that contributes to the declining interest in careers as primary care physicians or general specialists is a sense of being undervalued. Many of the subspecialties have been able to define their own scope of activity, while the others seem destined to be more reactive. It is important to explore whether some of the activities and procedures carried out by subspecialists could not also be done by general specialists and family physicians, thereby allowing subspecialists to concentrate their clinical activities in areas where their expertise is indisputably unique.

These issues should be of concern to physician resource planners within medical organizations, governments and the academic institutions that carry a social responsibility to produce an adequate number and mix of properly trained physicians in each of the primary care, general specialist and subspecialist categories.

We suggest three general initiatives that may be helpful in beginning to address this issue in Canada.

1. Attempt to more accurately define the most appropriate roles and inter-relationships for these broad sectors of the medical profession. This might serve as a valuable prerequisite to concurrent equally important discussions about the most efficient interactions between medicine and other legitimate health professionals.

2. Address some of the remuneration and lifestyle differences that appear to be driving future physicians away from Family Medicine and general specialties.

3. Train future physicians in clinical learning environments where each of these sectors is regarded with equal respect and importance.

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