

TOWARD INTEGRATED MEDICAL RESOURCE
POLICIES FOR CANADA:
BACKGROUND DOCUMENT

Morris L. Barer
Greg L. Stoddart

HPRU 91:6D

JUNE 1991

HEALTH POLICY RESEARCH UNIT

Centre for Health Services and Policy Research
429 - 2194 Health Sciences Mall
University of British Columbia
Vancouver, B.C. CANADA
V6T 1Z3

The Centre for Health Services and Policy Research was established by the Board of Governors of the University of British Columbia in December 1990. It was officially opened in July 1991. The Centre's primary objective is to co-ordinate, facilitate, and undertake multidisciplinary research in the areas of health policy, health services research, population health, and health human resources. It brings together researchers in a variety of disciplines who are committed to a multidisciplinary approach to research, and to promoting wide dissemination and discussion of research results, in these areas. The Centre aims to contribute to the improvement of population health by being responsive to the research needs of those responsible for health policy. To this end, it provides a research resource for graduate students; develops and facilitates access to health and health care databases; sponsors seminars, workshops, conferences and policy consultations; and distributes Discussion Papers, Research Reports and publication reprints resulting from the research programs of Centre faculty.

The Centre's Health Policy Research Unit Discussion Paper series provides a vehicle for the circulation of preliminary (pre-publication) work of Centre faculty and associates. It is intended to promote discussion and to elicit comments and suggestions that might be incorporated within the work prior to publication. While the Centre prints and distributes these papers for this purpose, the views in the papers are those of the author(s).

A complete list of available Health Policy Research Unit Discussion Papers and Reprints, along with an address to which requests for copies should be sent, appears at the back of each paper.

The appendices to this Discussion Paper are available as HPRU Discussion Paper 91-7D. This Discussion Paper is being simultaneously released as a Working Paper of the Centre for Health Economics and Policy Analysis, McMaster University.

TOWARD INTEGRATED MEDICAL RESOURCE POLICIES FOR CANADA:

BACKGROUND DOCUMENT

Morris L. Barer

Director, Centre for Health Services and Policy Research,
and Professor, Department of Health Care and Epidemiology,
University of British Columbia; Associate, Population Health
Program, Canadian Institute for Advanced Research

Greg L. Stoddart

Professor, Centre for Health Economics and Policy Analysis, and
Department of Clinical Epidemiology and Biostatistics, McMaster
University; Fellow, Population Health Program, Canadian
Institute for Advanced Research

Report prepared for the Federal/Provincial/Territorial Conference of
Deputy Ministers of Health. Final report submitted June 1991.

This report is dedicated to the memory
of Roberta Labelle. Her strong belief
that knowledge and understanding can
make a difference will sustain our
commitment to this work.

ACKNOWLEDGEMENTS

Our greatest debt is to the many individuals and organizations, listed in Appendix A, who gave freely, not only of their time, but of their candid views, concerns and hopes. Their insights provided a depth of information and understanding well beyond what one could ever hope to cull from published literature, commissioned reports, or research based on secondary data sets. We are particularly indebted to Eva Ryten, Michel Bérard, Stuart MacLeod, Roberta Labelle and William Tholl.

The project team included: Neil Stuart who assisted us with interviewing; Marc-André Fournier and André-Pierre Contandriopoulos, who provided us with a more detailed and enlightened picture of the Québec policy scene than we could possibly have developed ourselves within the tight project time frame; Jonathan Lomas who provided thoughtful policy advice, a critical eye, and assistance with the drafting of selected sections of the report; Kathy Friesen, who was the project manager, assisted with a significant proportion of the interviews, prepared one of the appendices, and helped us organize and wade through the voluminous literature in this contentious area; Charlene Crumback at UBC, who bore the brunt of the 'manuscript production' and logistical responsibility for the project; Nancy Bishop, Diane Rogers and Lynda Marsh at McMaster, who provided a variety of types of assistance during the project; Christel Woodward, who served as a consultant and critical reviewer on selected aspects of the project; and our seven international consultant teams who prepared the reports that appear as Appendices D through J. An undertaking of this magnitude could not possibly have been completed in such a short time without the energetic assistance of these individuals. We suspect, nevertheless, that none of them would wish any part of the report to be attributed to them; convention suggests we should accommodate those wishes -- the analyses, opinions, recommendations, and errors of commission or omission are, in the end, ours.



TABLE OF CONTENTS

Acknowledgements	i
Table of Contents	ii
Preface	vii
 Chapter 1: Summary, Recommendations and Guide to Report	
Executive Summary	1-1
Summary of Recommendations and Options	1-4
Reader's Guide to the Report	1-14
 Chapter 2: History, Objectives, Constraints and Process	2-1
Objectives	2-2
Constraints	2-4
Process	2-5
Information Gathering	2-6
Analysis	2-10
Report Writing	2-11
 Chapter 3: Promoting Change: General Themes	
Summary	3-1
Themes	3-4
Figure 3.1: Analytic Framework for the Report	3-17
 Chapter 4: Problems in Physician Resource Management	
A. From the Perspectives of Those Interviewed	4A-1
Summary	4A-1
Overall Physician Supply	4A-6
Medical School Enrolment	4A-7
Undergraduate Medical School Curricula	4A-8
Graduates of Foreign Medical Schools (GOFMS)	4A-9
Proliferation of Sub-Specialties and Number of Residency Programs	4A-10
Number and Mix of Residency Positions	4A-12
Specialty Shortages	4A-15
Role and Funding of Academic Medical Centres	4A-16
Geographic Distribution of Physicians	4A-19
Licensure of Physicians and Regulation of Medical Practice	4A-22
Remuneration for Medical Services	4A-24
Research, Planning and Information	4A-26
Miscellaneous Other Problems	4A-27
B. From an International Perspective	4B-1
Overall Physician Supply	4B-1
Medical School Enrolment	4B-3

Undergraduate Medical School Curricula	4B-3
Graduates of Foreign Medical Schools	4B-4
Specialty Training and Specialty Shortages/Surpluses	4B-4
Geographic Distribution of Physicians	4B-5
Licensure of Physicians and Regulation of Medical Practice	4B-6
Remuneration for Medical Services	4B-6
Research, Planning and Information	4B-6
C. From Our Perspective, All Things Considered	4C-1
Summary	4C-1
Overall Physician Supply	4C-6
a. Undergraduate Enrolment in MD Training Programs in Canada	4C-9
b. Graduates of Foreign Medical Schools (GOFMS)	4C-16
Residency Training and Specialty Certification (Numbers and Mix)	4C-23
Specialty Maldistribution	4C-32
Role and Funding of Academic Medical Centres	4C-34
a. Multiplicity of Sources of Funding	4C-36
b. Instability of Sources of Funding	4C-37
c. Lack of Correspondence of Sources with Functions	4C-39
d. Fragmented Control over Levels and Allocations of Centre Revenue	4C-40
e. The Use of Fee-for-Service as a Method of Remunerating Clinical Practice in Academic Settings	4C-40
Geographic Maldistribution	4C-42
Patterns of Medical Service Utilization	4C-47
Licensure and Regulation	4C-51
Physician Remuneration	4C-56
a. Fair and Equitable Remuneration for the Provision of Medical care	4C-56
b. Political, Human and Financial Costs of Fee or Income Negotiation	4C-58
c. Lack of Incentives to Deploy Physician Resources Efficiently	4C-58
d. Linkages Between Dominant Method of Remuneration and Increases in Utilization of Medical Services	4C-60
e. Effects of Dominant Method of Remuneration on Relationships Between Institutions and the Physicians Who Use Them	4C-61
Global Expenditure Policy	4C-66
Information Creation and Provision	4C-69

Chapter 5: Approaches to Physician Resource Management

A.	From the Perspectives of Those Interviewed	5A-1
	Summary	5A-1
	Overall Physician Supply	5A-2
	Medical School Enrolment	5A-3
	Undergraduate Medical School Curricula	5A-5
	Graduates of Foreign Medical Schools	5A-6
	Number and Mix of Residency Positions	5A-7
	Specialty Maldistribution	5A-11
	Role and Funding of Academic Medical Centres	5A-12
	Geographic Distribution of Physicians	5A-14
	a. General Thoughts and Constraints	5A-14
	b. Admission Criteria	5A-15
	c. Training Programmes, Sites and Curricular Exposures	5A-15
	d. Financial Approaches	5A-17
	e. Public Service	5A-18
	f. Geographic Restrictions on Practice Opportunities	5A-18
	g. Organizational Approaches	5A-18
	h. Regulatory Approaches	5A-19
	i. Alternative Health Care Personnel	5A-19
	j. Other Miscellaneous	5A-20
	Licensure of Physicians and Regulation of Medical Practice	5A-20
	Remuneration for Medical Services	5A-21
	a. Restructuring within a Fee-for-Service System of Remuneration	5A-21
	b. Restructuring of Methods of Remuneration	5A-23
	c. Dispute Resolution	5A-23
	d. Other Cautions, Suggestions and Solutions	5A-24
	Global Expenditure Considerations	5A-24
	Research, Planning and Information	5A-26
	Other More General Policy Considerations	5A-28
	Miscellaneous Other Solutions and Suggestions	5A-29
B.	The Quebec Experience	5B-1
C.	Lessons from International Experience?	5C-1
	Overall Physician Supply	5C-2
	Undergraduate and Post-MD Training	5C-3
	Geographic Distribution of Physicians	5C-4
	Licensure of Physicians and Regulation of Medical Practice	5C-5
	Remuneration for Medical Services	5C-5
	Global Expenditure Initiatives	5C-6
	Research, Planning and Information	5C-7
	Other Potentially interesting Policy Initiatives	5C-7

Chapter 6: Policy Analysis, Options and Recommendations

A. Policy Framework	6A-1
Figure 6.1: A Framework for Physician Resource Policy	6A-2
B. What Could or Should be Done?	
Summary	6B-1
Undergraduate MD Education	
a. Enrolment	6B-1
b. Admissions Process	6B-4
c. Curricula	6B-6
d. Provision of Information to Medical Students	6B-7
Graduates of Foreign Medical Schools (GOFMS)	6B-8
Post-MD Pre-Licensure Training	6B-17
a. Numbers and Clinical Exposures	6B-18
b. Return-In-Service Policies	6B-20
Residency Training and Specialty Certification	6B-21
a. Overall Number of Residency Training Slots	6B-21
b. Specialty Mix, and Location, of Residency Training Positions	6B-28
c. Funding of Post-MD Residency Training	6B-34
d. Residency Training 'Curricula'	6B-39
Specialty Maldistribution	6B-42
Role and Funding of Academic Medical Centres	6B-46
Geographic Maldistribution	6B-53
Patterns of Medical Service Utilization	6B-64
Regulation and Licensure	6B-69
Remuneration for Medical Services	6B-74
Global Expenditure Policy	6B-87
Information Creation and Provision	6B-96
a. Information Creation	6B-97
b. Information Dissemination	6B-101

Chapter 7: Next Steps

How, When, and By Whom?	7-1
The Current Environment	7-3
First Steps Toward a National Strategy	7-5

Bibliography

- A. Books, Articles and Presentations
- B. Reports and Miscellaneous Other Documents

PREFACE

Physician resource policy in Canada is plagued by historical and political inertia, professional and geographic territoriality, incomplete and inconsistent information, frustration, and a great deal of nervous apprehension. It is also a field of remarkable complexity, encompassing issues of equity, distribution, supply, incomes, regulation, immigration, education and research, to name a few of the prominent ones. It would be pretentious of us to suggest that, in the short space of ten months, we developed a complete understanding of every nuance of every issue, and became sufficiently well informed and insightful that we can now do what others before us have avoided, or failed to do: provide a blueprint for a national physician resource policy that will 'work'. So we will not, because we did not.

What struck us during the life of this project was not just the complexity of each issue area taken separately, but the fact that so many issues were so very interdependent. It is this 'inter-complexity'-- the fact that, to have any chance of meeting their objectives, initiatives in one area must be accompanied by concurrent policies in another -- and the diversity of regional and provincial problems, which present the greatest challenges to a 'national approach' to policy co-ordination in this critically important area of health policy. It also points to the need to think of physician resource policy in a dynamic health and social policy context. We need to be able to do much better in monitoring and evaluating the effects of what we do on people's health and well-being, and then in adjusting or fine-tuning policies as may seem appropriate. Perhaps most importantly, we need to get over our collective Canadian-style fear of changing directions even when such re-direction is clearly called for. We must realize collectively that letting policy develop by default, disinterest, or insufficient will, is itself a policy strategy, but one that can only be expected to bring about satisfactory results by those who believe in winning lotteries.

This is not to suggest that the task is impossible (although others may make that judgement after reading this document), or that there is no hope for a national strategy. On the contrary, we feel both that there are some areas in dire need of co-ordinated policy development, and that for some of these the most logical (indeed the only logical) approach must be a 'national' approach. But we cannot over-emphasize the fact that ten months of review and analysis, drawing on limited resources, cannot possibly do justice to the complexity of the task.

This complexity is, in part, due to the shifting policy environment. Several significant events occurred during the period of this report, some but not all of which we were able to incorporate into our analysis (which was completed in late January 1991). For example, we have not been able to address in any detail the most recent proposed reforms in Québec. The special report from our Québec associates was completed in late November 1990, just prior to the public release of the proposals.

Nevertheless, we hope we have been able to identify some priority areas for policy attention, to develop some new 'avenues of opportunity' for them, and to offer some initial directions for getting to those 'avenues'. We have tried also to identify both broad directions where stakeholders can be given the opportunity at the next stage to develop consensus on particular initiatives, and specific areas where more intensive and extensive investigation could pay dividends. We do not claim to have done more.

MLB
GLS

May 1991

Chapter 1: SUMMARY, RECOMMENDATIONS AND GUIDE TO REPORT

Executive Summary

This report is based on the synthesis of six components: 1) as a starting point, a set of problems as perceived by the Deputy Ministers of Health in Canada; 2) over 70 interviews with individuals involved in a variety of ways with the physician resource sector; 3) eight commissioned reports, one on the experience in Québec and seven international reports; 4) reviews of the academic and 'trade' literature and of recent committee, task force and commission reports in Canada; 5) consideration of physician resource policy initiatives and, where possible, their outcomes in Canada; and 6) our own analytic perspective.

The report has three main objectives: 1) to bring as much as possible together in one place on matters of relevance to physician resource policy in Canada; 2) to develop principles and a framework to guide future policy development; and 3) to make policy recommendations consistent with the principles and framework.

Eleven themes underlie the report; four are of overriding importance. The first is that there is presently no agreed-upon policy objective for management of the physician resource sector in Canada. We propose that this objective should be to meet those health needs of the population that can be most efficiently met by individuals with training as MDs, subject to societal decisions about the resources it is willing to commit to meeting those needs.

The second theme is that an 'optimal' number of physicians cannot be defined by purely technical means. Ultimately, this is a social rather than a technical judgement. Unwillingness to accept this fact has unnecessarily delayed policy development while the parties involved awaited improvements in data collection or planning methodologies.

The third theme is that a national strategy which encompasses specific policies to which all provinces and territories must commit is not feasible; however, nationally co-ordinated provincial/territorial policies built upon a commonly understood policy objective and framework may well be feasible. Even this approach will have to accommodate the reality that all stakeholders do not and will not agree on all issues, and that the nature and severity of problems in this sector do and will vary considerably by region of the country. There is, however, an important consensus among stakeholders that falling back on the status quo as a policy is not acceptable for most problem areas. Furthermore, many of those interviewed during this project felt that 'the time is right' for significant reforms to address the problems in physician resource management in Canada.

The fourth theme reflects the tension that has evolved since the inception of publicly funded health care between the private interests of physicians and the collective goals and objectives of the public enterprise in which they now work. Although this tension has gradually led physicians toward a greater appreciation for the collective public goals, it has been a slow

evolution. The theme is, therefore, that more attention must be paid to incentives and structures that, while minimising coercion and regulation, increase the responsiveness of physicians and organisations such as academic medical centres to the collective goals and needs of the public enterprise of which they are an integral part. (A summary of these and the remaining themes appears at the beginning of Chapter 3.)

The conceptual framework adopted for the analysis of physician resource policies is the medical career life-cycle. This framework recognises that the distribution and morale of, and the services provided by, the 'physician resource' are the result of the aggregation of many micro-level decisions made by individuals faced with personal and professional incentives at numerous 'choice-points' in their career. Many macro-level policy decisions have tended to ignore this reality and have consequently fallen short of their objectives. Analysis of present incentives faced by individuals when they come to choose (say) specialist versus generalist or urban versus rural practice provides a better insight into the roots of current problems. Therefore, future policy initiatives should explicitly target the incentives faced by individuals at these key 'choice-points' to encourage a distribution and use of physician resources that is more in line with public needs and collective objectives.

Several problem areas, and their causes, are identified in our analysis, including:

- increases in physician supply in excess of population growth without any compelling justification;
- numbers and mix of residency training positions, and mix of specialists, that are out of balance with population need;
- a poorly defined role for academic medical centres and chaotic funding of their activities;
- significant geographic variation in physician supply which affects timely and/or convenient access to necessary services;
- a non-trivial amount of medical services utilization that is being found to be ineffective, inappropriate, or inefficient;
- lack of uniform national standards of clinical competence for licensure;
- inadequate attention in the self-regulation of practice to overlapping 'scopes of capability' and the need for continuing competence review;
- significant dissatisfaction with processes for negotiating remuneration forms and levels;
- conflict between the fee-for-service method of payment and clinical, educational and public policy objectives;
- deficiencies in both the amount and quality of basic clinical and management information, and incomplete use of information which does exist.

(A more detailed and explicit summary of problems and causes appears at the beginning of section C of Chapter 4.)

On the basis of stakeholder interviews it appears that the problem areas

around which there is the most consensus only partly coincide with the above. These problem areas are: geographic maldistribution, control over graduates of foreign medical schools, rationalisation of residency training, the role and funding of academic medical centres, and the role of fee-for-service remuneration. (A complete summary of the problems as perceived by interviewees appears at the start of section A of Chapter 4.)

The policy analysis and development section of the report (Chapter 6, section B) contains over fifty recommendations (or options) to address the problem areas systematically. The recommendations are organised around the choice-points in the medical career life-cycle, from high school education exposures, through the MD admissions process and training experience, the pre-licensure period, specialty certification, and on to clinical practice. These recommendations can also be categorized into six general avenues available for physician resource policy: capacity and mix; information; funding and reimbursement; examination, licensure, certification and regulation; curricula; and spatial location (Figure 6.1 in Chapter 6, section A). We emphasise the need to link a number of these recommendations in carefully timed and co-ordinated 'policy packages' and warn against the introduction of isolated policies which do not take account of their inter-dependence. (For instance, dealing with graduates of foreign medical schools (GOFMS) requires both policies to control their flow and policies to attract Canadians into the positions where only GOFMS have historically responded to the need.) By necessity, the Summary of Recommendations and Options which directly follows this Executive Summary identifies distinct policies. In nearly all cases, however, each policy is a component of a co-ordinated package designed to address specific problems.

Several steps remain in the process of drafting a national 'strategy' (however defined) for the management of physician resources in Canada. These include more explicit consideration of the timing and co-ordination of specific policy initiatives and discussion of which parties might accept leadership roles in policy change. This process should begin, however, with an opportunity for stakeholders, including governments, across Canada to react to the framework, analysis and recommendations of this report, to identify the principles on which collaboration can be based, and to indicate the 'policy packages' for which there exists the strongest initial support.

The level of concern about the current state of this sector demonstrated by the many individuals and groups whom we interviewed, and their willingness to assist us in preparing this report, may augur well for the outcomes of a consensus-building exercise. It is imperative that this effort be made, because effective medical care for Canadians in the future depends upon both sensible and sensitive management of physician resources today.

Summary of Recommendations and Options

The recommendations and policy options summarized below are drawn almost entirely from Chapter 6, section B. While we have attempted to provide a relatively concise summary of the key recommendations and options, the reader is cautioned that in many cases they were exceedingly difficult to summarize in a way that captured the various complexities and inter-dependencies.

The ordering of these recommendations is not intended to indicate priorities. Rather it follows (approximately) the medical career life-cycle which has been used as the conceptual framework for our analysis.

Undergraduate MD Education

Enrolment

1. Undergraduate enrolment should be adjusted so as to maintain approximately the current population:physician ratio; further reductions in this ratio are not warranted. At present a domestic entry class size of 1600 students is consistent with this objective. This represents a reduction of less than 10% in current domestic entry class size. This recommendation assumes the implementation of concurrent policies (see below) regarding graduates of foreign medical schools, funding of Canadian medical schools, and the supply and mix of post-MD training positions.

Admissions Process

2. The criteria used for admission to medical school should place more emphasis on broadly-based academic preparation and performance, life experiences, and problem-solving and interpersonal skills of applicants.
3. 'Home-province'¹ advantage for applicants should be eliminated or reduced, so that medical schools become a 'national' resource equally available to all Canadian students irrespective of their province of residence.
4. If geographic maldistribution is a high priority problem, some entry class places should be reserved in medical schools for students from under-served areas. Alternatively, or perhaps in addition, some places should be reserved for applicants willing to sign (at time of admission) contracts for pre- or post-licensure service provision in designated under-served areas.

¹ We use "province" here and elsewhere in this report to refer to provinces and territories.

Curricula

5. The existing undergraduate curriculum should be broadened to include a view of health in its societal context. This will mean greater emphasis on certain clinical areas of increasing importance, exposure to discussions about the context as well as the content of medicine, and more explicit identification of the management or 'gatekeeper' skills required by today's primary care physicians.
6. More training should be located outside of urban tertiary care environments.

Information for Students

7. A national database should be established containing information on characteristics of practice and opportunities for practitioners by, at least, specialty and region. Medical students should also be provided with information on socio-demographic and health profiles of populations, by region, and on emerging developments such as quality assurance and competency assurance, activities of hospitals or licensing authorities which will affect the context of their practice.

Graduates of Foreign Medical Schools (GOFMS)

8. An objective should be adopted, and specific policies enacted, to reduce Canadian reliance on GOFMS in the longer term. This should be achieved through policy initiatives in other areas (see recommendations above and below) which will have the effect of encouraging Canadian graduates to fill those necessary positions presently 'staffed' by 'selected' visa physicians and trainees.
9. A more concerted effort should be made to monitor and strictly enforce conditions of entry for visa trainees and visa physicians.
10. More creative policies need to be developed to encourage 'non-selected' GOFMS entering Canada on grounds unrelated to their profession to fill positions presently filled by 'selected' GOFMS. The feasibility of a national strategy on this issue should be investigated further.
11. Progress on implementation of the recommendations contained in the 1986 Report of the Joint Working Group on Graduates of Foreign Medical Schools to the Federal/Provincial Advisory Committee on Health Human Resources should be reviewed and an action plan should be developed for the recommendations which have not received attention to date.

Post-MD Pre-Licensure Training

12. The annual number of funded positions for graduates of Canadian medical schools should approximate the number of Canadian medical school graduates times the length of post-MD pre-licensure training.
13. The types of clinical training settings require significant re-alignment away from tertiary care centres and toward settings which more closely resemble trainees' eventual practice settings.
14. Trainees should receive more exposure to traditionally under-emphasized areas such as chronic care, mental health, rural area practice and others. The shift from a one-year to two-year pre-licensure requirement affords an opportunity to implement this re-orientation.
15. Post-MD pre-licensure training requirements should be consistent across provinces.
16. Further consideration and discussion should be given to the possibility of requiring a period of (non-fee-for-service) remunerated public service (either prior to or upon licensure) in under-served geographic and/or clinical areas, particularly if current problems and rigidities in the physician resources sector persist.

Residency Training and Specialty Certification

17. The national capacity for residency training should be determined by the educational needs of graduates of Canadian medical schools, and not by clinical service imperatives or other factors. This implies the need for about a 10% reduction in the overall numbers of post-MD training positions funded by provincial Ministries of Health in Canada (even after all provinces have adopted a standard two-year pre-licensure training requirement, and assuming that recommendation #1 above is adopted; see also companion recommendation #19 below).
18. Specialty training programmes should be examined to ascertain the time and extent of clinical exposure required for training, excluding resident provision of purely service needs.
19. Necessary clinical services currently provided by residents, but which are not essential for their specialty training, should be provided by other configurations of health-care personnel (including possibly non-physician personnel). Several options are suggested in Chapter 6B for examination and further discussion.

20. A forecasting model should be developed nationally which would use detailed data on the characteristics of the existing supply of specialists to project future specialty-specific supply. This is seen as an important input into national discussions of adjustments to the mix of specialty training positions.
21. A national and/or regional co-ordinating body(ies) should be created to oversee and broker the rationalization, redistribution, and ongoing adjustment of the specialty mix and location of residency training positions. Included in the goals of these bodies should be the reduction of unjustified duplication of sub-specialty training programmes and the co-ordination of all sources of residency position funding.
22. Coincident with the restructuring of the funding of academic medical centres (see recommendations below):
 - (a) fee-for-service payments to clinical supervisors for services provided under supervision by residents should be eliminated;
 - (b) clinical supervisors should receive non-fee payment explicitly for the activity of clinical supervision.
23. If 'under-subscription' by Canadians of particular residency programmes persists after the recommended rationalization of the number, specialty mix and location of positions, then consideration should be given to providing financial incentives (such as residency stipend bonuses and/or practitioner income bonuses upon obtaining certification) to encourage the choice of these less popular specialty programmes.
24. Consideration should be given to the establishment of accredited residency programmes specifically designed to train 'generalist specialists' for non-urban hospital-based practice. Ministries of Health could give impetus to this by making available special programmatic funding for the purposes of developing, implementing, and evaluating pilot programmes.

Specialty Maldistribution

25. GOFMS should continue to be used where needed to meet specialist shortages, but should only be viewed as a short term solution.
26. Aside from inherent differences among specialties in their attractiveness as 'lifestyles', overall problems of specialty maldistribution are largely the by-product of more fundamental problems in the training, certification and remuneration of specialists. Several concurrent actions should be taken as part of a concerted effort to address these problems, including:

- (a) a review by the Royal College of Physicians and Surgeons of Canada of its processes of sub-specialty certification and accreditation to identify scope for moderating the proliferation of new recognized specialties and of new accredited training programmes;
- (b) examination of the internal structure of fee schedules by provincial medical associations to identify and remove perverse incentives encouraging the choice of less-needed specialties (also see recommendations on remuneration below);
- (c) exploration by Ministries of Health of remuneration policies (such as income bonuses) to influence career choice and specialty distribution, if identified problems with these instruments can be overcome.

Role and Funding of Academic Medical Centres

- 27. The academic medicine establishment should show more leadership in several important areas, including: adapting the training of physicians to changing social needs, monitoring the supply and mix of physicians and the appropriateness of the services they provide, maintaining a balance among different types of research, and contributing to more effective continuing education and competency assurance programmes.
- 28. The funding of academic medical centres needs to be restructured to link it as explicitly as possible to academic goals and the activities and programmes required for their achievement, and to reduce the growing reliance of the centres on clinical earnings.
- 29. Although the design of specific models may differ across provinces and centres, the restructuring of funding should incorporate several general principles, including the following:
 - (a) funding should flow through a single office of responsibility at each centre;
 - (b) funding should not be developed on the basis of 'per student' allotments;
 - (c) 'envelopes' should be used to provide funds for particular programmatic objectives and activities;
 - (d) fee-for-service payment for clinical activity undertaken for academic purposes should be eliminated; funding for these activities should be provided programmatically, and should include clear identification of funds for clinical supervision of post-MD trainees.
- 30. Within each province, all Ministries providing funds to academic medical centres should do so through collective, co-operative, and co-ordinated negotiating mechanisms with the centres as a group (where there is more than one). Significant improvements in inter-ministerial co-ordination and co-operation are required in this regard in some provinces.

Geographic Maldistribution

31. The 'framing' of this problem should be modified, so that: (i) the policy objective is not seen as equal geographic distribution of all types of physicians but rather as equitable and reasonable access to necessary clinical services; and (ii) policy options are not viewed narrowly as physician resource options but as options involving increased scope for other health-care personnel.
32. Because 'piecemeal' approaches and/or 'trickle-down' policies of general increases in physician supply are unlikely to be any more effective in the future than they have been in the past, improved geographic distribution of medical services will require a concerted effort (and resource commitment) to create a broadly-based and integrated 'policy package' of reinforcing initiatives which cut across virtually every other policy area discussed in this report. Therefore serious consideration and discussion of the priority status of this issue is required.
33. A 'policy package' might include some combination of the following:
 - increasing the availability of non-physician personnel as front-line contacts within regional service networks involving regional physician consultants;
 - establishing new training programmes for these non-physician personnel;
 - improving science programmes and career counselling in rural area high schools;
 - reserving undergraduate medical school places for qualified applicants willing to commit to rural area practice;
 - revising admissions criteria for medical school to favour qualified rural applicants;
 - enhancing rural area exposure in both undergraduate and post-MD training;
 - developing new residency training programmes designed explicitly to prepare specialists to serve as rural regional consultants;
 - introducing or increasing financial incentives (both at the training and practice stages) to encourage choices of specialties in short rural supply;
 - introducing or increasing financial incentives to encourage the location of practices in non-urban settings;
 - providing clinical decision-making support networks and regular sources of relief for rural community physicians through academic medical centres;
 - providing 'amenity packages' (e.g. travel funding for continuing education, benefits for spouses/children) as part of recruitment and retention strategies;
 - encouraging alternative remuneration methods, e.g. regional capitation for primary care (see also recommendations on remuneration below).

Patterns of Medical Service Utilization

34. Medical colleges and associations and academic medical centres should take leadership roles in the further development and dissemination of clinical practice guidelines, and the ongoing review of their application and effectiveness. There is considerable scope in this area for a national collaborative effort.
35. Academic medical centres in particular should play a larger role than at present in quality assurance activities, including the generation and synthesis of research contributing to the development of practice guidelines, the identification of situations where guidelines are needed, and the provision of training both for the individuals performing quality assessments and for those whose performance is identified as requiring improvement.
36. For areas in which clinical practice guidelines already exist, the extent of inappropriate care which is presently occurring should be ascertained.

Regulation and Licensure

37. Exclusive fields of practice should be eliminated and replaced by a more circumscribed set of exclusive acts and reserved titles in order to address overlapping 'scopes of capability' of physicians and other health-care personnel.
38. The establishment of programmes to assure the public of the continuing competence of all physicians should be given higher priority, under the leadership of provincial licensing authorities. If effective voluntary programmes which assure the continuing competence of all physicians cannot be designed, then mandatory continuing competence assurance programmes should be established.
39. Licensing authorities in each province should ensure that there is inter-regional portability of licenses.

Remuneration

40. Although there is no single 'best' way to pay physicians in all circumstances, too little use is made of alternatives to fee-for-service as a payment method in Canada. Fee-for-service should be replaced wherever that method of payment aligns poorly with the nature or objective of the service being provided. Following this principle, specific candidates for national payment reform might be:

- (a) elimination of fee-based payment associated with academic activity (where the primary objectives are either education or educational supervision) (see recommendation #29 above);
- (b) replacement of fee-for-service with global funding (contracts) for highly specialized, relatively uncommon tertiary or quaternary services serving regional or provincial populations;
- (c) replacement of fee-for-service by capitation payment for primary care (or a mixture of capitation plus limited fee-for-service) to emphasize and reward the management function of primary care physicians.
- (d) sessional payments or salaries instead of fees-for-service (where it still exists) for emergency department physicians;

These are examples of situations where objectives and methods of payment seem mis-aligned. There are undoubtedly others (see recommendation #41 below).

- 41. Further review of the appropriateness of method of payment for the nature and objectives of specific types of services should be undertaken for other types of services.
- 42. Master agreements governing remuneration negotiations between governments and physicians should facilitate the full range of remuneration methods and include a formal dispute resolution mechanism.
- 43. The development of inter-provincial consistency in fee relativities within fee schedules should be encouraged.

Global Expenditure Policy

- 44. Some form of global budgetary policy will be a necessary component of a responsible policy package. Both quality of care and public accountability would be best served if all provinces moved toward a system of resource allocation consisting of 'top-down' budgetary allocative processes and 'bottom-up' evaluative and corrective processes.
- 45. The level of overall resource commitment to health care is ultimately a matter of social choice. Based on today's apparent social consensus about resource commitments and on existing opportunities for improving effectiveness and efficiency in service delivery and utilization, however, a strong case can be made for limiting increases in health-care expenditures (and especially medical care expenditures) to those necessary to account for general inflation, population growth, and changes in the 'needs-composition' of the population.

46. In the absence of reform of fee-for-service remuneration for physicians and of other physician income reforms, carefully developed individual income ceilings should be considered as an alternative to assist with medical care budgetary control.

Information Creation and Provision

47. A nationally co-ordinated information system that could guide the determination of numbers and mix of post-MD training positions should be established with input from stakeholders and organizations which have already developed useful data.
48. Increased emphasis should be placed on 'applied' health services research (i.e. issues such as the effectiveness and efficiency of alternative services or delivery models, and alternative (to medical care) ways of improving population health). To make this investment worthwhile, however, there needs to be a better interaction between research funding agencies (and researchers) and policy-makers.
49. Routine health status/disability surveys, similar to those now in use in Ontario and Québec, should be fielded in a relatively consistent format in all provinces, with pooling of some of the developmental fixed costs and resources. These surveys should be designed to (among other things) support investigations into the broader determinants of health, monitor key changes in health needs, and provide information on the relationship between health deficits and the use of different types of health-care resources.
50. The public should receive more information than at present on issues such as clinical effectiveness and cost-effectiveness of services, current resource allocations, and determinants of health.
51. It is important to realize that no amount of information is ever likely to be sufficient to satisfy all parties in any policy development process. Furthermore, information itself cannot and does not 'make' fundamental allocative and distributive decisions. Therefore, although there are deficiencies in the amount and quality of current information, these should not be allowed to paralyze policy development in the physician resources sector. Failure to act on the serious problems in this sector will itself be a policy statement.

Next Steps

52. A process should be launched to seek the reactions of stakeholders, including government officials, from across the country to the framework, analysis, options and recommendations

of this report. For this purpose, the report should be viewed as a discussion document which (a) adds impetus to selected changes that are just beginning to occur; (b) encourages other changes that are not yet apparent; and (c) demonstrates the need for integrated policy development within the physician resources sector.

53. The objectives of this process might include the following:
- (a) to confirm the assessment rendered herein, that it is both imperative and possible to begin now a careful process of significant change in this sector;
 - (b) to seek and develop agreement on the principles upon which collaboration will occur among parties in implementing and managing change;
 - (c) to identify the 'policy packages' for which there is the strongest support;
 - (d) to explore the willingness of different parties to take leading or supportive roles in key areas;
 - (e) to identify further the practical obstacles to specific policy changes, and to develop strategies and agreements to address and overcome them; and
 - (f) to address issues of the timing and co-ordination of specific initiatives more explicitly.

Reader's Guide To the Report

We recognize that this is a lengthy report. Therefore we offer comments on its organization and content that may assist readers to review and digest the report more quickly and efficiently.

For readers with specific and circumscribed interests, we have provided a detailed Table of Contents which should allow them to 'customize' their own reading plan. For readers with broad rather than deep interests, the Executive Summary and Summary of Recommendations and Options should suffice. For others, the following comments regarding specific chapters may be useful. Three abbreviated reading sequences of special interest are suggested at the end of the specific chapter remarks.

Chapter 2 is, as its title indicates, a description of the history, objectives, constraints, and process of this project. Readers who are familiar with the project may wish to skip this chapter.

Chapter 3 is, in our opinion, central to an understanding of the analysis and recommendations of the report. Eleven important general themes of the project are discussed, and material appears here which does not appear (although it influences what appears) elsewhere in the report. Each theme is summarized in a one or two sentence 'main message' at the beginning of each sub-section of the chapter. The third sub-section (3 c)) also introduces the organizing conceptual framework for the remainder of the report.

Chapter 4 deals with current problems in physician resource management. Sections A and B are descriptive in nature. The former reports what we were told by interviewees across Canada. The latter provides a synopsis of the problems in other countries as identified in the international reports commissioned for this project. Our analysis of the current Canadian problems, including our characterization of the fundamental nature of the problems and our view of their underlying causes, is presented in section C. This latter section represents the analytical underpinnings of the recommendations and options presented in Chapter 6.

Chapter 5 deals with approaches to 'solving' the problems and managing the physician resources sector, and is largely descriptive in nature. Section A provides a narrative of the approaches offered by interviewees. Section B provides a synopsis of a special report on the Québec experience, commissioned for this project and appearing in full in Appendix B. (The section also incorporates our limited independent review of literature about Québec.) Section C summarizes the approaches identified in the seven commissioned international reports, which also appear in their entirety as Appendices D through J.

In Chapters 4 and 5, key sections (4A, 4C, 5A) begin with brief summaries of their contents.

Chapter 6 continues and completes our own analysis begun in Chapter 3 and continued in Chapter 4, section C. In Chapter 6 we proceed systematically through the physician resources sector, using the organizing framework presented in Chapter 3, to do the following:

- identify and discuss policy options which are, in our opinion, worthy of serious consideration;
- make recommendations where we feel the analysis warrants;
- identify opportunities for national co-operation in policy development and implementation, including opportunities to involve affected interests in the resolution of existing problems.

Section A provides a brief overview of the policy avenues; section B contains the detailed analysis, as well as the policy recommendations and options.

Chapter 7 outlines and discusses some potential 'next steps' toward a national framework and strategy.

Finally, the Bibliography has been divided into two parts: Books, Articles and Presentations (A) and Reports and Miscellaneous Other Documents (B).

Abbreviated Reading Sequences

For Reader Primarily Interested In:

Read Chapters

The views of interviewees

3, 4A, and 5A

International problems and experiences

4B, 5C, and
Appendices D - J
as desired

The analytic 'guts' of the report

3, 4C, 6A, and
6B

Chapter 2: HISTORY, OBJECTIVES, CONSTRAINTS AND PROCESS

Issues of physician supply, mix, distribution, regulation, remuneration and training have been at or near the forefront of health care policy discussions in Canada at least since the early 1960's. They spawned a plethora of national and provincial task forces and research reports in the 1970's and early- to mid-1980's and have, we suspect, been instrumental in motivating the epidemic of provincial royal commissions in more recent years. But the pace of policy development has not matched the frequency of the reviews or the calls for change. In fact, there would undoubtedly be widespread agreement among informed observers of Canadian health care that there has been a lot of sound, fury and gnashing of teeth, but that very little has actually changed since 1971. The problems are much the same, the methods of organization and remuneration remain largely unchanged, training sites and numbers are very similar, and the most frequently suggested solutions to the myriad problems leave one with a strong sense of déjà vu. What has changed, perhaps, is the sense of urgency that things must change, and in many situations change dramatically, in the very near term. Another change is the extent to which such sentiments now seem to pervade the field; in the early to mid-1970's there were but a few lonely voices suggesting that all was not well in the land of 'physician manpower'. Today one can find virtually no one involved in the area who cannot cite a long list of urgent problems.

It was this long history of inaction, and the climate of urgency, that presumably led the Deputy Ministers to decide, at their meeting of December 1989, that a regional/national strategy was urgently needed to address many of the problems common to all provinces and territories: "a national (and, in some cases, regional) strategy and action plan must be developed to successfully address problems which provinces or regions cannot manage on their own" (personal correspondence, J. Jones, 09/03/90).

This report grew out of a March 1990 request from the Federal/Provincial/Territorial Conference of Deputy Ministers of Health to prepare a strategy discussion paper, "based on an analysis of national, regional and provincial options" (ibid.), in response to which we submitted a proposal in April 1990 (subsequently revised the following month). The terms of reference for the project made the Deputy Ministers'

interest in physician resource policy quite explicit.¹ While reference was made to broader health human resource issues, and their relation to health outcomes, our interpretation (confirmed by the Deputy Ministers' Steering Committee for the project²) was that the primary concern was management of physician resources.

Readers will find that, in line with this directive, we have focused on policies related to the management of physician resources in Canada. This has meant that, for example, we give little consideration to some closely related issues such as institutional management and pharmaceutical use or costs, except insofar as they bear directly on the management and delivery of medical services. While we fully recognize the risks inherent in an investigation which is so narrowly focused, we believe readers will agree that even this 'narrow' mandate was so broad and complex that to attempt a yet more broadly conceived study, at this level of detail, would have been impossible to complete in a timely fashion. It would also have lengthened an already lengthy report. We have, however, attempted wherever it seemed possible and particularly relevant, to set our analysis within the broader context of health human resources.

The project was officially launched at a meeting between the Steering Committee and the principals, on June 4, 1990. Work got underway in earnest in late June 1990.

Objectives

We were guided to a considerable degree by the desire of the Deputy Ministers to have the report completed within a very short time frame. We felt that another study attempting to quantify supply, mix, requirements, and distribution would, if done right, cost far more and take far longer than anything the Deputy Ministers had contemplated and, if not done

¹ Those terms included references to "options to address...the number of physicians practising within a given area", "appropriate mix...of generalists and specialists", "immigration of physicians", "trend towards increasing sub-specialization", "geographic distribution of physicians", etc.

² The Steering Committee comprised the Deputies of Ontario, British Columbia, Nova Scotia, Quebec, and (chaired by) Manitoba.

right, would be just that - another study. Instead our point of departure was the observation that a set of perceived problems had motivated the study. Thus, our first objective was to ascertain whether there was general agreement on a set of problems and issues in this area and, in particular, on the extent of agreement with the major problem areas as perceived by those who commissioned the study.

We were also interested in the extent to which regions or provinces were beset by problems that were not widespread, 'Canadian' problems, because such situations would present challenges and constraints for any 'national' strategic initiatives. Thus a second major objective was to develop as complete a picture as possible of the current issues in the physician resources sector.

Our third objective was to elicit the views of those at the coal-face, so to speak -- those who earn their livings working within the medical care system in this country, either as planners, policy-makers,³ regulators, clinicians, administrators, educators or researchers -- as to what the root causes of the problems are and what solutions might be possible. Here our particular interest was in the scope for collaborative solutions which either cut across regional boundaries or across broad stakeholder constituencies. This approach arose directly from the understanding that virtually every policy creates both winners and losers, and that solutions would remain elusive unless they were carefully crafted around the development of constituencies committed to change.

The fourth and most daunting objective was to develop solutions and innovative policy avenues, particularly opportunities for interprovincial/territorial and inter-stakeholder collaboration. Here we hoped to draw on the information garnered through interviews, sub-commissioned international reports, and literature synthesis to sketch out general directions, mechanisms, and participants for what we perceived to be the most pressing issues in physician resource management in Canada today. We were conditioned by the knowledge that most of the issues had

³ We use the term "policy-makers" to mean those who promulgate policies, whether in the public or private sector, e.g. clinical policies in hospitals (Lomas, 1990a).

been around for decades and that there had been many solutions proposed over the years, yet most of the problems remained, and some were getting worse. In short, we perceived that new approaches, alliances and attitudes would be necessary if headway was to be made, that the problems were far more complex than the solutions that had been offered in the past, and that solutions would therefore need to be more creative, more sensitive, and more integrated than their predecessors.

Constraints

The most binding constraint on the task was time. We were asked to undertake a broad policy review, encompassing areas many of which have attracted far more detailed enquiries. Examples that come to mind are Federal/Provincial/Territorial Advisory Committee on Health Human Resources (FPTACHHR) studies of physician supply and requirements, of graduates of foreign medical schools, and of post-MD training, and a number of recent reports on the funding of the Canadian medical training establishment. The bibliography includes many of these more detailed reports.

The tight time frame dictated our strategic approach to the task; this was clearly an undertaking that two principals (each with full-time 'day jobs') working alone were not going to be able to complete. To meet the objectives within the time frame, we assembled a project team comprised of (i) associates who would play critical and varied roles in the project, from assistance with interviewing, to policy analysis and drafting of sections of the report; (ii) consultants and contacts, knowledgeable in numerous relevant areas, on whom we would call as needed to familiarize ourselves with specific areas, or for names of contacts or references; and (iii) a small project staff which would be responsible for the management and coordination of the various parallel activities, and one of whom would undertake a significant portion of the interviewing.

Because of the time frame, we were unable to include any new secondary data source research, we limited our literature search largely to the most recent five years, and we inevitably missed opportunities to interview many knowledgeable individuals across Canada. Virtually every

interview the team conducted provided names of others to whom we should speak. We were simply not able to follow up all suggestions; the report is undoubtedly the weaker for these missed opportunities.

Finally, we wished to avoid becoming involved in an overly-ambitious and costly study. Our feeling was that it should be possible within a reasonable budget to survey the issues, analyze underlying causes, and ascertain the scope (if any) for inter-regional policy development. This approach was a constraint, however, in that it limited the extent of interviewing, the number of collaborators involved in the project, the number of staff who could be set upon the literature, and the amount of analytical work that could be included in the study. In retrospect we think these were the appropriate decisions, although the limited the depth of analysis in some cases.

Process

The project proceeded in three main phases: information gathering, analysis, and report writing. These phases were intended to be non-overlapping; that turned out to be impossible because of the tight time frame. We were still completing our last few interviews and sifting through literature during the early stages of report writing; nevertheless the reason we persisted with interviews deep into subsequent phases was because of the importance we attached to them. Information gathered even from those late interviews was extremely important to the form and content of our recommendations. Similarly, the volume of relevant recent literature was far beyond what even we (who have worked in this field before) could have anticipated. We only hope that the literature search in particular (as represented in the bibliography) will be useful to others well beyond the end of this project and the publication of this report.⁴

⁴ Even so, we do not claim to have included every possible reference of relevance.

Information Gathering

This phase included four central activities: interviews and consultations, a commissioned report on Québec, commissioned reports on experiences abroad, and a review of scientific literature and 'trade' newspapers/journals. The activities proceeded in parallel, although much of the up-front activity involved scheduling and coordinating the interviews, which were conducted during the period August to November 1990.

The project team decided at the outset that (i) it would be impossible, and not particularly useful, to attempt to interview every conceivable stakeholder group in every province or territory, and (ii) there was no compelling reason to try to select interviewees randomly. Instead, we developed a list of interviewees on the basis of three key criteria:

- (a) at least one (and if possible more) interviewees would be selected from each province, territory and the federal government;
- (b) at least one (and if possible more) interviewees would be selected from each of the key stakeholder groups or policy areas, as identified by the project team in consultation with the Deputy Ministers' Steering Committee;
- (c) in selecting interviewees, consideration would be given to travel time and cost, so that groups of interviews could be combined within single journeys wherever possible.

We proceeded under the assumption that personal interviews would be more productive and allow for more candid exchanges than would telephone interviews or written submissions. We believe our experiences confirmed this, although we did a small number of telephone interviews when convenient personal meetings turned out to be impossible to arrange. In addition to the formal interviews, we sought a number of less formal consultations from individuals with expertise in specific policy areas, and we met for a full morning with the members of the Federal/Provincial/Territorial Advisory Committee on Health Human Resources.

Persons and organizations interviewed or consulted are listed in Appendix A. Because of the sheer number of interviewees identified (we

conducted about 70 personal and telephone interviews in all, some of them involving more than one organization or stakeholder), it was not feasible to conduct all the interviews ourselves. We were aware of the potential methodologic problems associated with multiple interviewers and consulted with an expert in interview process. Because of the nature of the interview topics, it was determined that this would not be a major impediment. It was our assessment that the benefit of additional interviews far outweighed the potential cost of inconsistent interview approaches and lines of questioning. Readers should bear in mind, however, not only that the interviews were conducted by six different combinations of interviewers, but also that the selection of interviewees may have 'over-sampled' some stakeholder groups and 'under-sampling' others.

To minimize the extent of inter-interview variation, we developed an interview format (which also appears in Appendix A) that was circulated to all interviewees prior to the interview. It contained a list of problem areas as articulated by those who commissioned the project, some potential underlying causal factors, and some broad guidelines regarding the types of solutions which we were most interested in exploring. Interviewees were invited to comment on the problems and causes, to add or delete, and generally to provide insights related to them. But our over-riding principle was that the interviews should be free-flowing, flexible and candid, and should provide interviewees with the opportunity to be constructive participants in the project, particularly through discussions with the interviewers regarding possible policy directions. Furthermore, we attempted to work to each interviewee's 'comparative advantage'. Thus, we focused on problems and solutions relating to medical education in interviews with those involved with medical education; we sought detailed information on rural area incentive programs from those involved in such programs, etc. In such instances, of course, the interviewee was free to comment on other issue areas.

The second component of information gathering was a commissioned study by Marc-André Fournier and André-Pierre Contandriopoulos (APC) on policy experience in Québec. The decision to commission a separate report

on Québec was made for pragmatic and 'comparative advantage' reasons. The pragmatic reasons were language and time (neither of the principals felt sufficiently comfortable working in French to do justice to interviews in that province or to reviewing documents containing the policy history). The comparative advantage reason was that a colleague (APC) with a long and distinguished history of work in this area in Québec agreed to be involved in the project. There was no doubt in our minds that the project would be better served by more intensive involvement of our Québec colleagues than by the principals attempting to cover this ground. In many ways, Québec has developed policy avenues unique in Canada, and we felt it was important to have a detailed understanding of the policies, and their potential generalizability across the country. The complete Québec report appears as Appendix B; a synthesis of some of the policy initiatives developed there appears in Chapter 5.

The third information gathering activity involved the commissioning of a number of short reports from international experts. Again we consulted with the Deputy Ministers' Steering Committee regarding countries that might have something to offer to this investigation. We also sought the advice of a number of colleagues regarding both countries of interest and potential contributors in each country. Here again the time constraint posed a serious problem, as we required reports to be produced within a few months if they were to be of use in our analysis.

The consensus was that the countries chosen should be similar enough in some key respects to Canada to ensure the possibility of policy export. No dedicated U.S. report was commissioned because the principals and associates were relatively familiar with the United States situation, because in many respects the problems are similar to (but often more serious than) those in Canada, and because there was no shortage of recent literature from that country. The countries chosen are as follows, with the consultants in parentheses: Australia (Neville Hicks and Jane Edwards); Belgium (Denise Deliege); France (Simon Sandier); Germany (Claudia Ade and K.-D. Henke); Great Britain (Stephen Birch and Alan Maynard); New Zealand (Laurence Malcolm), and Sweden (Knut Odegaard, Rolf Ohlsson and Bjorn Lindgren).

We were interested in more than a simple historical recounting of problems and policy responses in the selected countries, because such is readily available in the international literature. Instead we asked the consultants to provide a personal analytic impression of what the key problems were and had been, what policy initiatives had and had not worked, and why. We also asked them what they saw as impending problems and promising solutions which had not yet become policy.

Instructions to the international consultants may be found in Appendix C. The full international reports are in Appendices D through J. We use these reports in two ways in the following chapters of our report. In Chapter 4 we synthesize the reports in terms of the international commonality of problems; in Chapter 5, we address possible avenues of opportunity for Canada from these selected international experiences.

The fourth and final information gathering activity was our review of the literature. Here we were unable to be as comprehensive as we would have liked, due to the limited time frame. Our review had two foci: the scientific literature with an emphasis on the most recent five years; and the Medical Post for the most recent six months (ending in November 1990). Our purposes in choosing each were quite different. We used the former to update ourselves on the state of scientific knowledge on issues such as the determinants of physicians' choice of practice location, the role and impact of increasing proportions of women in medicine, the effects of innovative medical education initiatives, and the effect on physician practice patterns of income, fee and other policy initiatives or external 'shocks'. We used the latter to supplement our interview information with regard to key provincial, territorial and national problems, solutions and stakeholder positions; in a sense this was a validation of the 'pulse' of Canadian medical policy as presented to us in the interviews.

We also perused the recent reports of provincial royal commissions, councils and task forces, as well as a small number of other reports and periodicals. As always, there was much more that could have been read. Thus the bibliography is not intended to reflect a comprehensive review of physician resource literature. It does represent the material reviewed by us in the course of this project.

Analysis

As noted earlier, we neither intended to, nor did in fact, undertake any new analyses of supply, mix, or distribution of physicians. Our analysis took a number of forms. We 'minuted' each interview in considerable detail, and then analyzed the interviews carefully to draw out problem areas, causes and potential solutions. Inventories of identified problems and suggested solutions were created. These formed the bases for what appears in section A of Chapters 4 and 5 respectively. We were particularly interested in areas where there seemed to be widespread actual or potential agreement on problems or directions for change, and in suggestions for how one might encourage the development of constituencies that would enable change. In some instances we sought follow-up information from interviewees.

The literature synthesis proceeded in a number of concurrent directions. We organized clippings from the Medical Post over the past six months, by issue and stakeholder within each province or territory, and then synopsized the chronology of views, positions and events. The result appears as Appendix K. In addition, we undertook a number of keyword-driven literature searches, some of which provided abstracts as well as citations. This literature was scanned for the subset of most direct relevance to the project, and those articles and reports were reviewed in the course of analysis and report writing. This literature is listed in the bibliography, and selectively cited throughout the report.

We reviewed the international reports and the report from Québec in the course of our analysis. In all cases but one, we commented in some detail on original drafts, and requested revisions and clarifications. The reports included in Appendices B, and D through J are the 'final products' of this process, and represent the views and opinions of the individual authors, not of the principals.

Finally, and perhaps most importantly, the principals spent many days holed up away from their usual offices, with mounds of paper and a portable computer for company, engaged in what might best be described as an extensive and intensive process of review, synthesis, and analysis.

Report Writing

Most of the report was drafted over a period of twelve weeks, November 25, 1990 - February 19, 1991, and was submitted to the Deputy Ministers' Steering Committee on February 20, 1991. The final version, which benefited from the critical review and comments of our project associates and a few selected colleagues, was submitted in mid-May 1991. It represents the outcome of the review, synthesis and analysis described above. But the writing was not a distinct process. In fact, significant parts of the analysis are really inseparable from the writing. As an illustrious colleague of ours reminds us periodically, "The real analysis gets done when one sits down to confront the imperative of the blank computer screen".

Chapter 3: PROMOTING CHANGE: GENERAL THEMES

Summary

The following important themes repeatedly emerged during the conduct of this project and underpin the specific analyses and recommendations in later chapters:

1. *The main objective of physician resource policy should be to meet those health needs of the population that can be most efficiently met by individuals with training as MDs, subject to societal decisions about the resources it is willing to commit to meeting those needs.*

The various jurisdictions and stakeholders involved currently appear to have no agreed-upon policy objective, such as the above, available for the physician resource sector. Establishing a consensus around the policy objective for the sector is an important first step. For the purposes of the report we have adopted the above, and identified several important corollaries.

2. *An 'optimal' number of physicians cannot be defined for policy purposes by technical means; this is ultimately a social rather than a technical judgement.*

Unwillingness to accept this fact has led to inappropriate delays in policy development while participants awaited technical improvements in data collection or modelling methodologies.

3. *Future policy development must recognise that the individual decisions of prospective and practising physicians, made in the face of strong personal, institutional and largely private and local incentives, are far more important determinants of policy outcomes in the physician resource sector than the macro-level policy decisions characteristic of previous policy development.*

Although the health-care system is publicly funded and is intended to meet general social objectives, physicians maintain the scope to make decisions which may reflect their private interests. If increasing coercion and regulation are to be avoided, solutions to problems in this sector must focus more on restructuring incentives in the medical career life-cycle to more carefully align private with social interests.

4. *The complex inter-dependence of specific policy areas in the physician resource sector should not be taken as a reason to fall back on the status quo, but will necessitate extensive coordination (across jurisdictions and stakeholders) and careful complementary timing for the implementation of policy 'packages'.*

Broad consultation and implementation responsibility is needed to take account of the complexity of policy interactions in the physician resource sector. For example, isolated policies on undergraduate medical school enrolment may do more harm than good if they are not combined with appropriate companion policies concerning graduates of foreign medical schools, financing of academic medical centres, residency training, and quality assurance, to name only a few.

5. A national strategy which encompasses policies to which all provinces must commit is probably not feasible. Nationally co-ordinated provincial/territorial policies built upon a commonly understood policy objective and framework may well be feasible.

Differences in priorities, philosophies, problems and practices in each of the provinces/territories will require that any national strategy must have enough flexibility to allow for such differences; however, there are some areas for which national strategies are essential, e.g. standards for licensure, and training capacity.

6. Some problems probably have no solution, but may be managed so as to be less problematic. Geographic maldistribution of physicians is a good example of this.

7. Academic medical centres are in urgent need of reform to align their governance, explicit roles, and funding more precisely with their mission within universities, and to pull them back from their evolving role as 'trade schools', increasingly reliant on service funds for operation, and slow to respond to changing social needs.

Academic medical centres have the potential to take a leadership role in reform of the physician resource sector and are, in any event, central to providing for the health-care needs of the population. Their ability and willingness to take on such a leadership role seems to be impaired, however, by numerous conceptual and structural problems relating to the place of medicine in higher education.

8. Long-term planning relating to numbers and mix of health-care personnel can only occur once the future role of the physician is better articulated.

In Canada's publicly funded health-care system, physicians operate under a 'social contract' to serve the medical-care needs of the population. The recent emergence in the public domain of evidence that not all that is done by physicians is necessarily appropriate or effective has not only raised questions about the extent to which

they are fulfilling the contract, but also has left physicians feeling harassed and unappreciated. A more explicit definition of society's expectations of medicine (with particular emphasis on isolating the substantial proportion of its activities which is of proven worth from that of unproven or dubious worth) would both guide future health personnel policy and potentially increase the general morale of physicians.

9. A primary guiding criterion for physician resource policy should be the concept of 'effectiveness'.

Whether an intervention does more good than harm or than no treatment is agreed upon by all parties as an essential foundation for decision-making. New policies on accountability, funding, training, and management in this sector must take account of this concept.

10. There is a continuing evolution from the view of physicians as private agents for their patients' and their own interests, to the view of physicians as clinically skilled agents serving the collective goals of a publicly funded health-care system.

Physicians, more than any other group in Canadian society, have rights and privileges that allow them to satisfy professional interests within a publicly funded enterprise. This system of 'private participants in a public enterprise' requires the reconciliation of 'professional' and 'political' ideologies concerning both the content and context of medicine: Progress in this direction, which has been slowly evolving since the inception of 'medicare', may be aided by additional incentives that make the accountability of physicians to collective public objectives more explicit.

11. Greater effort should go into providing the Canadian public with information, in easy-to-understand formats, on the effectiveness, efficiency and alternative allocations of existing or proposed resource commitments designed to improve health through medical care.

The information typically provided to the public often does not provide a clear picture of our current knowledge of the effectiveness and efficiency of medical care, and may lead the public to have unrealistic expectations. The issue of providing information to the public is not receiving the degree of attention that it deserves. Informed public decision-making, especially in the context of an apparently increasing trend toward devolution of management authority for health-care services, will require the effective provision of more information.

One of the primary objectives of this discussion paper is to treat the problems of physician resource policy systematically. Issues of the supply, mix and distribution of physicians cannot be dealt with effectively in isolation from consideration of other policies affecting the behaviour, attitudes, welfare and performance of physicians and the institutions in which they work and with which they interact. Furthermore, there are compelling reasons for reviewing medical policy besides disputes about surpluses or shortages of physicians. Therefore in this and successive chapters a spectrum of specific problems, causes, potential solutions and obstacles to those solutions is presented and discussed.

Throughout the conduct of the project, however, numerous general themes repeatedly emerged -- in interviews, from published studies and reports, and during our own analysis of the current situation and policy climate. In some cases these themes pertained to underlying structural deficiencies in the current system; in others they arose from the need for a more realistic view of the breadth or depth of the issues and obstacles to solutions; in yet others they represented general principles or values which in our opinion seemed integral to a coherent approach to policy development. In this chapter we identify and discuss these 'referent' themes, which underpin the analysis and inform the recommendations in later chapters.

- a) There needs to be a clear statement of the objectives of physician resource policy that is agreed to by all key 'policy-setters' and 'policy-influencers' in this sector of the health-care system.

Perhaps because the different aspects of physician resource policy (e.g. training, licensure, remuneration, regulation, quality assurance, etc.) have typically been addressed in isolation, in part because policy control and influence is distributed both de jure and de facto among a number of parties, we were unable to find a statement of the overall policy objectives in this sector. We therefore offer the following statement:

The over-riding objective of physician resource policy should be to meet those health needs of the population that can be most efficiently met by individuals with training as MDs, subject to decisions by that population about the resources that it is willing to commit to meeting those needs.

A number of corollaries and implications underly, or derive naturally from, this statement of objective:

- i) within a largely publicly-financed health-care system, decisions about resource allocation, as between health care and other public responsibilities, must be taken in such a manner as to satisfy requirements for public accountability, promotion and protection of public health, and fiscal responsibility;
- ii) regulatory, organizational and financial structures and instruments bearing on the delivery of physician services should be designed to promote the efficient and equitable provision of effective clinical services, the assurance of quality care for the public, and fair and equitable remuneration to all personnel providing those services;
- iii) health needs should be defined in the context of current knowledge about effective clinical interventions and capacity to benefit from intervention; in that regard, physician resource policy should ensure the availability of individuals with training as MD's who can be involved in the research process, the objective of which is to expand the boundaries of effective clinical interventions and knowledge about the determinants of the health of populations;
- iv) sufficient numbers of individuals with appropriate MD and post-MD training should be available to meet the clinical and research training needs, and those associated administrative needs that can be most effectively and efficiently met by individuals with MD-training;
- v) bearing in mind that health needs, and the supply of physicians and other health personnel, are dynamic in nature, physician resource policy must be sufficiently flexible to adjust in time and space to the changing needs of the population and resources allocated to health care by that population.

This statement of objectives treats physician resources as one sector (albeit a very important one) or sub-system of the health-care system, which in turn is but one component of the health system and but one of the determinants of the health of the population (Lalonde, 1974). As stated in Chapter 2, we have focused on the physician resources sector both because this was our task and because the constraints of the project permitted little else; however, the policy objectives in this sector must be embedded within, and indeed stem from and be consistent with, a broader statement of provincial¹ and national health goals. There have recently been statements of such goals by several provinces as well as the federal government. We believe that the objectives of physician resource policy offered above do 'fit into' the broader goals of health-care policy and health policy and do focus attention on what it is that society hopes to accomplish through the production and support of physicians.

The objectives as stated obviously contain some value judgements. On the basis of our consultation with individuals and organizations across the country, however, we believe them to be, in general and on balance, judgements which are shared by most parties. The objectives as stated also require that many further value judgements be made. Agreement on these will be another matter. Indeed, how and by whom judgements of need, effectiveness, efficiency, appropriateness, equity, and willingness to commit resources will be made are perhaps the most difficult, yet central, issues requiring agreement if long-standing impasses in this sector are to be resolved. As one interviewee remarked, "the principles are sound, but the structures for achieving them are a shambles".

It should be reiterated at the outset of this discussion that the primary objective in this sector is to meet those health needs of the population which require physician services with high quality (i.e. effective) patient care, both now and in future. As with any policy objective in this or other fields, total resource cost is an important consideration and a constraint on the achievement of the objective. In

¹ Here and throughout the remainder of the report (unless otherwise specified) we use "provinces" and "provincial", in the interests of space and readability, to refer to all provinces and territories.

our view, however, it should not be confused with or substituted for the real objective; rather it should enter through an explicit framework of accountability in which the roles and responsibilities of all parties involved in the provision, utilization, financing and regulation of physician services are clear and the performance of those parties in executing their responsibilities is monitored. The current situation is deficient in both of these respects.

- b) There is no 'optimal number' of physicians in any absolute or meaningful technical sense that can be a direct and practical guide for policy because, ultimately, this is not a technical matter but a social judgement.

This is important to state unequivocally at the outset, because in our view past and continuing debate over the 'right' or 'optimal' number of physicians (or population:physician ratio) has not been constructive, has perpetuated the myth that better data or methodologies will resolve disagreements, and has impeded a long overdue refocusing of attention on more fundamental and logically prior decisions about the goals and structure of the health-care system itself.² Whether by design or default, this debate can lead and has frequently led to 'analysis paralysis'. Although there is clearly room for improvement in existing data on a variety of relevant factors, the sources of disagreement on the appropriate size and growth of the physician stock are rooted much deeper.³ If it were primarily a technical exercise, we doubt that the

² In this, Canada is no different than virtually every other western industrialized nation. They all share this apparent fascination with the endless pursuit of the magic ratio, and with their placement in the international ranking. On the other hand, Canada does have an opportunity to rise above this fascination, and to provide intellectual leadership in the rationalization of physician supply within a broader health human resource management context.

³ As one small witness to this, we were struck a number of times by the fact that, even in cases where the data themselves were not disputed (e.g. number of physicians recruited to specific under-served areas or locating in certain differentiated fee zones), the parties we interviewed held several different opinions regarding the success of the policies in achieving an appropriate physician supply in the areas in question.

lack of consensus would have persisted so long. It certainly would be easier to resolve.

A number of very basic judgements affecting the supply of physicians must be made in any health system. Perhaps the three most fundamental concern i) the share of resources that will be devoted to health care, ii) which, and whose, needs for care will be met, especially in a largely publicly-financed system, and iii) which delivery models will be used to provide services.⁴ All three are important, inter-related elements of the context in which medicine is practised and services delivered. Contextual decisions in favour of a larger resource commitment, the social legitimization of broader or deeper medical needs, and/or more physician-intensive delivery models would presumably raise the 'optimal' number of physicians, and vice-versa. One exasperated observer of the political economy of Canadian medical care to whom we spoke put it bluntly: "Somebody, somewhere, has to say what services are needed and how they'll be provided".

The historical focus on optimal population:physician ratios in particular does not seem to have been particularly useful in assisting policy formulation, although the ratio approach may in a crude fashion monitor trends in the overall availability of physicians. The problems with the construction and use of population:physician ratios are well-known and much discussed (e.g. Migué and Belanger, 1974; Canadian Medical Association (CMA), 1989; Adams and Wood, 1990, and references therein). Typically they mask more than they reveal, unless they are calculated at very disaggregate levels by specialty and geographic area. Even then, of course, they may reflect differences in regional or local delivery models which are very effective for the populations that they serve. Moreover, even carefully calculated population:physician ratios tell little, if

⁴ Elsewhere (Lomas, Barer and Stoddart, 1985, Ch. 6) we have stressed the importance of adopting health services rather than physicians, or any other type of health personnel, as the initial unit of analysis in health human resource planning, precisely because it focuses attention on the choice of delivery models and arrangements. For a description of what the author refers to as "a major paradigm shift in health services organization" based on services rather than institutions, see Malcolm (1990).

anything, about patterns of utilization of physician services and their relationship to either effectiveness or need.

For policy-makers, the use of ratios as normative standards has been a particularly frustrating experience. Stakeholders can and do easily make the 'optimal' ratio into a moving target. Today it is 'x', but when we arrive at 'x' it is now 'y' (usually requiring more physicians). Things have changed; new concerns have surfaced; there are emerging trends which must be factored in; other countries' ratios are still 'better' than ours. When 'y' is attained, there are now reasons to move to 'z', and so on. The concerns and trends are real, and the responses of policy-makers throughout the system who assist with or acquiesce in lowering the ratio are understandable, both in terms of the preservation of current budgets and power and in terms of quieting the nagging doubt that to do otherwise would violate the age-old advice, 'better safe than sorry'.

The numbers themselves, even allowing for disputes over accuracy (Gainor, 1988) and a variety of different 'selection' criteria,⁵ are reasonably straightforward. In 1964 the population served per (active civilian) physician (including interns and residents) in Canada was approximately 775. It has steadily fallen until today it is approximately 455⁶ (Barer and Evans, 1983; Canada, 1990). The growth rate in the number of active civilian physicians has exceeded the rate of population growth each year for almost 40 consecutive years, starting in 1952. Although many agreed with Justice Emmett Hall that Canada was under-supplied with physicians in 1964, in view of its forthcoming introduction of national health insurance, many would contend that today Canada is oversupplied. They frequently point out that Hall's own normative standard, and the

⁵ See Barer, Wong Fung and Hsu (1984) for a discussion of alternative approaches to the measurement of physician supply. Variations in supply figures are functions of who is to be considered (e.g. only practising physicians, everyone licensed with a provincial College, everyone with MD training), from where the data are derived (e.g. from administrative payment databases, from mailing lists, from College registries), and what adjustments are to be made to take account of varying levels and mixes of activity.

⁶ If one excludes interns and residents, the population:physician ratio has declined from about 900 to 525.

policy justification for the major expansion of Canadian medical school capacity between 1966 and 1972 (a capacity which remains intact today), was a population to physician ratio of 857:1! All of which vividly illustrates the trouble with ratios as planning norms.

The frequent use of the terms 'shortage' and 'surplus' in public discussion of physician supply also seems to be increasingly unhelpful and likely counter-productive. The terms have meaning only in specific contexts and with respect to specific norms or standards. Often it is not clear what criteria are being used to make the judgements. Different parties to the discussion almost certainly are using different criteria, implicitly if not explicitly. Moreover, different criteria applied to the same set of 'facts' will produce conflicting assessments. Are the criteria to be based on a statement of the objectives of physician resource policy such as the one in section a) above? Are population:physician ratios, past, present or anticipated, in Canada or elsewhere, to play a role in assessments?⁷ How important are geographic and specialty contexts, and their intersection? What significance attaches to waiting times or travel times for services by type of condition, severity, and ability to intervene effectively? Are all elements of the status quo (e.g. age-sex specific utilization rates for physician services, especially among the elderly, or extent of participation of other health care professionals in service delivery teams) to be considered exogenous or immutable in assessments of future physician availability?⁸ Much more specificity, in both criteria and

⁷ A vivid illustration of the theme that there is no 'optimal number' of physicians in any absolute sense can be found in Bankowski (1987). He reports on an international conference on health human resources, sponsored by the World Health Organization and several other agencies, at which representatives of thirteen countries assessed the adequacy of their supply of physicians in 1985. Although the number of physicians per 100,000 population ranged from 8 to 228, only one country (Sri Lanka with 8) felt that it had a physician "shortage". Moreover, Pakistan and India, with 27 and 36 respectively, reported "surpluses", while Cuba with 228 assessed its supply as "adequate". (The figure presented for Canada was 166).

⁸ One criterion which does not seem appropriate in the context of a universal, publicly-financed medical care insurance system is that of 'market forces', although this does not always prevent individuals from using it as if

context, is required for the terms 'shortage' or 'surplus' to be useful labels in future discussions.⁹

In cases where assessments of shortages and surplus are not simply impressionistic, they are usually based on detailed comparisons of present and future supply of physicians to estimates of requirements from one of three basic methodologic approaches known loosely as 'need-based', 'demand-based' or 'utilization-based' forecasting. All three are subject to major limitations which, again, have been much discussed and debated (CMA, 1989; Lomas, Stoddart and Barer, 1985; Adams and Wood, 1990; Harris, 1986). They typically require better data than are currently available; they have difficulty operationalizing and incorporating the conflicting influences of a complex set of variables which might affect both requirements and supply projections; and their numeric results are, in the final analysis, determined more by assumptions on fundamental issues such as the definition of need itself, the extent of current unmet need, the extent of current ineffective or inappropriate utilization, the degree of substitutability among physician specialties and between physicians and other health care providers, and limits to resource availability than by the precision of measurement in the more straightforward aspects of the analyses (Lomas, Barer and Stoddart, 1985).

If there is any consensus in this methodologic 'cold war' on the elements of what might constitute a sensible planning approach, it would seem to focus on two themes. First, insofar as is feasible given the existing poor data sources, planning should 'build up' estimates of the

it were. In a normal market, shortage and surplus would be defined by the relationship between demand for and supply of services (with alternative technologies for producing and delivering such services) at the prevailing price of services. Price adjustments could be expected to 'solve' problems, either of surplus or shortage, in the short run, while the resulting effects on incomes would lead to longer run supply adjustments. But medical care is clearly not (and should not be considered) a normal market, for well-known reasons, therefore perceptions of shortages and surpluses must be based on other criteria.

⁹ In the remainder of this report, the words continue to be used, and used loosely, because this is how interviewees 'see the world' and how most literature treats the subject. We emphasize again, however, that more specificity in both criteria and context will be important in any discussions based on this report.

need for services from information on the health of local or regional populations obtained by epidemiologic or other surveys. Second, if current utilization data must be used for planning purposes, they will require explicit adjustment for both unmet need and ineffective, inappropriate, and perhaps inefficient delivery and utilization patterns. This approach has been referred to recently as an "adjusted service target approach" (Adams and Wood, 1990). Although there will still be discussion and disagreement about which adjustments should be made, who should decide what constitute unmet needs or ineffective care, and how to make the adjustments, our cautious assessment is that this direction may hold some hope for progress, if only because it may focus attention on the more fundamental issues.

Throughout our nine months of discussion with individuals across Canada we frequently encountered a dichotomization of planning approaches into what might be termed 'expenditure-driven, top-down' versus 'need-driven, bottom-up' approaches. We find this to be neither a constructive nor a realistic dichotomy. Furthermore, from a methodologic viewpoint, it is an unnecessary polarization, as elements of both approaches can and must be taken account of in planning, as distinct from projection exercises.

To ignore limited resources is to deny that there are opportunity costs to spending on medical services. Yet everyone agrees that there are important competing, sometimes urgent, calls upon resources from other parts of the health-care system. Moreover, there is often intense pressure within the political structures of provincial governments to increase funding for other policies and programs outside the health-care system which also have a significant and sometimes dramatic effect on people's health and well-being. Although no one seriously challenges the desirability of need-based planning in principle -- to do otherwise would contradict the fundamental premise of allocation by need on which publicly-financed medical and hospital insurance rests -- as one interviewee pointed out, "need-based planning can take you right onto 'flat-of-the-curve' medicine if every possible need is met, and met by physicians."

Nevertheless, it must be kept foremost in mind that the ultimate goal of physician resource policy development, as for policy development in all areas of the health-care sector, is not to save money but to improve the health of Canadians. In our view, the likelihood of consensus among stakeholders on any proposed policy changes will be directly proportional to the degree to which they are convinced that the changes will serve this ultimate goal.

Cast in this light, the important question is not 'what is the optimal number of physicians?' but rather 'what are the key parameters of the planning and policy development process, and how, by whom, and for what purposes will they be set?' Stated (perhaps too) succinctly, the problem appears to be that there are many parameters, control over individual parameters is widely distributed, and there does not exist an acceptable planning framework in which to reconcile roles¹⁰ and, if necessary, reach compromises. Williams (1978) has discussed various roles and who might play them in what he termed "an economic exegesis of need". Evans (1984) has characterized the problem as one of "competing sources of legitimacy" for different parties, each of which perceives itself to be acting in the public interest.

We will return to this issue in Chapter 6, after a closer examination of current problems with and potential approaches to specific areas of physician resource management in Chapters 4 and 5 respectively. For now, we conclude with the suggestion that it is not the question of too few or too many physicians on which attention should focus. Rather, the focus of planners and policy-makers, both public and private, might best be on questions such as:

- i) are Canadians receiving the services that they need and can most benefit from?
- ii) are the services of high quality (i.e. effective)?
- iii) are the services being provided efficiently?

¹⁰ Price Waterhouse (1990) represents one recent attempt to lay out the elements and steps in such a planning and policy development process for health human resources more generally.

- iv) what do the answers to i), ii), and iii) imply about the selection, training, supply, distribution and support of future physicians?

Questions such as these need to be addressed both in aggregate, at national and provincial levels, and in specific local or regional contexts. Sensitivity to varying patterns of need and supply is an essential component of any planning framework. There is no one magic population:physician ratio, or optimal number of physicians, other than that which a fully-informed public is willing to support. The search is not for global optimality, just for better decision-making.

- c) The heavy focus on macro-level policies has tended to obscure the crucial importance of the micro-decisions made everyday by physicians at various stages of their careers and the incentives that they face when making those decisions.

There is a risk, when discussing policy in this sector, of forgetting that the characteristics of the current situation and the outcomes of past and current policies are the result not just of the policies themselves, and the institutional structure of this sector, but also and perhaps primarily of the accumulation of the choices and decisions made by thousands of individuals everyday. These micro-decisions are far more important than is typically acknowledged in policy discussion and formulation. Many of the important problems in this sector -- for example, residency choice and specialty maldistribution, ineffective or inappropriate patterns of practice and utilization, geographic maldistribution, and the apparent unresponsiveness of academic medicine to changing social needs - can only be addressed when a better understanding is achieved of the situation facing the individuals. Their expectations and motivations, their perceptions and knowledge, their working conditions and the incentives to which they respond all exert powerful influences on individuals' behaviour. In a system of public finance and private provision of medical care, it is the decisions of individuals 'at the coal-face' that drive the system. The remark was frequently made to us that the 'real action' in the medical care sub-system occurs at a level removed and insulated from macro-policy intent.

Therefore no one should be surprised at the poor correspondence between social pressures and needs on the one hand and the outcomes that result from the sum of a large number of private decisions on the other. Perhaps it is time to reduce our emphasis on the myriad policies and focus more on the people whom they (are intended to) affect. If so, then the first order of business will be to examine the types of incentives which physicians face at various stages of their careers, from entry into medical school until retirement from practice. If progress is to be made toward solving some of the problems in this sector without increasing regulation or coercion, then considerably more attention will have to be paid in future to a restructuring of incentives to more carefully align private with social interests.

This theme, like others in this chapter, emerges in specific instances through the remainder of our report. Here we wish only to illustrate the theme with a few of the many examples we were given, largely by physicians themselves:

- interest in some specialties like general internal medicine is declining because of the 'poor' lifestyles and incomes associated with them;
- the culture of tertiary care centres reinforces a view that practice in smaller communities implies 'second-class' medicine;
- high status and/or income often accrue to certain specialties or sub-specialties disproportionately to the difficulty or social importance of the work involved;
- excellence in teaching is not rewarded in academic medicine;
- the lack of residents in certain specialties and sites has more to do with the choices of the residents themselves than any reduction in the number of residency positions;
- the service (i.e. billing) imperative in academic medicine today distorts the patterns of practice of not just the teachers, but whole cohorts of future physicians.

The influence of incentives is, of course, a general phenomenon. They affect not only medical students, their teachers, and practising physicians but all individuals involved in the management and utilization of physician resources. This includes, among others, CEO's of teaching

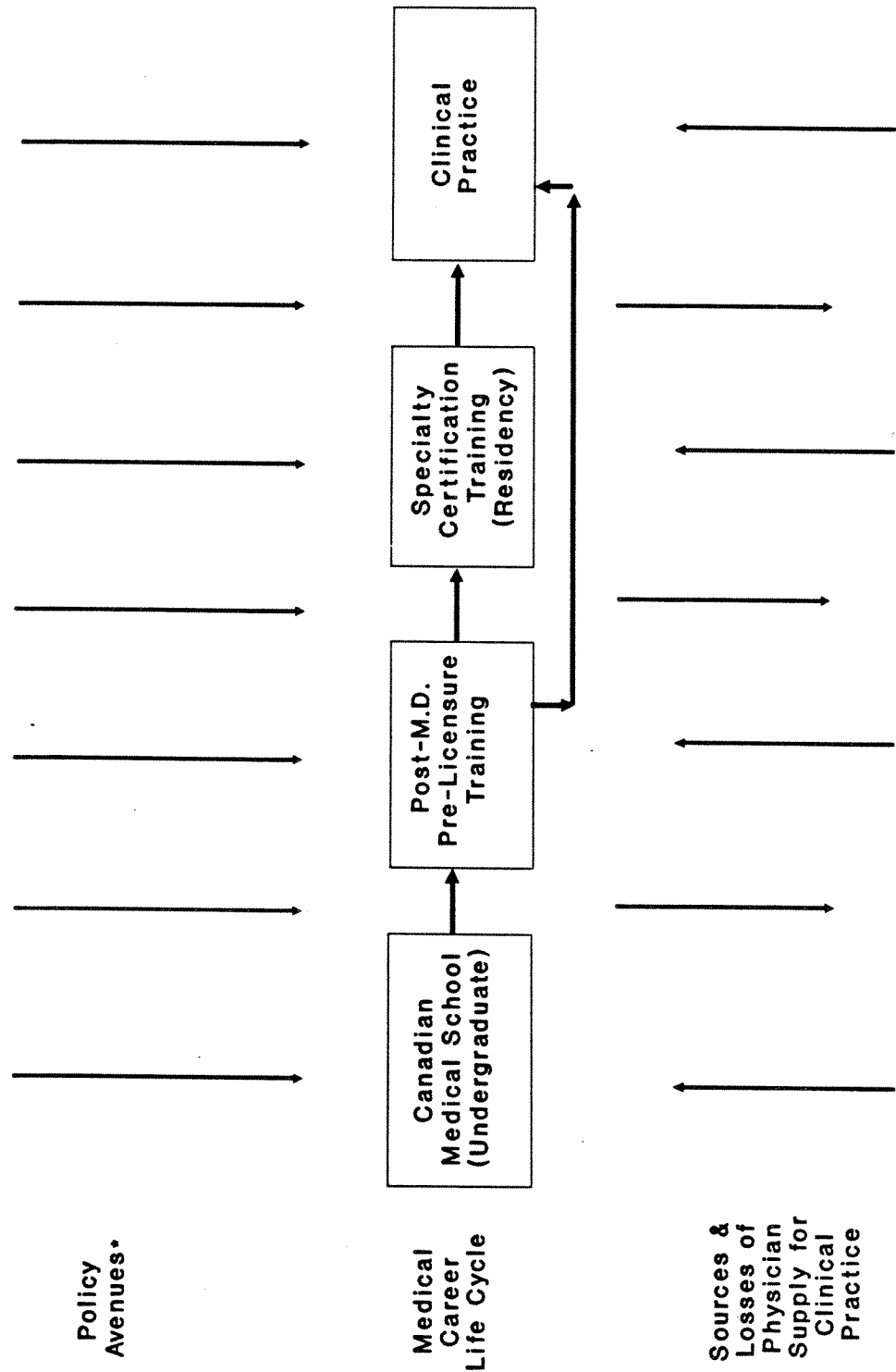
hospitals, officials of licensing bodies, university deans and presidents, and patients. Furthermore, the problem of obtaining socially beneficial outcomes from individually-made choices is hardly restricted to medical care. It is present in all human activity. In fact, given the largely perverse (in the context of objectives stated above) structure of incentives for most actors in the Canadian medical care sub-system, the surprise is not that there are problems emerging, but that they are not much worse, and that they did not emerge sooner (Stoddart, 1985). On the whole, Canadians have been well served by their medical care sub-system. Given the perverse structure of incentives, especially for effectiveness and efficiency, we take the record to date to be an indication that most providers act conscientiously and most patients act responsibly, and that both groups, somewhere in the back of their minds even if not the front, have an (albeit blurred) image of the bigger picture. If so, this will be a significant asset in the process of change.

A detailed analysis of the complex sets of incentives facing every relevant decision-maker is beyond both our scope and our knowledge. Nevertheless, we think that this theme, and the one in the opening sentence of this chapter about the need to examine medical human resource policy systematically, are of paramount importance. Therefore we have adopted an analytic framework for this report which follows and examines physician resources from entry into medical school until retirement from practice. The skeleton of this framework is presented in Figure 3.1.

Physician resource management policy must address items of concern to both physicians and society at all stages of the medical career life-cycle. In the chapters which follow, we discuss first the current problems and then possible approaches to them, in each case proceeding sequentially through the life-cycle. Two further important dimensions which are introduced explicitly into the analytic framework and the discussion are the sources and losses of physician supply for clinical practice,¹¹ and current or potential policy avenues. Again, these are

¹¹ The medical career life-cycle used here as the organizing concept focuses on clinical practice. There are, of course, other needs for individuals with MD-training, as recognized in section a) above on the objectives of physician resource policy.

Figure 3.1: Analytic Framework for the Report



Barer/Stoddart

•Routes through which change can be enacted, without consideration of control over change.

placed in the context of the life-cycle of a medical career.

We are well aware that even this is an ambitious analytic undertaking for a project of this size. No doubt some readers will identify omissions, or will disagree on the points at which attention should be focused. Our primary intent, however, is to offer a framework in which the complexity and key characteristics of the system can be seen simultaneously, and from which discussions among all affected parties can proceed. The discussion in Chapters 4 and 5 'fills in' the arrows.

Readers who wish to see a preview of the result can consult Figure 6.1.

For example, with the medical career as an organizing concept it is possible to illustrate what many interviewees concerned with an increasing trend toward costly and procedure-driven sub-specialization referred to as a 'vicious cycle'. Their view was that in today's clinical practice the rewards (prestige, glamour, lifestyle, income) frequently accrue to those performing costly and narrowly focused techniques and procedures which require a highly specialized (though easier to keep up with) knowledge base. This occurs for a variety of reasons, including the structure of fee schedules and power within the medical profession, public attitudes, technologic change and the organization of hospital-based practice. In addition to their influence on the content of post-M.D. training, these physicians become attractive role models for interns and residents, which eventually influences choice of specialty and creates pressure for some types of residency positions beyond projected needs, while leaving other residency slots unfilled. (Some interviewees felt that the emerging image of the successful and respected physician as a highly-specialized procedural scientist was also starting to affect even the type of individual applying for entry to medical school.) The emerging physician cohort, feeling most comfortable with procedure-based sub-specialty medicine (which reinforces the choice of urban areas as practice settings), continues the pattern of extensive referrals and use of 'high technology', protects the incentive-reward structure, recycles the images and culture, and reinforces the trend. One physician interviewee summed up as follows: "At every stage in the production and later support of

physicians, we make it easier and more attractive for them to go in directions that we don't want them to go than in ones that we do."

Individual choice is highly valued in our society, and policies which might restrict it attract and merit considerable discussion and debate. Whether or not one agrees with the view that sub-specialization is becoming a concern, however, it is obvious that if one wanted to change the trend without seriously restricting individual choices, then significant changes would have to occur in the structure of incentives influencing these choices.

- d) The complexity and linkage among problems must be acknowledged and respected when planning for any policy change in this sector.

This is not news, but it warrants repeating. As John Evans insightfully said in 1973 while discussing the subject of "physicians in a public enterprise":

The problem areas of organization of health services, health manpower, and cost control have been dealt with as if they were separate issues. In fact, they are inter-dependent. Cost control is intimately linked to the supply and distribution of health manpower, and the solution to the problems of health manpower and cost control is dependent in large measure upon the organization of health services. If a rational system of health services is to be developed, it is imperative that when changes are contemplated in one area consideration is given to the consequences in other areas and corrective measures introduced if necessary.

(Evans, 1973, p. 984-5)

The same point was emphasized in many of the stakeholder interviews, and appears explicitly in two recent reports on health human resources (CMA, 1989; Kazanjian and Friesen, 1990).¹²

There are several distinct aspects of the complexity. As noted in the preceding section, the incentive structure facing individual decision-makers is complex. Moreover, there is a broad network of fragmented control and influence over decisions affecting physician and other health human resources. An attempt to provide a full listing of relevant parties might go on for pages and would include organizations and individuals at

¹² See also Lomas and Barer (1986).

federal, provincial, and local levels; in governments (both politicians and bureaucrats); in professional associations, and coordinating bodies; in licensing authorities; and in education and service institutions. Within universities alone, for example, presidents and vice-presidents, deans, department chairs, residency programme and clinical teaching unit directors, and directors of continuing education all apparently play key roles in the formulation and execution of policies. There is nothing inherent or mechanistic that ensures that the same incentives bear on all of them or, even if there was, that their individual objectives and constraints would motivate similar responses.

The issues and problems found in the physician resources sector are also, to some extent, reflections of those in the broader social context. Increased emphasis on and employment in the service sector, continuing urbanization, a higher value on personal lifestyles than on occupation, and a heightened awareness of rights (coupled with perhaps a decreased awareness of responsibilities) are all broader trends which were pointed out to us. The pursuit of policy objectives requires the reconciliation of conflicting values on delicate questions such as universal access versus cost (CMA, 1989), human rights and freedoms (Ontario, 1989a), access to higher education, and the role of physicians as agents for individual patients, patients collectively, or the community.

There is also a historical perspective to be considered, dating back at least to the introduction of first private and then public health insurance, an institutional evolution that has created an important separation between the content and the context of medicine (Lomas and Barer, 1986). Foremost in the minds of those involved in the physician resources sector, it seems, are the two reports by Justice Emmett Hall, in 1964 and in 1980, the first leading to the introduction of a publicly-financed medical care insurance system over initial opposition by organized medicine and the second to the elimination of extra-billing, again not without opposition. In the former case, it became generally acknowledged that an implicit understanding had developed between the parties that provincial governments would 'pay the bills' and refrain from involvement in the content of medicine. In the latter, the issue of

extra-billing and its elimination was linked to the issue of fair and reasonable compensation of physicians and the creation of mechanisms to ensure this.

The historical linkage of macro policies illustrated by the Hall reports and subsequent events is an excellent example of what is perhaps the most important aspect of the complexity in the physician resources sector, namely the linkages between and among specific areas on the continuum in Figure 3.1. Numerous illustrations of this come to mind. For example, the appropriate size of Canadian undergraduate enrolment is a frequently discussed subject and there have been recommendations for its reduction (Canada, 1984). Yet this is clearly linked to policies concerning graduates of foreign medical schools (GOFMS). If domestic enrolment cuts are not accompanied by limitations on the entry of GOFMS, then the number of practising physicians may not be affected, and concerns will likely be raised about the diminished opportunity for Canadians to pursue medicine as their career choice. Similarly, it is claimed that undergraduate enrolment cuts in isolation from other complementary policies have the potential to worsen the current problems of residency choice, and specialty distribution. Or, as one interviewee remarked on the linkage between physician supply and patterns of practice, "You can't decide numbers without looking at what physicians do and what the results are".

Geographic maldistribution provides another illustration. By all accounts, this issue may require simultaneous action on a number of fronts, from the medical student recruitment and training processes, to problems of income, the professional milieu and opportunities for both relief and continuing education, psychosocial adjustment, and family needs. If physicians cannot be recruited to under-served areas, then one alternative for preserving equity of access to needed services is the use of other health professionals; however, as noted in the Québec report in Appendix B, this then raises issues of scope of practice. It also, it should be noted, does not remove the need for personal and professional supportive policies.

Almost anywhere one cares to enter the continuum of Figure 3.1 examples of inter-dependence can be found. Policies to limit medical expenditures or the incomes of physicians may have the unintended consequence of 'penalizing the good guys' if they are not linked to quality assurance activities and information about the effectiveness and appropriateness of practice patterns. Funds that support health services research on the effectiveness and efficiency of services and delivery arrangements may be wasted unless the implementation mechanisms exist, publicly or privately, to see both that the transfer of knowledge occurs and that the practice and delivery patterns respond. Policies to change the distribution of specialists may require, simultaneously, initiatives to address programme accreditation, the process of specialty certification, fee or incomes policies, and changes in the physical location, content and milieu of post-MD training.

In one interview, the difficulty of accomplishing significant change in the physician resources sector was likened to "turning the Queen Mary around in a small river", because of the apparent constraints on all sides of each problem. The complexity of this sector means that change will require careful consultation and coordination, with particular attention paid to the expected impacts along the continuum and the timing of complementary policy initiatives. It will also require commitment to change from all, or at least most, parties. Furthermore, in our view it will require that policy leadership arise from -- or be distributed to and accepted by -- more parties than have in the past been prepared to lead. Although this report was commissioned by the Federal/Provincial/Territorial Deputy Ministers of Health, the provincial Ministries of Health are only one of the key players if we are to move forward. Systematic rather than isolated policy analysis and development must become a priority for them, but it must also become a priority for others. We must change the pattern of falling back on the status quo -- or of blaming the medical profession or 'government' for every problem -- because change is perceived to be too difficult conceptually, too slow politically, too threatening personally and too fractious professionally. What we prepare for will be what we get.

- e) There may be only limited scope for a national strategy if this is interpreted to mean a set of specific policies to which each province commits; therefore, the nature of the national interest and a potential national 'strategy' requires careful consideration.

One of the tasks of this project was to explore the potential for a national strategy to deal with current issues in the management of physician resources. We wish to introduce a note of caution into this discussion at an early stage regarding what the term 'strategy' might mean, and also regarding the current view of the other stakeholders on the extent to which provincial governments are likely to be capable of effective cooperation.

There are certainly some serious impediments to a national 'strategy', especially if this is interpreted as national 'policy' or as committing all provinces to the same policies. The problems are different in different regions of the country, and the provinces must retain sufficient flexibility to tailor sensitive and feasible solutions to their particular problems. Furthermore, the provinces display different political milieus and philosophies, they are at different points in the electoral cycle at any particular time, and the level of policy priority given to physician resource management, both within Ministries of Health and within provincial cabinets, varies by province. No one expects that there are or will be any 'quick fixes' to problems in this sector.

We would be remiss if we did not also report that there exists some scepticism among those whom we interviewed as to the ability of the provincial Ministries of Health to co-ordinate an effective national strategy in this sector. This is apparently based upon past experience with attempts at inter-provincial coordination in this complex area. What appears to be required, at least in the view of some stakeholders, is stronger evidence of collective political will and commitment to deal with the full range of issues rather than just issues of expenditure control. There was, however, recognition that this project itself was potentially one small step in this new direction.

In the discussion and analysis in the following chapters we attempt to identify opportunities for inter-provincial coordination on specific

issues, and we return to the subject of the nature of a national strategy at the end of this report. In the remainder of this section we offer some initial thoughts on possible characteristics of the strategy.

First, it may be that the most important aspect of a national strategy is to achieve a common understanding and acceptance among all stakeholders of the policy objectives with respect to physician resources. This will likely require the adoption of an agreed upon policy analysis framework, whether it be the one suggested here or an alternative one.

Second, it seems clear that the most feasible approach is not to aim, in general, for national policies, but rather for nationally-coordinated provincial policies. Coordination and consistency are, in our view, going to be far more important than the adoption of identical strategies. This immediately raises the question of the mechanisms by which this is to be accomplished. There will almost certainly be the need for new mechanisms.

Third, any comprehensive approach to the full range of issues in this sector will require the cooperation of most, if not all, key stakeholders. The role and attitudes of their national organizations therefore become key elements of a strategy.

Fourth, although there are obvious areas where national cooperation is essential or logical, there are other areas where it may not be as important as it appears at first glance or where the costs to individual provinces of participating may outweigh the benefits. We should not and cannot expect 'everyone to agree on everything' as part of a strategy. Policies regarding the size of undergraduate enrolment and common standards for licensure, for example, would appear to require close cooperation and consensus for effective implementation. Health services research, technology assessment, the development of practice guidelines or the technical development of resource-based relative value scales for fee schedules, for example, are candidates for national cooperation in order to avoid duplication of effort and to benefit from pooled resources. On the other hand, it is hard to imagine, and may not be necessary to have,

any common approach to the funding of academic medical centres,¹³ although this is a critical problem which must be addressed in several provinces. The same may be said of provincial solutions to the process of resolving disputes between government and the medical profession, where different models may satisfy the parties in different provinces. In the case of other policies, such as the limitation of billing numbers, what may initially seem attractive from the viewpoint of a single province may not achieve overall objectives in this sector if its implementation in all provinces simply produces unemployed physicians and wastes the investment in their training.

Fifth, the possibility should be admitted that the solution of some problems of national interest and concern will not involve all provinces. Again, we would be remiss if we did not report that parties in other parts of the country felt that significant progress on some national issues might be made most efficiently and directly through changes in Ontario.

We have not commented above on the role which the federal government might play in the development of a national strategy. It was certainly the view of those we interviewed (and here we refer to all interviewees and not particularly to federal officials) that the scope for federal involvement in specific policies other than immigration policy was very limited and that the basis for federal involvement was itself being eroded by recent developments in federal-provincial fiscal relations. There is, of course, currently an active Federal/Provincial/Territorial Advisory Committee on Health Human Resources and a dormant National Committee on Physician Manpower, and federal support of health research as well as information gathering and dissemination activities. But there may well be important new roles for the federal government, in areas such as the facilitation and support of 'national' databases, the co-ordination of provincial initiatives directed toward 'national' targets, and the like.

¹³ There is wide variation in terminology in referring to the institutional arrangements existing across Canada. We include in our definition of "academic medical centres", faculties of medicine/health sciences and affiliated teaching hospitals or clinical teaching/academic units.

- f) It may be more realistic and practical to view certain conflicts or problems as 'manageable' rather than 'solvable'.

We do not wish to be negative or pessimistic because, as we indicate in the final chapter of this report, we feel that there are many encouraging signs of change in the current environment; however, we do wish to inject a note of realism into this identification of general themes.

Throughout the process of our national consultations we were struck by the uniform desire of all parties to "get these problems solved".¹⁴ Yet, for at least some of the issues in this sector, we suspect that the vision of a 'solution' as a 'final resolution' is simply not a realistic expectation. In cases where differences between parties arise from fundamental differences in basic values, one person's solution will no doubt constitute another person's problem. In other cases, for example geographic maldistribution, the root cause of the problem - geography and sparse population - is not going to change. In still other cases, changing patterns of disease or dramatic advances in therapy for example, apparent solutions will not be permanent.

One implication of a more realistic view is that current efforts toward a strategy should seek to create a management framework as well as a policy framework. The capacity to adjudicate differences and identify in advance and prepare for emerging issues or changing circumstances will be critical to policy success. We must avoid illusions of precision (Reinhardt, 1981). Instead we must look to co-ordinated and consistent initiatives, ongoing monitoring and evaluation, and structures and processes that are sufficiently flexible that they are able to respond.

- g) Fundamental issues regarding the place of medicine in higher education and the structures for governing and funding it appear to be unresolved and confused.

One of the most serious areas of concern along the continuum of issues and policies affecting the physician resources sector is the role

¹⁴ It is perhaps worth mentioning here that we were also struck by a sense of genuine commitment to participating in further consultations about specific solutions.

and performance of academic medical centres.¹⁵ In no other area did we find such a multiplicity of issues in urgent need of attention. The assessment is not just our own; the area was high on the priority list of most interviewees whether they were inside or outside the academic medicine establishment. Although it is perhaps a more acute concern in some provinces (especially Ontario) than others, it constitutes a general theme of national and even North American interest (Valberg et al., 1990; Murray, 1990; Schroeder, Zones and Showstack, 1989).

That all is not only not well, but also appears in some cases to be in disarray, in academic medicine is cause for serious concern. Academic medical centres are at the heart of our ability to meet the future health care needs of Canadians, through both their education and their research activities. Beyond that, however, they represent a tremendous resource for leadership and are looked to for that leadership at many other points along the continuum. Perhaps most concerning, however, is the impression that operational problems of governance and funding may be more deeply rooted in continuing differences among parties, even within the education establishment itself, regarding the place of medicine in higher education.

We heard and read about a number of specific problems, within academic medical centres, within universities, across universities, between universities and provincial governments, and within provincial governments, including the following sample:

- outdated organizational structures for dealing with the relationships between faculties of medicine/health sciences and teaching hospitals

¹⁵ There are many 'labels' used to describe the academic settings within which medical training takes place. We came across at least the following: academic medical centres; academic health sciences centres; medical schools; faculties of medicine; faculties of health sciences; clinical teaching units or sites; affiliated teaching hospitals. Throughout this report we attempt to be consistent in using the "academic medical centre" to mean the faculty or school responsible for undergraduate medical education, plus all health care institutions or agencies which provide sites for the undergraduate or post-MD training of those students. We recognize that this particular definition may be inappropriate for some situations. We also recognize that many of the issues and recommendations discussed here are generalizable to broader health sciences environments, although we do not attempt to address them in that context.

- academic medical centres being increasingly viewed as 'intensive care hospitals'
- divisions within academic medical centres regarding the balance between biomedical and applied health services research
- diversion of academic medicine from its education and research missions by increased reliance on service activities to generate revenue
- diffuse and (perhaps as a direct result) unclear accountability for the activities of academic medical centres
- poor linkage of both undergraduate and post-M.D. training to current and anticipated community needs
- isolation of deans of faculties of medicine/health sciences from the rest of their universities
- faculties of medicine/health sciences being viewed as 'cash cows' by their universities
- inability of universities to collaborate extensively, especially in rationalizing education programmes
- poor communication between universities and provincial ministries responsible for health and/or advanced education
- poor communication, jurisdictional problems, and different policy 'styles' between provincial ministries responsible for health and/or advanced/higher education.

Two different views of faculties of medicine/health sciences frequently emerged, one portraying them as essentially 'trade schools' to produce needed professionals, the other representing them as an integral part of the university and sharing fully in that institution's missions of research, education and service. The picture is dotted with apparent inconsistencies and ironies. The medical education function clearly resides at present within universities, yet for many faculties of medicine/health sciences only a relatively small share of funding arrives through education budgets. A significant and increasingly large portion of operating revenue derives from clinical service, a situation which it is claimed further weakens the faculties' academic status. Yet, simultaneously, criticism that the faculties are not producing the proper mix and types of physicians seems to call into question their performance

as either professional schools or institutes of higher learning cognizant of society's needs. Although the prevailing view, and one with which we agree, is that faculties of medicine/health sciences have an important role to play, and can best play it, within the university's overall mission, current forces appear to be pushing them toward the trade school model, regardless of their physical location.

We acknowledge that this description oversimplifies what is a complex arena of goals and relationships, and we return to specific issues in the role, funding and performance of academic medical centres in the following three chapters. To the extent that specific issues are rooted in the more general question above, however, a much clearer specification and a consensus on the responsibilities and priorities of these centres -- what many have called their "social contract" -- is required.

h) More explicit discussion and a better articulation of the future role of the physician is required.

It is not just academic medicine, but all of medicine, that operates under a social contract. We share the view of many participants and analysts (e.g. Valberg et al., 1990) that certain aspects of this contract, implicit though it is, require more explicit review.

For strategic planning to occur in this sector, and certainly for significant change to occur, sooner or later very basic questions need to be addressed. For example, 'what is it that we need physicians to do and that we want done by physicians?' The answers to these basic questions are critical to action on issues throughout the continuum in Figure 3.1, from whom to admit into medical training, to how many and what types of physicians to train, to how to organize delivery settings and personnel. The answers also may have important implications for the training of other health professionals and for the need for social policies outside the health care field.

It should be emphasized again that the rationale for such a review is something much more important than fiscal pressures on provincial governments. It is to ensure the proper balance of types of services, personnel, and policies to meet changing health and social needs of the population. Furthermore, if it were the case that one result of such an

exercise was a moderation of public resource commitments to the medical care sub-sector, provincial governments might reasonably be expected to monitor the success of the new pattern of resource allocation in improving the health or well-being of the population. Expenditure control simply for its own sake is an empty objective.

Reflecting on our interviews with physicians and their representatives and with representatives of provincial ministries responsible for health care, we are struck by the fact that each expressed a sense of frustration which we think relates to the articulation of the future role of the medical profession.

Today's physicians frequently feel harassed and unappreciated. They often perceive themselves as caught in a tightening vice of higher public expectations of what medicine can do and a less than corresponding increase in the resources with which to do it. Looking inside, they see their professional stresses and personal sacrifices. Looking outside, where they might expect to see evidence of public appreciation, they increasingly see criticism from those holding the purse-strings, and public dissatisfaction with their politics even if not with their practice.

The payers for services also feel a sense of frustration with the situation, but of a very different type. They feel that the medical profession has resisted changes in the organization and financing of health care and the context of medicine which have threatened the professional and economic interests of physicians, and that physicians have been relatively slow to adopt more effective and appropriate patterns of practice or even to show a willingness to scrutinize what they currently do and to evaluate its results.

Reviewing the expectations under which medicine operates is not a simple task, either conceptually or operationally. We do not know how to do it. From our discussions, however, it does seem important to distinguish three different 'zones' in which medicine currently operates and some policy implications of each zone.

In the first zone are procedures, services, and activities of proven efficacy and which everyone agrees are essential, valuable, and both

important and appropriate to have done by individuals trained and licensed as physicians. We would submit that this is likely to be a large and critical set of services of which the medical profession can be justifiably proud and for which the public should be and is deeply grateful. It would perhaps be wise for the public's elected representatives and their officials to acknowledge this zone more fully and frequently, even in the course of their attempts to place the contribution of medicine to society in perspective.

There is a second zone, however, in which medicine's performance is not acceptable. In this zone are services and patterns of practice which are known to be and have frequently been proven to be inefficacious or ineffective. Also in this zone are patterns of provision in which otherwise effective services are provided in clinically inappropriate circumstances or through more costly than necessary delivery models. Here it seems essential for the credibility of medicine that the profession acknowledge this zone and take or support actions to eliminate it.

The most difficult and threatening area of change will be that involving substitutions among types of physicians, between physicians and other health care professionals, and even between health care professionals and other workers. If the statement of objectives in the first section of this chapter is accepted, however, then adjustments to facilitate such substitutions are warranted wherever their superior effectiveness, appropriateness, or efficiency has been demonstrated. Adjustments to the mix of health human resources cannot happen overnight and will need to be carefully introduced in order to accord fair treatment to those already practising and in training. Nevertheless, unless the subject is addressed explicitly now, and strategic decisions taken in the context of broader health human resource planning, change will simply not occur, and both the quality and the cost of future services will be adversely affected. One interviewee remarked that "medicine can no longer fashion itself as the total custodian of health and well-being in society". Whether or not it ever has is debatable. Moreover, if this was the perceived task of medicine, we suspect that physicians would be happy to be relieved of it.

During the course of our interviews, we heard a relationship between provincial ministries and the medical profession that would acknowledge both of these zones described as "tough love". The existence of a third zone, between the two above, might alter this characterization. This zone, which is likely to be quite large, encompasses the services and patterns of utilization and practice which have not been evaluated. Although there may be claims and counter-claims made about them, the services and patterns cannot be placed in either zone with confidence. The obvious implication is the need for well-designed research studies; the real significance of this third zone is that it gives both parties an avenue for avoiding or postponing the relationship altogether. In our view this would be unfortunate (though understandable and perhaps even predictable) because basic issues of who will do what to whom are at the heart of current statements.

- i) Increased emphasis should be placed on effectiveness as the primary guiding criterion in all aspects of policy formulation regarding physician resources.

Effectiveness¹⁶ is the "sine qua non" of the health-care system. It is the criterion to which accountability must be linked and on which changes in this sector must be based. It contributes to, indeed is a prerequisite for, efficiency, but it is a primary policy objective in its own right. It is the one objective on which no one can, or does, disagree.¹⁷

¹⁶ That is, whether or not a procedure or act does more good than harm or than no treatment (Sackett, 1980).

¹⁷ This is not to say that the demonstration of caring itself is not of value. A humane system is as important to most Canadians as an effective and efficient one. It is not at all clear in general, however, that the caring function is best accomplished through the implicit definition of it as a medical act and the allocation of physician resources to it. What society wants to have done by physicians, rather than which acts a medical training is required in order to perform, is a separate and important question which was identified, though not addressed, in the previous section. We return to it in section k) below.

There is ample scope for the application of this criterion throughout the continuum in Figure 3.1 - in revising the curricula of both undergraduate and post-M.D. training, in the setting of examinations and accreditation standards, in the design of reimbursement methods and policies, in the evaluation and introduction of new technologies or alternative delivery models, in continuing education programmes, and in the execution of quality assurance activities including the design of maintenance of competency programmes.

We heard considerable concern frequently expressed about the width of the range of uncertainty and ignorance which currently exists about the effectiveness of many procedures, services and clinical protocols. This concern is not limited to the payers for services. It is a concern of physicians themselves, as the contents of leading clinical journals attest. Comprehensive evaluation of all procedures and protocols is admittedly difficult and may not be worth doing in all cases. Furthermore, generalizations about overall effectiveness are misleading if not dangerous. Nevertheless, it is fair to say that the lack of measurable outcomes of many of today's interventions and practice patterns has created uneasiness about where the burden of proof should lie for further increases in resource commitments to medical services. Is it with the advocates or with those who question what proportion of service growth is effective service growth? Our observation is that the burden has been shifting, and will continue to do so, from the latter to the former.

The failure to focus on information about effectiveness has a pervasive influence on policy development in this sector. Many feel that better information on effectiveness and its transfer to and implementation in patterns of practice must precede certain strategic changes in health human resources in general and physician resources in particular. One interviewee summed up the influence this way: "Doctors don't really know what they're selling, and government doesn't know what it's getting. How can they negotiate about anything, let alone what the product is worth."

Two additional points warrant comment. First, it should be recognized that the pressures creating ineffective utilization come from many sources, including patients themselves and third parties (such as

employers) who use the health-care system as a "legitimizing" of absence or inability to function (Woodward and Stoddart, 1990). Although other policy routes may provide complementary possibilities, nevertheless it is the formulation of clinical policy by physicians and the exercise of physician judgement in individual physician-patient encounters which affords the best opportunity to focus on improving effectiveness. The increased attention to "utilization management" by physicians (Linton and Peachey, 1989) is an encouraging sign in this regard.

Second, it should be noted that even though effectiveness data are often not available, optimal use is not being made of the data that are available. Perhaps the most significant challenge to clinical educators and policy-makers is to find effective mechanisms for the transfer and widespread implementation in practice of the results of effectiveness studies.

- j) Cooperative, 'made in Canada' solutions to problems in the physician resources sector require reconciliation of competing ideologies regarding the manner in which physicians must 'fit into' a publicly-financed system.

A major challenge in a system of public finance but private provision of medical services is the constructive management of tension between what Evans (1984) has called "political" and "professional" ideologies. The professional ideology stresses that physicians should control the practice of medicine and that the legitimacy of this derives both from the expertise of the profession and from the role of physicians as the agents for members of the public -- patients. In this professional role physicians feel committed to doing the best for their patient-clients.¹⁸ The political ideology stresses the collective rather than the individual interests of the public and points out that the expertise of

¹⁸ At times the professional ideology may also contain elements of a "market forces" ideology, wherein some physicians portray themselves as independent businessmen or entrepreneurs, rather than private participants in a public system; however it is doubtful that these individuals would use the rhetoric of the market if they understood fully its implications for them. To their credit, most leaders of organized medicine in Canada today understand the important differences between professional and market ideologies.

the profession relates to clinical matters such as diagnosis and treatment, not to social values and preferences concerning how much to spend on medical services or how the costs and benefits of the public programme should be distributed. Therefore, although the privileges of expertise may accord to physicians control over the content of the practice of medicine, these privileges do not extend to the context of the practice of medicine. In short, nobody elected the physicians. The political ideology also emphasises that the context in which physicians are practising is in effect not an insurance plan, but a social program, one which is highly valued by Canadians and the 'management' of which has and continues to enjoy overwhelming popular support, more or less regardless of the particular government involved. Therefore, the practice autonomy so important to the professional must co-exist with public accountability.

On the whole, this tension appears to have served Canadians well, especially when compared with the performance of the U.S. health-care system (Evans et al., 1989). The parties involved have exerted "checks and balances" on each other. Confrontations have frequently occurred, but compromise of some sort has typically followed.

During our interviews and literature review we observed that despite dissatisfaction on the part of some physicians with the public system, medicine in Canada is still perceived - certainly by others and even by many physicians - to be a privileged occupation which brings to its practitioners substantial rewards, both personal and financial. It was frequently pointed out by non-physicians that no other profession enjoys such privileges and discretion over both the content of what it does and the context in which it is done. Education is heavily subsidized,¹⁹ employment is guaranteed, and physicians can choose where they wish to locate and how they wish to practise. From this perspective, many feel that problems such as continued geographic maldistribution, the perceived unresponsiveness of the academic medicine establishment to changing social

¹⁹ As PARI-BC has noted, this still leaves graduating medical students with significant debt loads (Professional Association of Residents and Internes of B.C., 1990).

needs, and the persistence of ineffective, inappropriate, and/or more costly than necessary patterns of utilization and delivery are symptomatic of a lack of sensitivity on the part of Canadian physicians to the collective goals of the health-care system. In this view, the current situation represents only partial achievement of an important principle of physician resource planning articulated in the Québec report (Appendix B, p. 17):

The first of these [principles] is the central role of physicians in the health-care system and if there is to be consistency in the health-care system, of the necessity of ensuring that physicians' behaviour is compatible with the objectives of the health-care system while respecting their professional autonomy.

Nevertheless, the reconciliation of competing professional and political ideologies has been evolving steadily since the introduction of publicly-financed medical insurance in most of Canada in the late 1960's. A generally workable even if at times uneasy partnership is slowly emerging with a new ethos in which both government and physicians respect the other's source of legitimacy. The emergence of this ethos is aided considerably by the underlying fact that the parties ultimately share an important common goal -- the maintenance and improvement of the health of Canadians. In this ethos, there is substantial room for physicians, if they are willing, to be brought into and be rewarded for helping to solve current problems in this sector.

- k) The general public will play an important role, directly or indirectly, in supporting and approving any significant policy change in this sector; however, it typically does not receive appropriate information with which to make informed decisions.

The general themes identified above have focused on the explicit roles and responsibilities of numerous actors. Implicit in many of the themes, however, is the participation, perhaps more indirectly than directly, of the Canadian public, as patients and prospective patients, as taxpayers, and as citizens with preferences about fundamental characteristics of their society. Several roles have been alluded to above. Social consensus plays an important role in determining priorities

about which needs will be met publicly, and to what extent. Perceptions of what the public is willing to pay, and for what activities, are critical in the setting of budgets for the health-care system and its sub-systems. Moreover, public attitudes, expectations and knowledge have an important influence on when, how, and for what the health-care system is utilized.

Important questions are before the public, whether or not the public is aware of them. For example:

"What value do Canadians place on health care use for which the expected benefits, though positive, are quite small, especially in relation to other social uses of the same resources or expenditures?" or, "How will Canadians reconcile resource allocation decisions and policies based on a population health perspective with their own individual wants and values?" (Woodward and Stoddart, 1990, p. 286)

Our concern is not only that there are problems with the amount and type of information that the public receives, but also that the issue itself does not appear to be receiving as much attention as it deserves. In some areas of relevance to the physician resources sector, (for example, ethical issues about the extension of life) public discussion is increasing. In others, however, it is not. People remain generally naive about the limits and precision of medicine. They also remain relatively uninformed about issues of cost and effectiveness, and about both alternative delivery models and alternative uses of public resources more generally, even within their own communities.

Better and more information will be required if we are to create a public understanding and climate that supports planners in this sector, whether they be physicians, hospitals, governments, or universities, especially when they act on evidence of effectiveness and efficiency to change existing protocols, programmes or policies. Yet many basic questions remain unsettled, and will not be easily resolved. Does the public really want more information? If so, what type of information would be most useful? How, and by whom, should it be presented?

Although these may seem fairly abstract issues to some readers, in the case of particular policy options they will quickly become concrete and central ones. For example, decentralization of fiscal authority,

perhaps to elected regional bodies within a centrally-determined budget for health services, is the subject of much discussion across the country, as we note in the more detailed discussion in following chapters. This proposal has a number of attractive aspects, yet we frequently heard fears expressed that in the absence of improved communication with the general public, the result might well be less informed rather than more informed policy-making. There is a danger that this could have deleterious effects on quality and cost-effectiveness of care.

This concludes our identification and illustration of general themes. In the following chapter we discuss in more detail specific problems in physician resource management, including an international perspective.

Chapter 4: PROBLEMS IN PHYSICIAN RESOURCE MANAGEMENT

We gathered information on problems and issues from three major sources, as noted in Chapter 2. In Section A of this chapter we present our synthesis and summary of problems identified by interviewees. This leads rather naturally into a consideration of the generalizability of the Canadian problems. Do our most urgent problems appear equally urgent outside Canada? Do the other countries surveyed face additional problems not found in Canada and, if so, are these the result of peculiarities of their systems, or are they problems about which Canadian policy-makers ought to be concerned? We consider these questions in Section B. In the final section of the chapter we bring interviews, international reports and literature, and domestic literature together to identify some priority problem areas on which we focus our policy attention in Chapter 6.

A. From the Perspectives of Those Interviewed

Summary

On the basis of frequency, emphasis and degree of consensus revealed during the interviews, three categories of problems were isolated: 1st tier problems, 2nd tier problems, and problems with little agreement on nature or extent. (No significance should be attached to the order of presentation of problems within each category.)

1st Tier Problems

1. Graduates of Foreign Medical Schools

Dealing with the various flows of GOFMS was seen as an extremely high priority as a national pre-requisite for dealing with many of the other problem areas.

2. Number and Mix of Residency Positions

The main concern expressed was the need for rationalisation of residency places to achieve a better match with service needs.

3. Role and Funding of Academic Medical Centres

This was particularly identified as a problem in Ontario and most often related to the disorganised way in which funding sources had evolved.

4. Geographic Maldistribution

This emerged as a major concern of almost all interviewees, particularly shortages of some specialty services in rural areas.

There was less, but still significant, agreement that major urban areas were over-supplied with general practitioners.

5. The Role of Fee-For-Service Remuneration

Although this issue arose in connection with all forms of service delivery, and was alleged to underly many of the other problems in this sector, it was particularly noted in connection with the funding of academic medical centres.

2nd Tier Problems

1. Medical School Curricula

Concerns were largely that the content did not reflect the changing health-care needs of the population, and that the training sites did not provide the range of exposures that would allow graduates to feel comfortable practising outside urban areas and/or in tertiary-care hospital environments.

2. Proliferation of Sub-Specialties and Residency Programs

The concern was that the expansion of programmes in new sub-specialties was relatively uncontrolled, and that recognition of each new sub-specialty spawned a demand for residency programs out of proportion with population requirements for the specialists. This was often raised in the context of the relative powers of residency programme directors and deans, as well as in the context of the role of the Royal College.

3. Role of Self-Regulation for the Medical Profession

There was some questioning of whether the role and activities of self-regulation had kept pace with the changing environment in which medical care is delivered.

4. Licensure of Physicians

The lack of common inter-provincial pre-licensure standards was the most common concern in this category.

Problems with little agreement on nature or extent

1. Medical School Enrolment and Overall Physician Supply

Other than the comments noted above on shortages of rural specialists and potential surpluses of urban general practitioners, no consensus emerged on overall supply. The weight of opinion suggested that some further reduction in Canadian undergraduate medical school enrolment was overdue.

2. Specialty Shortages

Although some specialties were mentioned more often than others, targets varied by province and viewpoint of interviewee.

3. Research, Planning and Information

Although a variety of deficiencies were mentioned, there was little consensus on which needs should be given priority.

In this section we offer our distillation of the information and materials collected through interviews. In order to provide a manageable way through the volume of interview material, we have grouped the syntheses under relatively traditional problem-descriptions (e.g. specialty mix, geographic distribution, supply, remuneration, etc.), leaving a 'residual' sub-section in which we recount some of the less easily compartmentalized problems.

We should note at the outset that interviewees were generally extremely forthright, attempted to be constructive, felt that the task, while daunting, was worthwhile and that the time was right, and were pleased to have been given the opportunity to participate. This general support for the worth of the effort was reflected in the candor and introspection that characterized many of the interviews. The interview process itself appeared at times to have become part of the policy-development process, the early stages of testing the waters, of consensus building. There was clearly will and momentum among stakeholders, to be nurtured and built upon.

Interviewees were provided with a list of problem areas, as described to the principals by the Deputy Ministers of Health. These included:

- 1 sense of lack of fiscal control over medical expenditures;
- 2 perception that many services presently provided are either unnecessary, or are necessary but could be provided more efficiently; in other words the motivation is not so much cost control per se, but a sense that we could be doing much better for the dollars we spend, or could be spending less on medical care, for equivalent health outcomes.
- 3 over-supply of general practitioners and some specialist groups in most urban settings.
- 4 current or impending under-supply of some specialties in some jurisdictions.
- 5 problems in getting medical human resources into certain regional areas.

- 6 a sense of frustration over the lack of sound instruments and processes for assessing medical and health care needs in populations for which the provincial Ministries of Health hold responsibility.
- 7 difficulty with managing conflicts between general practitioners and specialist groups over incomes and allocation of fee changes.
- 8 collective bargaining process generally, and more specifically the pressures for binding arbitration.

They were clearly identified as key problem areas by the Deputy Ministers at the time the study was commissioned. They were not intended as representations of the views of the investigative team, nor as the investigators' view of what would be seen as problems by the interviewees.

We were surprised at the extent of general agreement with this statement of the key problem areas. This is not to imply that we did not hear other problems, or that we heard no dissenting views; on the contrary, interviewees offered plenty of both (although almost no interviewees suggested that the entire list was mis-conceived). But the broad consensus of opinion was that most, even if not all, of the above problems were, indeed, serious problems, if not for them as stakeholders, at least for provincial governments. Some interviewees commented that provincial Ministries of Health generally lacked sensitivity to priority problems of other stakeholders, particularly those of the medical profession. Included were unrealistic public expectations, and conflicts over practitioner roles as agents both of patients and of the broader society, particularly with respect to ethical decision-making.

A second general sense that permeated most of the interviews was that continuation of the present physician resource situation in Canada is a formula for disaster. Virtually all interviewees suggested that there was cause for concern, although interviewees disagreed on the extent to which specific problem areas were, in fact, problem areas. If we were to attempt to articulate a single summarizing theme, it would be that at least some aspects of the current situation are simply untenable. Furthermore, we were told repeatedly that the climate is right for major change, making the cost of not doing something in the very near term extremely high. We may be on the verge of an unprecedented and perhaps

fleeting window of opportunity, in part a product of the serious state of several of the key aspects of medical care in Canada, in part a product of the current attitude of leaders of key stakeholder groups, and in part because of a growing recognition among stakeholders of the fiscal realities and responsibilities facing federal and provincial governments.

Another key over-arching theme regarding problems was that the blame for the current situation has many partners. We are where we are because of past inaction, stakeholder intransigence, lack of political will, failure to adjust to changing information and requirements, inappropriate and ill-informed expectations, and a lack of purpose and direction for Canadian health care. We were taken aback by the candid views on this matter. This was not, by and large, a case of finger-pointing or deflecting blame. We heard deans of medicine tell us that the deans themselves had been remiss in fulfilling their responsibilities to the Canadian public, that the medical education establishment was training too many physicians in order to protect its own financial base, and that the manner of funding Canadian medical schools was encouraging the abuse of fee-for-service medicine in Canada. We heard senior Ministry of Health officials tell us that Ministries and Ministers of Health had been woefully negligent in their roles as agents for the public, and had failed to muster the political will necessary to take difficult but essential steps in medical care policy. We heard representatives of the medical profession acknowledge that governments had a public responsibility to ensure fiscal control over medical care costs. We heard licensing bodies tell us that they should be doing much more in the way of quality assurance (in particular in the development and adoption of clinical practice guidelines), and we heard other stakeholders accept some of the responsibility for the mess which Canadian post-MD training programs are in today.

Lest we leave the wrong impression, this self-flagellation was swamped by the not surprising tendency to identify as key those problems that were clearly within the purview of other stakeholders -- we were on the receiving end of a considerable amount of government-bashing, doctor-bashing, College-bashing, medical-school bashing, foreign-medical-graduate

bashing, even interviewer-bashing. A small number of interviewees felt we had come with a pre-set agenda and pre-set conclusions. Our job would have been much easier if this had been true; we tried to convince those we interviewed that this was not, in fact, the case; that there were compelling reasons for their constructive involvement in this investigation, and that a choice not to participate in a constructive manner might mean that their views on problems, causes and solutions would not be taken into consideration.

In the remainder of this section we report on the problems and causes offered to us during interviews, augmented by information culled from Canadian literature, within the following broad (and not necessarily independent) categories: overall physician supply; medical school enrolment; undergraduate medical school curricula; graduates of foreign medical schools; proliferation of sub-specialties and number of residency programs; number and mix of residency positions; specialty shortages; role and funding of academic medical centres; geographic distribution of physicians; regulation of medical practice and licensure of physicians; remuneration for medical services; research, planning and information; and miscellaneous other. In what follows we report what we found and heard, largely without critical comment. The views and opinions are not necessarily those of the authors, although the organization and presentation of those views is, of course, ours.

Overall Physician Supply

Among those addressing this point directly, more felt there was, than was not, a surplus of physicians in Canada, but there were voices on both sides of this debate, and certainly nothing that one could characterize as close to consensus. Many respondents suggested there was no way one could tell because we lacked reliable data. In fact this view was as common as suggestions of surplus or shortage.

Related issues, claims and counter-claims (reported without editorial comment) included: because there are no MDs unemployed or wanting for patients, there could not possibly be a surplus; official supply figures are consistently over-estimates, and rarely take account of the age

distribution in some specialties; provincial and federal governments go out of their way to create the perception of surpluses; shortages are creating over-burdened physicians and poor quality care; physician supply has been driven by teaching hospitals and medical faculties, not by population needs; increasing numbers of women in medicine are, and are not, an issue in estimating supply; nursing supply is a much more pressing issue than physician supply; we waste too much time searching for the elusive magic ratios; someone can always argue that more are needed somewhere for something; there is a public perception that fewer physicians would mean lower quality care; there is a general trend toward reduced work hours and different lifestyles that must be taken into account in future projections of supply.

Medical School Enrolment

The weight of opinion on this subject, even among those deans of medicine whom we interviewed, was that first year intake was probably still too large. A number of interviewees suggested that Canada had an excess supply of entire medical schools. Others suggested that university autonomy created a disjunction between community needs and university priorities. It was noted that the number of Canadian graduates had already fallen somewhat in recent years, and one interviewee suggested that the present annual complement was about right. We heard no one suggest that Canada should be training more than it is at present.

Concerns about enrolment reductions centred around three key issues: medical training, other non-domestic sources of physicians, and the location of further reductions. On the first, concerns included potential loss of affiliated teaching hospitals, and the implications of reduced class size for medical school funding. On the second, the major claim was that domestic enrolment reductions would have no impact on physician supply unless concurrent policies were enacted to stem the entry into practice of graduates of foreign medical schools. Furthermore, it was suggested to us that reductions in medical training opportunities for Canadian students would be politically a "tough sell" if at the same time the inflow of foreign graduates was maintained or increased. Comments on the third issue amounted to observations about where cuts had already

taken place (Manitoba, Québec and Nova Scotia), and where the next cuts ought to occur (Ontario; a few interviewees went farther, to suggest that the reductions should occur at the University of Toronto).

Undergraduate Medical School Curricula

A number of respondents suggested that there had been some movement toward significant changes in recent years, designed to provide more flexibility, more rural area exposure, a broader view of health and health care, and more exposure to newly identified areas of importance (e.g. medical ethics, health economics, clinical epidemiology). But here again the predominant view was that the Canadian curricula and educational process were rigid, not willingly adapted to the realities of medical care for the 1990's, and therefore the root cause of some of the other problem areas. As one particularly cynical observer (who had, in fact successfully survived the ordeal) put it to us, "[Medical school] is the most severe socialization process outside of the U.S. marine corps", and this socialization process creates graduates who are unable to distinguish the content from the context of medical practice.

While there was little in the way of more directed criticism, what little there was included allegations of an over-emphasis on hospital-based teaching, and little content or exposure that would encourage or promote rural area practice; insufficient emphasis on evidence-based medicine; little effort to train primary care physicians for the 'gatekeeper' role so often espoused; and not enough curricular content in the areas of health-care system issues, effectiveness and efficiency. With respect to the integration of undergraduate curricula and post-MD training, one interviewee felt that the co-ordination between medical schools, the College of Family Physicians of Canada, and the Medical Council of Canada was poor.

Overall, however, this was not seen as one of the major problem areas, although we cannot establish whether this was a true indicator of the extent of concern, or a result of the fact that this was not included as a problem area or problem cause in the pre-interview notes we distributed to all interviewees.

Graduates of Foreign Medical Schools (GOFMS)

This came across clearly as a second major area of concern. It was cited as a key problem area across the spectrum of stakeholder groups. While the 'problem' (that there are large numbers of graduates of non-Canadian medical schools entering practice in Canada through a variety of channels of 'control') seems simple enough, the mechanisms and responsibility centres were portrayed as complex, varied, and clearly worthy of more detailed study than could be accommodated within the scope of this project.

Here again the intertwined nature of this with other problem areas was apparent. The GOFMS problem was variously represented to us as a problem because: (a) it made domestic medical school and post-graduate training capacity reductions politically difficult; (b) some GOFMS provided poorer quality medical care; (c) individual provincial licensing arrangements and entry routes created subsequent pressures for post-graduate training slots; (d) individual provincial arrangements restricted inter-provincial mobility of physicians; (e) there is a huge pool of actual or soon-to-be unemployed physicians, and other physicians desirous of careers and lives in Canada, most notably from the European community, South Africa, and third world countries, which represents a potentially overwhelming source of pressure for Canadian post-MD training and for Canadian health care; (f) problems with Canadian curricula and mix of residency slots create demands for GOFMS that are avoidable (i.e. the demands are education-driven rather than population-need-driven; see below re: geographic maldistribution problems); (g) problems with Canadian curricula and mix of residency slots result in rural area specialty shortages which must be filled by recruiting GOFMS; (h) GOFMS who enter into restricted geographic positions or on special licensure arrangements are not held to those commitments or compelled to return to their country of origin upon completion of their term; (i) further restrictions in Canadian medical school capacity would drive more students to the U.S. (where the ratio of applicants to entrants has fallen dramatically over the past decade), creating a large pool of 'Canadian GOFMS'; (j) the geographic and economic distribution of Canadians attending U.S. schools

would be skewed toward higher income urban classes (relative to the current distribution of Canadian-trained students), making it even less likely that graduates would be willing to practice in rural areas; (k) GOFMS represent a source of increased physician supply over which provincial Ministries of Health have insufficient control, yet Ministries are then saddled with the (assumed) increased medical and health care costs; (l) there is a significant pool of GOFMS in Canada presently that is unable to access pre-licensure post-MD training slots, and that represents a constant source of political pressure; and (m) the entry standards for GOFMS are insufficiently sensitive to clinical competence. With regard to access to pre-licensure (internship) positions, a number of interviewees expressed concerns about Ontario's "Access to Professions and Trades" report.

On the 'positive', or supportive, side, interviewees suggested that GOFMS were, and would continue to be, an important source of rural area specialists (implying that there were no effective routes for encouraging more Canadians into these situations); that GOFMS posed no problem at all; that there was unlikely to be an increased flow of Canadians to U.S. medical schools; and that GOFMS do not, in fact, represent a political obstacle to reductions in domestic medical school capacity. But the predominance of opinion was that policies designed to address 'the GOFMS problem' would need to be essential components of any integrated national strategy on physician resource management.

Proliferation of Sub-specialties and Number of Residency Programs

The tendency toward sub-specialization in medicine, and the attendant pressure to increase the number of distinct residency programs at Canadian medical schools, was cited as a significant problem by a number of interviewees. Provincial Ministries of Health fund the vast majority of residency slots in Canada, yet under current arrangements, they have no control over this process of proliferation and the resulting pressures for additional funded residency positions. A related aspect of this problem was the fact that new sub-specialty certification rapidly becomes a requirement for "entry to practice within an area of specialization",

which in turn creates pressure for more training opportunities in the sub-specialty.

While this concern was not voiced as often as were the 'first tier' problems, it was certainly a 'second tier' area of concern. Procedural tertiary specialties were isolated as areas particularly susceptible to proliferation.

Remarkable for its relative absence among alleged causes of this problem was the simple notion that the knowledge base for medicine is expanding so rapidly that the only manageable way for humans to deal with it is to compartmentalize it. Specialization is a natural tendency in an increasingly complex world. Instead, we were treated to a range of putative causes which clustered around a small number of 'culprits', namely faculties of medicine and in particular deans of medicine and academic department chairs, the Royal College of Physicians and Surgeons of Canada, and the United States.

We were offered the general view that the number of distinct residency programs associated with a faculty of medicine was a significant source of prestige and power for deans, and that it was this factor that represented the dynamic behind the translation from certificated specialties to new accredited training programs. A variant on this theme (some might consider it a contrary view) was that deans were, in fact, largely the puppets of department heads and clinical directors, and that the pressure for residency programs in new areas of specialization derived from those levels in the 'hierarchy'. A corollary of this view was that secondary and tertiary care residency programs tend to crowd out primary care specialty programs, because academic institutions are "polluted" with sub-specialists, who then become both student role models and sources of programmatic pressure. Perhaps a simpler view of this cause was that deans simply convene as a group so seldom that opportunities to rationalize this proliferation are rare.

A second view holds that the Royal College of Physicians and Surgeons of Canada is too quick to create new certificated specialties, and that if it did less of this, the pressure for new programs would not develop. As always, there is at least one opposing view. In this case the most

significant one appeared to be the fact that the United States recognizes about twice as many specialties as does the Royal College in Canada. This poses a problem for Canadian students who, because of a lack of accredited programs in Canada, are ineligible to write American board exams in these sub-specialties. By this view, factors driving the trend to sub-specialization in Canada are exogenous to Canada.

Number and Mix of Residency Positions

Closely related to the sub-specialty proliferation issue is the widespread concern about the number and mix of residency positions in the country. We have chosen to maintain these as separate from (although related to) the issue of sub-specialization because they appeared to have some non-overlapping causes, and because there were distinct differences in the frequency of mention and in the passion with which they were held out as problem areas. The number and mix of residency positions came out of the interview process as a third, 'first tier', major problem area.

These were seen as problems largely because, in the minds of most interviewees, there was virtually no relationship between the mix of residency slots and population specialty needs. That is, even if one cannot reach agreement on the absolute number of specialists required, there seemed little doubt in the minds of the interviewees that the mix bears no relationship to a mix that might be developed, from a 'zero-base', to best meet the current and future needs of Canadians.

This problem was presented, in general, as historical precedent perpetuated by academic intransigence and political disinterest or lack of political will. While the number of funded positions has been dominated by funding from provincial Ministries of Health, the proportion funded from other sources has been increasing lately. Thus the absolute number of post-graduate training positions in the country appears presently to be under the control of no one, while at the same time the channels and mechanisms by which residents in non-Ministry-funded positions gain specialty certification and provincial licensure are not well understood (at least by us and those we asked). As for the allocation of those positions across the various specialties and sub-specialties, the current

situation was presented to us as the product of a dynamic and on-going competition among residency programme directors and clinical department heads affiliated with the medical schools. The rules of the competition appear to preclude the relinquishing of 'ground' -- positions, once gained, must never be relinquished; others' 'needs' must be met by seeking even more collective 'ground', not by reallocating positions already secured.

We grouped the suggested underlying causes of the alleged irrationality of residency student mix suggested in interviews into a number of generic fundamental themes:

- (a) conflict between service needs in teaching hospitals and educational needs of post-MD trainees. The claim is that both the number and mix of residents is driven by the 'need' to provide clinical service (as determined from the perspective of those working in tertiary care teaching hospital environments), often around-the-clock and at low cost, and the historical model of post-MD-trainees providing much of that service under supervision of varying degrees. This was the most frequently suggested fundamental cause of the current mix. We heard that this cause has unfortunate side-effects, both for service and education, with long hours put in by residents resulting at times in care of suspect quality, but also resulting in reduced ability to secure educational value from clinical exposures. The long hours were presented as a direct result of the service-education conflict.
- (b) the mix is determined by the needs of the post-graduate training system, and therefore reflects the historical mix of training programs, the critical resident mass needed for a viable training program, and the relative power-bases of different residency programme directors and clinical department heads; an extreme example of this would be a training programme that is a world-class training resource, but which trains specialists for whom Canada has no need. A large number of interviewees, including many involved with medical education and licensure, suggested that control of residency training rested firmly with directors of residency programs and clinical department heads, and that neither of these groups understood (or cared to try to understand) the need to ensure that specialty training programs were logically integrated within a clinical training system designed, first and foremost, to meet the needs of the Canadian population. When we asked whether deans had a role and responsibility in this regard, we were repeatedly informed that deans were in many cases the captives of their directors and heads. This issue is addressed from a different perspective in our reporting under "Role and Funding of Academic Medical Centres" below.

- (c) access to residents is one of the major attractions for clinicians to engage in academic-related work, because residents represent a 'triple play': (i) evening/night/weekend on-call coverage; (ii) practice plan income (residents are paid a salary; services provided by residents, ostensibly under the supervision of academic clinicians, are billed at regular fees, with a variety of arrangements across the country governing how those practice plan earnings are allocated among the supervising faculty, the represented department, the dean's office, and the university); and (iii) power (in part from the clinical earnings over which the supervisor has control) and prestige. Residents were described to us as providing "lifestyles to clinical supervisors", and as being the academic's "gravy train". This issue, like (b) above, is integrally related to that of the "Role and Funding of Academic Medical Centres".
- (d) the academic environment is dominated by sub-specialists, who then control the mix of programs and thus the mix of residents.
- (e) the only way to meet some provincial sub-specialty service needs is to provide clinicians with academic affiliations and access to residents (see (c) above).

A second set of points which emerged on this issue related to the micro-career decisions of the prospective residents themselves. This related not so much to the number and mix of residency positions in the country, but rather to the number and mix of slots filled by graduates of Canadian medical schools. Points made in this regard included the claims that, to some extent, the number of positions in programs were responses to student demand; that students tend to choose sub-specialties because such choices are perceived as ways of bounding a rapidly expanding base of clinical knowledge; that many sub-specialty career choices are perceived to be of greater prestige, status and glamour¹ than many of the generalist specialties; and that inequities in provincial fee schedules tilt choices toward procedural sub-specialties.

As for specific residency problems, a number of specialties were noted in which it was difficult to fill the available slots. These included general surgery, anaesthesia, obstetrics/gynaecology, and paediatrics. Because we did not specifically ask a related question of

¹ These are, of course, nothing more than matters of perception. But if perceptions are important, they are no less real in their effect on career choices.

each interviewee, we suspect this is but a subset of the programs across the country which presently experience difficulties in filling available funded slots. On this point, it was noted that there is a general lack of support from deans and department heads for 'generalist specialists' (another part of the power/prestige story), with the recent exception of family practice. Finally, we had one interviewee suggest that it is exceedingly difficult for students to get into residency programs, with the result that we end up training ever more urban general practitioners which we do not need. The implied suggestion was that Canadian medical establishments should be training relatively more specialists because we already have far too many urban general practitioners and no effective means of ensuring that the new general/family practice graduates will practice outside the urban centres.

Specialty Shortages

While many non-urban specialty shortages were identified in interviews, there was no indication that Canada faced an overall specialty shortage (or surplus). The shortages were described almost exclusively in the context of geographic distribution, and causes were couched not in terms of insufficient overall numbers being trained, but in terms of the determinants of choice of location and the mix of residency programs. We inferred from this that, in general, the view from the field is that there are many urban centres in the country with more of certain specialties than is required to serve those urban populations, and more of some sub-specialties than is required even to serve in broader tertiary/quaternary care roles.

The most frequently cited specific specialties in short supply were neonatology, psychiatry, geriatrics, obstetrics/gynaecology, general surgery, and emergency medicine. Other specialty areas noted by only one interviewee each included anaesthesiology, laboratory medicine, radiation oncology, general internal medicine, clinical epidemiology, ear, nose and throat, radiology, cardiology (rural), and physiatry. The breadth, but lack of depth, of opinion on specialty shortages lends credence to the claim that, somewhere, someone using his or her own criterion perceives a

shortage of virtually any particular specialty. The perceived shortages varied by province and region within province.

Among the causes suggested for shortages in particular specialties included the threat of malpractice (particularly with respect to obstetrics/gynaecology), lack of information provided by Ministries of Health or other agencies to students regarding impending shortage and surplus specialty areas, lack of control by Ministries of Health over specialty choice, differential fees policies such as those in Québec and New Brunswick, inter-specialty income disparities, and the tendency of women to select into different specialties than their male counterparts.

A major underlying theme that emerged was that the shortage specialties tended to be those that represented the less attractive 'lifestyles'. These included specialties with significant on-call time or unpredictable hours, and in locations where on-call relief would be sparse or unavailable.

Role and Funding of Academic Medical Centres

This was the third of the 'big five' problem areas emerging from our interviews. It comprised three interdependent generic issues: mission of faculties of medicine or health sciences; funding of the medical education and research enterprise; and remuneration of those responsible for teaching and clinical supervision.

We perceived a general sense (explicit in some interviews, implicit in others) that academic medical centres had 'lost their way' (or were never very clear on where they were going to start with) in fulfilling a social contract that was (or should have been) conceived of much more broadly than simply in terms of the basic training of physicians. This was portrayed as more than a simple matter of semantics and public objectives. Because the centres themselves have been largely unable to articulate clear and coherent missions, goals and objectives, and then design policies to meet them, there is little public recognition of the multiple roles they do, in fact, attempt to play.

As discussed in Chapter 3, the narrow view of academic medical centres as having objectives limited largely to the training of physicians

has, it was alleged, raised issues of whether those faculties are in fact trade schools which have no fundamental place within university environments. This, in turn, has had serious effects on the sources and stability of funding for those faculties and their affiliated teaching hospital facilities.

The problem most often noted for medical faculties was their growing dependence for financial survival and stability on the clinical (fee-for-service) earnings of their geographic full time (GFT) and affiliated clinical faculty. This was viewed as a serious problem for a number of reasons. First, the importance of clinical service earnings influences internal faculty power and priorities and decisions bearing on the educational and research roles and emphases of the faculties. This, in turn, undermines the case for funding from Ministries of Higher (Advanced) Education, which have responsibility for funding teaching and research faculty and infrastructure, but not clinical service. This then increases the importance of clinical earnings. Second, broader physician resource policies which result in reductions in post-MD training positions tend to undermine the financial base of the academic enterprises because the latter are so heavily dependent on clinical earnings for services rendered at least in part by their residents. Third, considerable amounts of undergraduate teaching and intern and resident supervision are provided by clinical faculty who receive no, or very little, remuneration for that educational service. Those faculty who supervise residents receive some remuneration through the service-provision side, which was argued to be problematic for a number of reasons noted below. But considerable amounts of educational time are provided by clinical faculty who receive very little funding from the 'educational side' of the public ledger.

This growing (and widely regarded as inappropriate) dependence on clinical faculty earnings was attributed by many interviewees to major jurisdictional problems between Ministries of Higher Education and Ministries of Health. The problem was, 'on average', posed as follows: Ministries of Higher Education have for many years been cutting back on funding to Universities, to the point now where medical research and education are "grossly underfunded" (to use the words of one interviewee).

Universities view medical faculties as "cash cows", and therefore tend to allocate disproportionate amounts of the fiscal pain on the education/research side to those faculties (they make very large targets). Faculties of medicine have had to turn to clinical earnings to make up the deficits, but have generally been unsuccessful in convincing Ministries of Health that they should also be providing more direct funding for teaching and particularly research. Ministries of Health argue that those are areas of Higher Education responsibility. Ministries of Higher Education increasingly view Faculties of Medicine as medical schools serving largely as trade schools, and so feel that Ministries of Health should be providing more of the funding. There were embellishments which we are not able to print, and certainly the specific problems varied by province (once again Ontario was fingered as a particularly acute mess) and even by university. But this overall picture seems to be widely generalizable.

A number of corollaries of this overall picture emerged. First, one interviewee raised concerns about the quality of individuals attracted to academic careers as the educational/research funding squeeze continues to become more acute; the opportunity cost of an academic career would appear to be increasing, particularly for those faculty who do not have access to residents. Second, the increasing dependence on clinical earnings, and the internal political wrangling over control of those earnings, reduces the flexibility of faculties of medicine to provide student funding and other discretionary allotments in exceptional circumstances. Third, and perhaps most important (in terms of frequency of mention and broader policy implications), the dependence on clinical earnings in academic environments has far-reaching socialization effects on the students passing through the educational system. Residents in particular, it was claimed, often become involved in far more pure service provision than could be justified on educational grounds alone. Furthermore, they are immersed in environments in which clinical earnings (and the expansion of same) are among the important considerations on the minds of, and discussed incessantly by, their clinical supervisors. One should not be surprised, given these circumstance, at the inability of new licensees to distinguish between the content and context of clinical practice.

Geographic Distribution of Physicians

With very few, but significant, exceptions, interviewees who cared to comment felt that the distribution of physicians in Canada was, if not the most urgent problem in medical human resources, certainly one of the top five. Specific problems identified included rural area shortages of family practitioners and many types of specialists, including general surgery, general internal medicine, obstetrics/gynaecology, anaesthesiology, cardiology, and psychiatry. Overall the general/family practitioner shortages were considered to be less severe problems than restricted access to a variety of specialist care. Finally, the overwhelming balance of opinion was that there were serious surpluses of general practitioners in the urban centres.

A major issue for policy-makers attempting to craft a national strategy to address this issue is the fact that the geographic distribution problems are not consistent in every region, nor are they static problems. Small regions may be 'well-supplied' by reason of having one resident general surgeon. If the surgeon leaves, they suddenly have an acute shortage. In small rural centres, there are very few 'in-betweens', because the problem areas tend to be predominantly centres with population bases too small to support more than one (or two) of a particular specialty, yet sufficiently large to support at least one.

The most often-suggested sources of this problem area fell into four generic categories, which we might label education-related, professional and personal, government policy-related, and fee/income-related. If one were to attribute primary cause on the basis of simple frequency of mention, the culprit, hands down, would be education-related. At one end of the educational spectrum was the suggestion that insufficient numbers of trainees from rural areas (including native students) ended up in medical school, and that the root cause of this problem was poor high school science education in northern and other rural areas. At the other end was a suggestion that the culprits were the pre-licensure post-MD training programs and that, in turn, responsibility rested with the College of Family Practitioners', rather than medical school, control of those post-MD curricula. One interviewee suggested that if the family

practice curricula were designed by rural area family practitioners, the programs and College certification examinations would adapt; if pre-licensure standards continued to be influenced by a national College, the standards would continue to be dominated by urban family practice considerations.

In between, blame seemed to concentrate on inappropriate location of training programs (e.g. family practice programs in urban Toronto or Montreal rather than based out of more rural university settings) and inadequate rural area supervision; on the fact that pre-licensure and residency training programs were located in urban tertiary care centres, and that this meant these centres and the faculty teaching within them become the milieu and role models for students; and on a virtual absence in Canada of programs tailored to train rural area 'generalist specialists'. Related to the second of these was the fact that practice in smaller communities (even specialist practice) is viewed as 'second class medicine'. As one interviewee put it, "only the failures go out and work in community hospitals". The fact that there is a prestige and power pecking order within the medical establishment and within the academic medical community, and that this becomes part of the socialization that takes place during medical education, was put to us repeatedly and forcefully as a major underlying causal factor.

On the third point, the absence of tailored rural area specialist programs, the point was made that no, or very few, licensed physicians being turned out of Canadian schools today have the skills and the confidence to practice in rural areas which lack highly sophisticated technology and a ready network of referral sub-specialists. The dominant view on this was that medical curricula and post-MD programs were designed for reasons other than responding to the needs of all of Canada's population; that they evolved from, and were tailored to support, academic medical hierarchies and their needs -- the academic practitioners had captured the structure and process, thereby influencing the outcomes. This would suggest that the problem is more fundamental than simply the training environment and the role models. If the appropriate programs do

not exist, no amount of ego-stroking or incomes policy is going to provide the necessary professional preparation and confidence.

The professional and personal reasons were much less frequently mentioned. They included suggestions that students choose practice locations for a variety of reasons, few, if any, of which include considerations of where their services might be most needed. Rather, the choices are dominated by social, cultural, recreational, familial, and educational (in short lifestyle-related) factors.

Among government policy-related considerations were suggestions that the most effective re-distributive policies were also the least politically palatable (and so were rarely enacted); that governments lacked sufficient regulatory authority to implement effective policies; that the Charter of Rights and Freedoms impeded effective policy development; and that provincial governments had simply failed to take up the challenge of designing effective policies.

We were told that inequities in fee schedules were a major deterrent to rural area practice for specialists because non-urban practices provided fewer opportunities for procedural work, and without procedural work such specialists could not make decent livings. Thus, rural area 'generalist specialist' practice faces double jeopardy: relatively lower incomes, and relatively lower prestige. We were offered a grab-bag of other possibilities, including suggestions that the uniform access philosophy created the perception of rural area imbalances when, in truth, the facts of geography, population density, one-industry-based economies, and small towns that insisted on recruiting physicians without adequate population bases to support them, would continue to keep geographic 'problems' at the forefront of medical care policy discussions.

Each of these putative causes presupposes a particular view of the determinants of choice of location by physicians, on which a considerable literature exists. For example, suggestions that this is largely a medical education/socialization problem assume that choice of location is largely influenced by clinical and role-model exposure and preparation during training. Similarly, claims that the culprit is rural science education have, as their underlying theoretical foundation, the view that

home-region is a powerful determinant of subsequent practice location and that, if the science curricula were stronger in rural home regions, rural students would represent larger shares of medical school entry classes and, eventually, return to practice in those regions. Income-based causality assumes that decisions on practice location are largely income-driven, and so on.

The flip side of the geographic distribution story is surpluses. Here we heard far less, although there seemed to be widespread agreement that there were surpluses of general practitioners in most major urban centres in the country. The growing phenomenon of walk-in clinics and medi-centres, which were seen as being driven by the need of general practitioners to maintain incomes in the face of declining average patient rosters, was mentioned frequently. Specialty areas of possible urban surplus included anaesthesia, family medicine, and sub-specialties in general.

As evidence of the urban area specialist surplus, we were pointed to the fact that many urban specialists in fact practice primarily as general practitioners, exacerbating the over-supply of the latter. On the other hand, one interviewee claimed that many family practitioners were practising as specialists, so that the supply of general practitioners was over-estimated.

While the Québec report cautions about the possibility of shortages in that province within fifteen to twenty years, other provinces seemed not to have similar concerns. Given that Québec's supply of general practitioners is in excess of that in most of the other provinces, we were unable to reconcile these rather distinct viewpoints without much more detailed data on physician age distribution.

Underlying causes of the urban general practice surplus included the size of the entering class of Canadian medical schools, and the reasons cited above that discourage practice location in rural areas.

Licensure of Physicians and Regulation of Medical Practice

Under this rubric we include problems related to certification and licensure, competency and patterns of clinical practice, quality

assurance, and in general the issues relating to scope and quality of medical care provision by physicians. Problems in this area were not among the most frequently mentioned. Nevertheless, some specific concerns emerged repeatedly.

Perhaps of greatest concern was the issue of common inter-provincial pre-licensure standards. Fears were expressed that individual provincial licensing requirements not only restrict the mobility of Canada's physicians, but also undermine attempts to make Canada's medical schools a 'national' resource.

There were three other issues mentioned less frequently. First, a number of interviewees noted that exclusive fields of practice provisions represent impediments to the more efficient provision of significant segments of care which, under current regulations, can only be provided by, or under the supervision of, a licensed physician. But we also heard the opposing view, that exclusive fields of practice were necessary to ensure that only suitably qualified individuals perform medical acts. This is, of course, not a new story, and the opposing views on this came from the expected stakeholders.

A second issue was the role of provincial Colleges in the processes of quality assurance, the promulgation and application of clinical practice guidelines, and other forms of monitoring of the quality and necessity of medical care provided to the public. Here the concerns were that Colleges have failed to interpret their mandate from a sufficiently broad perspective, that there was too much variability across provincial Colleges in will, resources and capabilities for more pro-active and expanded activity, and that the review of patterns of billing generally lacked 'teeth' and even resided with the wrong body (e.g. professional association rather than College or Ministry of Health) in some provinces. Closely related to this was the contention that provincial Colleges are generally perceived as being part of the medical profession, representing the interests of the profession rather than the public, and are therefore not suitable bodies for setting standards or monitoring the appropriateness of care. In general, we were given the sense that there

would be relatively broad support for an extensive review of the role of self-regulation of the medical profession.

Finally, we heard a call for national and provincial Colleges to become more actively involved in developing competency testing and re-certification programs. As one interviewee put it, one of the reasons we need to continue training as many new physicians as we do is because the existing physician supply "becomes less productive over time relative to what clinical knowledge and technology make possible". Of course this is not a problem unique to medicine, but the market adjustment processes that in other fields and professions might filter out, or adjust the incomes of, those who 'do not keep up', generally fail to apply in the 'market for medical care'.

Remuneration for Medical Services

The place of fee-for-service as the dominant method of remuneration for medical services in Canada was clearly labelled by interviewees as the final one of the 'big five', 'first tier' problems in physician resource policy. One interviewee suggested that it was the big problem, that issues of physician supply, graduates of foreign medical schools, and funding of academic medical centres all reduce to issues of fee-for-service remuneration. Absent this, and the other problems would not be problems. A broad representation of stakeholders (including deans of medicine, representatives of affiliated teaching hospitals, representatives of provincial licensing authorities, and government representatives) identified this as, in their minds, one of the fundamental problem areas. Perhaps not surprisingly, method of remuneration was not identified as a problem by representatives of medical associations, or of intern/resident associations.

Fee-for-service remuneration was considered problematic for three fundamental reasons: first, it encourages procedure and visit proliferation; second, fee schedules are inherently inequitable for historical and political reasons, and this has wide-ranging physician resource policy implications; and third, the process of fee negotiation consumes inordinate amounts of time, money and political energy, the cost

of which, in terms of foregone opportunities for constructive and collaborative policy development (not to mention in terms of professional association member and public taxpayer funds), is exceedingly high.

We heard contentions that there were many situations (rural area physicians; urban emergency room physicians; general practice in all locations) where fee-for-service was not the most (or even a) logical way to remunerate providers. Opposition to changing methods of remuneration by medical associations (despite some isolated claims to the contrary) was cited as a major problem, and attributed to the fact that many physicians still view Canadian 'medicare' as an insurance system rather than as a social program, or for other reasons still regard payment by fee-for-service as (in the words of one interviewee) "a God-given right". A number of interviewees highlighted the problems that fee-for-service poses for hospitals. They contended that it is fundamentally inconsistent with the way in which hospital funding has evolved in Canada, and also pointed out that government pressure on fees is resulting in increasing demands from clinical staff for remuneration (from global hospital budgets) for hospital administrative work.

But perhaps the most frequently cited specific issues related to fee schedule structure. On this matter we heard about family practitioner vs. specialist inequities for provision of the same hospital-based services; about problems in the processes (controlled by provincial medical associations) governing the allocation of global fee increases negotiated with provinces, and the lack of input of provincial Ministries of Health in those processes; about the failure of fee schedules to adjust downward as clinician familiarity and overhead cost reduction lowered the cost of providing new technological procedures; about the fact that relative fees encourage a distribution of physicians toward high-payoff procedural subspecialties and away from those generalist specialty areas that were identified elsewhere in interviews as being most needed; and about the fact that, in general, the internal relative values in many provincial fee schedules were a constant source either of general practitioner/specialist conflict, or of inter-specialty conflict. We were also informed, however, that many provincial medical associations are presently actively involved

in attempting to reform internal fee schedule structure using principles of relative resource cost.

Research, Planning and Information

Under this heading we heard a 'grab-bag' of concerns, with only a very few areas of multiple interviewee concern. These ranged from a view that physician resource planning required, as a starting point, inter-provincially developed and consistent health goals and, therefore, goals for health care, to contentions that things can change so quickly in medicine that health needs are too dynamic to be amenable to long term forecasting; in other words that the task of 'manpower planning' is so complex that "there is little hope that one could ever get it right".

Between these extremes of (i) needing to start afresh from basic underlying principles, and (ii) not bothering because the task is too difficult and fraught with uncertainty, three other general areas of concern were raised. The first and most often mentioned of these was concern from a broad base of stakeholders, including licensing authorities, training institutions and medical associations, that a major underlying problem for physician resource planning in Canada was a lack of reliable, validated, agreed-upon databases on which reasonable manpower plans could be based.

A second general issue was that failures in resource planning in this area could be attributed to an overly-decentralized Canadian planning system; i.e. the problem rests with the lack of a single agency with responsibility and accountability for the necessary activities and information provision. The third issue was the lack of reliable, readily available, information on the effectiveness and efficiency of alternative medical interventions and forms of organization. In this respect particular concern was expressed for the manner in which new technology became commonplace in the absence of indications for, or information on the efficiency of its application in particular circumstances for particular patient populations. A major problem appears to be a lack of structures and mechanisms for reaching consensus on the appropriate and warranted use of new technologies and clinical information.

Miscellaneous Other Problems

We heard views and comments on a variety of other problems not easily categorized under one of the headings used to this point. With one significant exception, they are difficult to group and so are reported here in point form. The exception is a collection of comments on expectations and responsibilities.

A few interviewees suggested that many of the key problems in this field derived at least in part from consumer-driven demands for health care. These demands, it was suggested, were fueled by societal attitudes and expectations about the role and promise of medical intervention, and resulted in many unnecessary calls on medical care. But we also heard that these expectations were related in part to the medical profession's inability to convey to the public the limits of medical knowledge and capabilities, and its willingness to promote the notion that most problems can be identified and cured, given sufficient resources.

But unrealistic expectations were not something on which consumers/patients were felt to hold monopoly rights. Most interviewees who mentioned expectations as a problem suggested that many of the key physician resource problems could be traced to unrealistic expectations held by society, patients, physicians and governments. One particularly articulate interviewee noted that unrealistic expectations breed frustration among all parties. For the public, availability and effectiveness are not commensurate with expectations that have been shaped by governments and the medical profession respectively. Politicians continue to expect that we can and should avail ourselves of the latest in technological and clinical advances, without needing additional resources to do so, and then become frustrated at cost pressures (which may have little to do with the advances at the margins) which limit their capabilities to provide the access to the latest that their constituents think they need. Physicians are frustrated by expectations that they should be able to provide the best possible care for their patients, but are generally provided with few formal clinical management guidelines and are increasingly facing more restricted access to resources that they feel are essential to being able to provide that level of care (e.g.

institutional capacity and diagnostic and therapeutic technologies). Their frustration comes from a feeling that they are expected to provide ever more service, for ever less reward.

Other problems might best be summarized by one interviewee's contention that "It all boils down to money and power and turf". Nevertheless, we list these others, in no particular order, for the sake of completeness and to illustrate the breadth of concerns expressed to us during our interviewing process. Once again, we emphasize that these are problems reported to us by interviewees, and do not necessarily represent the views of the principals:

- difficulty for provincial Ministries of Health in disseminating information to the public on effectiveness and efficiency, because the profession is still largely viewed as the 'authority' in matters of clinical practice, and because hospitals have a clear "media advantage" over Ministries;
- lack of inter-provincial co-ordination and provincial will to act, even where policy instruments do exist and where their effects are relatively well understood; lack of significant role for federal government in mobilizing that co-ordination or will; this results in un-co-ordinated interventions that mean some provinces become dumping grounds for others, and the profession in some provinces plays off situations in others; provincial policies create external effects for other provinces;
- failure to develop constituencies mobilizing behind policy change is a result of the Deputy Ministers' failure to provide strong, responsible, apolitical leadership; Deputy Ministers cannot expect stakeholders to buy into responsible change if they are not seen as acting responsibly themselves;
- lack of strong national (even if not federal government) leadership;
- fear among provincial Deputy Ministers of Health of the political consequences of policies that might reduce the availability of physician resources; particular fear about attempting to act unilaterally in this regard;
- too much bureaucracy resulting in health-care system inefficiency;
- government-profession confrontation (too much 'imposition'; not enough 'negotiation');
- lack of rationalization of institutional resources;

- lack of fiscal accountability of hospital department heads; lack of accountability from the medical profession to the general public for value for money;
- Ontario is both the source of most of the problems, and the major obstacle to constructive change;
- lack of women in organized medical politics;
- most of the major issues reduce to issues of ideology, expectations and politics; there has been a failure to decide what we as a society expect from our health-care system, to set goals commensurate with those expectations, to develop coherent overall health human resource plans based on principles of effectiveness and efficiency to meet those goals, and from those to derive a clear role for physicians in that system;
- public is not in favour of substitution so, e.g. midwives become add-ons;
- separation of health promotion and care provision communities; too energetic recent embracing of health promotion by Deputy Ministers on misguided grounds that it will save money;
- Charter legislation as an impediment to policy development;
- inability to develop consensus because of variety of stakeholder claims and interests, represents a major impediment to change;
- lack of good will between medical faculty deans and provincial Deputy Ministers of Health;
- pharmaceutical costs, because of prescribing habits of physicians;
- difficult to mobilize change because of difficulty of measuring outcomes of alternative approaches;
- private laboratories a major source of cost pressure and unnecessary medical utilization;
- conflicts between physicians and hospitals as a result of physician attitudes toward hospital access and increasing physician supply relative to hospital capacity; leads to duplication of hospital-based resources such as coronary care units and intensive care units in urban settings; lack of accountability of physicians with hospital privileges or practice bases to CEOs of the institutions;
- medical travel costs (in Territories) and out-of-province costs;
- liability concerns of extended duty nurses in rural areas, as problem for substitution;

- media as problem because it responds to sensationalization of individual situations, while being relatively ineffective in disseminating broader-based population information on effectiveness, efficiency, and determinants of health; medical profession, and health care institutions can play this 'card' against government virtually at will;
- people are prepared to believe that less is better, until they personally require acute care;
- provincial medical associations are unwilling to take leadership role in health policy initiatives because of lack of compulsory membership;

This completes our reporting of the problems identified in our interviews. In the following section we provide a brief summary of the problems identified by our international collaborators in each of their countries.

B. From An International Perspective

The commissioned international reports that form Appendices D through J of this document reflect the individual approaches of seven different teams to our instructions which appear in Appendix C. Predictably they have taken different approaches to providing the information we requested, with the result that the content and perspective vary across countries, and the information is incomplete from the perspective of the life-cycle framework developed in this report. Because of the tight time frame for this study, we did not have the luxury of commissioning the reports after we had completed our conceptual development and analyses, although such an approach would have clearly better informed our own work.

While the synoptic discussion of international experience which we provide in this section attempts to follow the framework developed in Chapter 3 and the sub-section headings used in the first section of the present chapter, we have little to report under many of these sub-sections because the international collaborators were not specifically asked to comment on each area, and many apparently did not feel that certain topics warranted discussion in their own national context.

Having said that, we feel that the complete international reports provided in the Appendices do provide a reasonable flavour for the history, the present situation, and the current problems faced in each of the seven countries. For those interested in any particular country, the discussion in this section will not be particularly helpful. Rather, we attempt here to draw out some of the apparently common themes and problems which emerged from our own reading of these reports and a small amount of supplementary international literature.

Overall Physician Supply

Perhaps the most obvious common theme that emerges from the international reports is that the seven countries (at least in the opinions of the authors) are all presently grappling with the problems associated with an oversupply of physicians. A number of these countries have physician supplies well in excess of that in Canada (e.g. Germany with a population:physician ratio in 1989 of about 370 (van den Bussche, 1990); Sweden and France at around 340 in 1990 (Calltorp, 1990; Bui Dang Ha Doan, 1988)).

A second interesting theme is that the present oversupply is largely a result of dramatic expansion in domestic training capacity in the 1960's and 1970's. This raises intriguing questions about how it is that virtually all western industrialized nations came to expand their training capacity so dramatically, and over a common period of about two decades. While expansion in Canada is generally linked to recommendations in the Hall report of 1964 (Canada, 1964), and those recommendations are explicitly tied to projected population growth and the recommended development of a national medical insurance scheme, such underpinnings are clearly not generalizable to the other countries. We do not have an immediate answer to the commonality of this phenomenon. Perhaps it points out a danger in looking to international experiences to guide one's own policy development, or perhaps policy evolution involves a poorly understood international symbiosis (Bui Dang Ha Doan, 1990). At the very least, this stands out as an area in which further research might bear interesting fruit.

A final interesting note on overall supply is the clear message from the German literature that the rapid increase in supply is creating an increasing problem of unemployed physicians (Deneke, 1988) and that if the present cost control arrangements remain in place while present supply expansion continues, Germans will witness the emergence of either precipitous declines in the incomes of physicians providing ambulatory care, or physician unemployment on a 'grand' scale. Van den Bussche (1990) offers as well the prospect of tremendous pressure on physicians to expand their scopes of practice to recapture areas presently covered by other allied health professionals, and to expand their product line into areas not traditionally covered by German sickness insurance (e.g. psychotherapy, naturopathy). The increases in numbers of unemployed physicians is not, however, restricted to Germany (see, e.g. Morosini, 1988). In the face of this potential burgeoning unemployment in continental Europe one finds, ironically, 'protectionist' expansion in domestic training capacity (see, e.g., Appendix F). At the same time, unemployment does not appear to be a problem in countries such as the U.K.

where, as Maynard (1990) notes, physicians continue to have handsomely rewarded job tenure for life (p. 94).

Medical School Enrolment

As noted above, the rapid expansion in physician supply in the countries examined arose largely because of rapid expansion in domestic training capacity. Among those reports mentioning undergraduate training, all indicated that the size of the entering class continues to be problematic. In at least a few of the countries examined (e.g. New Zealand, United Kingdom, Germany), this class size is significantly larger, relative to population or to existing physician supply, than that found in Canada.

In this context it is interesting to note that Australia's actual population growth has apparently not been reflected in adjustments to its medical school capacity, despite the facts that population projections were a primary factor motivating the expansion in training capacity, and that those projections have turned out to be in error.¹ There is also the hint in the Australian report that some of the problems in that country with serving particular ethnic and geographic populations have their roots in the fact that the admissions process strongly favours the "upper social classes and academic strata of Australian society".

Undergraduate Medical School Curricula

If there was a common theme, it was perhaps best put in the German report, where the authors noted that "the contents of medical curricula basically reflect the convictions or interests of medical faculty working in an environment where maximal possible treatment is offered" (Appendix G, p. 11). Similar sentiments were evident in the reports from Australia and Sweden.

¹ As we will see later, this experience turns out to have some remarkable parallels with what has transpired in Canada.

Graduates of Foreign Medical Schools

The role of GOFMS in physician supply was discussed explicitly in only three of the seven reports. Australia's attitude appears to be one of ambivalence. Strong opposition to the in-migration of foreign-trained physicians is expressed by members of the medical profession and by the upper- and upper-middle classes which are the predominant source of domestic medical students. Yet at the same time there is a general recognition that certain ethnic segments of the Australian population are both under-served, and poorly served by native Australian physicians. As in Canada, many rural areas must recruit GOFMS in order to provide any medical service to their populations.

The United Kingdom report notes the influence of foreign-trained physicians on short-term supply in that country, and GOFMS are also raised as an issue in the report on France. There appears to be a general sense of unease about the mobility of physicians in the new era of the unified European community.

Specialty Training and Specialty Shortages/Surpluses

While the problems of specialty distribution tend to reflect the structural and financing situations in each country, a number of general impressions emerge from the reports. First, some problems of specialty shortage appear to plague all the countries polled, although it was difficult for us to ascertain whether some of the problems were problems of geographic distribution rather than overall shortage. We were not offered sufficient detail to be able to tell whether shortages or surpluses in particular specialty areas are common trends. Some countries appear to have too many urban general practitioners and urban hospital-based specialists. Others indicated shortages in psychiatry, geriatrics, and a variety of other areas. But there also seems to be wide variation in the availability of specialists. For example, the ratio of generalists to specialists in Germany is about 1:3, and the Swedish report also noted an increasing trend among trainees toward specialization, whereas the specialist supply in Australia is tightly controlled by a plethora of individual specialty Colleges.

With respect to post-MD specialty training, a few common themes do appear to emerge from among the quite different training situations in the seven countries. There appears to be a fundamental mis-alignment of population needs and post-MD training curricula, because clinical supervisors tend to be interested only in students wishing to specialize in their areas of interest, and because training sites are largely hospital-based whereas the practice opportunities and needs are in the community.² At least one report also noted a lack of integration of undergraduate and post-MD curricula, and we found interesting the claim in the report from Sweden that eligibility for practice is based predominantly on having put in the 'training' time rather than on any demonstration of clinical competence.

Geographic Distribution of Physicians

The common theme here is that geographic maldistribution continues to be a problem in each of these countries. We were provided with insufficient statistical detail to be able to appraise the variance in geographic distribution, either within these countries, or comparatively across countries. But the general themes would appear to be urban surpluses, particularly of general practitioners, and rural shortages of both specialists and general practitioners.

This is particularly problematic in the U.K. and New Zealand for general practitioners, because they are either not, or less, affected by regional funding allocation formulae than are hospital-based specialties. The German report notes that there are no particular incentives for physicians to practice in rural areas because, despite the huge urban supply, urban-based physicians seem still able to "induce demand". Sandier notes the failure of the French medical education system to align regional training capacity with regional physician requirements.

² In most of the countries from which reports were commissioned, there is a clear separation between hospital-based and ambulatory care, with physicians from one sector having no or little access to the other. In this context, it makes little sense to train physicians for the latter in hospital-intensive settings, yet this appears to be a common problem in Europe.

Licensure of Physicians and Regulation of Medical Practice

Few of the reports addressed these issues explicitly. A few of the authors noted that the medical profession has dominated medical care policy, while we found particularly intriguing Maynard's claim (1990, p. 100) that "any attempt to use available mortality data and examine performance by hospital or clinician would be vetoed by medical civil servants" [our emphasis].

But in general, impediments to, and the likelihood of reforms relating to licensure, quality assurance, and other similar issues, are products of each country's unique historical medical/political evolution. The problems in each country are products of that evolution, and the solutions are likely to have limited international generalizability. Although they are all likely to have similar attributes, they will evolve at quite different paces, be dominated by different organizations, and are likely to have quite different effects.

Remuneration for Medical Services

We could identify no common theme here, although the discussion in the U.K. report of the lack of integration of remuneration policy with supply and distribution policies appeared to describe the situations in the other countries as well. Because of the variation in the way physicians are paid, both within some countries, and across countries, perhaps the lack of emergence of a common set of problems is not surprising.

This is not to say that there are no problems. The discussion in many of the reports of actual and proposed initiatives is liberally populated with suggested physician payment reforms. We discuss some of these in Chapter 5C below.

Research, Planning and Information

A number of the reports note that poor or inconsistent data on physician supply, distribution, productivity or requirements, or poor or inadequate planning methods or communication, plague the physician resource planning process.

This very brief summary of some of the more prevalent themes emerging from the international reports fails to do justice to their descriptions of problems in each of the countries. Again, we encourage those interested in the situations in particular countries to refer to the relevant Appendix, to the references cited in the Appendix report, and to other relevant references in our bibliography.

In the final section of this chapter we offer our analysis of the fundamental problems and underlying causes in Canadian medical resource management.

C. From Our Perspective, All Things Considered

Summary

Before addressing solutions we outline in this section our perspective on the problems, including our view of their underlying causes. While this summary provides the 'highlights' of the section, it cannot capture the complexity and inter-connectedness of the policy issues which we have attempted to draw out in the text.

Overall Physician Supply

PROBLEM : - The long-term trend, of annual increases in the rate of growth of physician supply in excess of population growth, continues without obvious or compelling justification.

CAUSES : - Undergraduate enrolment is too high relative to population growth because current training capacity is 'rooted' in the 1964 Hall Report, the population projections in which have turned out to be grossly in error.

- There is too little, and fragmented, control exercised over the entry (into Canada, and especially into practice) and/or subsequent status of graduates of foreign medical schools.

Residency Training and Specialty Certification (Numbers and Mix)

PROBLEMS: - The number and mix of post-MD training positions are out of balance with population need and with the educational capacity required for the present medical undergraduate complement.

- The present organization of training programmes is inefficient, with possible implications for the quality of post-MD education.
- The present methods of funding residency positions and the clinical services that residents provide, are both inefficient and deleterious in terms of their impact on the educational experience of post-MD trainees and the priorities of the host academic medical centres.
- Present clinical exposures and experience rarely provide levels of confidence and competence sufficient to encourage graduates to practice outside urban centres.

CAUSES : - There are too many residency positions, an increasing proportion of which are not controlled by Ministries of Health.

- There is a poor match of types of positions to types of future health-care needs.

- The growing reliance of academic medical centres on clinical earnings, and the fact that clinical supervisors receive fee-for-service remuneration for services provided under supervision by residents, result in an over-emphasis on service provision by residents.
- Clinical exposures during training are often not the most appropriate for future community practitioners.
- There is poor co-ordination of residency programmes, within medical schools, across medical schools and across provinces.
- Incentives in medical schools favour sub-specialization.
- The concentration of sub-specialists for research purposes in academic medical centres creates a sub-specialty ethos that affects curricula and mix of clinical exposures.
- The concentration of post-MD training in urban tertiary hospital settings constrains opportunities for community clinical exposures.

Specialty Maldistribution

PROBLEM : - There is an inappropriate mix of specialists relative to the need for their services, especially on a geographic basis.

CAUSES : - There is no mechanism to signal population needs to those setting training priorities.

- Sub-specialties have been allowed to proliferate, partly in response to pressures from the U.S.
- Relative incomes once in practice, lifestyle and status considerations, and the nature of current training environments provide incentives for sub-specialisation.

Role and Funding of Academic Medical Centres

PROBLEMS: - The roles of academic medical centres are poorly defined.

- The funding of academic medical centres is unstable, chaotic, and inconsistent with their roles.

CAUSES : - No mechanisms exist for all interested and affected parties to develop and agree upon a modern 'social contract' for the centres.

- Multiple sources of funds are not co-ordinated and are often unrelated to the functions they support.
- 'Opportunistic' sources of funds (clinical earnings and competitive research grant funding) support an increasing proportion of the basic infra-structure of the centres.
- Control over both the sources and the internal allocation of funds is fragmented.
- An alleged decrease in funding from Ministries responsible for higher education has increased centres' reliance on clinical earnings.

- Incentives associated with fee-for-service remuneration are largely incompatible with the functions and objectives of academic medical centres.

Geographic Maldistribution

PROBLEM : - Significant geographic variation in physician supply means that necessary services are not available to some Canadians in a timely way or without substantial inconvenience, and that some regions have more physicians than are required to meet most of the medical care needs of the local populations.

- CAUSES : - Individual practitioner decisions are driven by professional incentives and personal lifestyle factors which strongly favour concentration in urban practice settings.
- The selection of students by medical schools takes inadequate account of the relative need for rural physicians.
 - Exposures and influences during training encourage urban practice.

Patterns of Medical Service Utilization

PROBLEM : - A non-trivial amount of medical service utilization is being found to be ineffective, inappropriate, or inefficient.

- CAUSES : - Services and procedures, including many currently in use, are not routinely subjected to rigorous scientific evaluation.
- There is poor awareness of evidence about effectiveness and there are few good mechanisms to implement changes in practice patterns among practising physicians.
 - Data on the relative costs and benefits of different services are frequently not available.
 - Fee-for-service payment, especially when coupled with increasing physician supply in urban areas, encourages over-servicing.

Licensure and Regulation

- PROBLEMS: - There are no uniform national standards of clinical competence for licensure.
- The regulation of medical practice takes little or no account of overlapping fields of training and known areas of substitutability.
 - The regulation of physicians embodies no uniform, systematic review of continuing clinical competence.

- CAUSES : - Licensure is an area of provincial jurisdiction, with few co-ordinating mechanisms.
- The structure and processes associated with licensing and regulation of the medical profession have not kept pace with the evolution of medical knowledge.
 - There are few explicit lines of public accountability for Colleges and licensing authorities.

Physician Remuneration and Global Expenditure Policy

- PROBLEMS:
- Current processes of fee bargaining and internal fee schedule allocation are not perceived by many physicians to produce fair or equitable outcomes.
 - 'Transaction costs' of fee or income negotiations are high.
 - The dominant method of remuneration, fee-for-service, embodies no incentives to encourage the efficient use of the physician resource.
 - Fee-for-service payment is considered an unassailable 'right' by many physicians.
 - Fee-for-service payment encourages the proliferation of services.
 - Fee-for-service payment creates structural conflict between physicians and the globally-funded institutions in which many of them work.
 - Fee-for-service payment leads to open-ended budgets and resulting problems of predictability for provincial governments.
 - Provincial governments generally act as if the public is unwilling to spend more on medical care, despite the fact that little information exists on what an informed public might wish to spend.

- CAUSES :
- Political power accrues unevenly to different groups within medical associations.
 - Many provincial governments fear the uncertainty associated with binding arbitration for dispute resolution.
 - Medical associations fear the uncertain consequences of alternative (to fee-for-service) methods of remuneration.
 - Fee-for-service payment is process- rather than outcome-based, and favours 'technical' or 'procedural' rather than 'cognitive' approaches to care.
 - Fee-for-service payment is considered part of professional autonomy by many physicians.
 - There is a long-term impact on trainees from being immersed in fee-for-service payment environments in academic medical centres.
 - Lack of the Rand formula (compulsory 'dues'; voluntary membership) inhibits medical associations from engaging more fully as partners in policy development.
 - Only very imperfect mechanisms exist for ascertaining public preferences with respect to the expenditure of public funds, and few (if any) effective mechanisms exist for providing the public with the information it would need to make informed decisions of this nature.

Information Creation and Provision

PROBLEM : - There are serious deficiencies in the amount and quality of basic information, such as the health status of the population (both over time and for specific groups, regions and communities). Moreover, key actors in this sector often do not make good use of the information that is available.

CAUSES : - No clear priorities or system-wide approaches for information creation exist, due in part to lack of both interest and inter-provincial co-operation.

- Dissemination of information is haphazard and, because it is often championed by those with specific 'causes', frequently only one 'side' of an issue is presented.
- There are few incentives for the use of available information in every-day decision-making.
- The media, the public, and disease- or issue-based interest groups tend to 'create' and disseminate medical care information in innocence of any broader context of health and well-being.

We now depart from the relatively straightforward, uncritical recounting in the first two sections of this chapter of what was reported and told to us, and attempt in this section to provide our synthesis, analysis, and 'outcome' for each of the specific problem areas identified in section 4A. Wherever possible we have adopted the approach of beginning by identifying what appears to us to be the fundamental nature of the problem(s) in each area, and following with an analysis of the apparent underlying or root causes.

This approach was prompted by the fact that a determination of the nature of the problem does not, by itself, provide the necessary information to develop effective policy responses. To be effective, policies must be targeted at underlying causes. We attempt to carry our identification of underlying causes forward, along with some of the wide variety of options that we heard or had reported to us (see Chapter 5), in our policy analysis and options/recommendations development in Chapter 6B.

While this distinction might strike some as not much more than a matter of academic semantics, in fact we found that maintaining this distinction was particularly useful (at least to us) during the course of interviewing, and we hope what follows will convince the reader of its

utility. A concrete example may prove helpful. Virtually everyone agrees that uneven geographic distribution of physician resources in Canada is one of the major problems facing policy-makers. There is less agreement on whether the wide variation in per capita physician supply represents the existence of surpluses, shortages, or both. Although in either case the 'existence' of the problem is probably necessary to attract policy attention, it is not sufficient to provide any policy direction. For that, one must attempt to examine the causes of the distribution, which relate closely to the motivations underlying individual decisions on location of practice and the environments which influence those decisions. Only with a clear understanding of the set of likely causes (and this is where research literature becomes indispensable), can one develop and target policy initiatives which have some hope of addressing the problem.

This section is intended, then, to be our 'problem analysis'. We draw on sections 4A and 4B, the literature reviewed in the course of the study¹, and (in the end) our own analytic approaches and insights. We have chosen to devote most of our analytical effort in this section to discussions of problems on which there appears to be less unanimity.

Overall Physician Supply

The fundamental problems here would seem to be three. First, physician supply in Canada is, and has been for some time, increasing far faster than the size of the population. Second, we did not hear, nor could we develop, any compelling reason for this to continue. The body of evidence that would support the continuation of these relative rates of growth is virtually non-existent, and that which does exist is widely regarded (i.e. not just by us) as embodying fundamental methodological flaws or poorly concealed intellectual dishonesty, or is simply unconvincing (see, e.g. Schwartz and Mendelson, 1990; Schwartz, Sloan and

¹ The numerous items listed in the bibliography are not all specifically referenced within this section or elsewhere in the report. While many of the bibliographic items are not cited in the text, for a variety of reasons, we have included the extended bibliography (rather than a more circumscribed list of references) as one of the by-products of the project. We hope that it is of use to others working in this area.

Mendelson, 1988; Harris, 1986). Other literature addressing this topic contains many kernels of wisdom which get lost in the religious belief that ever increasing numbers of physicians represent a solution to meeting all possible health needs, now and in the future (on this, see the exchange between Hanft, 1987, and Petersdorf, 1987).

Many of these problems, of methodology and 'religion', have been addressed elsewhere (e.g. Lomas, Barer and Stoddart, 1985; Lomas, Stoddart and Barer, 1985; Tarlov, 1990), and will not occupy us here. While the argument that many of the policy changes taking place in the United States could not have materialized without the rapid run-up in physician supply (Hanft, 1987) is probably correct, this seems an unusually costly approach to motivating organizational and financial changes, particularly in light of the growing recognition of the uncertainty regarding the relationship between medical care and health (Roos and Roos, 1990). Furthermore, on the U.S. record to date, those changes have not been terribly effective, either in controlling runaway costs, or in effecting necessary service redistribution in that country!² In the Canadian context one could argue that the increasing physician supply has represented not a motivation, but an impediment to organizational and financial change (see, e.g., Lomas, 1987).

Third, the continued funnelling of very talented scarce human resources into careers as physicians carries a high social opportunity cost for Canada in an increasingly competitive 'high-tech' international environment. We cannot escape, and must not forget, the fact that unlike other 'goods and services' (in the economist's jargon), health care is a 'bad'; as a society, and as individuals, we would like nothing better than to be able to use less of it, much less of it. Much of health care is extremely valuable in terms of its impact on health status and quality of life, and all of it is 'productive activity' in an economic sense, with economic benefits accruing to those providing it and those activities and

2 In this respect it is interesting to note that, as early as 1970, some American observers were suggesting that the alleged physician shortage of the 1960's on which the North American medical school expansion was pinned, was the product of someone's very vivid imagination (McNerney, 1970).

investments that support the 'industry'.³ But from a social welfare perspective, most, if not all, of us would be better off if we could collectively get away with less of it while maintaining the same health status. Health care is, in itself, a source of disutility (Evans, 1984). Those receiving it would be happier to need less; those providing it could be otherwise gainfully engaged in other productive endeavours. Furthermore, it carries potentially high personal costs if young students receive costly publicly subsidized training, and are then set loose into an environment that is relatively unsupportive because society has no particular need for their skills.

In this respect, we disagree strongly with the view put forward by Harris (1986) that "a shortage of doctors entails significantly greater social costs than does an excess". Shortages do not materialize overnight; there are plenty of early warning systems, and many temporary sources of adjustment. History has already clearly shown that there is an information bias with respect to the identification of surpluses and shortages,⁴ and history has also shown that the creation of new economic activity is politically much easier than unravelling already established activity,⁵ because of the asymmetry in ability to muster information on, and organized opposition to each. "It is always easier to expand than to

³ This is perhaps nowhere more true than in the small one-hospital, one-physician towns in Saskatchewan. On purely health care need and quality grounds, some have argued that many of these hospitals should have been converted to other uses years ago. Yet they remain intact because "each is considered the lifeblood of its community" (Houston, 1990). The hospitals take on purposes much broader than simply the enhancement of health status. They become part of the economic survival for small rural communities. When health care policy confronts broader economic policy (not to mention politics), health care policy often comes out second, or third best.

⁴ It remains difficult, if not close to impossible, to find representatives of the medical profession, for example, who can lay out for us the criteria on which they would conclude that there was a local area surplus, of any type of physician; the difficulty for them of identifying shortage situations is, by contrast, trivial.

⁵ As John Iglehart noted at a recent ACMC conference, "politicians everywhere prefer to err on the side of too many, rather than too few, physicians" (Adams, 1989a).

contract -- particularly in medicine, a profession that seems to have lost its ability to control its own growth" (Petersdorf, 1983). These facts suggest that we should continue to try to 'get it right', but that, if anything, we should err on the side of under-shooting.

If the rate of growth of physician supply, and the opportunity cost that growth represents are the fundamental problems, then it must follow that the underlying causes are the sources of that increase. In Canada this suggests two underlying causes: the size of the undergraduate medical class, and the inflow of graduates of non-Canadian medical schools. We deal with each separately.

a. Undergraduate Enrolment in MD Training Programmes in Canada

The products of domestic training provide the vast majority of additions to supply. While this seems reasonable enough, it also implies that domestic training must be a representative part of any solutions. The current capacity of Canadian medical schools is a direct result of the recommendations from the 1964 Royal Commission on Health Services (Canada, 1964). Many of the recommendations of this Commission became the blueprint for the structuring of Canada's health-care system, a system widely admired to this date, within and outside Canada. In the area of medical school capacity, the recommendations of the Commission were followed almost verbatim. Yet strangely (in our view), the underpinnings of those policy recommendations have not received much public scrutiny in the last quarter-century. In light of the current fashion of having every new clinical or policy initiative accompanied by calls for ongoing monitoring and evaluation, this sanguine lack of scrutiny begs scrutiny!

A particularly revealing example is offered by Ryten and Watanabe (1987). They note that "Faculties of medicine kept very close to the commission's recommendations until 1981/82. Since then, admissions have been well below the recommended levels....It can by no means be claimed that Canadian faculties of medicine expanded their capacity irresponsibly". They then go on to note that "The forecasts and projections upon which the commission's recommendations were made turned out to be wrong in several critical areas, particularly population." The

factual parts of these statements are correct. But the authors fail to put the two pieces together. It is as if reacting in 1982 to gross errors in population projections, which were evident to anyone who bothered to look as early as five years after the publication of the Royal Commission report, is somehow reasonable policy.⁶

Let us re-examine this important piece of Canadian health policy history more closely, if only because it appears to have remained well hidden until now. Hall's recommendations were based on calculations performed and assumptions adopted by researchers for the Commission (Judek, 1964; MacFarlane, 1964). On the basis of these, he stated that "The problem of providing sufficient medical school facilities to supply Canadians with the present or an improved level of medical services requires immediate attention" (Canada, 1964, p. 524; emphasis in original). He recommended the development of four new medical schools, and significant expansion of existing facilities to produce just over 1859 medical graduates by 1991. But on the same page he noted an important rationale for these recommendations: "...we believe that the maintenance of the 1961 population-physician ratio is a realistic goal" (our emphasis this time). The 1961 population per physician was 857!

In Table 4.1 we compare Hall's Commission projections for 1991 with actual data for the late 1980's. Without exception, the researchers' estimates and assumptions, accepted explicitly in the recommendations made by Hall, erred on the side of fostering domestic over-production of physicians. Population was over-estimated by about 35%, and attrition from both the ranks of practising physicians and medical training were over-estimated. Immigration of foreign physicians was severely underestimated, in part because (as Ryten and Watanabe (1987) point out), many "years elapse following enrolment expansion before a large number of physicians becomes available. We did not wait ...Instead [we encouraged]

⁶ We do not mean to malign the medical schools on this point. They may truly have felt they were acting responsibly. The fact that the dramatic divergence between projected and actual population somehow never quite made it into considerations of undergraduate enrolment policy may simply reflect the lack of inter-sectoral and inter-stakeholder coordination that we hope this report will begin to correct.

Table 4.1

Comparison of Hall Commission Projections for 1991
with Actual for Late 1980's

	Hall Projection	Actual
Population	35,106,700	26,095,200 ¹
Attrition rate from stock (deaths, retirements, emigration)	3.0%/yr	2.5%/yr ²
Attrition rate from medical school enrolment to graduation	10.0%	3.5% ³
Immigration of physicians (#/yr)	1971-80 300) 1981-90 250)	450 - 650 ⁴

¹ Preliminary post-censal estimate for 1988 (Canada, 1989b).

² Based on data tapes from Southam Communications Limited, report "Change of Activity Status" for 1986 to 1989.

³ Personal communication, November 1990, Eva Ryten, Association of Canadian Medical Colleges.

⁴ A single reliable source for this figure is not available. This range is based on Immigration Canada data on new immigrants stating medicine as their intended occupation, and on the Southam data tapes (see note #2 above).

massive immigration of doctors...". Hall estimated available supply in 1991 of about 40,000 physicians, for a population of 35 million!

Sceptics may hasten to suggest that much has happened since 1964 in population structure (as distinct from size), and on the technology and clinical knowledge fronts. But Hall's calculations incorporated assumptions of improving technology which, on balance, were assumed to translate into a need for additional physicians, and also made adjustments for demographic changes. The influence of Hall's recommendations is

reflected in the fact that his projected 1991 graduating class of 1850 is remarkably close to the Canadian peak of 1835, reached in 1985 (Ryten, 1989). Unfortunately the influence of his population projections was not nearly as pervasive. The recommendations for new training capacity were adopted without regard to their most fundamental justification!

We do not wish to suggest that we feel 857 is an appropriate population:physician ratio for Canada. As we have noted earlier (and repeat later), there is no magic ratio. We have nothing in our arsenal of evidence that would suggest that a ratio of 500 is any more, or less, appropriate. Certainly there have been many advances in effective clinical technologies and techniques since the early 1960's that would suggest the useful deployment of more physicians in Canada than the 30,000 implied by the 857 ratio. On the other hand, in the years since the Hall report, two other countervailing factors have emerged.

First, compelling evidence has accumulated suggesting significant potential for the deployment of personnel less highly trained than physicians, in certain areas of medical service delivery where equal competence has been demonstrated. Although the most frequently cited example is the nurse practitioner, who may be able to substitute for as much as one third of general practitioner workloads (Lomas and Stoddart, 1985), there is also evidence of considerable substitution potential for psychologists and social workers in psychiatry (see, e.g. MacPherson, 1988). Furthermore, physiotherapists, social workers, family counsellors, and a variety of technicians currently working in teams under physician supervision (or even independently in certain situations and for certain types of presenting conditions) all represent potentially significant, but largely untapped, substitution potential. This team approach may be particularly relevant for care of the elderly, where one finds social support and palliative care needs may be more pressing than needs for 'curative' clinical interventions that can only be satisfied by individuals with MD training (see, e.g. Hertzman et al., 1990). Much of physician resource policy discussion proceeds as if this evidence does not exist, or as if it is somehow irrelevant to the debate, although such

discussions appear to be taking on a more enlightened view in recent years.

Second, it is now clear that not all the services delivered by physicians are 'necessary'. Evaluation of the appropriateness of physician services has become commonplace (a new growth industry), and is consistently demonstrating that a significant proportion of care is inappropriate, because either the services need not have been provided at all, or they could have been provided more cost-effectively. While a complete review of this literature would be out-of-place in the present document, we offer a few Canadian examples here, and selected other literature is referenced in Chapter 6, section B.

In a 1987 Ontario study on the use of blood products, 15% of the use was found to be "clearly inappropriate", and another 15% was of dubious benefit (Ali and Blajchman, 1987). A more recent study on the use of caesarian section in Canada found that repeat elective section rates are considerably higher than necessary (Lomas, Anderson et al., 1989). During the interviews for this latter project, some interviewees expressed concern that the growth in the physician supply may be responsible in part for levels of inappropriate care. Even more recently, an internal investigation of clinical practice at a hospital in Victoria, the results of which were leaked and caused considerable public furore, explicitly identified the oversupply of urban general practitioners as a major determinant of poor, and often dangerous, quality care at that hospital (Paterson, 1990a, 1990b). There are many similar studies emerging from the United States and elsewhere, and even representatives of Canadian regulatory bodies have suggested that continued increases in the supply of physicians may have negative consequences for the quality of patient care.⁷

⁷ Michael Dixon, registrar of the Ontario College of Physicians and Surgeons, noted in 1986 that provincial licensing authorities "recognize that there may be some negative effects on the quality of medical practice when increasing numbers of physicians are competing to provide medical services" (Sullivan, 1986).

These considerations, in conjunction with the fact that there is no magic ratio⁸, and therefore no 'right' number of medical graduates, provide a compelling reason to re-visit the training capacity of Canada's medical schools. A further reduction (since there has been a reduction of about 100 positions, or 6% since 1983/84)⁹ would go some way to recognizing the false premises on which the rapid expansion in training capacity was based, the potential for substitutability of health-care personnel (the realization of which is hampered by an increasing physician supply), and the presence of quality-threatening over-provision of medical services by physicians.

The three most frequently cited reasons for not reducing Canadian undergraduate enrolment are: (1) it would reduce opportunities for young Canadians who wish to become physicians; (2) it would compromise quality medical education because of problems of funding or critical mass; (3) it would have no effect on physician supply because more graduates of foreign medical schools would simply take their place (see, e.g., Sullivan, 1986). In our view, the third reason is the most compelling and potentially serious, and we address it immediately below. The second is considered at other points in our discussion, in this section and in Chapter 6. Here we need note only that these are untenable and unconvincing reasons for the maintenance of current training capacity, and the problems alluded to can be directly solved through rationalization of medical education facilities.

⁸ As Rudolph Klein (1990) noted recently, "...perceptions [of surplus or shortage] seem to be shaped both by past history and structure of medical care, organizational and financial, within which doctors work". This explains why, for example, "the British medical profession is currently worried about the prospect of a surplus, even though Britain's doctor-patient ratio would suggest that the country is still desperately short of physicians when compared to, say, the F.R.G. or Sweden" (p. 247). It may also explain why medical associations (and others) in this country are constantly revising their assessment of 'optimality' in the ratio of population per physician downward (yesterday's target is today's shortage).

⁹ First year enrolment in Canadian medical schools peaked in 1980/81, and remained stable for the subsequent four years. Since then, reductions in Manitoba, Quebec, British Columbia and Nova Scotia have resulted in the 6% decline (Association of Canadian Medical Colleges, 1990).

The first reason warrants our attention here, although we have made passing reference to the issue above. Opportunities for young Canadians to practice medicine are already severely rationed. Current ratios of applicants to entrants (Canadian citizens and landed immigrants) are about 4:1 (Association of Canadian Medical Colleges, 1990; Tables 9, 18 & 70). If one assumes that the applicants include only those who are informed about the stiff entry requirements, and who feel they have a reasonable chance of being accepted, then it would seem safe to conclude that there are many more than the annual 7000+ formal applicants who covet a career in medicine. But training opportunities in all highly specialized professional careers are limited; in most cases, Canadian higher education institutions and Ministries attempt to provide training resources which align approximately with anticipated capacity of the downstream 'markets' to absorb their talents. The process is far from perfect; examples of counter-cyclical gyrations in the training of teachers, for example, are well-known.

But in the context of the organization and financing of Canadian health care, we must be particularly sensitive to the considerations noted above: the implications for health and health-care policy of increasing supply far more rapidly than population; the implications, in terms of quality and opportunity cost, of our past production excesses; and the implications, in terms of social and personal opportunity cost, of continuing to mint more physicians than communities require. Many countries around the world are creating large and rapidly increasing pools of unemployed physicians (as we note above in section 4B). This is unlikely to happen in Canada. But there is growing evidence that under-employed physicians represent a risk to the health of the public.

Furthermore, the maintenance of an entry class in excess of what the country reasonably requires, simply for the purposes of providing Canadians with an opportunity to become physicians, seems a perverse and costly failure of education and health policy co-ordination. Those who would bear the brunt of the cost will be those same students who interpret the availability of undergraduate MD training opportunities as a signal that the skills with which they will emerge are required and highly valued

by the society supporting their training. As the B.C. Professional Association of Residents and Internes argued, with considerable justification, during the infamous B.C. 'billing numbers' case a few years back, the time to employ overall physician supply policy is at the beginning of the educational process, not at the end!

b. Graduates of Foreign Medical Schools (GOFMS)

The other major, although much smaller, source of new supply is graduates of foreign medical schools (GOFMS). GOFMS enter Canada through a variety of mechanisms, and for a variety of purposes, not all of which have an impact on Canadian physician supply. We attempt to trace the sources and mechanisms here, with references to more detailed documentation, and then comment specifically on those channels which appear to represent underlying causes of the rapid growth in the Canadian population:physician ratio.

The 1986 report of the Joint Working Group on GOFMS (Canada, 1986) classifies GOFMS into three groups: Canadians (whether citizen or permanent resident) who have gone abroad for medical training (henceforth C/PR); students who are in Canada on student or temporary employment visas, to complete post-MD training (henceforth VISA/T); and physicians who have entered Canada on temporary employment visas, "for the purposes of medical practice and/or teaching and research activities" (*ibid.*, p. i) (henceforth VISA/P).

For our purposes, it seems useful to separate GOFMS rather more finely, because the potential or desired policy approaches to each, and the policy initiatives for each, are likely to be quite different.¹⁰ For each of our categories, we indicate the three-way 'family' (C/PR; VISA/T; VISA/P) within which it falls:

- (1) Canadians who would be (or are) accepted to one or more medical schools in Canada, if they applied, but decide to pursue training outside Canada (C/PR);

¹⁰ ¹⁰ We are indebted to William Webber, former Dean of Medicine at the University of British Columbia, for providing what turned out to be the foundations of this taxonomy.

- (2) Canadians who are unsuccessful applicants to Canadian medical schools, but complete undergraduate MD training requirements in a school accredited by the Liaison Committee on Medical Education (i.e. in the United States) (C/PR);
- (3) Canadians who are unsuccessful applicants to Canadian medical schools, but manage to complete undergraduate MD training at schools other than those in (2) (C/PR);
- (4) GOFMS who are recruited into Canada to meet rural area needs (these could be general/family practitioners, or specialists) (VISA/P);
- (5) GOFMS who are recruited into Canada to meet specific specialty needs in urban areas (VISA/P);
- (6) GOFMS who are recruited into Canada to establish or enhance highly specialized tertiary care service and training capacity affiliated with academic medical centres (VISA/P);
- (7) GOFMS who enter Canada as refugees, and become landed immigrants (C/PR);
- (8) GOFMS who immigrate to Canada, sponsored by relatives, or through otherwise meeting Canadian/Québec immigration requirements (C/PR);
- (9) GOFMS who are recruited into post-MD training positions funded through Canadian sources (i.e. intended to meet Canadian needs for service or needs of training programmes) (VISA/T);
- (10) GOFMS who enter post-MD training positions funded by the countries from which they originate (i.e. intended to meet foreign service needs through training in Canada) (VISA/T).

All ten of these categories of GOFMS are potential, and in fact have been, sources of entry into medical practice in Canada. But the need for, extent of, and methods of control vary widely, at two generic levels: entry into Canada, and entry into practice. For example, for individuals in categories (1), (2), (3), (7) and (8), control over entry into Canada is outside the purview of those responsible for Canadian health care policy, but entry into medical practice is not. For those in the remaining categories, entry into Canada and entry into practice are, or should be, under the control of those responsible for health care policy, but the lack of actual control appears to be a product of fragmented responsibilities.

One of the striking effects (for us) of identifying this large number of possible routes and causes of entry was that it illustrated that GOFMS are a 'floating variable', under the control of no single agency or responsibility centre. The variety of sources and routes of entry undermines attempts to develop coherent physician resource policy. Each class of GOFMS has a distinct status as part of the underlying cause of the physician supply problem:

- (1) there are a small number of this category of individuals each year who seek undergraduate MD training outside the country, presumably for personal or family reasons or because of the belief that a higher quality medical education is available outside the country; these individuals represent a potential source of unanticipated pressure on entry to practice in Canada.
- (2),(3) represent significant potential adverse sources of pressure on entry to practice in Canada; their numbers, and their anticipated time of return to Canada, are largely unknown, and for some the quality of medical training is largely unknown or is alleged to be inferior to that required for licensure in Canada;
- (4),(5) represent potential adverse sources of pressure on entry to practice in Canada only to the extent that there is lack of enforcement of the conditions upon which recruitment was based;
- (6) represent adverse sources of pressure on entry to practice in Canada only to the extent that they are recruited for educational/research purposes rather than because there is a perceived clinical need for their services or for the subsequent services of students whom they might train; recruitment for the sole purpose of establishing excellence in education or research, in areas where such capacity would exceed clinical requirements, represents an underlying cause of increases in physician supply, and in the mix of specialists (see below);
- (7),(8) represent significant potential adverse sources of pressure on entry to practice in Canada; their numbers, and their time of entry into Canada, are largely unknown, and for some the quality of medical training is largely unknown or is alleged to be inferior to that required for licensure in Canada; once in Canada, categories (7) and (8) become largely indistinguishable from (2) and (3);
- (9) represent adverse sources of pressure on entry to practice in Canada only to the extent that they are able to extend or otherwise change the status of their entering visas; this is integrally linked to the problem of post-MD training and funding (see below);

- (10) represent adverse sources of pressure on entry to practice in Canada only to the extent that they fail to abide by the conditions to which they agreed prior to entering training programmes in Canada.

Many GOFMS will continue to fill important Canadian health care-related needs for which no other mechanisms exist. The problems lie largely with specific categories (4,5,7,8,9,10) and, from among them, a subset (4,5,9,10) become problems only because of a variety of federal and provincial 'holes' in routes to unrestricted licensure. In this respect, categories (9) and (10) are particularly problematic because these individuals often enter Canada for reasons entirely unrelated to Canadian physician supply, mix or distribution policy¹¹, yet significant numbers of them apparently end up becoming fully licensed permanent features of Canadian supply. Categories (4) and (5) are deliberately added to Canadian physician supply to solve specific problems, but often become parts of the problems by staying beyond the period for which they are needed, or finding ways to circumvent the restrictions on their practice mobility because the restrictions are not adequately enforced.

There seems to be general agreement that the major problems rest with categories (4), (5), (7), (8), (9) and (10), simply because the rest of the categories represent, in relative terms, minor pressure points on Canadian supply. But the mechanisms of entry into practice, and the types and targets of pressure along the way are quite different, and therefore pose quite different policy problems. For example, category (4) and (5) physicians become problematic either if they manage to circumvent the restricted circumstances under which they enter (i.e. pressure on provincial licensing authorities or Ministries of Health), or if they manage to extend their stays sufficiently to become eligible for permanent resident status (i.e. pressure on immigration process) (Canada, 1986). On

¹¹ There are situations where funded positions representing Canadian future needs are not fully subscribed by Canadian students. But in many other situations, funded positions go begging because their numbers do not align with Canadian practice requirements. A major future task for Canadian physician resource policy will be rationalizing the size and funding of post-MD training, and part of this process will involve the separation of these two types of position supply exceeding student 'demand'.

the other hand, category (7) and (8) physicians create pressures on pre-internship and post-MD training capacity (i.e. on Ministries who would fund such capacity), and category (9) and (10) trainees create pressures for immigration, funding, certification and licensing authorities. Of course all categories represent sources of consternation for those responsible for the development of physician resource policy designed to serve the needs of the Canadian public.

But the distinction noted above, between entry into Canada, and entry into practice, seems worth re-emphasizing. There is little that anyone is going to want to do with respect to entry into Canada for group (7), and we understand there is very little more that can be done by immigration authorities with respect to group (8).¹² They will enter Canada. The issue for Canadian physician resource policy is to attempt to develop mechanisms that can use the skills of these individuals to the maximum health benefit of the Canadian population, subject to the over-riding objectives of Canadian physician resource policy. In this regard, the increasing numbers of these GOFMS who are seeking post-MD training in the United States, expecting entry to practice upon return, ought to be a matter of considerable urgency. As we understand it (Canada, 1990b), these individuals are accepted to post-MD positions in the United States on the strength of a letter from Health and Welfare Canada, which is routinely provided to any Canadian wishing to undertake such post-graduate training, testifying to Canada's need for the skills which the individual will acquire. The problem with this sort of blanket policy would seem to be obvious, but also relatively easily corrected. The potential entry into active physician supply of category (7) and (8) GOFMS should not be viewed in isolation from the other groups, for which Canadian physician resource policy has significantly more control over entry into Canada. One of the great ironies in this situation, clearly articulated in the 1986 Joint Committee Report (Canada, 1986), is that Canada will continue to receive significant numbers of individuals with medical training from

¹² The 1986 Joint Working Group report (Canada, 1986) contains a number of concrete suggestions which we feel are certainly worthy of implementation, but the likely effects of which are largely unknown.

somewhere in the world, for whom there are presently very few routes to licensure or certification in Canada, yet at the same time Canada continues to recruit large numbers of post-MD trainees and visa physicians. What seems all the more remarkable, is that Canada does not, and likely will not, have much control over the former numbers, yet exercises (at least collectively) complete control over the latter. One can only conclude that those in the former category enter Canada without the necessary qualifications to meet the needs filled by the latter. Unfortunately, once the latter enter Canada, there seems much less that can be done to control their eventual entry into mainstream unrestricted medical practice. These considerations suggest some rather obvious areas worthy of policy attention.¹³

But this ongoing recruitment of GOFMS has other, more widespread, effects on physician resource policy in this country. As long as GOFMS continue to enter practice through selected entry-to-Canada routes, and are seen as solutions to Canadian problems (either at the training or practice stages), Canadian policy will continue to avoid dealing directly with the fundamental underlying reasons for their recruitment. In other words, the possibility of using 'selected GOFMS' allows us to avoid addressing the development of incentives that would result in Canadian, rather than imported, solutions to the problems they are brought in to solve. This implies that policy solutions that would reduce Canadian reliance on category (4), (5), (9) and (10) GOFMS must be developed with reference to the micro-decision processes of Canadian students and practitioners (see Chapter 3), and must address directly the underlying

¹³ We do not wish to imply that creating unlimited opportunities for individuals in categories (7) and (8) to enter clinical practice in Canada is a desirable policy approach. It is not, simply because the over-riding considerations must be Canada's requirements for, and decisions regarding the funding of, clinical services within a publicly supported system. On the other hand, there may be significant opportunities to take advantage of trade-off possibilities among categories (4) through (10), a consideration we address in Chapter 6.

causes of the problems (e.g. geographic maldistribution, size and mix of residency programmes¹⁴, etc.) for which these GOFMS represent a solution.

In addition, the fact that 'selected GOFMS' continue to find their way into Canadian physician supply creates two potential types of problems for domestic training capacity policy. We heard from a few interviewees that a decline in the Canadian proportion of new physicians entering practice would cause public outrage. This is, in the end, an empirical question. The more serious problem is that if one reduces domestic training capacity but does nothing on the GOFMS policy front, the primary objective for implementing the domestic training policy (to reduce overall supply) would not be achieved. One would end up with the same supply problems, but with a significantly higher proportion of GOFMS.

We see these as extremely important points, in part because the potential pool of highly qualified GOFMS is going to increase, not decrease, for the foreseeable future. As some of our international reports (see Appendi), and other literature (see, for example, Morosini, 1988; Ritsatakis, 1988) make clear, unemployed physicians are an accepted part of the landscape in many countries. The development of the broader European community is going to have as yet only partially understood implications for the mobility and employment of physicians on that continent (Viefhues, 1988). Furthermore, the state of the world suggests no let-up in the flow of potential refugees, and it seems unlikely that

¹⁴ The large numbers of post-MD training positions filled by selected GOFMS should not, however, be allowed to deflect attention from the fact that initiatives are required across the entire spectrum of physician resource policy. It is, for example, misleading and over-simplistic to suggest, as Sullivan has quoted Eva Ryten to have said, that "if there is an oversupply of doctors in Canada, it exists because the number of post-MD training slots that can lead to licensure far exceeds the needs of Canadian graduates, and these excess slots are eagerly snapped up by foreign graduates who will eventually practise here" (Sullivan, 1986). Certainly the latter part of the statement is correct, and certainly we have suggested here that entry to practice of individuals who enter Canada as visa trainees is a significant problem. But the connection between the two segments is incomplete. It is well known that most of the post-MD positions filled by GOFMS are residency positions (CAPER, 1990). The proportion of internship and family practice positions filled by GOFMS is very small. Yet many of the allegations of over-supply that we heard referred specifically to general practitioners.

Canadian policy in the foreseeable future would reduce or turn off that flow of GOFMS. Thus, pressures on the Canadian health-care system from sources of potential supply over which that system has (and will continue to have) no entry-to-country control, are going to continue to grow. It is incumbent on the Canadian health care policy community to develop collaborative approaches which would have the effect of significantly reducing the inflow of selected GOFMS.

While not a GOFMS problem at first blush, there are a number of Canadian graduates who seek post-MD training outside the country (primarily in the United States; Canada, 1989a; Ryten, 1989). Where they are seeking specialized training not available in Canada, and where Canadian clinical needs are too small to justify the development of the equivalent training programme, Canadians seeking specialized training outside Canada cannot be considered a direct underlying cause of physician supply problems, provided that the flow of trainees is aligned with Canadian clinical, research and teaching needs. But they represent an indirect source of pressure on overall supply if their departure implies the addition of visa trainees from abroad, as well as having a possibly adverse effect on specialty mix, the topic we address next.

To be more specific, MDs may seek specialty training in the United States which is unavailable in Canada, or which is available but for which residency position capacity falls short of Canadian demand. In both cases these residents are likely to become future sources of Canadian physician supply, but because they do not take up a post-MD position in Canada, that position is filled by someone else, who will also, in many instances, eventually enter practice in Canada.

Residency Training and Specialty Certification (Numbers and Mix)

There appear to be five distinct fundamental problems here, namely that: (1) the absolute number of post-MD residency training positions exceeds the number needed to meet current Canadian requirements for specialist services; (2) the allocation of residency positions across specialty areas does not appear to be determined by, or to align with, the relative specialty priority needs in the field; (3) the organization of

the training programmes is inefficient and, therefore, perhaps of lower educational quality than necessary; (4) the funding of residents, and the clinical service provision in which they are intensively involved, are irrational in an organizational sense, and likely inefficient from a social opportunity cost perspective; (5) the experience of graduates, even from the ostensibly generalist specialty programmes (e.g. general internal medicine, obstetrics/gynaecology) apparently does not provide a sufficient level of comfort to encourage practice at distances from urban tertiary care centres. We elaborate on each of these briefly.

On the basis of post-MD training needs implicit in the undergraduate training capacity of Canada's medical schools, bearing in mind the desired ratio of general/family practitioners to specialists, and with due cognizance of the important distinction between educational needs and service provision, there are significantly more funded residency positions in Canada than can be justified by a need to ensure an adequate overall supply of specialists.¹⁵ If we assume, in rough terms, that there are 1700 graduates from medical schools annually, and that about half should proceed to programmes leading to Royal College certification (involving an average 4.5 years over and above the initial post-MD pre-licensure year), then the implied requirement for post-MD, post-year 1 funded residency positions (not including family medicine) to meet Canadian training needs is about 3825 positions. This is well short of the approximately 4800 positions presently funded by provincial Ministries of Health alone (CAPER, 1990, p. 27), and ignores the issue of whether the length of training period is appropriate, on average, for the practice situations where the graduates are most needed.

But this is not the end of the overall numbers problem. The number of positions funded by sources other than provincial Ministries of Health

¹⁵ This is not intended to minimize the problem of specialty areas in which there are shortages (see specialty maldistribution section below). Of course the problem is even worse in the United States, where the ratio of specialists to generalists is much higher. This has prompted one informed observer to note that "the real purpose in the perpetuation of large specialty training programs is the replication of the race", and that the greatest need now is "to institute birth control" (Petersdorf, 1983, p. 1954).

is not only significant¹⁶, but is growing rapidly in contrast to the recent relative stability in Ministry-funded positions (Maudsley, 1988). Thus, an important component of the problem of overall numbers of positions is the apparent lack of co-ordination and control of this capacity.

The problem of an excessive number of funded positions is exacerbated (from a policy development perspective) by the fact that the specialty training mix within that globe is seriously misaligned with the areas of relative specialty surplus and shortage 'in the field'.¹⁷ As the Nova Scotia Working Party on Physician Manpower Planning (Nova Scotia, 1989a) noted,

"Because of the critical mass requirement, the size of some specialty programmes tends to be more a function of the demands for programme viability than a reflection of identified physician manpower needs. Furthermore most medical schools endeavour to offer as wide a range of specialty programmes as possible. Thus Canada has tended to over-produce some specialty categories simply because every medical school has elected to continue to produce them." (p. 118)

Factors such as programme size and prestige, service provision by residents, the influence of clinical programme directors and department heads, and historical inertia appear to carry far more weight in the allocation process than do issues of future community needs.

A part of the problem of inappropriate overall specialty mix of post-MD positions arises as a product of the third fundamental problem, the inefficient national organization of training programmes. These two

¹⁶ The most recent figures suggest that these other sources increase the total funded post-MD positions by close to 20% (CAPER, 1990).

¹⁷ Not only was this a frequently heard complaint in our own interviewing, but it has been identified as a problem by virtually every provincial Commission to date (e.g. Saskatchewan, 1990b; Nova Scotia, 1989b; personal communication, Commissioners, B.C. Royal Commission on Health Care and Costs, December 1990).

issues are distinct, but in fact appear to be closely related.¹⁸ To complicate matters further, organizational inefficiency struck us as having a number of independent dimensions of importance. First, and perhaps most obvious, is training site duplication which has resulted in too many distinct programmes in the country, many of which are of sub-optimal size in the sense that there are significant fixed costs associated with establishing and running a training programme. That is, from a purely educational programme cost perspective, one could train the same number and mix of specialists more efficiently by consolidating or co-ordinating programme offerings across the country. The opportunity cost of not doing so may be significant.

Second, not all programmes can be of equivalent educational quality. Here the inefficiency is not economic, but educational. Relative to the organization of programmes that would yield the most productive educational experience for the residents, the present number and distribution are sub-optimal. This type of inefficiency has perhaps the greatest long-term impact, as it may affect practice patterns and quality of care throughout the graduates' practice life.

The third dimension is an inefficiency in impact on geographic distribution of physicians in Canada. That is, the location and specialty mix of programmes may contribute significantly to decisions by graduates regarding practice location. If residency programmes were less dominated by urban, tertiary care, high technology environments, the probability of any particular graduate settling into a practice in such an environment would, in all likelihood, fall (see below for our discussion of geographic maldistribution).

On the issue of the inefficient organization of training programmes, Maudsley (1988) has been very articulate:

"The absence of a subspecialty programme in a given discipline does not imply that services are not provided to the community, that

¹⁸ To illustrate, one might have an optimal national specialty mix of residency positions, but still have them inefficiently organized. Alternatively, the programs may be efficiently organized, but simply be the wrong mix of programs. In Canada we appear to have a situation where the mix is inappropriate, and where part of the underlying cause of the inappropriate mix is the inefficiency in organization.

undergraduate education is not available, that there is no training for interns and residents in core programmes or that active research cannot occur. Some subspecialty residency programmes may need to be phased out to generate a sufficient number of residency positions to support core residency programmes, family medicine programmes and existing or new programmes that capitalize on new areas of priority and strength within the medical school" (p. 1135).

The fourth fundamental problem in residency training and specialist certification is that of the method of funding post-MD positions. This, too, has more than one dimension. First, our interpretation of the present situation is that many (if not all) Ministries of Health in this country are paying twice for service provision. Residents receive a stipend from those Ministries, on the grounds that their training involves them in providing clinical services to patients (Professional Association of Residents and Internes of B.C., 1990). Yet their clinical supervisors are able to bill provincial medical plans for the provision of the same services. This has a number of unfortunate side-effects: (a) the clinical earnings for supervisors have a significant influence on decisions regarding the specialty mix of residents in clinical teaching units; (b) residents are involved in providing more, and an inappropriate mix of, clinical services relative to the mix of exposures and experiences that would best meet their educational needs; and (c) the importance of plan income to academic medical centres more broadly tends to skew the activity mix within those centres away from research and teaching, and toward service provision (see discussions below on role and funding of academic medical centres, and on physician remuneration).

The second funding dimension is the multiple sources of funding post-MD training positions, and particularly residency positions. In fact it is not the multiplicity per se that we see as the fundamental problem, for there may be quite rational and compelling reasons for many positions to be funded other than through Ministries of Health. Rather, it is the fact that, under present arrangements, the multiplicity of funding sources contributes significantly to the lack of control and co-ordination of overall numbers, their locations, and their specialty mix.

The fifth and final fundamental problem, in our view, is the curricula, or clinical exposures, provided to residents. We leave it to

others, with many more years of personal experience than we will ever accumulate, to articulate this problem:

"The major problem in the quality and effectiveness of medical education stems from the mismatch between the health needs of the public and what is concentrated upon, demonstrated and taught in our academic medical centres. The educational programme is dominated by the choices made in research and patient care, which reflect the interests of the many specialized individuals and groups that make up the faculty. Though each of these choices has some relevance to health and disease, when taken together, they rarely match the health needs of the population as a whole. Geriatrics and alcoholism, for example, present massive problems which get little, if any, attention in the academic medical centre. The emphasis is on acute and unusual conditions, leaving chronic disease grossly neglected. The focus is generally on the unusual rather than the common problems. Prevention and rehabilitation are given lip service. Tertiary care is preferred over primary care. The patient in bed is deemed to be more interesting than the one who is ambulatory. The patients in the teaching hospital, where student experience is concentrated, present a tiny fraction, less than 1 percent, of the total number of patients who seek medical care at any point in time. How can this experience be thought to prepare students adequately for medical practice?" (Lewis and Sheps, 1983, p. 141)

While this quotation is now somewhat dated, and was offered as an observation on the American medical training process, we neither heard nor read anything from our numerous Canadian sources (e.g. Maudsley, 1988) that would suggest it is not an accurate reflection of this problem, today, in Canada. For example, as the proliferation of sub-specialty programmes, in the face of stable, or slowly increasing numbers of funded residency positions, inevitably siphons off residents from core programmes, "it becomes more likely that trainees will be assigned to roles of little direct relevance to their education" (ibid.).

As for the underlying causes of these fundamental problems in numbers and mix of residency positions, there are predictably many possibilities, very few of which we can confirm personally, but most of which coincide with our limited understanding of the processes underlying these funding and allocation decisions and with what we heard in interviews. Perhaps the single most important underlying cause of many of these fundamental problems is the lack of control and co-ordination mechanisms for overseeing the total complement of funded positions, and the allocation of those positions across specialties and across training sites. There are

numerous examples of duplication and sub-optimal critical mass evident even from a cursory perusal of statistics provided by CAPER (1990). These 'statistical impressions' are confirmed by informed educators.

But there is an underlying cause for this underlying cause. The need for control and co-ordinating mechanisms seems widely acknowledged and appreciated. The absence of same must be attributed to a failure of political will, at two levels. First, there is ample opportunity for co-ordination in some provinces, yet even at the level of single provinces no agency has stepped in to take a leadership role (although the Council of Faculties of Medicine (COFM), for example, seems now to be trying in Ontario). Second, there have been virtually no attempts to date to develop inter-provincial arrangements that would improve this situation. Our view (and this is getting ahead of ourselves a bit) is that this is a situation begging for a national strategy. In fact, there is a danger inherent in individual provincial developments in this area, if they then impede broader national attempts at rationalization.

This same lack of political will underlies the mis-alignment of funded specialty mix and population needs. While some provinces have recently shown a keener interest in the overall numbers of positions they fund¹⁹, there has apparently been little interest in developing more effective mechanisms for involving those Ministries more closely in the specialty allocation of those positions. As one senior Ministry official (from a province that will remain anonymous) noted, "We know it's a problem, and we know it's a problem about which we could do something. Somehow it never seems to be quite important enough amidst the competing political and fiscal priorities".

The lack of control and co-ordination is not, however, the exclusive domain of provinces or larger regions. There is ample evidence of similar problems at the level of individual institutions. As Maudsley (1988)

¹⁹ In fact the number of positions funded by the Ontario Ministry of Health has fallen since the early 1980's by about 3%, and there have been declines since about the mid-1980's in a number of other provinces. But the number of positions in British Columbia has increased by almost one-quarter since 1981 (and by 11% since 1985), and the Ministry in Québec dramatically increased its funded positions in November 1989 from 1857 to 1993 (ACMC, 1990, Table 41).

notes, "In many programmes the issue is not too few trainees but, rather, too many CTUs" (p. 1135). Here the underlying causes are pressures from clinical teaching units, for affiliation and funded residents, and in turn from the potential clinical supervisors who would stand to benefit personally from the establishment of programmes and affiliations (Maudsley, 1986). This conflict, between the service needs of teaching units (or at least the service interests of clinical faculty), and the educational interests of the mix of residents which will best meet the needs of the Canadian population, must (in our view) be resolved in favour of the educational interests.

Of course it is not always (or ever) that easy. A particular example of this is a situation in which a province's service needs can only be met by recruiting a sub-specialist through the offer of an academic affiliation and a residency programme. In order to provide for the service needs of the population, a province may end up training individuals it has no need for. Again this points to a need for national coordination of training programmes, and co-ordinated programmes to ensure a reasonable distribution of specialty capabilities across the country.

But the clinical teaching units should not be asked to shoulder all of the responsibility. Affiliations with teaching units are developed in conjunction with the development of new programmes. Here the academic medical centres' insatiable thirst for ever more sub-specialty programmes and the prestige and practice plan income they may represent, and the relative disregard for primary care and core specialty programmes (Barnett and Midtling, 1989), must be (and apparently is beginning to be; see for example, Valberg et al., 1990) held up to critical scrutiny. The role of the Royal College in this process of specialization proliferation appears to be a related underlying cause. Not only does the Royal College designate new certificated specialties for Canada, but it sets standards for, and accredits the new training programmes that produce the certificants. Each new certificated specialty appears to create a pressure on all deans of medical schools to establish a programme in that

specialty²⁰, with attendant pressures for the funding sources (Ministries of Health).

An underlying cause for some of the fundamental curricular problems is the fact that academic medical centres tend to attract sub-specialists because these are the individuals who represent the human skills necessary to do first rate clinical research. Unfortunately their influence extends well beyond their research contributions. They represent the educational milieu, the professional ethos, and the mix of available clinical exposures. These pervasive influences affect student demands for particular residency programmes, as well as influencing their subsequent decisions about practice location, and style of practice, and their perspectives on the broader context for their medical practice. Finally, we have argued earlier that student demands for particular residencies may be functions of a variety of personal influences on career decisions. To the extent that student demand is a determining factor in the mix of residency positions in the country (and we profess not to know whether, or to what extent), all such influences (preferences for particular lifestyles, spousal constraints, income aspirations, etc.) would represent underlying causes of the present mis-alignment of residency position mix.

One could delve into these underlying causes in considerably more detail. But such scrutiny would not significantly advance our purposes here. This discussion provides a sufficiently comprehensive basis on which to begin to formulate some policy directions. Furthermore, these fundamental problems were ones about which there was relatively little disagreement.

²⁰ This is not to say that either role of the Royal College is inappropriate. But if this body's professed interest in playing a collaborative role in Canadian physician resource policy development is to be embraced and operationalized, a more evident recognition of the resource implications of its decisions would seem necessary. Of course, in situations where it is determined that there is a sufficient body of knowledge to justify the establishment of a new certificated specialty, the Royal College can play only a much more circumscribed role in controlling the diffusion of programs in that discipline. Its role is to accredit those programs that can muster the necessary skills and resources to mount the program. This reinforces the importance of taking a broader view of the process of certification of new sub-specialties.

Specialty Maldistribution

The fundamental problem here seems quite straightforward. There are too many of some specialties and too few of others. Unfortunately all specialties tend to cluster in urban areas, so that even for surfeit specialties one finds geographic shortages, while the shortage specialties present particularly acute problems in rural areas. Thus, there are rather direct and obvious links between geographic and specialty maldistribution, and we address some of the issues under each general heading.

There would appear to be a number of causes underlying this problem. First, there is no formal mechanism (and insufficient support information even if the mechanism existed) for ensuring that population needs are somehow served by the sources of supply. Current specialty training programmes seem no better attuned to ensuring that the future graduates will meet the population's most pressing needs than does the current mix of practising specialists. We address options to rectify this situation in a variety of different sections in Chapter 6B, including the mix and funding of post-MD training positions, and the creation and dissemination of information.

Second, the proliferation over the past two decades of accredited sub-specialty training programmes or sub-specialties for which designated Royal College certification is available²¹ has exacerbated the specialty maldistribution by diverting faculty attention and resources, and students, into activities unlikely to result in improved availability of the relatively less available specialty services.²² Responses to the establishment of new sub-specialties can be of three types: additional training programmes and additional funded post-MD training positions; new

²¹ See Canada (1990b) for details on the new specialties and the dates of their recognition by the Royal College of Physicians and Surgeons of Canada.

²² We were informed that at least part of the reason for the move to increasing sub-specialization is pressure to 'keep up with' the United States. But there are other reasons as well, including pressure from academic faculty to have their particular areas of expertise 'recognized', and the sheer pace of the advance of knowledge.

programmes developed at the expense of some of the capacity of existing programmes; or both. In the first case, Canadian students are likely to be siphoned off into some of the more glamorous new sub-specialty areas, thus increasing the need for GOFMS. In the second case, the direct result is likely to be fewer students (from any source) entering the shortage specialty residency programmes.

This was identified as a critical problem, for example, by a study undertaken in support of the Nova Scotia Royal Commission (Nova Scotia, 1989a). The authors note, as an example, that

"Five years ago Canada was well [supplied] with Paediatricians. In the interim, however, the Royal College has recognized 16 sub-specialties within Paediatrics and has indicated that 50 percent more Paediatricians will now [be] required to meet this new demand (our emphasis). Although the number of government funded residency positions has been held constant, accrediting bodies, in recognition of the sub-specialization within programmes, inevitably demand that more resources (i.e. more faculty and more residents to meet both educational requirements and rising hospital service demands) are required to make programmes viable. This sub-specialization tends to create its own demand within teaching hospitals and serves to dilute the numbers of core specialists being trained that are required to promote preventive medicine and community based patient care." (p. 118).

But the effects of sub-specialty proliferation on specialty distribution do not end there. The certification of new sub-specialties places pressures on medical centres to establish training programmes in those areas. This, in turn, may often involve the recruitment of prestigious faculty from abroad to spearhead the development of those programmes, and will create pressure on provincial funding authorities to provide the necessary 'workshop', residents, etc. Once these programmes are in place, they become part of a system's human and physical capital, which creates its own downstream pressures for further capital and human resources (Barer and Evans, 1990). We addressed some of the underlying causes of sub-specialty proliferation in more detail above.

This is not to imply that the causes are all endogenous to the training and certification processes. In the end, it is students who choose to specialize or not, and if the former, in what areas, and practising physicians who choose the types of specialty services they are

comfortable providing.²³ A third set of underlying causes would then be the influences on those decisions. These include the rate at which medical knowledge is advancing (making the circumscription of knowledge through sub-specialization, or the selection of procedure-based specialties that require relatively more technical than cognitive skills increasingly attractive options), the general lack of availability of clinical practice guidelines in the more 'cognitive' specialties which might assist in the management and application of the expanding knowledge base, and the fact that some specialties carry with them lower 'prestige' within the medical and medical academic communities. In addition, anticipated income, lifestyle, and other 'downstream' life-cycle factors are likely to enter into this decision-making process.²⁴

Fourth, the basic underlying causes of the present specialty distribution are the relative incomes, prestige and lifestyles associated with different specialties. There are shortages of some specialties for reasons no more complicated than some combination of relatively low mean incomes, less desirable lifestyles (on call, unpredictable hours), and demands for those specialties being concentrated in less desirable locations (links to geographic maldistribution). But while the reasons are straightforward and compelling, policy approaches for addressing them are among the most complex and elusive in physician resource policy, in no small part because for this group of physicians, choices of specialty and location are already taken and not lightly, or costlessly, altered.

Role and Funding of Academic Medical Centres

Our assessment of the fundamental problem with respect to the role of academic medical centres is that neither the public for whom these centres are designed and funded to serve nor the representatives of the centres

²³ See, for example, Kruse, Phillips and Wesley (1990), on the phenomenon of family practitioner withdrawal from providing maternity care.

²⁴ Not mentioned in this list is the student's interest in a particular area of medicine; one would presume that this would play an important role. Unfortunately we are unaware of research that would shed light on the relative importance of these factors.

themselves seem clear on what the appropriate balance among their roles ought to be. Encouragingly, however, we have seen evidence of considerable recent effort to negotiate and clarify these roles.

Questions about whether academic medical centres are fulfilling their social obligations have proliferated during the past decade in the United States²⁵ (leading examples are Lewis and Sheps, 1983; Light, 1988; and Schroeder, Zones and Showstack, 1989), and more recently in Canada (see, for example, Valberg et al., 1990; Dirks, 1990; Murray, 1990). Although there is general agreement on their traditional roles as educators of future physicians, as the sites of leading-edge basic, clinical (and even applied health services) research, and as the sources of tertiary care, there is far less agreement on the relative emphasis each role should have, on whether the manner in which the centres have chosen to meet these roles is meeting public expectations, on the roles of the centres in competency assurance through continuing medical education activities, and on whether they should attempt to fulfil a much broader community service role as well.

The underlying causes of this problem appear to be rather straightforward. There are no mechanisms, or fora, either within individual provinces or more broadly, for all interested parties to sit down, develop, and commit to a social contract. As a result, we find a wide variety of existing perspectives on what the mix and priorities in roles ought to be, and on how they can best be met.²⁶ From the public's perspective, the major role is probably the training of the "right physicians for the future, in the right numbers, in the right areas of medical practice, and for the communities that need them" (Murray, 1990).

²⁵ Petersdorf's (1983) comments in his infamous 'stripping down' of the American training establishment, suggested that concerns were commonplace there as early as 1970. Evans (1973) identified similar problems in Canada at about the same time. In both countries, however, interest has re-surfaced as the problems and their implications become more apparent, and more costly.

²⁶ This is not necessarily inappropriate, as it may be quite desirable to have the mix of priorities differ among medical centres. But that mix at present is a matter of happenstance rather than the product of any formal coordinated process.

There is a growing recognition among medical education leaders in Canada and the United States that academic medical centres must work to train "doctors with a broader, and more sensitive view of the place and role of medicine in the larger society...doctors...with more skills with which to assess the efficacy of medical interventions and the relative contribution of medicine to the health of society...doctors who are more skillful in doctor-patient relationships...[and doctors who are more aware of the] social, environmental, and emotional factors bearing on health" (Rogers, 1989). Thus, one of the most important roles for academic medical centres in Canada must be to ensure that the problem of medical education "preparing doctors for medicine of the past" (ibid.) is rectified. A secondary role of importance to the public would be the provision of care when no one else seems to know what to do with a clinical problem.

In our view, actual roles have been driven to an increasing extent by the sources and methods of funding the academic medical enterprise. There is little likelihood of developing, and delivering on, satisfactory social contracts, unless and until appropriate methods are developed for funding these institutions to meet the commitments of those contracts. Here we see five fundamental problems: (a) the multiplicity of sources of funding; (b) the instability of those sources; (c) the lack of correspondence of sources with functions; (d) the fragmented control over levels and allocations of academic medical centre revenue; and (e) the use of fee-for-service as a method of remunerating clinical practice in academic settings.

a. Multiplicity of Sources of Funding

The sources of academic medical centre funding vary across medical centres, but in general include at least: each province's Ministry responsible for university funding; Ministry of Health (through both practice plan (fee-for-service) income, and direct funding of programmes, faculty, research, and teaching hospital overhead); the Medical Research Council; the National Health Research and Development Programme; and student fees. In many provinces and for certain medical centres, other sources will include other Ministries (e.g. Labour, Community and Social

Services in Ontario), Workers' Compensation Boards, and a variety of sources of research funding, some of which will fund faculty, others of which will not. Included in the latter will be provincial research granting agencies (e.g. B.C. Health Research Foundation), a variety of American funding agencies (e.g. National Institutes of Health, National Cancer Institute, National Institute on Aging, Agency for Health Care Policy and Research), and some international agencies (e.g. World Bank, WHO, Rockefeller Foundation, CIDA, IDRC). In addition, a variety of private sector sources provide research funding which may include funding of faculty. It is a mind-numbing and diverse array of funding sources.

But it is not the rich variety of sources of funding that is the problem. Indeed, we see this smorgasbord of sources as a strength for academic medical centres. Rather, the problems lie with the lack of institutional control over the effects of the myriad sources on the missions of the institutions (the proverbial tail often seems to wag the dog) and the pervasive effects that certain sources of funding have on the manner in which missions are interpreted and operationalized. To be more concrete, the relative decline in importance (in most provinces) of funding from traditional education sources (e.g. Ministries of Higher Education) has had dramatic effects on not only the mix of activities on which academic medical centres place relatively more importance, but also on the centres' standing and functioning within the academic community of which it tries to be a part (see our discussion in Chapter 3 in this respect).

b. Instability of Sources of Funding

We heard repeatedly that contributions from Ministries of Higher Education have declined as a relative share of overall operating costs of academic medical centres in the country. While we felt it was beyond the scope of this investigation to confirm this view in every jurisdiction, we have no reason to believe it to be false. Nor do we have any particular reason to believe that such a shift in relative contributions is inappropriate. After all, the simple fact that a group of faculty becomes more successful over time in attracting competitive research funding will

shift the relative shares. More worrying is the increasing importance of income derived from providing clinical service.

In general, all sources other than Ministries of Higher Education are opportunistic, entrepreneurial, or service-related. They are driven by activities which may not align with an overall physician resource policy that has more programmatic objectives (e.g. continuing competence; undergraduate medical education; post-MD training). Put another way, there is no guarantee that this funding 'crap-shoot' will correspond (or even come close) to a funding model that might be developed from first principles (that is, starting with roles and objectives, determining the resources required for each, and then developing budgets and sources of funding for each). Even if the overall amounts turned out to be proximate, there is no guarantee that (indeed, it would be a remarkable coincidence if) the internal allocation of funds across functions will correspond with the objectives and their relative importance. This leads directly to our next sub-problem.

A major problem is the instability of the more opportunistic sources of funding and the fact that, over time, such sources have come to support increasing proportions of the basic infrastructure for the academic enterprise. It is certainly true that these institutions, like most other institutions, tend to take on inertia and lives of their own. What used to be discretionary activity tends, over time, to become part of core, and therefore to be considered as part of the fixed infrastructure costs without which the institution cannot meet any of its objectives. It may be this sort of accounting shift that forces an antibody reaction among Ministries of Higher Education, who see themselves as being responsible for funding only the education, and part of the research enterprise. Nevertheless, it seems likely that fundamental core infrastructure - that is, the physical and human resources which everyone would agree are essential to the academic medical centre's ability to meet its core public responsibilities - has been squeezed to a degree that has forced these centres to subsidize such activities with funds raised through providing complementary and discretionary activities.

c. Lack of Correspondence of Sources with Functions

Clinical earnings have assumed importance for funding out of all proportion to what should be the programmatic objectives of academic medical centres (Petersdorf, 1983; Schroeder, Zones and Showstack, 1989; Silversides, 1990; Valberg et. al., 1990; Lewis and Sheps, 1983; Barnett and Midtling, 1989; etc.). While the extent of this problem varies across medical centres (being particularly problematic in some Ontario schools), our interviews indicated that the problem exists across the country.

The growing importance of clinical earnings as a source of medical centre operating revenue poses a problem because it distorts the internal programmatic and capacity micro-decision-making within the centres. Control over funding brings with it varying degrees of control over decisions which are critical to the missions of these centres. This source of funding also results in significant investments in senior administrative time, to deal with issues of how clinical earnings will be allocated. We were told by one interviewee that significant proportions of departmental meetings are taken up with issues of "overages", "ceilings", and the like. Decisions regarding the addition or expansion of clinical departments²⁷, the development of new programmes, the allocation of resources to core programmes, and the allocation of faculty time among clinical service, research, undergraduate, and post-graduate education, have all come to be viewed through the tinted glasses of 'clinical earning potential'. It is becoming increasingly difficult to train young clinical investigators, because department heads and deans cannot protect enough of their time (from clinical, income-generating activity) to support the development of research excellence (Silversides, 1990). Finally, we noted in section A of this chapter the problems of perception of medical centres by the rest of the university community, and by Ministries of Higher Education, as the reliance on clinical earnings increases.

²⁷ In the American context, Petersdorf has been particularly uncharitable about these motives, claiming that "the biggest single reason for the increase in the size of clinical departments is their need to make more money" (1983, p. 1055).

d. Fragmented Control over Levels and Allocations of Centre Revenue

Academic medical centres "lack a system of governance that creates a framework of choice among competing priorities" (Lewis and Sheps, 1983, p. 183). Recipients of funding (both research and clinical) tend to be able to exercise a degree of internal medical centre control over the programmatic and research agenda which produces a mix of activities misaligned with the centres' overall vision, role and objectives (where such exist). This has particular implications for physician resource policy, particularly the alignment of post-MD training sites, opportunities and exposures with relative priority areas for the populations being served. This is, of course, integrally related to problem c above.

e. The Use of Fee-for-Service as a Method of Remunerating Clinical Practice in Academic Settings.

At this point there is very little more that needs to be said on this. Most of the problems described above are exacerbated in environments where clinical earnings are derived through fees paid for specific services. This method of payment encourages clinical service, and particular surgical and other procedural service, often at the expense of other academic-related activities that would be more in keeping with the mission and objectives of the academic medical centre.

In addition, having clinical faculty (including residency supervisors) derive significant shares of their 'academic' incomes from fee-for-service practice creates a social training milieu that is inappropriate in terms of conveying information about the broader context for the practice of medicine. We have had students complain to us about the fact that methods of increasing clinical earnings have come to dominate conversations among faculty in some medical centres. We believe there would be a fairly widespread consensus that this does not represent a particularly healthy environment in which to be training our future physicians.

It is exceedingly difficult to attempt to identify a few major underlying causes for the funding problems. The multiplicity of sources is not going to disappear. Indeed, we have suggested that such variety is

an important strength of these centres, and is, in fact, in keeping with the variety of roles the centres are expected to play.²⁸ But lack of co-ordination and control is a major underlying cause of the problems, and it occurs at a number of levels. Perhaps most obvious is the lack of co-ordination among different Ministries.

For example, Ministries of Higher Education provide grants to universities, which in turn control the allocation of funds across faculties and schools. The Ministries see their major responsibility as the funding of post-secondary education and, to a more limited extent, research. Ministries of Health, on the other hand, have more direct programmatic control, for example, through the direct funding of post-MD training positions, teaching hospital overhead, or specific innovative programs to which funding is tied. We found little evidence in most parts of the country that these Ministries actually talk to each other in an attempt to co-ordinate the funding of academic medical centres, and to ensure that the funding, and the manner in which it is provided, are commensurate with the multiple roles the centres are expected to play.²⁹ This lack of communication virtually ensures that some things that ought not to get funded get funded twice, and that others deserving of government support fall between the jurisdictional cracks.

A second level characterized by lack of co-ordination and control is internal academic medical centre decision-making. Who is really in

²⁸ In the economist's peculiar jargon, these Centres are 'multi-product firms'.

²⁹ Note that we do not wish to imply that we feel academic medical centres are underfunded in aggregate. They may be, or they may not. We simply do not have at hand the careful, considered, analysis of objectives, functions, and the costs of delivering each, that would be necessary to making such a judgement. Nor is it clear what the funding implications would be in aggregate of a new 'social contract' with re-balanced roles. The Valberg et al. (1990) report makes a start in this direction, and offers some considerable contributions. But it, like so much work in the physician resource planning area, is characterized by the too-ready acceptance of existing patterns, of organization, of manpower deployment, and of service use, as bases from which to ascertain future funding 'needs'. A detailed critique of this aspect of the Valberg report is well beyond the expectations of the present report, but would seem important in advance of further steps down that road.

charge? We heard a lot of conflicting claims on this point, and suggestions that ranged from the deans, through the clinical residency programme directors or the clinical department heads, to "no one". The endeavour involves two quite distinct types of institutions: university medical schools, and affiliated clinical teaching units. Each has its own governance and organizational relationships with funding agencies. Yet they are expected to act in concert to achieve common goals. It is a daunting expectation.

Geographic Maldistribution

Whether one believes there is an overall problem in Canada of geographic distribution depends fundamentally on what one believes an ideal distribution to be. Possibilities here abound, from equal physical distance from nearest specialist or equal per capita supply, through equal per capita use of specialist services, to reasonable access for the entire population. These distinctions are of more than academic interest because, for example, while the variance in physician supply per capita is well known, the fact that inter-regional variance in medical service utilization per capita is far smaller than the variance in physical supply seems still a well-hidden fact (Barer, Wong Fung and Hsu, 1984; Horne, 1987).

Thus, some thought needs to be given to precisely what we believe the fundamental problem to be. Everyone agrees on the large variance in per capita physician supply. There is far less agreement on what a reasonable distribution might be, or even whether physical distribution ought to be the criterion on which claims of 'maldistribution' are sustained. Furthermore, such claims are virtually always couched in terms implying severe shortages in some areas. Yet distributional variance per se is neither necessary nor sufficient to imply shortages.³⁰

³⁰ One could have wide geographic variance in physician supply, in a situation where, nevertheless, all regions had adequate supplies. Thus, the variance is not a sufficient condition. On the other hand one could have equal distribution, but a distribution which left all regions with shortages. Thus, the variance is also not a necessary condition.

To put the point more clearly, we might consider the recent inter-provincial maldistribution. The FPTACHHR "Report on Physician Workforce in Canada" (Canada, 1990c) shows 1988 provincial population per physician figures ranging from 489 in British Columbia to 766 in New Brunswick. Yet the Northwest Territories figure is 1226, and we heard very little from that jurisdiction suggesting severe maldistribution problems. Even larger variances are found in international comparisons; there too there seems little consensus on what constitutes a surplus or a shortage (Bankowski, 1987). Furthermore, virtually all provinces complain of inter-regional maldistribution, despite wide variances in rural area supplies.

We do not wish to dispute the general consensus from our interviews that there are serious geographic maldistribution problems in Canada (both surpluses and shortages). The problems have motivated considerable recent provincial activity, including the commissioning of comprehensive reports in Alberta (Alberta, 1990a,b), and the sponsoring of an invitational meeting in Manitoba (Manitoba Medical Association, 1989). But we feel it is important to point out that, with few exceptions, the need-based evidence on which such claims hinge is either non-existent, or circular (in the sense of being derived from use statistics). Furthermore, recent studies such as that conducted by the Alberta Medical Association cast some doubt on the severity of the problem, at least in some provinces. The Report of the Task Force on Rural Medical Care "found that few Alberta communities are in "dire need of basic physician services"" (cited in Alberta, 1990a). What was noted was the fact that some of the Canadian-trained physicians serving rural communities are deficient in certain technical and specialty areas, making recruits from other countries (with more extensive post-MD training) more desirable (Alberta, 1990b, p. 12).

There is no escaping the fact that there will always be differences in the population:physician ratio across this country, simply because of the distribution of the population, and the populations required to sustain physicians of different specialties. Yet evidence does show much less acute differences in actual services received, suggesting that more isolated populations generally receive medical services when they are required, but that getting the services is somewhat-to-much less

convenient than in urban areas. There are undoubtedly many situations where the more restricted access has detrimental health effects. On the other hand, there is growing evidence that 'excess access', as in urban centres, may also be detrimental to patients' health.

If a majority of observers of Canadian health care appear to accept that there are rural shortage problems, and everyone also agrees that a thoracic surgeon in every community is undesirable, where is the middle ground? Is one general practitioner for every 1200 people reasonable? If so, what does one make of the fact that the population:physician ratio for general/family practitioners in Vancouver and Victoria is about 750 (Health Manpower Research Unit, 1990). And what should that imply about physician resources for communities of 300-400 people?

In sum, the statistics show clearly that there is significant geographic variation (inter-provincially and inter-regionally) in physician supply. We did not have data at hand that would have allowed us to make a judgement as to those situations in which 'shortages' were indicated, and those where 'surpluses' were evident. This is an area still (surprisingly) in need of further research. It is tied to the more general information requirements necessary for the development of a national physician resource policy, which we discuss below. Furthermore, even if we had made judgements of this nature, they would be no more valid than those of any other informed observer. In the end, the decisions regarding the critical population sizes necessary to support the public provision of practitioners of different types are just that: public policy decisions. Data can be helpful; they cannot make the decisions. Just as there is no overall magic ratio, so there is no population:physician ratio above which one can assert a shortage, and below which one has a surplus. The world is simply not that simple.

Even this is too simplistic, however. The Canadian reality is that the distributional variance would be far larger if Canada had to rely on its own medical graduates. It is here, in the link to the GOFMS issue, that the maldistribution problem 'comes home to roost'. There are serious problems in enticing Canadians to practice in rural areas (see, e.g., Rieder, 1990). If we want to be able to move on many of the other policy

directions identified as high priority in the present report, we will need to be able to find mechanisms for attracting Canadian physicians to serve their own rural areas, or else we will need to change attitudes and perhaps regulations regarding the provision of medical services by other health care personnel with appropriate training. Canada's medical community cannot continue to expect the public to accept the notion of exclusive fields of practice, while at the same time demonstrating with their feet that they are unwilling to cover those fields of practice for a small but significant component of the country's population.

Even leaving aside the GOFMS issue momentarily, there are clearly some situations where improved distribution is warranted. If there are communities of 2000-3000 individuals without a physician, or communities of 5000 with only one physician (as examples only) while many urban area population:gp ratios are under 1000, there would seem to be a strong case for redistribution. It is difficult to argue that requirements for general/family practitioners should be greater in urban than in rural areas. In fact, one could quite convincingly argue the reverse, on the grounds that the availability of specialists is always going to be greater in urban centres. Similarly, one can find communities in Canada of a size that virtually everyone would agree are sufficient to warrant the services of a paediatrician, an obstetrician, an anaesthetist, or a general internist or surgeon, but where none is available. In situations such as these, the fundamental problem is that necessary services are not available to segments of the Canadian population without great inconvenience.

What, then, are the underlying causes of this problem, the extent of which cannot be ascertained in this report. The short answer is that the underlying causes are all those factors that have influence on individual physicians' choice of practice location, and our inability, to date, to develop incentive packages that are sufficiently sensitive to the interaction of these myriad factors. The literature on this topic is extensive; we offer only a small sampling of recent contributions in our bibliography.

There continue to be a variety of views on the relative importance of different determinants of practice location; the literature does not seem yet to be yielding a convergence. As an example, some investigations into the factors influencing physicians' choice of practice location suggest income and other financial incentives play a relatively insignificant role (Wright, 1985; Alberta, 1990a). On the other hand, other recent work implies that the potential of financial incentives is under-estimated (Hurley, 1990). In fact, if anything, the complexity of factors underlying this major life-cycle decision is becoming more apparent with time. It is not simply a matter of lack of adequate financial incentives. The factors that weigh in individuals' decisions regarding location of practice are intertwined with decisions regarding choice of specialty (one does not decide to become a thoracic surgeon because one likes rural living). But there is more than income and specialty motivating the geographic decisions.

Putative causal factors include the region from which students come (see e.g. Carter, 1987), the 'life experiences' that students accumulate to the point of entry into medical school, influences during medical education, relative incomes, and a variety of factors that we can label for convenience as the 'lifestyle' factors. The influences during medical education will include the location of training sites (virtually all large urban centres in Canada today), exposure to rural area practice during training (ibid.), generalist curricular content, and perceived prestige of different specialties and practice arrangements within the medical school milieu. The 'lifestyle' factors will include characteristics of both professional life (e.g. on call time, regularity of hours, availability of holiday relief, availability of complementary human and physical resources, threats of malpractice claims) and personal life (social, cultural and leisure opportunities for self and family, educational opportunities for children, job prospects for spouse, etc.). These will all be weighed in relation to opportunities in a variety of possible practice locations; their relative importance will not be the same for any two physicians. The underlying cause of geographic maldistribution may, in the final analysis, be the sheer intractability of developing incentive

programmes that adequately and appropriately attempt to address all such factors, or at least enough to 'tip some scales'.

This discussion does suggest a disaggregation of underlying causes into five discrete categories: 1) sources, and selection, of medical students; 2) educational exposures and influences; 3) financial considerations; 4) professional lifestyle factors; and 5) personal lifestyle factors. Past policy initiatives have tended to target only a small subset even of these broad determinant categories, and have tended to do so without regard to the interdependence of geographic distribution problems with problems of overall supply, GOFMS, remuneration policy, and broader health human resource issues such as scopes of practice.

Patterns of Medical Service Utilization

There appear to us to be two fundamental problems here. The first, simply stated, is that a significant proportion of the medical service provided to the Canadian public may be inappropriate because it is ineffective in reducing patients' disability or improving their quality of life. We noted some of the evidence earlier in this section, suggesting that a significant but not yet precisely quantified proportion of services is consistently being shown to be inappropriate in the sense of being medically unnecessary, or ineffective (see, also, Roos and Roos, 1990; Brook et al., 1990; Brook and Vaiana, 1989; Woodward and Stoddart, 1990). As one Ontario physician recently alleged, "Half of our lab tests are done because the ordering physician has no definite idea in his mind what he is looking for" (Eng, 1990).

The second, and in the longer term more fundamental, problem is that much of the recent rapid increase in medical service utilization may be appropriate from a narrow effectiveness perspective, but generates very small (even if positive) benefits which may be outweighed by their opportunity cost (Berwick, 1989a; Woodward and Stoddart, 1990; Watanabe, 1990).³¹

³¹ This has been labelled the "epsilon problem" by our colleague Pete Welch.

The prevalence of inappropriate patterns of medical care is the product of a number of concurrent phenomena. New procedures and technologies tend to become accepted parts of clinical practice without evaluation of their efficacy, effectiveness, or efficiency, or before such evaluations are completed. Some procedures and technologies come to receive applications far beyond the range of indications, or the range of patients, for which their effectiveness or efficiency has been demonstrated. Some technologies tend to be used disproportionately to population needs, simply because they are there, because the fixed costs of their acquisition and installation are already 'sunk', and because their use causes no clinical harm and is a source of revenue.³²

The existence of unwarranted or inefficient medical care has a number of serious implications. Perhaps the most obvious is that it often involves significant threats to the health of patients receiving the care: "inappropriate care is poor quality care" (Centre for Health Economics and Policy Analysis, 1990, p. 15). But inappropriate or inefficient patterns of medical service utilization also have other costs. They create fiscal pressures for Ministries of Health in a fee-for-service reimbursement environment lacking the capability and the resources to monitor and evaluate the appropriateness of each and every medical intervention. They create political pressures for medical associations and income pressures for the majority of medical practitioners, by consuming significant shares of constrained medical care budgets, leaving less for appropriate service provision. And finally, in environments of relatively fixed health care budgets, their real cost is in other foregone opportunities to enhance the health status of the populations being served. If resources are being devoted to the provision of inappropriate or inefficient services, those resources cannot be re-deployed to more productive uses.

What are the underlying causes of these practice pattern problems? To some unknown extent, inappropriate patterns of service provision reflect inappropriate (from a technical need perspective) patterns of patient demand. Claims of 'patient abuse' have been the underpinnings of

³² For a discussion of these sorts of phenomena with specific reference to the diffusion of health care technology, see Stoddart and Feeny (1986).

medical profession calls for the re-introduction of patient user fees in this country for decades. Yet Canadian evidence suggests that user fees differentially affect care-seeking patterns of lower income groups (see Barer, Evans and Stoddart (1979) for a review of the early literature and an analysis of the scope of user fees to achieve public policy objectives; see also Stoddart and Woodward, 1980), and recent evidence from the United States suggests that user fees deter both necessary and unnecessary care (Lohr et al., 1986).

Perhaps more fundamentally, the types of services and procedures examined in the evolving body of evidence on appropriateness are not generally 'patient-initiated' services. Patients may demand some share, but not all, of the contra-indicated repeat caesarian sections, for example, and there is evidence that patient demand has an influence in a variety of other questionable services (Eisenberg, 1985). But it is perhaps stretching the limits of credulity to suggest that patients demand plasma, extra-cranial intra-cranial bypass surgeries, coronary angiographies or endoscopies. The search for underlying causes must extend beyond simplistic notions of patient demand or abuse.

Our view is that the observed patterns of medical service utilization are primarily products of two fundamental sets of characteristics: the characteristics of the physician as multiple-agent, and the characteristics of the financial and physician supply environment in which the physician works. Without becoming buried in the extensive body of literature on physician behaviour, we simply note that the physician acts simultaneously as "self-interested practitioner" (interested in income, particular styles and settings of practice, particular clinical networks, and personal standing within the profession), and as the "patient's agent" (both clinical and economic) (Eisenberg, 1985), and is increasingly being expected as well to act as agent of a broader social interest in the efficient use of scarce resources (Culyer, 1991). The task is daunting and stressful.

In general, evidence suggests that the majority of physicians practice responsible medicine the majority of the time, letting their role as "patient's agent" dominate. But even doing what an individual

practitioner thinks is best for the patient can mean either the provision of inappropriate services (if the physician is not, for example, familiar with current evidence on particular interventions), or inefficient services (as, for example, with the widespread provision of 'well' child and adolescent care by paediatricians). Additionally, of course, there are (as in any profession) the 'bad apples' whose interests in acting as 'agent for self' dominate.

With respect to the "epsilon" problem, of services with very small though positive benefits, the lack of familiarity with current clinical evidence may be most pervasive. We lack information on the relative costs and effects of most decisions 'taken at the coal-face', and for those where evidence does exist, we lack effective 'transmission belts' for disseminating the information to the clinicians taking the decisions. This is, in part, a problem of conflict between macro (population) and micro (individual patient) evidence. Demonstrated ineffectiveness in populations, on average, does not imply ineffectiveness in all situations. Some, but certainly not all, of the evidence of this sort is just poorly suited for application in the individual physician-patient encounter.

In settings such as large urban centres, where it is widely conceded that there are too many physicians chasing too few patients, and where incomes are dependent on providing individual discrete services, the incentives to do just that can be overwhelming. Little wonder that anecdotal evidence reveals, for example, "that return visits are encouraged for second and third symptoms or complaints" (Watanabe, 1990).

The payment system is not an independent influence on practice patterns, however. It interacts with physician supply. Practice behaviours such as that just described would not materialize (or would be less prevalent) in an environment of 'taut physician supply', because the practitioner would not have the luxury of that sort of scheduling. So the ability to modify practice patterns is in part a function of the supply of patients, and in part motivated by pressures on incomes caused by increasing numbers of physicians, all seeking reasonable incomes while each has smaller and smaller patient bases. This points clearly to the connections between this area of policy concern and those of physician

supply, physician distribution (geographic and specialty), and physician remuneration. The problem of patterns of medical service cannot be solved, irrespective of the extent of resources committed to quality assurance, utilization monitoring, and like activities, without simultaneously addressing the other problems.³³

Licensure and Regulation

With respect to medical licensure, a provincial/territorial responsibility, a major problem is the lack of uniform standards of demonstrated clinical competence necessary for licensure (Kendel, 1989), a problem on which (we were informed) considerable progress is presently being made. But there would appear to be a more serious problem, that pervades issues of regulation and licensure. We refer to the thorny, and contentious, issue of exclusive fields of practice, by which the practice of 'medical acts' is restricted to those holding licenses issued by provincial medical licensing authorities.

The problem here is capabilities from training coming up hard against restrictions in application. Any informed examination of the educational and practical preparation of health professionals will reveal significant overlapping 'fields of training'. Thus, for example, clinical psychologists are trained in many areas which overlap with psychiatric training (MacPherson, 1988), extended duty nurses pick up many skills covered in medical curricula, nurse midwives have repeatedly been shown to be able to perform acts which continue to be regarded as medical acts, a variety of technician and technologist programmes have overlaps with medical curricula, and so on.

These overlapping areas of training do not, in and of themselves, pose any particular problem. Rather, it is the fact that, despite the partial congruence of training, virtually everything covered in medical curricula becomes an integral part of 'medical practice' and therefore the exclusive domain of licensed medical practitioners. There has been no

³³ See Wennberg (1990) on linkages between outcomes research, quality assurance activities, and physician supply in the context of the containment of health care costs.

serious attempt to reconcile and restrict such exclusive fields of practice only to those domains without overlap.

The implications of this monopolization of areas of activity by a dominant profession³⁴ are many, and link to a variety of other policy areas of concern. First, estimates of the 'need' for physicians will always, by definition and assumption, be over-estimated relative to the requirements implied by having physicians provide only the services that only they are trained to provide! This has obvious links, noted earlier, to policy directions on overall supply. Second, it implies significant opportunity costs, in terms of alternative uses of limited human and physical resources. If we are putting more resources into the training and deployment of physicians than is necessary to achieve the outcomes we observe, the cost of these decisions is represented by the other productive activity, and health outcomes, that we as a society forego as a result. In the presence of a surfeit of physicians, it is difficult to muster the resources necessary to mount programmes even to train (let alone deploy) some of these substitute health personnel. This has links, as noted above, particularly to the problem of geographic maldistribution.

A third fundamental problem of regulation and licensure is the lack of mechanisms in Canada for continuing competence review. Implicit in the

³⁴ Of course physicians are not unique in this respect. Rehabilitation personnel are notorious for their opposition to having rehabilitation aides practice in areas of overlapping training; similar jurisdictional disputes have pervaded the history of relationships between registered nurses, licensed practical nurses and registered psychiatric nurses. Furthermore, within the physician community itself, there are ongoing attempts by ever-more-specialized sub-specialists to create effective exclusionary fields of practice. The characteristic which distinguishes the physician vs. other health-care professionals from all these other situations (including the intra-physician jurisdictional disputes), is the licensure requirement. Licensure provides a vehicle of enforcement not shared by these other 'senior' professions. Those with a medical license can perform certain acts; those without cannot, at least not unless they are supervised by someone with, who then bears legal responsibility for the act. In contrast, a general practitioner could, if the patient agreed, perform a piece of thoracic surgery, despite not being a certificant in that sub-specialty. Similarly, lay persons might attempt to provide care that most would consider nursing care, although they could not call themselves nurses.

licensing process in place today is the belief that a physician, once licensed, will continue to upgrade his/her level of clinical knowledge and technical competence throughout the 30-40-odd years of practice beyond highest level of certification. Discretionary professional continuing education is assumed (implicitly even if not always explicitly) to be an effective means of ensuring this continuing competence.³⁵ We, and the rest of the public, would like desperately to believe that this is true; our health might some day depend on it.

It is more than simply a desire to ensure that clinicians, once licensed, continue to "do no harm" throughout their practice lives. It seems not unreasonable for the public as patient, and for the broader public interest, to expect that physicians will be able to prescribe diagnostic and therapeutic regimens that reflect evolving states of knowledge. The fact that the body of clinical knowledge grows and changes, that new and effective technologies and techniques become available, that other technologies and techniques are shown to be inappropriate or cost-ineffective, ought to be at the fingertips of those with whom we entrust individual clinical decisions. It is the collectivity of those decisions that determines, to a considerable extent, our consumption of all health care services, our investments in particular types of human and physical capital, and therefore our foregoing, as a community, of other goods and services that we may value.

Unfortunately, evidence is accumulating that the assumption may not, in fact, be the case. In a different context, Dennis Kendel recently noted that "Canadian medical licensure policy has yet to deal effectively with the enormous evolutionary change that has occurred over the past four decades in the way medicine is actually practised in this country" (Kendel, 1989). In the present context, we would rephrase this as follows: "Canadian medical licensure policy must be structured to deal effectively with the enormous evolutionary change that will continue to

³⁵ The only alternative to that assumption, since this is all that there seems to be in the way of continuing competence activity in most Canadian jurisdictions, would be that continuing competence is unimportant. We found no evidence of this view.

occur in the way medicine ought to be practised in this country in the future."

The underlying cause for the lack of inter-provincial consistency in licensure requirements is that licensure has been an issue of provincial jurisdiction, and there have been no imperatives or mechanisms to ensure that all provinces and territories adopt requirements that ensure inter-regional mobility for Canadian-trained physicians who meet 'national' standards. In the past, this heterogeneity of standards has undoubtedly resulted (at least in part) from inter-regional differences of opinion with respect to the capability of those national standards to ensure clinical competence at entry.

As for the regulatory impediments to efficient deployment of the spectrum of health-care personnel with overlapping 'scopes of capability', this is a product of the manner in which society in Canada has chosen to set regulations and assign regulatory responsibilities. Provincial governments have delegated authority over professional regulation and licensure to provincial medical colleges, comprised largely of members of the medical profession. These authorities have been entrusted by the public to set and enforce clinical standards in the public interest. Yet no explicit lines of accountability to the public, or reviews of the performance of these licensing authorities in fulfilling their mandate, have ever been established. Much has been written; little has been done.

Thus, for example, there are no mechanisms through which the public is able to evaluate the assumption of continuing competence, or the effectiveness of existing discretionary continuing education activities. There is no existing practical recourse (without changes in legislation; this is beginning to emerge in some provinces; e.g. Ontario through its Health Professions Legislative Review), for the public to ensure that evidence of more efficient possibilities in the deployment of health care personnel becomes embodied in public health-care policy. The public, through its elected representatives, has assigned these responsibilities to the profession, on the understanding that the public's interests will be paramount in the activities of self-regulation.

This is not to imply that fault lies exclusively with either the licensing authorities or the profession more generally. A recent Canadian study (Fooks, Rachlis and Kushner, 1990) revealed a more eclectic group of causes, which varied across provinces, and which included legal decisions, lack of regulatory authority, lack of skills or resources within provincial regulatory authorities, lack of will or interest among those authorities, and lack of support from members of the professions surveyed. For example, all provincial Colleges have programmes for responding to complaints (whether of poor or incompetent care, or unprofessional behaviour), but many do not implement any routine audit procedures. The authors' review of legislation covering five health professions revealed that in 50 percent of the cases, "the statutes did not permit audit" (p. 18),³⁶ while in other situations where regulations are not an impediment, the relevant regulatory bodies have simply failed to implement a programme (even in situations where cost and available personnel appeared not to be binding constraints). As for the role of the legal system, past events suggest that attempts to remove the privilege of licensure from practitioners whose practice does not conform to explicit standards are likely to involve protracted and costly legal proceedings, and that even then there are questions regarding how courts of law will view audit or other competency-appraising information. It is, to say the least, an area still very much in ferment. Nevertheless, it seems to us to be an area of critical importance to the whole process of maintaining and continuously upgrading the quality of health care in this country (Berwick, 1989b).

Interestingly, the recommendations of the Fooks, Rachlis and Kushner (1990) study are quite consistent with our interest in developing national strategic policy initiatives. "We suggest licensing organizations consider a pooling of resources both across provinces and across professions" (ibid., p. 22). We return to this theme in Chapter 6.

³⁶ Unfortunately the results are not disaggregated by health profession, so we are unable to assess the number of provincial medical licensing statutes for which this was true. The authors indicated that Québec legislation allows audit activity of this nature for all five professions. We assume, although have not confirmed, that the enabling legislation does not exist in at least some provinces.

Physician Remuneration

There are a variety of 'fundamental problems' with the manner in which the provision of medical services in Canada is remunerated, although the boundaries between fundamental problems and underlying causes are somewhat more difficult to maintain here. Not surprisingly, perceptions differ depending upon whether one is a payor or a payee. We would characterize these problems as including the following: (a) fair and equitable remuneration for the provision of medical care; (b) political, human and financial costs of fee or income negotiation; (c) lack of incentives to deploy physician resources efficiently; (d) linkages between dominant method of remuneration and increases in utilization of medical services; (e) effects of dominant method of remuneration on relationships between institutions and the physicians who use them.

a. Fair and Equitable Remuneration for the Provision of Medical Care

Within the medical profession in Canada, one would find as close to consensus on this issue as on any. There is a widespread feeling that current processes (of fee bargaining, of internal allocation of fee changes, of adjusting for changes in the costs of practice) do not provide incomes that are reasonable and equitable within the profession. Whether one agrees or disagrees with this view is, in some important ways, immaterial. The fact that it is a dominant (some would say obsessive) preoccupation of the profession makes it a fundamental problem in the area of physician remuneration, and one of the more significant problems in the entire area of physician resource policy.

The problem has at least three sub-components (dispute resolution, internal equity, and overhead). Dating back to the beginnings of Canadian 'medicare', and re-affirmed as an issue in the 1980 review (Hall, 1980), the absence in many provinces of an agreed-upon method of dispute resolution continues to be an open wound. There is a sense within the profession that, while many of the recommendations of that review have been enacted, the quid pro quo has failed to materialize as this particular recommendation continues to remain un-addressed in a number of Canadian regions.

On the second sub-component, internal equity, both members of the profession and of provincial Ministries of Health are concerned about a variety of inequities in provincial fee schedules, including inter-specialty differences in implicit hourly 'wages', and the slow pace of adjustment of fees to the diffusion of new procedures and technologies. For the profession, this results in inter-specialty conflicts over relative incomes (*Canadian Medical Association Journal* 1986a,b; *Medical Post*, 1986). For Ministries of Health, the concern is much broader, and linked to other issue areas. In particular, the perception is that fee schedule inequities promote undesirable utilization patterns (for example, rapid growth in procedural areas), as well as choices of specialty (and therefore often of geographic location) which do not align with population needs.

Finally, there continues to be disagreement on reasonable treatment of overhead costs in fee-for-service remuneration, with the profession generally feeling that fee changes do not take adequate account of increasing costs of practice,³⁷ and the payors feeling that costs of practice tend not to be exogenous. This will continue to be an area of controversy for as long as fee-for-service continues to dominate physician remuneration, and for as long as physicians continue to enjoy the privilege of organizing their practices (and therefore their practice costs), in ways which suit them.

Reasonable compensation and the existence and structure of fee schedules are fundamental problems. Like the population:physician ratio, there is no optimal physician income.³⁸ In the end, society must decide collectively (in a publicly financed system) what it feels would constitute reasonable compensation, taking into account considerations of length of training, value of service, availability of service, and so on,

³⁷ Physicians are interested not in gross billings but in practice revenue net of expenses and taxes.

³⁸ We were struck, in this respect, by then College of Family Physicians of Canada president Donald Watt's contention, in 1986, that "physicians deserve the proper wage for the time and effort they put into looking after their patients" (our emphasis) (*Canadian Medical Association Journal*, 1986b).

and then design methods of remuneration that attempt to align roles and functions with reasonable levels of compensation. We also feel that there is considerable scope for improving the internal structure of most of the fee schedules in the country. We describe what we see as some of the key underlying causes of each of these problems in our discussion below, and offer some explicit recommendations to address them in Chapter 6B.

b. Political, Human and Financial Costs of Fee or Income Negotiation

There is widespread agreement (and we include ourselves among those in agreement) that current methods of determining levels of fees are politically risky (for all parties), and costly in terms of the human resources devoted to what is, when all the fanfare and media coverage is stripped away, essentially unproductive activity. Both sides have staff employed to do little besides prepare for, and be involved in, this ritual war dance. While it is certainly not unique to the medical profession (in fact, all employers and employees go through some similar process), we would hazard that the process as applied to the medical profession may be among the most costly (per person in the 'bargaining unit'), and is probably the most politically charged in the country. Is this a problem, or simply part of the Canadian health care landscape (Evans et al., 1989; Barer, Evans and Labelle, 1988; Tuohy, 1986)? We would argue that it is a problem to the extent that there may be other means of dispute resolution that would consume fewer real resources.

c. Lack of Incentives to Deploy Physician Resources Efficiently

There is nothing inherent in the manner in which physicians are paid in Canada today that promotes efficiency in the provision of medical care. While we have already discussed the issue of scopes of practice, and its links with overall physician supply, remuneration is related in a number of ways. First, in a system organized largely around solo fee-for-service medical practices, and in which the supply of patients per physician is falling, there is little incentive for such practices to employ less costly personnel to perform some of those medical services under supervision. If anything, the incentive is for the medical community to

expand its own breadth of reach by expanding the 'product line' (e.g. health promotion activities, lifestyle counselling, etc.) in order to counteract the decline in patients per physician by increasing the services per patient. But if it were to do so by employing auxiliary personnel, and if a significant proportion of the medical community did so within the relatively constrained current budgetary environment, practice costs would increase far faster than practice revenues. Second, for the payor, there is also no particular incentive to encourage such deployment of 'substitute' personnel, because if the services they provide are provided under the supervision of a physician, the payor will inevitably end up paying physician rates for the services (indeed, it is precisely this feature that would make such employment arrangements attractive to the physician as entrepreneur).

But the lack of incentives promoting the most efficient use of scarce human resources bears on the allocation of effort within the medical profession as well. Paediatricians, obstetricians, internists and others across Canada, particularly in urban settings, are heavily involved in delivering primary general care (*Canadian Medical Association Journal*, 1986b). In most cases, such care is reimbursed at general practice fee levels, but money is not the appropriate way in which to measure the cost of this inefficient deployment of talent. This phenomenon is the sequela of the over-production of these specialties, or their sub-optimal spatial distribution. It is the specialists' expansion of product line. But it creates its own sequelae, not the least of which is the pressure it creates for general practitioners attempting to maintain viable practice loads in these same settings (with the attendant possible deleterious effects on quality of care, such as were revealed in the recent internal audit of practice at two Victoria acute care hospitals). It also creates intra-professional turf wars, as are alleged to underly (in part) the trend of general practitioners to abandon maternity care (Kruse, Phillips and Wesley, 1990).

d. Linkages Between Dominant Method of Remuneration and Increases in Utilization of Medical Services

That fee-for-service as a method of remuneration promotes the delivery of medical care in discrete pieces, and encourages the proliferation of those pieces, is a story as old as the debate over alternative methods of remuneration. Any considered examination of the incentives inherent in the method of payment acknowledges the potential. Physicians (see e.g. Watanabe, 1990; Bock, 1988), health services researchers (see e.g. Krasnik et al., 1990), payors and policy-makers all seem to agree on the reality.³⁹ It would be 'un-natural' if it did not happen, and those who persist in arguing that this method of remuneration has no effect on what gets provided seem increasingly difficult to take seriously (Fuchs, 1986). Where there is disagreement, is on the extent of 'induced utilization', the specific circumstances in which it is most likely to occur and, even more important, its impacts on health status. These are all topics worthy of detailed reports in their own right.

The fact that utilization growth (and particularly the proliferation of relatively more discretionary diagnostic and other procedural medicine) is perceived to be linked to this method of remuneration is a fundamental problem. The perception pervades the current policy environment; it is a particularly vexing issue for provincial and territorial Ministries of Health. As a critical issue, budgetary predictability is the Ministries' equivalent to the profession's concerns over reasonable and equitable compensation. To the extent that the method of remuneration itself undermines the achievement of that stability, it will remain a fundamental remuneration problem.

³⁹ In fact, literature that investigates the phenomenon of 'supplier-induced demand' by comparing patterns of service provision when method of payment changes, are quite rare. More commonly, the investigations involve examinations of relationships between physician density and population use (e.g. Hemenway and Fallon, 1985), or of utilization patterns when levels of fees change (e.g. Rice, 1983). For a recent review of some of this literature and a discussion of its relevance in the Canadian context, see Barer, Evans and Labelle, 1988.

e. Effects of Dominant Method of Remuneration on Relationships Between Institutions and the Physicians Who Use Them

Finally, we note that a practice structure in which physicians are reimbursed by fees for specific activities, and in which many of those activities require access to capacity and complementary facilities and equipment in institutions which are reimbursed on quite different bases (with quite different inherent incentives), seems a formula made to create problems. Those responsible for hospital management must see that their institutions are run efficiently in order to fulfil community expectations within negotiated budgets. Physicians using the facilities to care for their patients incur no practice costs as a result of 'creating' costs for the hospital. There are, in large part, no lines of cost accountability running between the medical community and the institutions that enable many of their activities. In short, the incentives bearing on the individual physician practice, and on the 'host' institution, are incompatible.

There is, of course, no single way of remunerating physicians that will not have potentially adverse effects on some dimension of importance. The goal, as Stason (1987) has noted, "should be to create a physician payment system that adequately recognizes the physician's worth to society, fairly reflects the value of individual services and specialties, and is relatively easy to administer. No panacea to these ends is obvious" (p. 469). This suggests a need to develop and prioritize the criteria on which such systems are to be structured. All existing systems 'do well' against some criteria. None do well against all. Therein lies the problem.

The single most important underlying cause of most of the remuneration-related problems noted above, is the very nature of the incentives inherent in fee-for-service as a method of remuneration. It rewards process. It penalizes careful, considered cognitive approaches to the practice of medicine. It rewards the choice of high cost, over low cost, techniques. It penalizes 'good bedside manner'. In other words, it encourages process- rather than outcome-driven medicine. In light of these fundamental flaws, one might expect that it would have other redeeming features. Yet it has not been a panacea for determining what a

reasonable (and publicly acceptable) level of income might be for different specialties and levels of experience, and it has, in its Canadian application, resisted efforts to ensure that it produces an equitable distribution of incomes. Furthermore, it seems particularly poorly suited to ensure that the budget decisions taken by publicly elected individuals are not counter-acted by private individuals' income aspirations. Certainly it promotes 'hard work', and long hours, and retains considerable symbolic professional/entrepreneurial importance for the medical practitioner. Whether these turn out, in the final analysis, to be criteria of sufficient import to outweigh the detrimental effects on many of the other criteria is open to question.

The underlying cause of the income and fee inequities that have resulted from this particular method of remuneration is that relative fee structures have evolved as much as a product of medical politics internal to medical associations as of any attempts to determine and apply a notion of relative value (however determined). Responsibility for relative values rests largely with provincial medical associations in Canada. There are few, if any, mechanisms for embodying information on relative needs and on relative values to society of different types of services in relative fees. Part of the underlying cause is historical precedent. Once relative fee levels are established, they become the defensive position of those factions within the profession that they may favour. Part of the underlying cause is relative political power within sections of the membership of medical associations, and the fact that contemplating changes in relative fee levels brings the prospect of playing a zero sum game. For every winner, there will be a loser.⁴⁰

The underlying cause of the failure to achieve an acceptable means of dispute resolution has, in our view, been a somewhat myopic fear on the part of provincial governments of being left exposed to unacceptable budgetary uncertainty. This fear is, we feel, tied to a considerable

⁴⁰ We are not proposing that the impartial development of relative values will eliminate the inter-specialty conflicts. In fact, the extensive, and expensive, effort by the Harvard group in the U.S. has simply spawned a new set of conflicts, and created new groupings of protagonists (Glaser, 1990).

degree to the fact that the profession has resisted more fundamental changes in method of remuneration. This long-standing, and continuing, 'opposition'⁴¹ of organized medicine in Canada to alternatives to fee-for-service remuneration represents a fundamental problem for remuneration policy. Not only does it stand in the way of the development of mechanisms that would serve the profession's interests in reasonable and equitable methods of remuneration and dispute resolution, but it impedes constructive dialogue and collaboration on a wide variety of other pressing policy issues. It inhibits serious investigation of the effects of alternative remuneration methods on quality, accessibility, and costs of care in a Canadian context, and it represents a serious impediment to the development of cooperative initiatives which would be consistent with the tone and thrust of the proposals in the present report.

What is the underlying cause for this intransigence? It would appear to be borne out of a widespread and collective view that medicine is, and must remain, a private, entrepreneurial endeavour, and that the alternatives all represent threats to professional autonomy (Pineault, Contandriopoulos, and Fournier, 1985) because they reduce to staff or civil service-type models.⁴² Whether this is a well-founded view seems relatively unimportant, although we have some trouble with a view of capitation or sessional payment models as 'staff' or 'civil service' (most staff and civil servants are paid salaries⁴³), and with understanding just how it is that removal of the ability to submit an item-by-item bill

⁴¹ While some provincial medical associations are on record as recognizing the desirability of a re-balancing of methods of remuneration, none (to our knowledge) has seemed inclined to take a leadership role in actively pursuing the development of alternatives.

⁴² In this respect, the recent negotiation by the B.C. Medical Association of a pension plan seems strangely at odds with that ethos. This may set a dangerous precedent, but for which 'side' is it dangerous?

⁴³ One of the many ironies in this field of debate is that in the apparently more competitive, less highly regulated 'market' in the United States, increasing numbers of physicians are moving into salaried situations (Relman, 1988). Furthermore, these are often situations in which the physicians are salaried employees, not of other physicians, but of private corporations with no particular interest in medical care.

somehow undermines professional autonomy. What is more important are the costs, and benefits, of retaining the dominance of this system of remuneration in situations where this is all it has in its favour.⁴⁴

There are two other possible underlying causes for the continued resistance to a more balanced mix of remuneration methods. First, this is the method of payment to which virtually all medical students are exposed, continually, during their training. When one grows up with something, it is often difficult to adapt to new approaches. Second, the lack of compulsory membership in provincial medical associations may make the executive of those associations reticent to become engaged in serious discussions about methods of remuneration, for fear of mass migration of members.

As for the underlying cause of the inordinate amounts of human time, public expense, and political energy consumed by the negotiation process, we see no particular incentives, on either side of the bargaining table, to minimize the cost of this process. In both cases, the distribution of costs is very diffused, the distribution of identifiable benefits very concentrated.⁴⁵ But the extent to which these costs are functions of bargaining over fees per se is not clear. It seems equally likely that the fundamental monopoly/monopsony structure of the Canadian medical care system guarantees some confrontation by design, and that bargaining over capitation rates, for example, would be just as fractious and costly a process. If this is the case, this is simply one of the costs that

⁴⁴ We do not wish to imply that we advocate the complete elimination of fee-for-service as a method of paying for medical services. Rather, we are foreshadowing a need for a reasoned examination of what the method achieves, against the sorts of functions and activities for which we are employing it, and against the costs of retaining it. This discussion may be found in Chapter 6B.

⁴⁵ For the profession, the benefits are largely economic. For the individuals within the medical associations involved in the bargaining process, there are other potential benefits (political) in favourable outcomes. For the public servants involved in the bargaining process, the benefits may come in the form of remuneration, promotion, peer-respect, etc., and for their political masters, the benefits are obvious. The gains to any individual member of the public, from a 'successful' outcome, will be rather small and, furthermore, impossible to identify precisely.

Canadians must accept as being an integral part of a system that, while not without its problems, is still widely regarded (inside and outside Canada) as a model worth emulating.

Another characteristic of fee-for-service remuneration identified above is the fact that it does not promote the efficient deployment of physicians, or of allied health personnel. In fact, it does not particularly promote the efficient provision of medical services, whether the inputs to that process are human, equipment, supplies, or space. Inefficient overhead configurations have become entrenched, and are used as the bases from which calls for fee increases to cover the increasing costs of overhead proceed. Just as virtually all estimates of the future need for physicians ignore the potential of providing many of the present services in alternative ways, so the concerns about medical practice overheads are based on 'what is', rather than on 'what could be'. Yet there seems no compelling reason why the public should support inefficient scales or modes of professional practice organization.⁴⁶ Furthermore, because fees paid to individual physicians are generally insensitive to the organization of their practices, few adjustments are made for the wide variation in overheads attributable to the fact that many practitioners run operations out of publicly-funded institutions, in which they have relatively few overhead responsibilities.⁴⁷

⁴⁶ It is difficult to understand why, in the face of pre-determined fee schedules and anticipated patient load, practitioners have not done more to share practice expenses. Perhaps it is simply easier to attempt to bargain for higher fees. Or perhaps there is less in all this than meets the casual eye. Unfortunately the profession has been particularly guarded against independent assessments of the shape of an efficient average practice cost frontier (as distinct from a 'behavioural' cost curve which simply maps actual cost experience against practice size), so that most claims as to the extent of practice costs continue to have to be taken on faith.

⁴⁷ Emergency room practices, which bill many of the same fees as ambulatory general or family practices, come to mind as one obvious example. There are undoubtedly also many specialties where some of the specialists maintain community offices, while their (e.g. clinical academic) peers are based in publicly funded hospitals, and have fewer overhead expenses.

Global Expenditure Policy

The fundamental problem for global expenditure policy is that most provinces and territories are unable to make responsible budgeting decisions on behalf of the public with respect to expenditures of public funds for medical care. The still largely open-ended nature of medical service remuneration continues to undermine budgetary predictability; attempting to stay within such budgets remains a constant source of pressure on politicians who are loathe to raise taxes, who are limited by the Canada Health Act in their ability to introduce private sources of increased revenue for medical care (even in the few instances where they might wish to do so), yet who see rising medical costs impinging on other priority public initiatives. In general, provincial governments act as if the public is unwilling to spend more on medical care. Yet we have little evidence on what a fully informed public might wish to spend in this area (maybe more, maybe a whole lot less).

There are no obvious mechanisms, other than the customary political processes, for informing the public of the various funding, organizational, supply and other options, and their cost implications, and then ascertaining (on an ongoing basis) the public's interest in spending more, or less, on medical care vis-à-vis other things. If asked, the public might opt to have more physicians available, but to pay them less; or it might prefer to have less physicians, to pay them less (or more), and to have many more, and more extensive, home support services available (especially for the elderly and disabled). The point we attempt to make is that much of the information the public might like to have before making such decisions is lacking, the mechanisms for transmitting the information are absent, and routinized processes for soliciting the views of the public and using the information in short- and long-run allocative decision-making are either non-existent or crude and sporadic.

Instead, politicians are left to make these decisions on the basis of whatever means they have at their disposal. At times they will be guided by information on relative costs and benefits. But the process will always be subject to political lobbying, and cabinet-level negotiations over competing public and political priorities. In this environment,

open-ended fiscal liabilities are like open sores: undesirable, but difficult to manage. Why does this problem exist? The basic underlying cause for the lack of global budgetary predictability is that fee-for-service remuneration provides no inherent self-limiting mechanisms, for patients or physicians, because it is devoid of budget-hugging incentives. The 'limits' are represented by the hours physicians are willing to work, the conditions with which they are presented, and their choices in diagnosis and therapy.⁴⁸ In short, fee-for-service remuneration is incompatible with global expenditure control when only fee levels (not income levels) are pre-determined, when supply, utilization per patient, and number of patients are largely floating variables, and when payment is made on the basis of process rather than outcome or effectiveness.

One can also look at underlying causes of global budgetary control problems in terms of the various determinants of global medical expenditures. Total expenditures are the product of: the number of physicians providing service, the number of patients provided care by each physician, the number and mix of services provided to each patient, and the price of each service. There is now general (although not universal) agreement that physician supply and medical care costs are correlated (even if the relationship is not linear). We do not propose to review the relevant literature on possible causal mechanisms here; suffice to note that the balance of evidence from that literature seems to support the balance of opinion of our interviewees, that through one mechanism or another increasing supply is associated with increasing use. The possible mechanisms "are not mutually exclusive and do not alter the empirical finding that a larger number of doctors means not only increased expenditures for doctors' services but also increased use of other resources because of the doctor's function as a purchasing agent" (Naylor and Linton, 1986). Furthermore, philosophy (rather than research design

⁴⁸ As Wennberg (1990, p. 1204) noted recently, "In a market with an increasing supply of resources and particularly of physicians themselves, one should not underestimate the ability of physicians to come up with new ideas [spawned by t]he inventive nature of the medical mind, the endless possibilities for plausible theories, and the urge all physicians feel to work for and be helpful to their patients".

and data problems) will likely ensure that this debate is never resolved in the literature. The important point here is that, to the extent that there is a positive correlation between physician supply and total medical service utilization, fee level agreements alone will never provide fiscal predictability.

Even in the absence of increasing supply, per capita utilization (age- and sex-adjusted) may increase for reasons unrelated to health needs, again because of the powerful incentives inherent in paying fees for process rather than outcome. Similarly, where fee schedules retain problems of relative value, there may be shifts in the mix of fee items billed, toward relatively more costly items. Both these phenomena can contribute, in a fee-for-service environment, to a lack of expenditure predictability.

Yet another potential source of unpredictability is the unpredictability in patterns of illness. This is often offered as the cause of otherwise unexplained increases in medical care utilization relative to projections on which budgets are based. Rarely (if ever), however, do we see 'negative variances' emerge. That is, unpredictability implies that (age-sex-adjusted) patterns of per capita illness in a population might be expected to fluctuate around some trend line (which may be flat, of declining slope if some major illnesses are succumbing to new clinical interventions, or of positive slope if some new significant illnesses are emerging). Yet, while we are familiar with numerous claims from medical associations that cost increases beyond those predicted were attributable to 'flu epidemics' or other unanticipated onslaughts of illness, we are unaware of a single instance where costs were alleged to be lower than anticipated, because a population happened to be healthier than anticipated during a given period.

Of course the other determinants of changes in global expenditures are population growth and demographic change. But these tend both to be rather predictable, and slow-moving. They can easily be embodied within a budget development process. In fact, the major danger in such forecasting is that changes in patterns of utilization may get bootlegged into the process of demographic adjustment, and thereby get confused with increases

in utilization attributable to demographic shifts (see, e.g., Barer et al., 1987, and Barer et al., 1989). Thus one of the most common assumptions in this area of controversy is that the need for physicians, and the cost of medical care, will rise dramatically in the future because of the aging of the population. Yet all analyses of this issue to date are consistent in demonstrating that the impact of the aging of the population alone will be relatively small. At the very least, such impact will be dwarfed by recent historical relative increases in (age-adjusted) per capita service provision for the elderly population.

As a final note on underlying causes, we would comment that we lack any reliable means (at least to date) of internalizing social choices on those providing medical care, even though they are expected to play 'multiple-agent' roles. The proliferation of relatively blunt cost control instruments is a reaction to, and a recognition of, this fact. Perhaps it is simply unrealistic to expect much more (see, e.g. Ku and Fisher, 1990); however, as our earlier analysis of problems has suggested, there is certainly plenty of room to experiment, and there are, we believe, some rather obvious places to begin to provide the information that might affect the relative importance of content and context of practice (Dresnick et al., 1979).

Information Creation and Provision

There are two quite distinct (but obviously connected) generic types of problems here: information creation, and information dissemination (to the public and to stakeholders). We take each in turn.

The basic problem in the area of information creation is that it would be nice to have more information on just about any aspect of medical care or physician resource policy one might care to mention. We can think of no area where all affected parties would agree that more information would not be useful. But getting agreement on priority areas of information need, on what would be done with the information if it existed, and on whether it is worth the cost of generating it, seems near impossible.

Perhaps more fundamentally, we detected no general recognition among those to whom we spoke that information alone will not create policies or solve problems. Unrealistic expectations of information are rampant, and dangerous. They tend to paralyze the policy development process, when in fact 'better' or more information in this sector will usually do little more than sharpen the instruments with which policies are crafted. Many of the fundamental decision points, and the reasonable choices at each point, are already well known. There is, however, a reticence to face them, and claims of information deficits provide a convenient avoidance mechanism.

Having said that, we do feel that Canada lacks sufficient information to inform policy-making in a few important areas. The first is information on health deficits or functional disabilities in the population, and on how those change over time, vary across communities, and relate to a variety of possible determinants ranging well beyond the availability of medical care. A second area is information on the health effects of alternative approaches to enhancing community health, including different numbers and mixes of health-care personnel, alternative diagnostic and treatment technologies, alternative organizational and funding models, and alternatives to health care for promoting health, to name but a few.

A third area where more information might be useful is socioeconomic and health care resource information at the community level. In conjunction with information on health status, this might be of considerable use for local area planning, to assist prospective physicians in making career location and specialty choices, and for regional and national planning of educational programmes and other physician resource policies.

There are undoubtedly other areas where information is not only lacking, but where there is a clear vision of the uses to which it would be put if available. Finally, we would note that we are still some way short of having stakeholders agreed on a national set of priority databases to support physician resource planning.

With respect to underlying causes, there would appear to be two: either the information is not available because we do not yet have the technology or the scientific understanding to generate it; or the information is not available because we have not developed the structure and processes, and mustered the resources, for generation and validation. The latter may be amenable to change through the development of national strategies; the former is not. Therefore we focus in the comments that follow on the latter.

There has been a dearth of inter-provincial co-operation and co-ordination in developing and promoting national information resources. The development of a national physician supply and service database, and the development of a national health information council and a national body responsible for technology assessment may be 'process' moves in the right direction. But information creation is not costless; these initiatives should themselves be subject to ongoing monitoring and evaluation relative to objectives that should be clearly articulated for each at the outset. Like medical care itself, there is always more that could 'usefully' be done in the area of information creation.

Movement in the area of health needs is less promising. With the possible exception of Québec, there are few high-quality national or regional information resources on health status deficits. Since we do not have any clear picture of population needs, it is impossible to evaluate the effectiveness of policy changes on those needs. Ontario is in the process of analyzing survey data which should begin to provide important information for that province. We are unaware of other activity in this area in the country at present (although we did not explicitly go looking for it).

Not surprisingly, we find ourselves sympathetic to the complaints from a broad range of stakeholder interviewees that far too much of the meagre Canadian research dollar finds its way into basic research, to the obvious detriment (given the relatively fixed nature of this pie) of investigations into broader determinants of health and well-being, and the effectiveness and efficiency of what we already know and are doing in medical care. On the other hand, there seems little point in funnelling

additional funds into these areas of research unless one establishes more effective mechanisms for (and stronger political commitment to) converting the results of such research into policy changes.

A major part of the lack of structures and mechanisms may be that there are too many unco-ordinated sources presently responsible for information provision in the country, with considerable duplication of effort, and no single responsible co-ordinating party. The types of information that might best support the development of a national strategy for physician resource policy are many and varied. It is probably unrealistic to expect any single constituency or organization to be responsible for the generation of all such data. On the other hand, there may be scope for the development of co-ordinating mechanisms which would oversee the activities of the variety of different information sources, would ensure that duplication of effort is minimized, and would have responsibility for validation and consistency. The recently constituted National Health Information Task Force may be a step in this direction.

A part of the task of such a co-ordinating process would be the identification of system-wide information needs. Information is presently created for a variety of rather narrow purposes, generally without regard to its place in a more systematic perspective. This tends to result in the creation of information gaps, even in areas where data generation is alive and well.

With respect to information provision or dissemination, we see a number of fundamental problems, relating to several key interests: the profession, system managers, policy-makers, and the public. For professionals, we lack effective mechanisms for integrating information on appropriateness, effectiveness and efficiency into everyday clinical practice. The rate of information proliferation makes the task of sifting, evaluation, and application an onerous one. There are steps being taken to provide critical appraisal courses for clinicians, which would appear to be movement in the right direction, although these are too new yet to have been evaluated for their impact on clinical practice, on health care costs, and on patient health.

The problems for system management are really rather similar. There is new information being generated on the relative efficiency of alternative organizational and deployment modalities, management techniques, information systems, and the like. The problems remain those of evaluating the evidence, and of developing mechanisms and building constituencies for implementing change where such is indicated.

For policy-makers the problems relating to information provision may be somewhat different. In general they tend to have considerably more information at hand than does the general public. Yet this information gap (between policy-makers and the public) is a serious problem for, and impediment to, policy change. There are no (or very few) independent 'voices on the other side', to balance off the information provided to the public by medical care providers and institutions, and it is not at all clear to us that policy-makers themselves can, or should, play this role. Yet the problem remains that the public is generally unable to get information on appropriateness, effectiveness, efficiency, implications of increasing physician supply, and the like. Certainly we cannot, and perhaps should not expect the medical profession to be the 'transmission belt'. Yet if the general view is that the public should be more involved in contextual decisions about its health-care system,⁴⁹ it is necessary to ensure that such decisions are made on the basis of a balanced set of information.

What is it about our system that underlies these basic problems of information provision? For the medical profession and institutional and system managers, the cause would appear to be a lack of incentives that would promote the uptake and application of new information. If receiving and applying information results in reduced power, lower incomes, less prestige, not only is there an incentive to turn off the receiver, but there is an incentive to run interference. As Lomas (1990a) notes, "there has largely been no audience" (p. 530).

⁴⁹ Of course while analysts, bureaucrats, commissioners, and activists may feel that such would be appropriate, it may turn out that most of the public is happy not being involved, either in content or context decisions. The problem presently is that we know very little about public preferences when it comes to system-level decision-making.

For policy-making, the problems relate more to the process of integrating research into the policy-making process. Here the fault lies as much with the research community's failure to understand the information needs and value systems of policy-makers, and the constraints within which they work, as with the policy-makers' failure to receive and use available information (ibid.).

The underlying causes for the failure of effective information provision to the public are at once the same as, and quite different from, the above. It may be that those involved in health-care policy simply know too little about the processes of changing the public's attitudes toward health and health care. How does one, after all, disseminate information on, say, the broad determinants of health or the implications of more vs. less physicians? How does one change fundamental public beliefs about the clinical base of knowledge (the limits of medicine), about the importance of medical care relative to other investments in the promotion of their health, or about alternatives to institutions and professions with which they have become comfortable over long periods of time? The proliferation of 'squeaky wheels' (individuals and groups), and the special relationship between the public as patient, and the medical practitioner, makes more broadly based, contextual education exceedingly difficult. Much of what the public picks up comes from groups or vested interests disenchanted with some particular aspect of resource allocation, system organization or funding. The media tends to report 'events', relatively uncritically, and only seldom accompanied by informed editorial discussion of varying perspectives on the 'event'. In short, other than the political process, there are no formal consensus-making processes that might affect information transmission, and the potential audience carries imperfect information and unrealistic expectations around with it.

However, even the provision of more 'localized' information, such as the relative quality of individual hospitals or practitioners (information that should be of immediate interest and concern to the public), is fraught with practical and legal difficulties. To use micro information of this nature requires that it be accurate. We are some way yet from

having quality assessment processes in which we could have sufficient confidence for use as a basis for public information (Sisk et al., 1990). But there are also questions of the public's right to have access to information obtained, for example, as part of an internal audit.

We have devoted our attention in this chapter to a description and analysis of the major problems confronting physician resource policy-makers in this country. They are many, complex, and perhaps most important, critically inter-related. In the next chapter we turn to a consideration of possible policy options, reporting again first on what we heard from interviewees, then describing some of the recent initiatives in Québec, and finally offering a brief synopsis of emerging policy directions in the other countries from which we solicited reports.

Chapter 5: APPROACHES TO PHYSICIAN RESOURCE MANAGEMENT

In this chapter we provide a synopsis of potential solutions to the wide variety of physician resource management problems discussed in Chapter 4. The solutions described here come from three separate sources. In section A we summarize the suggestions we heard during our interviews, supplemented by solutions described in the *Medical Post* during the period of 1990 covered by our review. We highlight the Québec report (provided in its entirety in Appendix B) in section B of this chapter. Finally, section C contains a brief summary of some of the common and possibly fruitful avenues identified in the international reports found in Appendices D through J. In all three sections of this chapter we attempt to report relatively uncritically, to provide the reader with an un-edited sense of the breadth of possible solutions being discussed in the field.

A. From the Perspectives of Those Interviewed

Summary

Interviewees gave significantly less attention to specifying solutions than to identifying problems and causes. Indeed, there were few solutions that garnered a significant consensus, with the possible exceptions of proposals for a national rationalisation of the number and mix of residency positions, and calls for common national pre-licensure standards. There were numerous suggestions for solutions to the geographic maldistribution problem, although no consensus emerged around a particular option. Finally, many interviewees stressed the need for 'packages' of solutions that respected the inter-dependence of problem areas.

It is not possible to summarize briefly the wide variety of solutions that were suggested for specific problems. Readers with interest in interviewees' suggestions for particular problem areas should peruse the corresponding sub-section below.

Solutions offered to us during interviews are organized in this section to be as consistent as possible with the section headings and ordering in Chapter 4, section A. Once again we include a 'residual' section at the end containing suggestions which did not appear to us to fit easily within one of the major problem areas.

The reporting that appears below represents the culmination of a process that began with the detailed minuting of each interview, and was followed by an attempt to synopsise and group common ideas and suggestions. We 'report them as we heard them', and attempt neither to question or justify their logic nor to offer our assessment of possible implementation options or problems. We rarely had time in interviews to delve into implementation details and, with few exceptions, few were offered. These solutions, then, do not represent our views (although some of them will turn out to be consistent with some of our recommendations and options outlined in Chapter 6).

Overall Physician Supply

A small number of suggestions were offered by more than one interviewee, with a variety of others being mentioned only once. Fewer than one-quarter of those interviewed offered any observations on this issue.

The most commonly heard suggestion (and this only from four interviews) was that there should be no further reduction in Canada's population:physician ratio for quite some time. Others suggested that control of growth in supply was a high priority. On the other hand, we were offered one view that the country should attempt to ensure a small excess supply, to take into account the imprecision in forecasting physician requirements, the trend to reduced work hours, the uncertainty in technological advances and new illnesses, and other similar factors. A few interviewees noted that there was "no right number", but that overall supply should be determined as part of the process of allocating scarce resources within and between areas of public responsibility. Consistent with this, others made a point of noting that they felt the medical profession should not be involved in overall supply decisions.

The remainder of the comments which we grouped under this heading were more in the nature of suggested approaches. There were suggestions that an emphasis should be placed on ascertaining areas of clinical work where physicians are not necessary to the provision of 'medical' services, and that decisions regarding which services and technologies were to be

available must logically precede decisions regarding physician supply. Among approaches to be avoided were (i) reliance on epidemiological estimations of population needs; instead the focus should be on obvious and identifiable imbalances; (ii) centrally-determined policies based on 'optimal ratios'; rather policies should be based on regional plans and be sensitive to regional needs; and (iii) "supply-side management".

Other suggestions included (i) increasing the failure rate on the MCCQE, (ii) using the Hall Commission (Canada, 1964) recommendations as a "jumping off point", (iii) applying a national 'billing numbers' policy that would geographically redistribute current and future supply, (iv) encouraging more trainees and licensed physicians to undertake careers in a variety of research areas where MD training would be a benefit, (v) linking supply issues and fee issues in provincial negotiations, (vi) ensuring that domestic training reductions would not be put into place unless policies to solve rural area shortages were developed concurrently, and (vii) using hospital "impact analysis" to restrict the number of specialist opportunities, particularly in urban settings.

Medical School Enrolment

We heard views on entry requirements and processes, the number of undergraduate positions, and linkages to other areas of physician resource policy. The majority of suggestions related specifically to undergraduate training capacity.

With respect to entry requirements and processes, a small number of interviewees suggested that entry criteria should de-emphasize strong academic performance in traditional 'pre-med' areas, and instead establish 'minimum' academic entry requirements. Within the cohort exceeding those requirements, the admission process should then give considerable weight to "well-rounded individuals and life experiences". A number of stakeholders suggested that a national application service and a national admission policy should be pillars of a national physician resource strategy, while one interviewee felt this to be an impractical idea. On a closely related matter, we heard from a few individuals that "resident-in-province" should be eliminated or reduced in importance as an admission criterion, in order to have Canada's medical schools serve as a national

resource, and from one interviewee that provinces should be encouraged to negotiate "slot purchase" agreements.

The most often heard sentiment within this area was that overall physician supply policy should take the form of reductions in the number of students entering Canadian medical schools.¹ A few interviewees argued for immediate enrolment reductions, but cautioned that these should not result in reductions of medical centre budgets because the 'education' share of those budgets had already fallen considerably over the past decade. Others argued that the entering class size should be determined by population needs rather than by 'needs' as determined by the medical or academic communities.

There were dissenting views, but they were heard far less frequently. These included suggestions that (i) enrolment should be frozen at current levels, (ii) enrolment should be increased, (iii) physician resource management should not occur through the education system, (iv) opportunities for Canadians to train as physicians should be maintained, (v) there was insufficient information to support enrolment reductions, (vi) stability in enrolment was an important consideration for the operation of medical centres, and (vii) the related point that we should avoid the risk of over-compensating.

The importance of linkages to other areas of physician resource policy was stressed by a small number of interviewees. One noted that domestic training reductions should be put in place only if they are accompanied by policies to ensure that such reductions will not simply exacerbate the problems of geographic maldistribution. Another noted the linkage with GOFMS, making the point that reductions in domestic training must be accompanied by concurrent reductions in sources of entry of GOFMS in order to ensure that the share of Canadian physicians who are Canadian-trained does not decline.

¹ Interestingly we heard suggestions ranging anywhere from a "slight cut", through a "significant reduction", to a suggestion that reductions should be enforced through the application of funding penalties for non-compliant schools/faculties. But no one was willing to offer a particular 'number', either of positions to be eliminated, or of total targeted entry positions.

Finally, we heard a number of 'structural/procedural' suggestions, including the idea of setting aside a component of the entering class complement for non-clinical training programmes (e.g. research, medical administration).

Undergraduate Medical School Curricula

We heard relatively few suggestions bearing on curricula. Those that were offered divided rather naturally into two groups: general suggestions regarding the educational process, and specific areas which do not presently receive much attention in the undergraduate curricula. Taking the latter first, a number of respondents felt that students required more exposure to the economics of health care in Canada, and more information on the relative effectiveness and efficiency of alternative clinical management approaches. One interviewee felt there was a critical need for training in post-operative care, either in undergraduate or post-MD training, while another felt the curricula did a poor job of training physicians to be gate-keepers, and that changes should be implemented that would ensure that training aligned more closely with the expectations and situations awaiting the graduates.

On more general issues, a small number of respondents felt that the socialization process in undergraduate training required "a radical transplant", although the only specific suggestion for effecting such an overhaul was the relatively vague notion of attempting to provide medical students with a broader view of the profession's role in society. One interviewee expressed a concern that restricted exposures in undergraduate training were having an undesirable effect on subsequent choices of residency training programmes, i.e. that it is unrealistic to expect individuals to choose residencies in areas that might be required in smaller communities if they receive no undergraduate exposure to the particular problems and opportunities represented by such careers.² Another suggestion was that the process of attracting and retaining high-quality medical faculty should become a priority, because the funding

² Of course undergraduate exposure may not be of much assistance if the post-MD programs are not offered.

situation in academic medical centres is making it more difficult to maintain first-rate educators. Finally, one interviewee felt that the national Colleges should play a much greater role in the development of the undergraduate curricula, while another felt that mechanisms should be developed whereby provincial governments could encourage the development of specific programmes by inviting medical centres to respond to "requests for proposals" which would have potential earmarked funding attached.

Graduates of Foreign Medical Schools

In contrast to the importance attached to GOFMS as a significant physician resource management problem, we heard few suggested solutions, and there was little 'clustering' of those we did hear. We took this, once again, as a clear indication that the problems were largely long-standing and had eluded past attempts to address them.

A number of interviewees suggested that one of the keys to reducing the entry into practice of GOFMS was to restructure the MCC examination process. Our understanding is that to some extent this is already occurring. One interviewee suggested the need for a comprehensive clinical assessment as part of the examination process, while others suggested reducing the "pass rate" on both the MCCQE and MCCEE.

A number of interviewees felt there was a need for a much more restrictive approach to the recruiting of 'rank and file' GOFMS into post-MD training positions, particularly into tertiary care residencies where the recruiting seems to be based more on the needs of the training programmes than of the Canadian population.

Other suggestions included (i) inter-provincial coordination of pre-licensure and practice entry requirements, (ii) the continued establishment of pre-internship programmes, (iii) supporting Canadians to undertake specialized training outside Canada, so as to reduce Canadian reliance on sub-specialist GOFMS in areas where there are no Canadian training programmes, and (iv) the establishment of more restrictive national immigration targets. On the other side, one interviewee felt that we should not be so vigorous in restricting access to medical

practice for GOFMS, while another felt there was nothing much more that could be done in this area even if we wish to.

Number and Mix of Residency Positions

While the proliferation of sub-specialties and the number of residency programmes was identified as an issue in interviews, and reported as such in Chapter 4, section A, no specific solutions were suggested during the interview process. Therefore, what we report here are solutions offered to address the number and mix of residency positions (as distinct from programmes or sites).

Three distinct themes emerged from among the suggestions offered by interviewees. The first was the strong sentiment favouring rationalization of mix and numbers on a national basis. The second was that, in order to do this, specific initiatives would be needed to establish a separation between the education of, and the service provided by, post-MD trainees. The third was that there are a variety of possible structures and 'responsibility models' for seeing that change comes about in this important area. We note before proceeding that only geographic maldistribution prompted more suggested approaches. But unlike that policy area, there was much more clustering in the suggested approaches to the problem of rationalizing residency training.

Over one-quarter of those we interviewed, representing virtually all stakeholder groups and most areas of the country, felt there was a need to view post-MD training capacity as a national resource, and to rationalize the overall number of positions and the specialty mix represented by those positions at a national level.³ While this is not particularly specific

³ While the fact that about one-quarter of all interviewees identified rationalization as a major policy initiative may strike some as evidence that it was not considered a major problem, it is important to recall that these views were not received in response to structured questions. Thus we cannot say, for example, that 25% of respondents indicated a need for rationalization because there is no 'denominator' in the usual sense. We did not specifically ask interviewees to respond to particular questions about every possible solution. To a considerable degree, what we heard was interviewee-motivated. Taken in this context, and bearing in mind the wide mix of interest groups, we take the fact that as many as one-quarter of interviewees were like-minded about anything as

as a solution, we found it significant that the interview process identified the need to develop mechanisms to achieve this objective as the single most agreed-upon policy initiative. Some of the respondents emphasized the need for overall reductions in the number of positions as well as a re-distribution of the mix among specialties, while others emphasized only the latter (while not explicitly condoning the present capacity). One interviewee noted that there was a need to recognize explicitly that fewer teaching hospitals were required for training purposes than are presently affiliated with the sixteen sites offering undergraduate medical education in Canada today.

The policy received an interesting variety of justifications, including (i) the need to align residencies with population needs and the abilities of other health professionals to deliver medical services, rather than with the needs of faculties, teaching hospitals or new technologies; (ii) the need to align the number of funded post-MD positions with the number required to complete the medical training of the undergraduate MD training capacity; (iii) improving the equity with which faculty receive access to residents; and (iv) the view that it makes no sense, on educational, cost, or any other grounds for each medical centre to attempt to support programmes in all (or even most) sub-specialties.

We also heard a few more specific suggestions, relating to specialty mix redistribution and implementation options. One interviewee identified a need for more internal medicine and general surgery residency capacity. Another felt that post-MD training should be funded on a programmatic contractual basis, with contracts being moved between medical centres on the basis of performance reviews, and with contracts encompassing all faculty affiliated with the programmes. A third interviewee suggested that rationalization would be assisted by inter-provincial purchase of positions. We heard a suggestion that one Ontario university should relinquish its neurosurgery programme and develop a collaborative programme with one of the other Ontario centres, and another more general suggestion that at least one Ontario medical centre suffers from acute

being about as close to 'consensus' as one is likely to find through this approach to eliciting views.

"diseconomies of scale" and should be down-sized to improve both efficiency and educational quality. But in general we found that the widespread call for rationalization, and the considerable (although less) support for overall reductions in post-MD residency positions, were not accompanied by suggestions for specific re-allocations. Most of the latter were offered in the context of solving geographic maldistribution problems (e.g. more rural area exposures in all residencies, more family practice and generalist specialist training positions).

There were a small number of interviewees who did not feel the need for reduction or rationalization. A few felt that the existence of specialty shortages justified the retention or expansion of the existing post-MD training capacity. One interviewee argued that residency positions were essential to the survival of training programmes, and that each medical centre requires programmes in the core primary care specialties plus some of the sub-specialties in order to maintain itself as a viable training site. This, it was suggested, leaves little opportunity either for reductions in the number of positions or for redistribution across sites or specialties. We were also offered the observation that rationalization possibilities are limited by the fact that the location of a training programme is a major determinant of subsequent location of practice.

The second general set of solutions was in the form of suggested approaches to address the fact that reductions or rationalization would leave a residual of unmet service needs. About 20% of all interviewees either simply noted that service and education would need to be separated in order for rationalization to take place, or went beyond that to offer alternative models for providing that share of clinical service that would no longer be provided by residents. We list some of these suggestions here:

- (a) provide specialty training to general practitioners in areas where there is minimal need for resident 'exposure' for the purposes of training residents, but where nevertheless there are ongoing service needs in tertiary care (often teaching) hospitals. One specific example given was bone-marrow transplantation.

- (b) offer salaried hospital positions to urban general practitioners; one interviewee noted that working under the supervision of specialists might be problematic for some g.p.'s; another felt that the maintenance of appropriate income relativities within the hospital environment, as between academic specialist faculty and the recruited general practitioners, might pose a variety of practical problems.
- (c) let medical students (undergraduate) participate by providing services which would be useful to their training, but which play no educational role in the training of residents.
- (d) develop hospital registrar positions, and perhaps have all MD's provide service through these positions as part of the pre-licensure clinical skills component of post-MD training.
- (e) create and train new categories of health workers, such as expanded duty nurses and physician assistants, to serve as house staff (this was the most commonly heard suggestion).

A number of interviewees had specific policy responsibility and initiation suggestions. These took the form of "X should take the lead". The "X"'s mentioned included (a) the Royal College of Physicians and Surgeons of Canada,⁴ (b) the Association of Canadian Medical Colleges in collaboration with the associate deans for post-graduate education, (c) a number of regional responsibility centres such as COFM in Ontario which would undertake overall co-ordination among themselves and then within-region rationalization of the allocation and mix 'provided' as a result of the national co-ordination, (d) the deans responsible for academic medical centres, (e) department heads and clinical programme directors, (f) regional medical education planning commissions or similar bodies, composed of all affected stakeholders. The variety of suggestions did not cluster. The most 'popular' locus of control and responsibility appeared to be the deans, although a few interviewees noted that the deans were unlikely as a group to initiate this process unless they had more control of post-MD training and were "convinced of the irrationality of the current situation". One interviewee felt that, at the very least, the deans should bear the responsibility of ensuring that the necessary capacity was developed to train the 'resident-substitutes' who would

⁴ One more specific suggestion was that the Royal College should be encouraging schools to develop shared training programs, and that the College should develop more explicit accreditation criteria which would apply to such situations, so as to encourage such initiatives.

provide those components of clinical service not essential to the development of necessary skills in the residents.

Specialty Maldistribution

There were few suggestions offered here, which did not come as a great surprise given that this was not viewed as one of the more pressing problem areas. Those that we did hear tended to be a 'grab-bag' of financial incentives or changes in methods of payment, adjustments to post-MD training mix and capacity, changes in accreditation standards, opportunities for skills upgrading, or provision of more and better information. The lack of specificity appeared to us to be related to the lack of specificity in identifying which specialties were in shortage.

We were offered a number of solutions which amount to adjustments in relative incomes. Particular mention was made of the need to increase the relative incomes of obstetricians/gynaecologists (to overcome the malpractice and lifestyle drawbacks), "heavy specialties" such as geriatrics and general internal medicine, and more generally the "low-tech", non-procedure-based specialties. A number of individuals suggested the need for more major payment reform, which would adapt methods of payment to different types of practice, or which would replace or supplement fee-for-service with a much more varied mix of payment modalities, particularly for specialties in short supply. We viewed this as one mechanism for changing relative income structures. A similar suggestion was that itinerant physicians might be engaged on a salaried basis to spread the availability of shortage specialists more equitably.

With respect to the number and mix of post-MD training positions, we heard suggestions ranging from increasing the number of residency positions, through providing more opportunities for urban general practitioners to "re-tool" in shortage specialty areas, to conflicting views on trading off Royal College and family practice training positions.⁵

⁵ One interviewee suggested that a considerable number of sub-specialty training positions should be re-channelled into generalist specialist residency programs, while another felt that we should be training more specialists and less family practitioners.

Two interviewees suggested that the problem was one of lack of adequate information, and that if trainees were provided with information on relative shortage specialties, relative incomes, physician demographic profiles, and information on the financial aspects of establishing practice in different specialties, career choices might align more closely with population needs. Finally, a suggestion was made that Royal College accreditation criteria should be altered to encourage the development of more generalist specialty programmes.

Role and Funding of Academic Medical Centres

Very few interviews elicited suggestions regarding the roles of academic medical centres. Two interviewees explicitly made mention of the need for a re-examination of the social contract to which all centres implicitly are parties. Two interviewees felt that a core of the centres should assume leadership roles not only in the traditional areas of research and education, but also as the major source of information on clinical effectiveness and efficiency for practitioners and less research-intensive educational environments. The two other specific roles that received mention were as sites for non-clinical training, and as sites for continuing education and "re-tooling" of licensed physicians. On the former, one interviewee noted that medical centres should be taking the lead in creating alternative career path opportunities for clinicians if they wish to preserve their present undergraduate training capacity.

We heard more suggestions regarding the funding of these centres. One interviewee was quite blunt in stating that "the topic has been worked to death, and is not worthy of [our] attention". Comments and suggestions from the rest of those who chose to comment on this area ranged from very general considerations to quite specific suggestions as to loci of responsibility. Among the general comments were that any solution must recognize and attempt to anticipate the "micro-motivations of academic physicians". In other words, the development of solutions will require an examination of the incentives and motivations bearing on academic faculty, to ensure that whatever changes to funding are put in place do not have the effect of seriously undermining the country's capability to attract

and retain high-quality researchers and educators. Two interviewees offered general thoughts on funding models, one suggesting a "mixed funding base", the other favouring a global budgeting model, but in both cases with the proviso that the funding should reflect the multiple roles and objectives of the centres.

A number of interviewees stressed the importance of eliminating the growing dependence of academic medical centres on clinical earnings, and in particular the need to sever the relationship between fee-for-service income and clinical supervision. One solution might be to develop contracts with all academic physicians which reflect their academic responsibilities. Another suggestion was that faculty fee-for-service income should be replaced with other methods of remuneration which reflect income under current arrangements which would be foregone. On the same topic, one interviewee noted that there is a need to ensure that all faculty are treated equitably under any new funding models. This individual pointed out that considerable amounts of academic activity, such as student supervision, are presently un-compensated.

Two themes pervaded the remaining suggestions. One was that any reductions in undergraduate enrolment should have no budgetary implications, and that medical centres should become involved in other activities to 'fill-in'. Specific suggestions included providing faculty expertise to provincial licensing authorities in support of the development of clinical guidelines and quality assurance activities, and training more GOFMS who would be funded by host countries under strict conditions governing return upon completion of training. On the former, one interviewee pointed out that the establishment of clinical guidelines is an activity that need not take place in every province and territory. There are significant opportunities for inter-provincial co-ordination of this type of developmental activity.

The second remaining theme was that ambiguity regarding responsibility for funding was a major source of current problems. Unless this could be sorted out, it was unlikely that much progress would be made on more rational funding models for academic medical centres. Specific suggestions included: (i) having all funding for the centres flow through

Ministries of Higher Education (or equivalent), to recognize the multiple roles played by the centres, and to counter the perception of these centres within university environments as 'trade-schools'; (ii) vesting responsibility for funding within groups comprised of affected deputy ministers, deans, and medical associations; (iii) sorting out responsibilities for the funding of post-MD supervision and service replacement, and funding the former through the Education side, the latter through the Health side; (iv) developing mechanisms for improving communication and co-operation between Ministries of Health and Higher Education; and (v) adopting a Newfoundland-type model which would see the centres funded largely through Ministries of Health (or equivalent).

Geographic Distribution of Physicians

Perhaps predictably, this issue area elicited significantly more interest, and therefore more suggested solutions, than any other. But the solutions did not 'cluster'. Instead we heard a wide range of suggestions, but very few were heard from more than two or three interviewees. This struck us as a revealing indicator of the difficulty of addressing the problem of geographic maldistribution. Because of this range, and in the interest of space, we do little more than list them here. But we have attempted to group them into the following broad generic categories which reflect types of policy instruments: (a) general thoughts and constraints; (b) admission criteria; (c) training programmes, sites and curricular exposures; (d) financial approaches; (e) public service; (f) geographic restrictions on practice opportunities; (g) organizational approaches; (h) regulatory approaches; (i) alternative health-care personnel; and (j) other miscellaneous.

a. General Thoughts and Constraints

To the extent that there was a general sentiment, it would be that the wide variance in population:physician ratios, both inter-provincially and within all provinces, can only be solved through the development and application of a multi-faceted policy package, perhaps with GOFMS as a 'fall-back'. One interviewee went so far as to suggest that the problem

will never be solved, another noted that a solution will require much more than the simple application of financial incentives, and a third argued that continuing to train more physicians would not solve the problem. A number of interviewees felt that 'coercive' approaches would be less successful than a variety of incentives and support policies, that one should strive to attract "committed" physicians to rural areas rather than creating policies that provide physicians who are there only because they have to be.

b. Admission Criteria

A number of interviewees felt that who the schools were accepting into medical training had a significant bearing on where they ended up practising. Suggestions consistent with this view included attempting to ascertain through interviews those candidates likely to seek rural area practice opportunities; recruiting from rural areas; reserving entry positions for applicants willing to enter into rural area return-in-service agreements⁶; and attempting to develop selection criteria that emphasize well-rounded students with broad life experiences by setting academic 'cut-points' and then assigning more weight to non-academic factors in choosing among the students exceeding those 'cut-points'.

c. Training Programmes, Sites and Curricular Exposures

There were a number of suggestions here that bore specifically on family practice training, and a number that were non-specific. Interviewees emphasized the need for the development of family practice programmes with more, and better, rural area exposures. A few interviewees felt there was a need to 'reserve' some proportion of family practice residency positions for designated rural area training. One interviewee suggested that there should be a national pool of family practice residency positions, and that those positions should be

⁶ This was the most popular suggestion within this sub-category, although one interviewee noted that it would simply create "captor's syndrome" unless schools could begin to attract students with different backgrounds than at present.

'assigned' to the schools with the best record of having their graduates end up in rural area practice. Two others felt that the problem rested with the accreditation and examination standards set by the College of Family Physicians of Canada. The view was that the examinations tend to test skills necessary for urban family practice but not for other situations, while programmes tend to be accredited even in the absence of a strong rural area emphasis. The suggested solutions were inter-provincially consistent family practice curricula designed by family practitioners with a broad base of experience, examinations that test students' ability to practice anywhere in Canada, and accreditation standards that require more rural area content than at present.

A number of interviewees pointed to particular curricular models as being exemplary. Included were the Newfoundland cottage hospital training programme, and the Manitoba programme. More generally, there was considerable support for increased rotations through remote and rural areas for all programmes training residents in specialty areas in short rural supply. Some interviewees suggested that the way to achieve this was to develop training facilities in some of these areas. Others felt that it was more realistic to attempt to develop academic affiliations with, and support for, rural physicians who might provide supervision. We also heard a suggestion that part of the problem related to the fact that the faculty in most academic medical centres were simply unfamiliar with the requirements of rural area practice. The proposal was that all geographic full-time faculty should be required to spend practice time each year in rural areas. This would increase their understanding of the problems of practising in such settings, while also providing 'relief' for physicians in those areas.

We also heard a few specific curricular suggestions. One view was that there was a need for more emphasis on obstetrics/gynaecology and general surgery, both focusing in practice in smaller communities, but less emphasis on general internal medicine. Another interviewee suggested that family practice programmes should place more emphasis on post-operative care, to make possible delivery models employing itinerant surgeons.

Other training-related solutions tended to emphasize organizational training models. Included were suggestions involving computer-based distance education, the development of primary and secondary care training institutions that would not offer tertiary care specialist training and that would not be based in the major urban centres, the use of the second year of family practice residencies for rural area training, and dedicated two-year family practice rural area programmes. One interviewee suggested the development of inter-provincial training agreements, while another felt that reducing the availability of residency positions that permit students to train in areas leading to urban sub-specialization would improve the problem of geographic maldistribution.

d. Financial Approaches

The financial suggestions split into those bearing on the training period and those bearing on practice, although we should also note that some interviewees simply suggested, without being more specific, that financial incentives were needed to solve problems in this area. With respect to training, suggestions included the provision of subsidized room and board for post-MD trainees who seek experiences in rural areas, and rural area bursaries or fellowships.

Incentives suggested for affecting practice location included mention of the Ontario northern area programme as a model, income guarantees of unspecified nature, and mixed reimbursement models involving 'retainers' in conjunction with modified fee-for-service reimbursement. A few interviewees suggested that capitation remuneration of general and family practitioners would ensure that only a limited number of these physicians could make a living in urban areas. The implication was that many of those presently practising in urban areas would move to less densely populated areas. Finally, a number of interviewees suggested the use of models involving area-differentiated fee levels, while one observer noted that there were a number of practical problems with such approaches, including the identification of 'shortage' rural areas, and the establishment of relative fees that would have the desired distributional effect.

e. Public Service

Four interviewees suggested return-in-service programmes as a possible means of ensuring an adequate supply of physicians for smaller communities. One variant would provide graduates with a variety of choices of location upon completion of post-MD training, and would require that all graduates complete an unspecified period of public service. A second suggested variant would provide training scholarships or bursaries to students willing to commit to some period of rural area practice upon completion of their programme.

f. Geographic Restrictions on Practice Opportunities

There were very few suggestions of this nature. One interviewee offered the idea of restricting hospital privileges to areas with identified needs for particular types of practitioners, a few suggested billing number-type policies while one made specific mention of the fact that this was not a desirable solution, and another felt that geographically restricted licensure might afford a solution. One interviewee noted that any solution of this nature would require a collaborative national strategy.

g. Organizational Approaches

There were a wide variety of suggestions of an 'organizational' nature, but as with all options described in this section, no one solution garnered more than a few 'votes'. The view expressed by a number of interviewees was that solutions would require models for providing professional relief in isolated areas. These included exchange programmes involving urban physicians or academically-based physicians, funding/organizational models that would result in medical practices with a minimum complement of two (one interviewee) or three (one interviewee) practitioners, and models that would involve itinerant specialists or travelling multi-specialty clinics.

An alternative view was that expectations should be altered, to favour the notion of moving patients to specialists. Quite a number of

interviewees offered variants on this theme. These included the development of regional delivery models involving referral specialists concentrated in a larger community which would serve as the delivery 'hub', general/family practitioners serving smaller communities distributed around the hub, and other health-care personnel such as extended-duty nurses or public health nurses providing the first point of contact in the more isolated communities. This model was favoured over the training of more generalist specialists, in part because of a concern that increased training alone, in the absence of changes in the delivery models, would simply result in the generalist specialists practising as general/family practitioners, either in urban or rural locations.

h. Regulatory Approaches

Aside from the suggestions already noted above, regarding the possibility of geographically restricted licenses or public service requirements, the only discussion of a regulatory nature concerned the option of licensing medical acts rather than professionals. The intent behind this type of approach (at least as we understand it in the Ontario context) is to provide a regulatory environment that is more 'substitution-friendly'. In that respect, it is potentially a direct way of addressing overlapping scopes of practice.

i. Alternative Health-Care Personnel

The single most often mentioned solution among those categorized by us as relating to geographic distribution was the development of new training programmes for alternative health-care personnel. Receiving particular mention were programmes for nurse-practitioners, extended duty nurses, and physician assistants. A number of interviewees made the point that care must be taken to ensure that Canada does not simply repeat the failure with nurse practitioners in the 1970's, by ensuring that the organizational, financial and regulatory environments do not discourage the use of these practitioners once they are trained.

j. Other Miscellaneous

The remaining 'solutions' or suggestions follow:

- inter-hospital agreements involving urban and rural hospitals was a notion suggested by a number of interviewees. The idea would be that the urban hospital would serve as a source of specialized information, and of sub-specialists on a rotating basis.
- the need for creative approaches to solving the problems of family and spousal social support and professional isolation in rural areas was discussed in a number of interviews, but without any concrete suggestions other than those noted earlier.
- opportunities for continuing education for rural area physicians.
- one interviewee suggested that we needed to find a way to ensure that rural physicians received professional respect, although once again no concrete solution was offered.
- whatever solutions are developed, interns and residents should not have to bear the cost of fixing a problem that was not of their making.

Licensure of Physicians and Regulation of Medical Practice

A number of interviewees emphasized the need for common inter-provincial pre-licensure standards. One observer noted that provinces that "drag their heels" in accepting a common standard may face the unexpected consequence of a dramatic increase in the supply of physicians from other provinces. In relation to a number of suggestions which had emerged in the course of our discussions regarding geographic distributional issues, one interviewee noted that licensure should not be employed as a "manpower tool".

The re-definition of the scope of practice of licensed physicians was mentioned on a number of occasions, with suggestions for regulatory replacement of exclusive fields of practice by exclusive or licensed acts and reserved professional titles. A few interviewees made a point of noting that they felt the present situation was satisfactory and should not be subject to policy change.

Suggestions relating to quality assurance were varied. A view expressed by a small number of respondents was that some form of compulsory continuing education was necessary. An equal (but still small)

number of interviewees felt that some form of continuing competence assessment was important; two went so far as to suggest the need for competence-based re-certification or re-licensure. Another suggested that adequate public accountability could only be ensured if quality assurance and utilization control were not left to the profession. On the other hand, a few interviewees made explicit mention of the responsibility of provincial licensing authorities in competency assessment activities, two noting that Colleges should be provided financial support for these activities.

Another more specific suggestion was that provincial Colleges should appoint (and provinces should pay the salaries of) "regional scholars", practising community physicians who would be affiliated with a medical school and who would undertake to monitor local clinical practice in their specialty for its effectiveness, efficiency and relationship to local health care needs. They would also encourage the use of research information through a continuous quality improvement approach to quality assurance and would be provided with a budget (by provincial Ministries of Health) and, if necessary, additional research/evaluation methods training and back-up support from their affiliated medical school.

Remuneration for Medical Services

Policy changes relating to remuneration tended to deal with three fundamental issues: restructuring within a system which would continue to be dominated by fee-for-service payment; restructuring to shift the mix of remuneration models away from fee-for-service domination; and dispute resolution. We take each in turn, and then complete this sub-section by reporting other suggestions not falling within one of these three general areas.

a. Restructuring within a Fee-for-Service System of Remuneration

A number of interviewees felt that provinces should be moving toward fee schedules structured along the lines of resource-based relative value

scales (RBRVS) such as that being developed at present in the U.S.⁷ One interviewee felt that the static and localized nature of the adjustment factors would not make U.S. RBRVS schemes generalizable to or applicable in Canada. On the other hand, this same interviewee felt that Canadian provinces and territories should be moving to develop internally consistent relative fees, however determined. Another interviewee went further, in recommending a national (single) fee schedule, while a third suggested the establishment of an independent pricing commission which would be responsible for ensuring that inter-provincial relative fees were consistent with broader national resource policy, and to which disputes might be referred.

There were a few voices opposed to or wary of RBRVS-type schemes. It was suggested that they are not reflective of or responsive to need or effectiveness, that any RBRVS scheme should be budget-neutral (that is, should have no overall effect on global fee-for-service outlays), and that any RVS scheme would have to be sufficiently flexible to ensure prompt adjustment for new procedural items, as the time, capital and other costs associated with the procedures decline rapidly after introduction. A suggestion based on a quite different approach was that relative fees should align not with resource costs and the value of physician time, but with relative population need, and service appropriateness and effectiveness.

One interviewee suggested that inter-provincial relative fees should be established so as to influence the inter-provincial flow of physicians between relatively more- and less-well supplied areas, while another felt that fee schedules should not be used as "manpower tools" in any way. Closely related, of course, is the issue of control over fee schedules. Here we heard both that Deputy Ministers of Health should have much more control than at present over internal schedule structure, and that Deputy Ministers should not be involved in issues of relative fees, in part

⁷ There is a considerable literature on RBRVS development in the United States. For recent descriptions and alternative points of view on its promise, see Ginsburg, LeRoy and Hammons (1990), American Medical Association (1990), Becker et al. (1990) and McMahon (1990).

because that would simply create one more source of antagonism between provincial governments and medical associations.

b. Restructuring of Methods of Remuneration

The most often-heard view expressed during discussions of remuneration issues was that payment reform in Canada should focus not on micro-adjustments to fee schedules, but on working toward a more enlightened mix of funding approaches. A few of these views were rather blunt recommendations that Canada should "get away from fee-for-service", or initiate a major review of compensation for medical services. Most suggested a continuing but less dominant role for payment by fees-for-service. To that end, one interviewee suggested that provincial Master Agreements should be drastically revised (or eliminated), because one of their by-products is the 'entrenchment' of fee-for-service as a method of payment.

While we heard a chorus of support for the general notion of payment method reform, here as elsewhere we were treated to far less in the way of specifics. Some of the suggestions included: (i) offering contracts that are initially at least as lucrative as fee-for-service; (ii) examining funding models such as those at Mayo Clinic and the Toronto Hospital for Sick Children; (iii) more extensive development of community health centre-type funding models (capitation or global budgets); (iv) more demonstration projects and research into the feasibility and effectiveness of alternative funding models; (v) ensuring that any new funding models are voluntary and offered on an 'equal footing' with fee-for-service; and (vi) using mixed methods of payment to alleviate problems with specialty and geographic shortages.

c. Dispute Resolution

The dominant view here was that physicians in all provinces and territories should have access to some form of binding dispute resolution. There was a sense expressed to us that this was a simple matter of "policy honesty" in light of the Hall (1980) review which led to the elimination of extra-billing. One interviewee felt that a national strategy in this

area was simply not feasible, that each province would have to develop an arrangement acceptable to the parties to the dispute. While progress has been made in the past few years to structure arrangements in many provinces, it is a bit early to tell whether they will turn out to be "acceptable to the parties".

d. Other Cautions, Suggestions and Solutions

A number of individuals suggested that fee negotiations should encompass far more than simply issues of fee levels and relativities. Suggested inclusions were physician incomes (including sliding fee scales based on individual item and overall billing volume, or income caps), utilization review and management, payment incentives for procedures avoided, and mechanisms for controlling the introduction of fee items pending evidence of effectiveness. The continuous process of negotiation established in Québec was offered as a model worthy of more wide-spread examination. One interviewee noted, however, that negotiations with medical associations over issues related to remuneration could not realistically be structured as part of a national strategy because national solutions would prolong the process and undermine provincial scope for establishing priorities.

On other and miscellaneous matters, one interviewee cautioned against dramatic cuts to the incomes of physicians who have become accustomed to, and have developed personal and professional plans on the basis of particular anticipated income streams. Others felt that academic medicine deserved particular attention in any process of payment reform. Suggestions were that educational institutions should be developing contracts with physicians rather than letting them generate income through fees-for-service, and that the fee-for-service incomes of academic physicians with little or no personal overhead should be adjusted to reflect this fact.

Global Expenditure Considerations

We heard very little in the way of 'solutions' to perceived problems of global budgetary control. And, as one might have anticipated, the

general views that we did hear bore few earmarks of consensus. Thus we were told on the one hand that there was insufficient information to support any supply-side, top-down, global expenditure-type policies, particularly in light of the fact that there was no public consensus on what ought to be spent on health care. On the other hand we heard frequently that there is now a general recognition among all stakeholders of the need for budgetary control and predictability within a publicly funded system, and that top-down global expenditure control is a necessary and sufficient condition for achieving this objective.

A number of interviewees pointed out that it will be worthwhile to invest more resources in 'bottom-up' activities such as health status surveys,⁸ quality assurance, utilization review, managed care, and technology assessment, but that to do so without first implementing top-down policies would not achieve the budgetary predictability sought by those responsible for the management of public expenditures.⁹

As for how one might implement global budgetary policies, interviewees offered a number of interesting suggestions. A few felt that there was both financial and political scope for provincial medical plans to target "high rollers"¹⁰ by imposing income ceilings or thresholds. Others felt that a fixed pool of funds for medical care should be provided to each province's medical association each year. The medical association would then be responsible for allocating the funds among providers. Two

⁸ A few of the individuals expressing a view on this matter felt that overall budgetary increases should be tied to changes in population needs, which could only be determined on the basis of such instruments.

⁹ There were a small number of respondents who felt bottom-up approaches are all that is necessary, while one individual argued that one needed both and that they must be coordinated, because the former alone may not be politically 'saleable' while the latter, while desirable, will not achieve the objectives of the top-down policies.

¹⁰ The term is often used, seldom defined. We took it to mean those physicians earning incomes well in excess of their peers' full-time type-of-practice mean incomes. We were somewhat taken aback by the number of times we were told that there was widespread resentment within the profession of what were viewed as excessive incomes, and that policies to 'cap' those incomes would be welcomed privately both by provincial medical associations and by 'rank-and-file' practising physicians.

different interviewees pointed out that this would both result in an increase in medical association membership, and force internal efficiencies and pressures for reduced supply if increases in the pool of funds fell short of increases in that supply.

One interviewee felt that, instead of allocating medical care funds to medical associations, all health-care funding should be allocated to regions which would then be responsible for deciding what services would be provided to the population in the region. Others felt that such fiscal decentralization would not work, and would simply lead to increased regional-provincial friction and would 'institutionalize' another set of highly visible sources of lobbying pressure on provincial treasuries. Finally, one respondent felt that sickness care should not be a free good, that consumers need to be held to "affordable limits", and that ways should be found to control demand.

One interviewee suggested a national 'billing numbers' policy as a method of global expenditure control, and also noted that a variety of solutions that we have categorized under other headings could form components of a policy package which would have the effect of controlling overall expenditures.

Research, Planning and Information

We heard a variety of suggestions for research priorities, information creation needs, and priorities for information dissemination. Areas which could benefit from further research included (i) effectiveness and efficiency of alternative clinical interventions (along with one suggestion that more funding should be made available to encourage more extensive participation of clinicians in evaluative research), (ii) overlapping scopes of practice and potential areas of clinical substitution, (iii) a detailed examination of the funding of academic medical centres in Canada, and (iv) a comprehensive and ongoing examination of the number and mix of residency positions relative to the supply and demography of practising specialists and to population needs as determined through regular health status surveys. One interviewee also noted that any new policy initiatives should be monitored and evaluated

against their objectives, while another emphasized the need to improve the interface between the policy and research communities.

The major information creation priority, as identified by interviewees, is the development, field testing, and implementation of surveys that will provide an ongoing picture of the health needs of Canadians. In this respect, it is interesting to note that an equal number of interviewees shared the belief that "needs-based" planning is not feasible. Other priorities include the development of an accepted national physician resource database which all stakeholders can support,¹¹ more information on the extent of specialist services provided by general/family practitioners, and more information on the relative effectiveness and efficiency of alternative technologies. A number of contacts felt a high priority should be placed on developing mechanisms for eliciting the views of the public on a wide variety of priorities in and approaches to the delivery of health care. The need to develop "plans" of one sort or another was frequently noted, but we sensed little agreement as to the basis or content of such plans. Offerings included needs-based plans, demand-based plans, medical human resource plans of indeterminate source, regional plans as the "micro-chips" of a national plan, and service-target-based plans (see Adams and Wood (1990) for a description of this approach). One interviewee highlighted the need to involve physicians in any planning processes, while another felt that in most areas we had sufficient information to indicate appropriate directions for change, that 'perfect' information will never be available, that even if it was one would not get universal agreement on its interpretation, and that policy-makers should therefore "get on with it".

On the information provision side, priorities included disseminating information to trainees on alternative career opportunities, relative incomes, availability of complementary resources, physician and population demographic profiles by region, and the practical and financial realities of developing a medical practice. One interviewee felt clinicians had access to far too little information on ineffective technologies and

¹¹ One interviewee suggested that the CMA should make its database a "community resource".

interventions, and two others labelled the development and provision of clinical guidelines or appropriateness standards as priorities. In this respect, the use of more consensus conferences involving leading clinicians was noted as a useful approach.

Suggestions also included developing means of improving the level of understanding of the public, on what is and is not known about the effectiveness of alternative clinical techniques, about the ability of current clinical knowledge to identify and cure illness, and about the rationale for and importance of activities such as utilization review and quality assurance.

Other More General Policy Considerations

The list that follows contains a number of suggestions relating to perceptions, processes, participants and pragmatic considerations offered to us in interviews in the spirit of improving the likelihood of collaborative development of new policy initiatives in the area of physician resource policy. They do not correspond to any particular piece of Chapter 4, section A, because they were not intended as solutions to specific problems. We have attempted to 'cluster' them somewhat (e.g. we begin with a series of views on the changing of public perceptions), but many of these comments defied thematic grouping for reasons that should become obvious:

- the success of any significant changes will depend critically on strong public support; therefore communication strategy must be an integral part of the development of physician resource policy
- policy initiatives must be perceived to be "fair"
- Deputy Ministers of Health need to counter the current public perception that they do not care about outcomes and access, but only about costs
- most of the necessary changes are necessary because they will improve patient care and outcomes. They will also reduce costs, but the rationale should be the former not the latter.¹²

¹² This general theme, of the need for a strong communication strategy emphasizing the potential for improved process and outcomes, was in fact one of the most often heard views during interviews.

- the public should become more involved in resource-related decision-making through the use of regional funding envelopes
- professional medical associations should be responsible for informing their membership that "the past will not persist" and that they will be worse off if they choose not to become participants in the process of change
- the profession should be taking a clear leadership role in the development of clinical guidelines, again on the grounds of improving clinical outcomes
- the message that more physicians does not mean better health must be communicated to the public
- national agencies should be playing a leadership role¹³
- the political will to initiate and support significant change must be found where it has been absent in the past
- a national consensus and a national strategy will be necessary to ensure that provinces and territories are not 'played off one against the other'
- solutions and policy approaches must be acceptable to individual provinces and territories
- a 'stakeholders' conference or "think tank" should be held to discuss possible options arising from the present study
- policy approaches should attempt to avoid confrontation and punitive approaches

Miscellaneous Other Solutions and Suggestions

At the end of sifting, categorizing and collating the many suggestions and solutions offered to us during the interview process, we were left with a considerable list of 'items' that would not fit comfortably under any of the headings used in this section. Some were truly suggestions quite different in nature from those described above. Others were combinations of solutions that represented linkages between categories of solutions most easily conveyed separately. We close this section of the chapter by listing many of them (without claiming to have

¹³ Receiving specific mention were the APMC, the CMA, the two national Colleges, the Medical Forum, and the apparently dormant National Physician Manpower Committee.

been exhaustive). Some are self-explanatory; others we have embellished somewhat to make them clear; and then there were some whose meaning or intent were not clear to us at the time of the interview, and are still not clear, but are reported as heard. The miscellaneous list follows:

- more use should be made of community health organization-type models
- hospitals and other institutions should be rationalized to eliminate duplication
- there should be a distinction and a functional and funding separation established between clinical and academic physicians
- medical practice should be "de-regulated" and physicians should be given greater autonomy
- the expectations of patients, physicians and governments need to be radically changed
- regions should receive funding sufficient to permit physicians to provide those services that only physicians can provide; regions should then individually determine the remaining substitutions within regional funding envelopes
- much more emphasis should be placed on developing clinical teams to deliver services, to replace physician-dominated models of care delivery
- it is essential to enforce the notion that physicians cannot expect to continue to enjoy freedom regarding the content of medicine if they do not willingly defer to others decision-making authority on issues of context
- there is nothing fundamentally wrong with having unemployed physicians. There are unemployed members of virtually every other profession in Canada
- hospital impact analysis should be more widely employed to rationalize the relationships between physicians and hospitals
- other provinces should examine the policy initiatives in Québec, and Québec should make a greater effort to publicize its initiatives in the rest of Canada
- a meeting of all medical centre deans and all provincial Deputy Ministers should be convened

- all medical centre deans should meet on a regular basis to work toward bringing the medical training establishment in line with the Canadian public's expectations, and to provide a forum through which the deans can take a leadership position on issues of public concern
- ineffective and inappropriate care should not be funded from any source through any method of remuneration
- health science centres should be encouraged to train fewer physicians, but more nurse specialists and rehabilitation specialists
- there is a need for a clear articulation of the relative roles for health promotion and medical care
- more and better inter-provincial coordination on the establishment of health goals and health-care objectives is needed
- provinces should establish "hospital service authorities" with responsibility for the institutional care of the population, in order to de-politicize capital expenditures
- health care should be de-politicized
- physicians should not be held accountable for health-care system problems
- the private laboratory sector should be the subject of a concerted policy initiative, in order to control escalating costs
- tighter controls on the diffusion of new technology which are more integrally linked to evidence on efficiency are needed
- hospital bed supply should be reduced, and there should be a further shift in locus of care toward the community
- ways of increasing the involvement of female physicians in professional 'political' activity should be developed
- physicians with hospital privileges should not serve on hospital boards because they are unable to represent the community, or (rarely) even the institution in which they practice
- medical advisory boards in hospitals should be eliminated and replaced with professional advisory boards that encourage teamwork and minimize professional domination by physicians
- expanded duty nurses could be employed effectively to undertake much of what passes as geriatrics

In the next section we summarize some of the policy approaches implemented in Québec.

B. The Québec Experience

This sub-section reports on the approaches to physician resource management that have been used in the Province of Québec. It is based primarily on the special report commissioned for this project and discussions with the authors of that report, and secondarily upon a limited independent review of literature, including government reports.¹ Here we provide a synthesis which corresponds approximately in sequence to the continuum of management and policy areas illustrated in Figure 3.1 and subsequently used to organize the presentation and discussion in Chapters 4A, 4C, and 5A. The presentation in this sub-section is intended to provide an overview and summary. We encourage those who are interested in a more detailed account of the Québec experience to read the full report of the Québec team, which appears as Appendix B to this report. Unfortunately, it was not possible to incorporate any detailed analysis of the most recent Québec reforms announced in mid-December 1990 into this report²; however, consideration should be given to doing so in any follow-up phase based on our report.

As indicated in Chapter 2, a special report was commissioned for Québec because of the unique and extensive experience with physician resource management policies in that province. Perhaps the most striking aspect of that experience, in contrast to the experience of other provinces, is that Québec has a history of carefully formulated and widely publicized and discussed strategic plans for the health and social services sector. These plans have established, and subsequently revised, the conceptual framework within which specific policies have been proposed, debated, and enacted. This history dates back to the report of

¹ The content of interviews conducted both inside and outside the province pertaining to the Québec experience has been incorporated into sections above on problems with (Chapter 4A) and approaches to (Chapter 5A) physician resource management.

² The Québec team completed its report in November 1990, just prior to the announcement of the reforms and the release of the discussion paper "Une Réforme Axée Sur Le Citoyen" (Québec, 1990). At the time of this writing we have just obtained a copy of the English version of the discussion paper; however, the English version of Bill 120, presented to the Québec National Assembly in mid-December, is not yet available.

the Castonguay - Nepveu Commission (Québec, 1970) and includes more recently the report of the Rochon Commission (Québec, 1987), which has subsequently generated two major policy discussion papers (Québec, 1989, 1990). In general, the strategic planning process has been characterized by clear statements of objectives and planning principles, attention to the conceptual basis of proposed reforms, comprehensiveness, solicitation of extensive public and professional input³, consistency of direction, and strength of political will sufficient to implement change even when consensus was not achieved among all stakeholders.

In the area of overall physician supply, Québec shared the national experience of a steadily increasing supply from the late 1960's to the late 1980's resulting from both immigration and the expansion of domestic training capacity; however its experience was one of the most dramatic. Between 1972 and 1988 the physician supply in Québec grew at a rate six times faster than the population. The policy responses to this have been to reduce the inflow of immigrant physicians and to reduce medical school capacity.⁴ The current assessment appears to be that the rate of growth of the physician supply has now been brought "relatively under control" (App. B, p. 3), although problems in the supply, mix, and distribution of physicians (discussed below) remain. In fact, the Québec report in Appendix B sounds a note of caution on further supply reductions in that province. It points out that a combination of factors, including aging and feminization of the existing supply of physicians, and other influences leading to declines in average hours worked by physicians, could imply a decline in service availability in about fifteen years. (This is predicated on a continuation of existing policies regarding supply and requirements. The Québec report did not include examination of potential policies affecting the effectiveness and efficiency of current

³ The latter has not always been successful in securing policies advocated by the professions involved; nevertheless, it has formed an integral part of the process and has shaped the consultative mechanisms being used currently.

⁴ Despite this recent reduction in medical school enrolment, the ratio of first year medical students to provincial population is still higher than that for Canada overall.

utilization patterns or the organization of service delivery.)

As part of its policy to slow the rate of growth of physician supply, the government in 1983 modified funding for faculties of medicine in an important manner. Now:

The cabinet, upon the joint recommendations of the Minister of Health and Minister of Higher Education, determines by decree the number of students admitted each year to the pre and post-doctoral level in all the four faculties for which the government provides funding. (App.B, footnote 5, p.22)

Although the overall quota of students is thus determined, the association of deans is responsible for the allocation of places among the four medical schools, "based essentially on their historical situation" (ibid.). Faculties are funded on a per student basis, for their share of the quota, with financial penalties for enrolments in excess of this.

Post-M.D. training has been an area of some friction in Québec, prompted by concerns about specialty maldistribution and geographic maldistribution, in particular with respect to specialist services. During the 1980's one government objective was to reverse the proportion of GPs to specialists, which was 45:55 in 1977. A target 60:40 ratio was set for the year 2000. Although an important motivation for the policy was to control expenditures on medical services, another was to improve access to medical services in the province. During the early 1980's, reductions in the provincially-funded number of residencies in specialist training were implemented, but due to opposition from the medical profession and pressure from more remote regions of the province in need of primary specialists, increases in the number of specialty residencies have been granted since 1986, "with some set aside for specific specialties considered to be facing renewal difficulties and others for students who undertake to practice outside the major cities" (App.B, p.7).

A most important result of this friction among government, remote regions, medical associations and faculties of medicine was the establishment in 1986 of a standing committee on medical human resources to make "recommendations to the Minister of Health for submission to the cabinet (after analysis by the Treasury Board) on the number of admissions to medical school and the distribution of specialties at the postdoctoral

level" (ibid., p.7). This "permanent consultation committee" also recommends on the improvement of geographic distribution of physicians (Québec, 1989).

The committee includes representatives of major stakeholder groups⁵ and has had some initial influence. Its first recommendations, made in 1988, were accepted and have led, among other things, to a policy of linking the supply of post-M.D. training positions to the number of M.D. graduates in the province, and a small increase in the proportion of post-MD positions set aside for specialists. The ratio of GPs to specialists in the province is now 50:50 and the assessment in the Québec report is that, although the reversal will continue, progress toward the target will, by mutual agreement of the parties, be slower in the future than it has been in the past.

Geographic maldistribution is an area which received substantial policy attention during the 1980s (ibid., Table 1). The policy objectives were to ensure equitable access to services in all regions of the province, and to train and distribute the supply of different types of physicians in accordance with the needs of the population in all regions of the province. Despite this concentration of policy effort, however, the assessment in the Québec report is that there are still significant problems, with specialists continuing to concentrate in urban areas while a lack of even primary specialists exists in more remote regions and even in some areas relatively close to urban centres.

The main policy instruments have been economic incentives, reserved residencies, and regional manpower plans. In 1982, a system of differential fees was introduced whereby new physicians (except tertiary-specialists) received different proportions of the basic fee during their first three years of practice depending upon whether they located in a region with a medical school (70% of the basic rate) or without a medical school (115% or 120% of the basic rate). Other economic incentives such

⁵ "Its members include representatives of the Departments of Health and Higher Education, the professional associations of physicians (general practitioners, specialists and residents), the Professional Corporation of Physicians, deans of the medical schools, regional health councils, and associations of health establishments (hospitals, CLSC's, CAs, etc." (App.B, p.7)

as bonuses to establish practice in certain locations and travel expenses for continuing education were also introduced. In 1986, a policy was adopted to reserve a significant proportion of the specialty residencies for individuals who agreed to locate and practise in remote regions for five years⁶, with a severe financial penalty for violating the agreement. In 1987, a system of regional manpower plans and quotas was introduced. In this system each medical establishment must prepare an organization plan pertaining to the services it plans to offer in the coming year, including the numbers of specialists of each type that it requires. These plans are reviewed, revised if necessary, and approved by regional health and social services councils whose task it is to synchronize the plans with regional objectives and quotas, set by the Department of Health and based on considerations of equitable access to needed services across regions. Establishments may not authorize a physician to practice within that setting if the physician is not part of the establishment's (and thus the region's and the government's) manpower plan. The intent is to direct the distribution of specialists practising within the public insurance plan.

Although the manpower plans have not been in effect long enough for their effect to be judged, the combined policies of economic incentives and reserved residencies have achieved only limited success. For a variety of reasons, the economic incentives have apparently had little, if any, effect on young specialists and only one-third of the reserved residencies in specialties have been filled during the last three years (ibid., p.16). The main effect, and this despite the differential fees, appears to have been to channel students into general practice in the major urban centres.

The Québec experience with attempts to solve the problem of geographic maldistribution (particularly of specialists) clearly illustrates the complexity of this particular problem and may indicate not only that there are no 'simple' solutions to problems in this sector, but

⁶ The number of reserved residencies was 50 of the 320 specialty residencies in 1986. In 1990, at the recommendation of the standing committee on medical manpower, the figures are 70 and 325. (ibid., p.10)

also that there may be few, if any, even 'moderately complex' solutions. In this particular case, the authors of the Québec report conclude that:

To make equity of access a fact, the questions of the complementarity and substitution of GPs and specialists as well as of physicians and other professionals must be faced head on. This would involve major changes in the organization of health-care professions in Québec which might extend as far as amendments to the legislation governing the professions and opening the areas of exclusive practice of physicians to other professions.⁷ (ibid., p.17)

Another area of policy focus in Québec has been physician remuneration in relation to global expenditure control. A combination of low fee increases and income ceilings, individually for GPs and as a group for specialists, in conjunction with the policies noted above to limit immigration of foreign physicians and reduce domestic training capacity, have controlled the growth in expenditures for medical services relative to other provinces and as a share of overall health spending in Québec (Barer, Evans and Labelle, 1988; Contandriopoulos, 1986). The policies have resulted in a dramatic decline during the 1970's and 1980's in the incomes of Québec physicians relative to their counterparts in other provinces.

As noted in the Québec report (Appendix B, pp. 8-9), negotiations between representatives of the government and the two professional associations (separately), for general practitioners and specialists, are explicitly about the average gross earnings of physicians (i.e. the average expenditure per practitioner on medical services). Target incomes are established, and if they are exceeded in a given year then a corresponding reduction in the following year's fee increase is made.

⁷ Quebec last experienced (attempted) a major re-organization of the health care professions in the early 1970's, around the introduction of the Professional Code, which had as one of its objectives to encourage cooperation among professions. As part of this reform, the professional corporations were required to identify acts reserved to their members which might be delegable to other professions. The results have been generally disappointing and unsatisfactory, and in some cases even counter-productive (Contandriopoulos, Laurier and Trottier, 1986; Dussault, 1986; Québec, 1989, p. 69). This has led most recently to a call to review again professional exclusivity and the delegation of acts, and to redefine the concept of protecting the public (ibid., p. 69).

(The reverse is also possible.) While income ceilings apply to GPs individually, a more selective review occurs for specialists based on patterns of practice by type of specialty. Although friction between GPs and specialists over relative incomes appears to have subsided since the early 1980s, major conflicts over income disparities continue within the federation of specialists.

Overall, the formalization of fee/income negotiations as an ongoing process, rather than a periodic one prompted only by the expiry and renewal of agreements, appears to have been an improvement in the negotiating mechanism. This has been aided by a willingness (or a resignation) on the part of physicians to work within the constraints of the public budget⁸ and to attempt to influence policy within that framework, for example "to use rate incentives to encourage certain types of practice (geriatrics, emergency medicine, psychiatry, etc.) and discourage others" (ibid., p.10).

Regarding future financing arrangements, both the Québec report for this project and the Orientations discussion paper (Québec, 1989) highlight the movement toward regional budget decentralization, a movement which some other provinces are in the early stages of considering, other provinces appear to have already rejected, and many recent Task Forces and Royal Commissions addressing health-care resource management have recommended. This development is one which warrants monitoring and perhaps further investigation in any follow-up phase of this project, as it is highly consistent with the objectives stated in Chapter 3a) above. Although the methods for doing so are currently rudimentary, research is ongoing to design methods of allocating budgets for medical and other health expenditures to regional populations in accordance with their growth, composition and needs, rather than allowing such expenditures to be determined primarily by the growth, composition and practice patterns of health professionals and their establishments (Birch and Chambers, 1990; Birch et al., 1990; Evans, 1988).

⁸ It is noted in the Québec report (p.10) that physicians have agreed to accept a rate increase similar to that of civil servants during the last two negotiations.

In summary, the picture of Québec which emerges from Appendix B is that of a province which has devoted considerable energy to policy development in the physician resources sector, with mixed success as judged against its stated policy objectives. While the policy mix has apparently been relatively successful in controlling expenditures on medical services, it has been less successful in solving problems of maldistribution among specialties and geographic maldistribution of specialists. Moreover, the Québec experience appears to suggest that i) formalized ongoing negotiations between government and the medical profession over economic issues have the potential to improve that relationship, ii) formalized consultation processes between government and major affected parties have the potential to rationalize decisions about undergraduate and post-M.D. training capacity, and iii) reliance solely upon economic incentives will be insufficient to accomplish important objectives in the physician resources sector. Finally, the Québec experience suggests that considerable thought and effort, backed up by suitable research and information, needs to go into publicly articulated strategic planning by provincial governments and, even then, reform will be neither rapid nor without unanticipated but necessary adjustments.

C. Lessons from International Experience?

An analysis of the reports in Appendices D through J yields a potentially bewildering collection of initiatives related in some way to medical resource management. In part this is a product of the different approaches taken by each of the sets of authors. But of equal importance is the fact that policy evolution, in this area as in others, is in large part a product (or a captive) of the institutional, ideological and political history of each country.

This heterogeneity in many of the key factors 'explaining' the evolution of medical resource policy makes 'policy shopping' in the international marketplace a hazardous process. Initiatives which appear to be working reasonably well in one country might be unmitigated disasters in another because of fundamental differences in political history and extant politics. On the other hand, policies which at first blush appear to be ill-suited to one's own country might, with a better understanding of the institutional, organizational and political dynamics that produced them, be adapted to one's own situation.

There is a considerable literature on the hazards of, and alternative approaches to, international comparative health policy 'lesson learning', which we do not propose to review here.¹ We have not attempted to cite every policy or proposed policy mentioned in the Appendix reports that is different from the present Canadian situation. Rather, we summarize those initiatives that, in our view and based on our knowledge of the Canadian health-care system, would appear to offer some potential. We do not claim that this process is complete; that is, we would not advocate the adoption of any of these initiatives solely on the basis of what we learned from the appendices. But the policy avenues highlighted here are those that in our view seem worthy of more detailed investigation as to their implementation, their effectiveness, and their portability to the Canadian situation. Put differently, a detailed international investigation into medical resource policy initiatives was well beyond the scope or intent of the present project. One can only expect to gain a superficial picture of

¹ For an introduction to this literature in a Canadian context, see Barer, Gafni and Lomas (1989). Our colleague Ted Marmor has written extensively and articulately on this topic.

possible fruitful policy avenues through the approach to international experiences adopted for this project. Yet the scope and time frame of the project precluded any more comprehensive effort.

In what follows, as in Chapter 4B, we organize our summary along the life-cycle portrayed in the framework proposed in Chapter 3. Like Chapter 4B, the reader will not find content under each of the potential policy headings, because none of the international reports addressed explicitly all of these areas.

Overall Physician Supply

In a recent review of physician manpower development in West Germany, van den Bussche (1990) noted that "[T]he 'diagnostic' consensus on future oversupply does not mean that there is an agreement with regard to the measures to be taken. The peculiar interests of the different lobbies concerned, the structural complexity of the systems and tenacious traditions make coordinated action very difficult." This description appears to fit equally the other countries from which we commissioned reports, as well as Canada and the United States.

While our sense is that the seven countries all feel they face significant physician surpluses, the reports offer very little in the way of consensus with respect to proposed or actual policy solutions. The exception would appear to be that there have been recent initiatives in most of these countries to effect reductions in medical school enrolment. These reductions appear to have been considerable (a number of the reports mention 20% reductions; there has been a reduction of 40% in Belgium). The mechanisms are unique to each country's situation, but the reductions appear to be quite widespread. In marked contrast is the apparent 'go slow and exercise all possible caution' approach in the United Kingdom, where the attitude appears to be that the uncertainty of the requirements forecasting process should dictate no major adjustments. A similar 'official' view seems to characterize the Australian situation, although there the medical associations are strongly supportive of a reduced domestic training capacity. One interesting aspect of Australian policy is that overall numbers of funded undergraduate medical school places are

not determined by each state but rather as a national policy established by the Commonwealth. The number of applicants to medical schools has also dropped in a number of countries, including the United States and Germany.

The other initiatives bearing on physician supply which receive mention in more than one of the international reports are retirement-related initiatives. Two variants are mentioned. France has experimented with early retirement 'buy-outs' intended to encourage clinicians between the ages of 60 and 65 to reduce their clinical practice activity earlier than might otherwise be the case. The United Kingdom requires general practitioners to retire at age 70, and is attempting to have this age lowered to 65 (the age at which hospital-based physicians must retire).

Finally we note that incentives are being put in place in France to encourage physicians to move into non-clinical medically-related careers (e.g. school medicine, occupational medicine, medical administration), and new training opportunities such as medical-legal and biomedical engineering are gaining increasing support.

Undergraduate and Post-MD Training

The Swedish report suggests that clinical exposures and the mix of training positions provided during post-MD training have been geared to regional needs and to desired organizational modalities. Mention is made of the fact that an "allocation programme of physicians" adjusts post-MD position mix on an ongoing basis according to regional and specialty needs as determined by a committee comprised of government and county council representatives. With respect to clinical exposures, post-graduate house officer training encourages broad exposure to "basic and routine health-care problems", and makes an explicit effort to acquaint physicians-in-training with health-care team approaches to delivery.

In the United Kingdom, prospective general practitioners are required to undertake three years of post-MD training before being able to register as a general practitioner. However, like the two-year proposals in Canada, this programme un-evaluated in terms of possible impacts on practice patterns or health outcomes. The training system keeps new physicians out of autonomous career positions and practising 'under supervision' for longer than is the case in Canada. On the other hand, it would appear that there is considerable service being provided through these ostensibly 'training grades' (see Figure 1 of Appendix H; see also Birch and Maynard, 1988).

Geographic Distribution of Physicians

The United Kingdom appears to have implemented a variant of the recent B.C. 'billing numbers' policy, at least for general practitioners. Hospital specialists can obviously only work where there are hospital employment opportunities. The general practitioner analogy in the U.K. is an application process to local family practitioner committees. Some areas are entirely closed, while others offer special remuneration packages as an incentive to encourage practitioners to apply to those areas.

As in the United Kingdom, some of the geographic specialty maldistribution problems in New Zealand have been solved by regional funding allocation formulae. Area health boards are responsible for much of the service management in each area, and this allows them to develop market-driven contractual arrangements to attract shortage specialties. Conversely, areas over-populated with specialists will not have sufficient funding allocated to their boards to provide sustenance for all of the specialists. Geographic maldistribution of general practitioners is still a more serious problem because they remain outside the service management/area health board management/funding structure. There has been some use made of guaranteed incomes and bonus schemes for general practitioners, and some recent discussion of U.K.-style restricted entry to over-supplied regions. But the former initiatives have apparently not been wildly successful, and the latter is likely to be strongly opposed by the New Zealand Medical Association. Interestingly, Malcolm (Appendix I) sees this problem being solved in New Zealand only with the full devolution of entire regional health budgets to the area health boards.

The report on Germany makes brief mention of a scheme of geographically restricted licensure (Appendix G, pp. 8-9), but suggests that the over-supply problem is so severe in that country that the regulations are simply "spreading over-supply".

Licensure of Physicians and Regulation of Medical Practice

A recent initiative in Germany involves legislation requiring medical audits and other quality assurance activities for ambulatory services. The legislation gives the sickness funds and medical associations the power to undertake random audits. Yet although the legislation is in place and it makes clear which organizations must take responsibility for this activity, implementation has been delayed by the absence of clinical standards, practice guidelines, or other criteria on which to base the audits. Furthermore the report suggests that lack of sufficiently developed methods for quality assurance are delaying the enforcement of the regulations.

Remuneration for Medical Services

The German system of fee-for-service remuneration embodies a uniform relative value scale across all sickness funds (Kirkman-Liff, 1990), while Belgium and Australia use national fee schedules. Capitation-based payment systems appear to be becoming more prevalent in the countries reviewed. There are discussions presently in Germany about the possibility of capitation replacing fee-for-service for primary care (gatekeeper) physicians, and some form of capitation payment has apparently been in effect for laboratory services for a number of years (van den Bussche, 1990, p. 229). In the United Kingdom, primary care practice is reimbursed partially on a capitation basis, with a significant part of remuneration coming in the form of an 'expenses of practice allowance', and some fee-for-service remuneration for a specific and restricted set of services. Additionally, consideration is being given to providing primary care practitioners with pharmaceutical budgets (presumably capitation-based) with a peer review process for those who exceed the budgets. Some physicians have begun to be paid on a capitation basis in Belgium as well. In short, there would seem to be a general movement, in systems dominated by fee-for-service, away from this method of remuneration and toward capitation- and budget-based remuneration.

In Sweden, in contrast, most physicians are salaried public sector employees of county councils. Salary negotiations take place between the

councils and trade unions representing the physicians. Hospital-based physicians in the United Kingdom are similarly paid by salary, with salaries being set centrally by the Department of Health. The United Kingdom also has a system of 'distinction awards' to reflect clinical excellence, although it appears fraught with accountability problems and seems fundamentally flawed in that the awards are granted for life.

The service management approach recently implemented in New Zealand allows physicians, at least in principle, to contract out for services that they require (e.g. laboratory, pharmacy, nursing home) for their patients, although it is not clear how this might affect general practitioners who apparently continue to operate outside the reach of the area health boards.

Global Expenditure Initiatives

Here we find a plethora of potentially interesting initiatives. In Germany medical expenditures are globally controlled through a two-phase budgetary allocation process. Total budgets are negotiated between each sickness fund and the medical associations representing the physicians providing care to patients enrolled with each sickness fund. Lump sums are allocated to each medical association, which is then responsible for managing the funds. If the volume of services multiplied by the level of fees exceeds the budget, the effective fee levels are rolled back retrospectively so that 'volume times fees' continues to equal the available funds (see also Kirkman-Liff, 1990). But the process is more sophisticated than this. Separate 'blocks' for particular types of services are negotiated so as to ensure that 'run-ups' in utilization of one type cannot have deleterious effects on incomes in other specialties. The major problem faced by this system is the continuing rapid expansion in physician supply.

There has been an effort, in Bavaria, to link physician remuneration with the use of other complementary types of services. One analyst has suggested that the potential of this sort of contract was undermined by the fact that it tied global physician incomes to global reductions in hospital and other types of care. In doing so, it ran into the classic

free-rider problem of incentives for the individual physicians being 'too indirect' (Kirkman-Liff, 1990). This initiative has now been abandoned. Finally, with respect to German expenditure policies, we note that annual increases in total health expenditures are closely tied to the growth of wages and salaries for the insured population.

Sweden has implemented a regionalization system structured around county councils. These councils even have responsibility for the major academic institutions, and play many of the planning/policy roles found at the provincial or federal level in Canada. Budgetary responsibilities rest with the county councils. The United Kingdom and New Zealand also use regional financial allocation mechanisms for global expenditure control. There is a voluminous literature on the UK system. We offer a brief description of some of the key aspects of the New Zealand system in the final sub-section of this international review.

Research, Planning and Information

The "Concerted Action in Health Care" in Germany provides a forum for all affected parties to meet to resolve their differences. It is also used as a mechanism for communicating government policy and for persuading stakeholders to work toward common goals (Kirkman-Liff, 1990, p. 78). It struck us as being rather similar, at least in principle, to the Québec concept of continuous negotiation.

Perhaps the most interesting international initiatives involve the generation and dissemination of information to prospective physicians at a number of points in their 'early life-cycle'. The Department of Health in the United Kingdom publishes information on medical staffing prospects in the NHS by specialty on an annual basis. The University of Louvain in Belgium has developed an information system that provides information to potential new specialists, and to graduates contemplating the practice location decision (see Appendix E).

Other Potentially Interesting Policy Initiatives

Here we note briefly several other items that appeared of potential interest in the appendix reports:

- The German report makes mention of the encouragement of group practices, both to reduce practice overheads and to provide supervised practical settings for ambulatory care training.
- The Swedish system is organized as a 'true' regional model, with each county having a major hospital housing a collection of hospital-based specialists, a number of smaller 'rural' hospitals, and then other practitioners serving even smaller communities. There are nine regional hospitals which serve as tertiary care centres. All are affiliated with medical schools, and many serve multiple counties. This requires inter-county co-operation and planning in order that the most specialized services receive adequate funding and do not impose an unfair burden on the host county (Calltorp, 1990). The county councils have taxation powers as well as financing and organizational responsibilities.
- In New Zealand the hospital may be disappearing as an organizational entity and, therefore, as an employer. Fourteen area health boards receive funding on a RAWP-type basis (Malcolm, 1990) and are expected to purchase all but general practitioner care for the populations for which they are responsible. The boards are responsible both to their local communities and to the national Department of Health, and are expected to develop budgets for each type of service. Service providers are then free to contract for other complementary or substitute services. The emphasis in this service management approach is on categories of service (e.g. medicine, surgery, mental health, primary health-care), rather than traditional institutions or organizations, as the 'unit' of accountability. Within this system, the emphasis is intended to be on outcomes, with resources seen as 'means' rather than budgetary 'ends'.
- A "medical reserve scheme" has been developed in New Zealand which facilitates the part-time involvement in clinical practice of physicians who choose not to be engaged as full-time practitioners.

In the following chapter we turn to a presentation and discussion of policy avenues for Canadian medical resource management. Some of the ideas described here from other countries find their way into some of those avenues. But we have deliberately avoided proposing the wholesale adoption of any of these initiatives, because we feel a more detailed examination would be required before we could be sufficiently confident in our understanding of their rationale, their context, and their implementation details to be able to develop and describe variants appropriately modified for the Canadian setting.

Chapter 6: POLICY ANALYSIS, OPTIONS AND RECOMMENDATIONS

A. Policy Framework

One of our objectives in this report is, as one interviewee suggested, to "bring everything together in one place". Although we do not claim to have succeeded fully in this task, the preceding two chapters have identified and discussed an extensive range of issues, and potential approaches to them, along the continuum introduced in Figure 3.1. As stated in Chapter 3, two foci of the discussions have been the specific influences on the supply of physicians in Canada available for clinical practice and the possible policy avenues for promoting changes in the physician resources sector throughout the medical career life-cycle. In Figure 6.1 we summarize this information in chart form, filling in the framework of Figure 3.1.

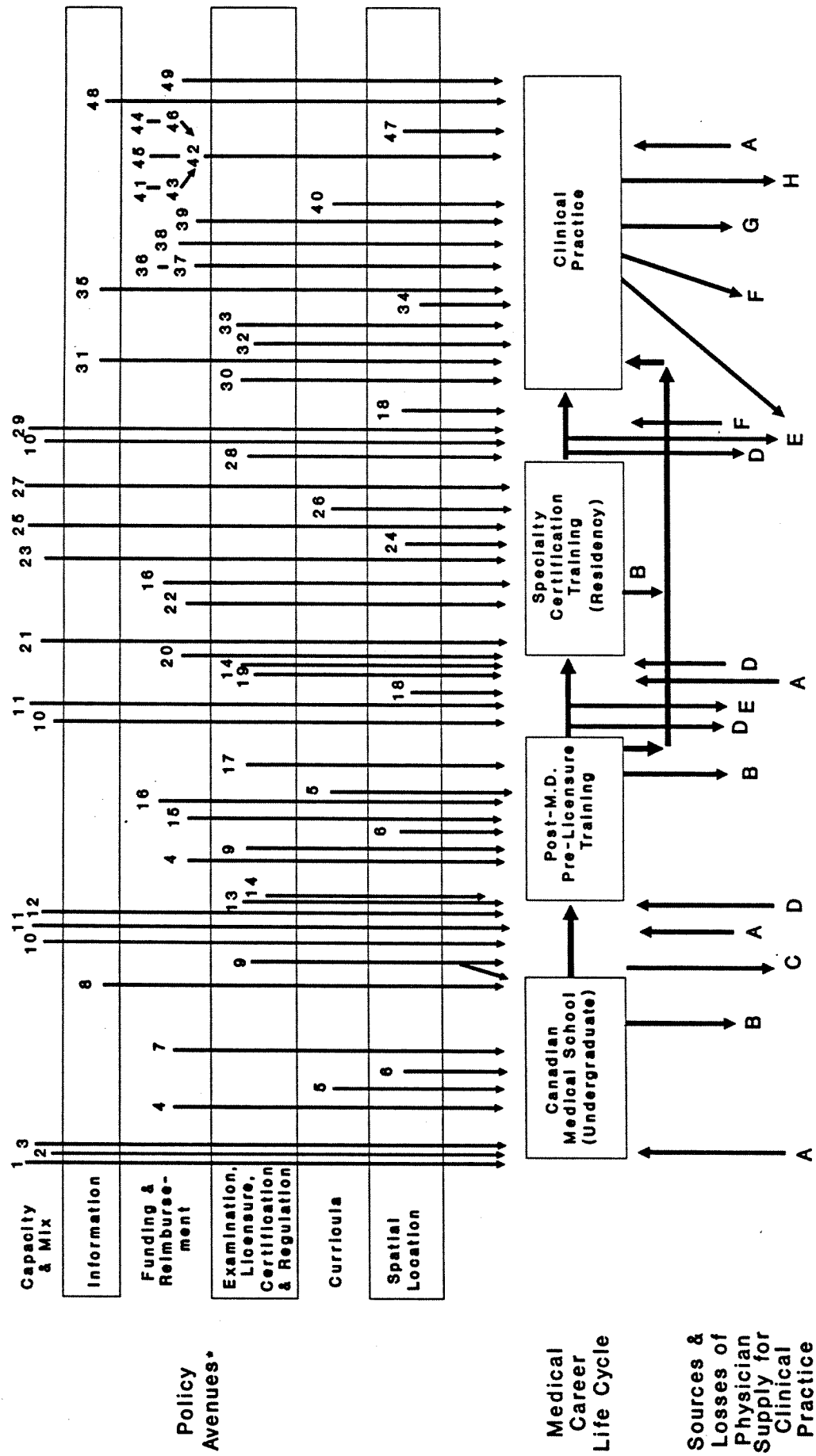
The sources and losses of physician supply are shown below the medical career life-cycle progression. Specific sources and losses are identified by capital letters, explained in the accompanying legend. The sources are Canadian citizens and permanent residents, visa trainees, and visa physicians. The losses are withdrawals from undergraduate or post-graduate training, MCCQE failures, non-clinical practice careers, retirements, and emigrants.¹ The approximate points of inflow and outflow are indicated by the position and direction of the arrows.

Current and potential policy avenues for affecting decisions and outcomes along the continuum are shown in the upper part of the figure. Specific policy routes are numbered and keyed to the accompanying legend. Again, arrows are used to indicate the approximate points of policy impact. In addition, shading is used in the upper half of the chart to distinguish different policy types or 'strata', e.g. capacity and mix of physician resources; the provision of information; funding and reimbursement; examination, licensure, certification and regulation; curricula; and spatial location incentives and resources.

Figure 6.1 is intended to be an overview or backdrop for the more selective analysis of options and recommendations that is presented in the following section. The upper part of the chart in particular may be used

¹ There will also be 'temporary' losses, not shown here, for leaves of absence, continuing education, etc.

Figure 6.1: A Framework for Physician Resource Policy



•Routes through which change can be enacted, without consideration of control over change.

Barer/Stoddart

Figure 6.1 Legend

A Canadian citizens & permanent residents	15	Trainee salaries	34	Regional distribution policies (eg. hospital privileges or 'billing numbers')
	16	Funding of supervisors		
	17	Common licensure standards	35	Regional manpower plans
	18	Public 'return in service'	36	Adjudication rules for reimbursement by provincial medical plans
B Withdrawals from training	19	Provincial college licensure		
C MCCQE failures	20	Incentives/opportunities to encourage specific specialization, or specific locations	37	Patterns of practice review
D Visa trainees			38	Global medical expenditure budgets
E Non-clinical practice careers	21	Royal College training program accreditation	39	Decentralized funding envelopes
F Visa physicians	22	Reimbursement of residents	40	Continuing education programs
G Retirement	23	Overall specialty residency numbers and mix	41	Methods of physician remuneration
H Emigrants	24	Location and size of specific residency programs	42	Physician incomes
1 Admission criteria	25	Reserved/conditional residency positions	43	Relative incomes policies
2 Size of entering class				- inter-regional
3 Reserved/conditional entry places	26	Residency program clinical & contextual exposures		- inter-specialty
4 Conditional bursaries/scholarships	27	Service responsibilities of residents	44	Fee levels
5 Curriculum content	28	Royal College certification examinations	45	Expenses of practice compensation
6 Training sites	29	Recruitment of visa physicians	46	Relative fee structure
7 Sources and amount of funding	30	Scope of practice legislation		- inter-specialty
8 Anticipated community needs, career opportunities, context of practice, etc.	31	Promulgation of practice guidelines		- inter-item
9 Exam MCCQE (LMCC)	32	Quality assurance/audit	47	- inter-regional
10 Immigration policy	33	Competency assurance		Familial, social, cultural and professional support policies
11 Recruitment of visa trainees			48	Public education
12 CIMS			49	Funding of alternatives to clinical careers
13 MCCEE				
14 Provincial College special registers				

in two ways, 'vertically' or 'horizontally'. In the former case, a cluster of policies of different types may be examined for a specific phase of the life-cycle continuum (e.g. all policies affecting Canadian undergraduate medical education). In the latter, policies of a specific type (e.g. funding and reimbursement) may be examined for their points of effect along the entire life-cycle continuum.

Overall, Figure 6.1 illustrates both the large number of places at which policy changes might be introduced into the physician resources sector and the many different types of change which might be introduced into this complex sub-system. It should be kept in mind that both the upper part and (especially) the lower part of the chart are in fact simplifications of even more subtle or detailed processes. It should also be remembered that the identified policy avenues should not be viewed as isolated options. The pursuit of one route almost always has repercussions on or implications for other routes, as emphasized in Chapter 3C and illustrated throughout Chapter 4. To attempt to portray these inter-dependencies and connections in the same figure would have made the figure unreadable (even if we had somehow managed it).

One of our colleagues remarked, "Figure 6.1 may look messy, but that's the way the world is out there". This figure illustrates rather graphically the difficult challenge of policy co-ordination necessary to ensure policy consistency, both 'vertically' and 'horizontally'.²

² Well beyond the scope of this - and perhaps any - analysis is yet another complicating factor. The life-cycles of the individual physicians portrayed in Figure 6.1 are constantly interacting with the career objectives and personal preferences of a variety of other relevant parties such as hospital administrators, medical association representatives, university officials, etc., who are at various points in their own life-cycles. This reinforces the significance of clearly stated objectives for this sector and policy consistency with respect to these objectives.

B. What Could or Should be Done?

Summary

This section contains our development of recommendations and policy options. These were summarized in Chapter 1. In the interest of space, they are not repeated here.

In this section we offer our analysis of options for addressing the priority problems identified in Chapter 4, section C, taking into consideration the over-arching general considerations discussed in Chapter 3. In particular, our judgements have been guided by the explicit statement of policy objectives for the physician resources sector presented in Chapter 3, section a).

We employ Figure 6.1 as a unifying framework along which our policy analysis proceeds. In some cases this analysis points to specific recommendations; in other cases we offer a menu of policy options. These recommendations and options are grounded in our analysis of problems and causes in Chapter 4, section C. As noted in previous chapters, very few of these policy options can be considered in isolation. The success of any specific policy in most cases will depend on appropriate implementation sequencing and linkages. While we offer some preliminary thoughts on sequencing and responsibility in the final sections of this report, we also suggest that considerably more work remains to be done on these critically important aspects of blueprint development. In particular the tasks of ascertaining where consensus exists on the recommendations within this framework, of developing strategies for building consensus where it may not already exist, and of identifying a logical sequencing for policy development and implementation are, in our view, critical next phases in the process of policy implementation.

Undergraduate MD Education

a. Enrolment

Consideration of undergraduate enrolment (size of entering class) makes sense only in the context of the adequacy of total physician supply. We found a reasonably broad consensus of opinion that, despite specific specialty and geographic shortages, little would be accomplished with

respect to the overall objectives of physician resource management through further reductions in Canada's overall population:physician ratio. There is no magic ratio, and experience has shown that specific shortage or maldistribution problems are not going to be solved through recent historical (or current) rates of growth in physician supply. Compelling arguments can be mustered for policies designed to result in significant increases in this ratio, not the least of which is the observation that potential or actual 'surpluses', and their cost implications, were being recognized almost two decades ago by informed observers of Canadian health care (Evans, 1973; Baltzan, 1973; Evans, 1972). We discussed a number of these arguments in Chapter 4.

On the other side, one finds arguments suggesting that uncertainty about (i) advances in clinical knowledge and technological capabilities, and (ii) the future incidence and prevalence of conditions amenable to effective medical intervention, dictate a more cautious consideration of overall physician supply. In fact, as we noted in Chapter 4, some analysts have argued for further reductions in the population:physician ratio in the future.

While we find the latter arguments unconvincing, it is also our view that the conservative middle ground, of the approximate maintenance of the current population:physician ratio, represents an overall supply policy that provides opportunities for the development of consensus on a broad range of other physician resource issues that are of considerable importance to the provision of effective and efficient health care to the Canadian population.

The collection of policy options and recommendations described here, including the present considerations of domestic undergraduate enrolment, are designed with the implicit view that, taken together, they should be consistent with this maintenance of the current population:physician ratio for Canada, for the foreseeable future. While new effective clinical interventions will continue to dictate a changing mix of specialties, we see no indications that would suggest the need for reductions in the aggregate population:physician ratio. Furthermore, it is our strong conviction that maintenance of this ratio will create opportunities for

innovative policy developments in health care and beyond (Evans and Stoddart, 1990) that will provide much greater payoffs in terms of community health and well-being than continued increases in physician supply in excess of population growth.

Domestic medical training is the dominant source of new physician supply in Canada. While there is considerable uncertainty about the precise numbers of graduates of non-Canadian medical schools entering practice each year, Canadian school graduates represent at least 70% of new entrants to practice. We do not suggest that the proportion of new supply provided by Canadian-trained physicians should decline; supply policy should not be restricted to domestic training. But it would be equally short-sighted to attempt to adjust overall supply, while addressing the myriad other specific problems, requirements and constraints detailed in Chapter 4, without including domestic supply within the policy menu.

A target of 1600 new first-year students annually for domestic entry class size is consistent with efforts to stabilize the population:physician ratio. It also seems likely to be a feasible compromise around which sufficient support might be built as long as it is but one component of an overall package of physician resource management initiatives, and it is consistent with the overall policy objectives described in Chapter 3. This would represent a reduction of less than 10% from current class size, would leave total reductions at less than were recommended in the recent Federal/Provincial/Territorial Advisory Committee Report (Canada, 1984), and is not inconsistent with the views espoused by leaders of organized medicine and medical education during our interviews.

While we believe 1600 is a reasonable and conservative figure, we recognize that there may be some who are concerned that this will undershoot the meeting of future needs for reasons unknown at this point. One of the causes of such concern is that Canada has lacked the dynamic information bases and processes, and the collaborative stakeholder environment, that would allow timely and ongoing adjustments. For example, the effectiveness of other policy options, such as compulsory re-

licensure and initiatives directed at GOFMS, may have a direct impact on overall supply, dictating some adjustment to domestic enrolment policy. We discuss these other policy options below. On balance, however, we believe the costs to society of undershooting are in fact less than overshooting, because upward adjustments in domestic capacity have historically been far easier to implement than the reverse, and because overshooting is associated with high social opportunity cost in terms of both other effective programmes and interventions that could be supported and a rigidification of the health policy environment. Interestingly, concern about undershooting was not frequently expressed by those we interviewed.

This specific recommendation should not be implemented without concurrent policies addressing the issues of graduates of foreign medical schools, the funding of Canadian medical schools, and the supply and mix of post-MD training positions. For example, it is important to ensure that policies on post-MD and undergraduate capacities are consistent with each other, and with Canadian policy on the desired mix of generalist to specialist physicians. Each of these related policy areas is dealt with below.

b. Admissions Process

We agree with the view, found in interviews and the literature (e.g. Rabinowitz, 1988) that the characteristics of the entering classes influence the career decisions and practice patterns of the future physician stock. While an in-depth analysis of selection criteria and processes was well beyond the scope of this project, it appears to us that increased emphasis on more broadly-based academic performance, and non-academic life exposures, deductive abilities, and problem-solving and inter-personal skills, would improve the likelihood of solving a variety of other problems identified above, including the proliferation of procedural sub-specialists, and the concentration of physicians in urban centres.

A second admission-related issue is provincial residency requirements. An examination of training location by student's geographic

origin shows clearly that out-of-province applicants are either disadvantaged at most Canadian schools or simply do not bother to apply to out-of-home-province schools, for reasons of cost, family, or perceived disadvantage (ACMC, 1990). The perception (and we suspect the fact) has become an underlying rationale for maintenance of relative provincial capacities. We neither found nor heard any compelling reason for the maintenance of this preferential selection process, and feel that its reduction or elimination would represent an important component of a national strategy on physician resources. In particular, this would facilitate the allocation of the entry class size reductions suggested above.

There are a number of possible enrolment/admission-related policies that might be effective in altering the geographic distribution of physicians. One option, anchored in evidence that home town has considerable influence on subsequent practice location decisions, is to reserve some proportion of entering class positions for students from specific shortage areas. While one might argue that this would compromise the integrity of the admissions process, or be an intrusion into the autonomy of medical schools, the extent to which it is deployed as a policy option ought to be dependent on the relative social priority given to geographic distribution problems, and the actual effectiveness of the policy in solving those problems. The broader issue of a social contract for academic medical centres is addressed below.

A second option would reserve some number of entry positions for suitably qualified applicants willing to make a post-licensure 'rural' service commitment, through contract at time of admission. This is more likely to be effective as a redistributive policy, and has the significant planning advantage of predictability. Potential problems with this approach relate to enforcement of the contract and options for restitution in the event of violation, the potential 'ghetto-ization' of these students, and the allocation across medical schools of these positions. Furthermore, as one interviewee articulately suggested, "the best rural area physicians are those who are there because they want to be, not because they have to be". Nevertheless, we feel this is a geographic redistribution option worthy of serious consideration. Furthermore, because of the urban over-supply situations in much of the country, we

feel there is scope for 'reserving' significant numbers of the entry positions for students willing to make this commitment. This option should, however, be considered as one of a number of policies which might be developed to influence geographic distribution; furthermore, it need not be considered an irreversible policy. The other options are dealt with below.

c. Curricula

The need for rejuvenation of the undergraduate medical curricula offered across Canada will vary considerably, as different faculties have implemented structural and content changes to different degrees during the past decade. Nevertheless, we feel some changes will be necessary at all sites, and that all sites should be striving toward some common principles and elements.

With respect to the content of the undergraduate medical curricula, there is a critical need to ensure that it is consistent with the training of clinicians able to meet population needs. This may mean greater emphasis on mental health, pharmacology, geriatrics and other clinical areas which presently receive relatively less attention (Ball, 1990), along with epidemiology, biostatistics, and principles of clinical decision-making. But the content should also be structured so that it takes explicit account of a variety of broader contextual subjects and issues. Without intending to be exhaustive, we might include medical ethics, the role of medicine in society (including considerations raised in Chapter 3 such as the competing sources of legitimacy, and therefore the complementary roles of governments and the medical profession), the importance of medical and health care as determinants of population health, health economics, and medical sociology and anthropology. Finally, if many physicians are expected to be 'gate-keepers' for the rest of the medical care system, the skills necessary for this role should be identified and taught.¹

¹ As always, the difficulty will be striking a balance between existing and revised content. To the extent that medical curricula cannot be changed to incorporate these new areas, and society places increasing importance on physicians with these exposures, the criteria on which students are admitted may require re-examination.

The locations in which the curricula are delivered are also extremely important for a number of other policy problems, specifically geographic and specialty distribution. There is a critical need in Canada for movement away from the concentration of training in urban, tertiary-care hospitals. This will require the development of affiliation agreements with a much broader range of institutions, community sites and clinical faculty, perhaps not at every academic medical centre, but certainly at enough that new cohorts of graduates do not continue to want to concentrate in urban tertiary-care hospitals. Other sites will include not only community hospitals, but community mental health centres, and ambulatory care practices, in both urban and rural settings.

The recent ambitious initiative of Associated Medical Services, called "Educating Future Physicians for Ontario", seems an important step in the right direction, although it will be some time yet before its impacts can be appraised (see AMS, 1990 and Ontario Medical Review, 1990, for descriptions of this project).

d. Provision of Information to Medical Students

One of the more interesting initiatives developed in Belgium was the creation of a database containing information of importance to students choosing specialties and practice locations. As a means of aligning such career choices more closely with the needs of Canadians, we recommend that medical students have access to information including, at least, projected national and provincial post-MD specialty training position availability, regional human resource plans and population socio-economic, demographic and disability/health status profiles, physician practice loads and incomes, availability of diagnostic and treatment facilities, and other referral resources. While we recognize that all of these types of information are not presently available, students should be provided with what exists, and we should strive to develop the capability to provide the rest (on this, see our recommendations below in the section on information creation and provision).

Of at least equal importance is the provision of information on the likely context of practice for coming graduates. Included in this might

be information on current quality assurance and competency assurance activities of hospitals and provincial licensing authorities, synopses of recent planning and policy documents published by Ministries responsible for funding health care, information on current investigations or Commissions, and information on the sources of, and allocative processes governing, public expenditures.

Graduates of Foreign Medical Schools (GOFMS)²

If GOFMS continue to enter Canada to solve particular training programme, specialty and geographic problems, and perhaps more importantly continue to be viewed as the solution to such problems, there will be no incentive to create situations attractive to Canadian graduates. One of the interesting ironies in this situation is that those who have been the most vocal opponents of reductions in domestic medical school class sizes and post-MD training opportunities have often argued that it makes no sense to implement such reductions while leaving the GOFMS situation alone. Yet at the same time these stakeholders have played, and continue to play, critical roles in the maintenance and even expansion of the GOFMS complement in this country.

The relatively unfettered entry into practice of GOFMS would not pose a problem were it not for the facts that (i) it is inconsistent with a policy of maintaining the current population:physician ratio, (ii) it would end up increasing the proportion of physicians practising in Canada who are non-Canadian-school graduates, particularly if our domestic training recommendations are adopted, and (iii) it would leave a variety of other physician resource problems unsolved, and could exacerbate other existing problems. Therefore we have concluded that some effective policy development addressing sources of GOFMS is essential if the overall objective of maintenance of a constant population:physician ratio is to be achieved. If nothing else, there is no compelling reason to rely solely on adjustments to domestic education to achieve this objective.

² Readers may wish to remind themselves at this point of the ten categories of GOFMS defined in Chapter 4, section C.

This is clearly one area of policy where a national strategy is not only feasible, but is probably the only way of achieving the desired objectives, because it involves federal (and Québec) immigration policy, and provincial Ministries of Health, training establishments and licensing authorities.

At the outset we would observe that a situation in which there are no entrants into Canadian physician supply from medical schools outside Canada strikes us as being neither desirable nor possible. There are major disadvantages to creating an insular medical community. Canadians should continue to be able to reap the benefits of access to graduates of outstanding medical training facilities outside of Canada (whether they be Canadians or non-Canadians), and some ethnic communities may (at least in the short run) be better served by GOFMS of like ethnic background than by Canadian graduates. Furthermore, physicians from abroad will continue to enter because of over-arching immigration policies.

But Canadians can and should control the rate of entry into clinical practice of GOFMS, simply because of the nature of the Canadian health-care system. With a publicly funded system, publicly elected representatives have a responsibility to the Canadian population to deploy public funds responsibly across a wide variety of public service needs. No Canadian is guaranteed the right to a particular education followed by practice in the profession of his or her choosing; new Canadians should be treated accordingly, and offered opportunities to train for and practice medicine only in accordance with Canada's requirements for their skills. Furthermore, visa trainees should, to the extent possible, be allowed entry for training purposes only (not to fulfil service requirements of under-subscribed residency programmes).

The FPTACHHR has published two recent reports that offer recommendations and information in this area. The first (Canada, 1986) was, in fact, a joint report of that Committee and the National Committee on Physician Manpower. It represented, therefore, the collective wisdom of an extremely broad cross-section of experts, including representatives of provincial Ministries of Health and of Health and Welfare Canada, provincial licensing authorities, Canadian medical schools, Canadian post-

MD trainees, the Canadian Medical Association, and Employment and Immigration Canada. This working group was able to analyze the situation in far greater detail than is possible here; with few exceptions, we find that their recommendations are as compelling today as they were then, yet we were told that there has been little policy activity as a result of the report! GOFMS were also examined in the specific context of post-MD training, in a more recent FPTACHHR report (Canada, 1990b).

We feel that a three-pronged general approach is necessary in this area. First, since many GOFMS are still entering Canada to fill selected training or service requirements, efforts in other policy areas should be developed to reduce these sources of 'need'. Many visa trainees, for example, enter Canada either to fill hospital-based service needs, or to fill post-MD (particularly residency) training positions that Canadians seem uninterested in filling. This requires a serious examination of the blurring of education and service provision in teaching hospitals (a subject which we address below), and the development of short- and long-term incentives intended to make particular specialty choices more attractive to Canadians (discussed in the context of specialty shortages below). Similarly, many visa physicians enter to fill geographic needs, in locations unable to attract Canadian graduates. Here again the appropriate policy responses should be some combination of programmes intended to ensure that more Canadian physicians move to (or at least through) these less well-supplied areas, and the development of physician-alternatives for servicing specific geographic needs.³ Other selected GOFMS may enter to fill highly-specialized service requirements; an alternative would be the support of outstanding Canadian graduates to seek the necessary training abroad.

Thus, the first set of strategies for addressing the GOFMS issue are not direct GOFMS policies but rather policies intended to reduce Canadian

³ In this respect, we find that the complaints from some quarters that reducing domestic training positions will simply result in a higher proportion of licensed physicians being GOFMS rings hollow. After all, if Canadian students continue to demonstrate a general unwillingness to practice medicine where the Canadian needs for medical practice are, then one may be forgiven for asking why we should continue to train them.

reliance on GOFMS. These are clearly longer term policies, that concurrently address a variety of issues, including GOFMS. But immediate initiatives, to begin movement in the right direction, are essential to the eventual reduction of Canadian reliance on GOFMS. We discuss these issues of implementation and staging in more detail in the final sections of this report.

A second component of a GOFMS policy package must be a more concerted effort to ensure that visa trainees and visa physicians who enter Canada under restricted (either training or geographic) circumstances abide by the conditions of their entry. This will necessarily entail a more intensive approach to monitoring, and a more hard-nosed effort at enforcement of conditions. But since these physicians are entering Canada only to receive training for the purposes of returning to their originating country, or to satisfy temporary Canadian training programme or geographic service requirements, we could not find (nor were we offered) any compelling reasons that such individuals should be permitted to 'leak' into overall, geographically-unrestricted Canadian physician supply.

Avenues for extending residence (e.g. fellowships for visa trainees) should be seriously examined by all provinces to ensure that they are, in fact, service or training situations that cannot be satisfied in any other manner. As for visa physicians, all entry visas should be time-restricted, and renewed only if the original conditions of entry continue to be satisfied (e.g. the physician is continuing in a geographic location where a requirement remains!). Assuming other policy initiatives offered in the present document are successful over time, one should anticipate the complete elimination of situations of perpetual visa renewals until residency status is granted.

The third and final strategic policy component is to recognize that there are going to continue to be significant numbers of GOFMS entering Canada through non-selected routes because of non-health-related Canadian policies (e.g. family reunification and refugee policies). Certainly, a core component of a national strategy for physician resources must be immigration policies for the country that are as consistent as possible

with the country's physician resource objectives. Certainly it seems unlikely that physician resource policy will be a major influence on Canada's policies affecting families and refugees in the future. If anything, these will represent increasing sources of potential physician supply. This source of potential supply is fundamentally different from the visa category, because these individuals are, or become, Canadians. Here we believe that provinces must be much more creative in finding avenues to deploy such individuals in situations presently filled by selected visa entrants. Some provinces have established distinct post-MD training opportunities for these individuals. Perhaps access to those training streams might be contingent upon the provision of limited-time public service in designated situations upon graduation (as we understand the case to be presently in Québec). The limited pre-internship slots should not be available to anyone who did not declare his or her GOFMS status at immigration. Perhaps non-selected GOFMS could be employed in physician-assistant-type situations (after appropriate on-the-job training) to satisfy some hospital service requirements presently met by post-MD trainees in situations where the number of graduates of those training programmes exceeds Canadian needs; such experience might be taken into account in consideration for access to pre-internship or designated GOFMS internship training.

With regard to access to medical practice for non-selected GOFMS, provincial policies appear to have evolved as either pre-internship training requirements and capacity (e.g. Ontario), and/or limited designated internship positions for these GOFMS (e.g. Québec). Each of these approaches appears to have survived legal challenge. What has not emerged is a national strategic plan for non-selected GOFMS. Provinces appear to be developing individual approaches, without any sense of what the aggregation of approaches might imply for overall supply, or for inter-provincial distribution. We feel that this is a potentially fruitful area for the development of a national strategy, for three reasons. First, these individuals have been granted equivalent-to-Canadian status as a result of immigration policy. They are a potential Canadian resource, and should be viewed as such, rather than as a resource

or problem only for the province in which they settle initially. Second, it would seem to make sense to ensure inter-provincially consistent approaches. Third, it may be that provinces working collaboratively can develop an equitable and consistent way of providing training sites and funding that would best satisfy other physician resource policy objectives such as the meeting of overall supply targets, and the correction of geographic supply imbalances.

On the former, we cannot offer specific recommendations regarding the appropriate number of non-selected GOFMS who should be provided annually with Canadian post-MD training, because the number would be dependent on the implementation, and success, of the wide variety of other policy initiatives proposed here.⁴ Certainly the more successful we are in reducing or eliminating the need for selected GOFMS, the more latitude there will be for providing training opportunities for the non-selected group. Above all, however, any entry process must ensure that the levels of clinical competence of non-selected GOFMS entering medical practice in Canada are equivalent to those of the Canadian graduates.

As for geographic imbalances, provinces might consider collaborative site/funding models for the post-MD non-selected GOFMS training that would

⁴ In this respect, as we noted in Chapter 4, the FPTACHHR (Canada, 1990b) raises the 'spectre' of increasing numbers of our category (7) and (8) GOFMS (that is, Canadian citizens or permanent resident GOFMS) seeking post-MD training in the United States. On the strength of letters from Health and Welfare Canada "provided to date without restriction" (our emphasis) (ibid.), testifying to the need for their clinical services in Canada, these GOFMS head south "with the expectation of gaining licensure in Canada upon their return" (ibid.). It was beyond the scope of our investigation to look into this particular phenomenon in greater detail. It should, in any event, be addressed by a shift to a more selective issuance of letters to the U.S. Educational Commission for Foreign Medical Graduates. The process of, and development of criteria for, issuing such letters should become part of the national physician resource strategy implicit in our entire set of recommendations. In fact the FPTACHHR has already developed a set of criteria which would have the effect of restricting the issuance of such 'blanket need' letters (ibid.). These should be re-examined, and implemented where appropriate and where such has not already taken place. To do nothing could seriously undermine the foundations of the overall supply policy suggested in this report, by leaving a 'floating variable' of potentially increasing importance.

improve the likelihood that graduates end up practising in areas of relatively greater need. Possible options might include an inter-provincial/territorial funding pool, and a process for deciding which provinces or territories will actually provide the physical training capacity (with the training then being funded from this pool). We would suggest that the present approach, of each province providing a few designated slots for non-selected GOFMS, may not be optimal, either in terms of quality of education for the students, or in terms of educational economies of scale. Furthermore, it appears that some of the provinces that have taken the lead in providing such training opportunities (e.g. Ontario, Québec) are also among those provinces who least need additional physicians entering practice!

With respect to the second component of the three-pronged strategic approach (enforcement of entry conditions), a number of options and issues bear further investigation. Certainly the joint report on GOFMS (Canada, 1986) identified selected visa trainees as the major source of GOFMS additions to Canadian physician supply. Furthermore, that report suggested that there was no practical legal avenue for enforcing return-to-country-of-origin commitments. Thus, it seems unlikely that much more (that would be acceptable to Canadians and consistent with policies governing immigration of individuals with other skills) can be done through the immigration process to stem this flow. One might have both immigration authorities and the employment or training site require that the entrants sign strong, unequivocal statements about intent to return, but precedent suggests that these would be only moral, not legally binding, statements of intent.

At the very least, further investigation of possible avenues for ensuring that individuals who fill positions funded by host countries return to those countries upon completion of training would appear to us to be a priority. There is, in our view, a distinct difference between GOFMS recruited into Canadian-funded post-MD training positions who decide they would like to stay in Canada after completion of training, and GOFMS sent by foreign countries for training, to fill post-MD positions funded by those countries, for the express purpose of providing clinical skills

to those countries. Other provinces might explore the details and success of Québec's policy of tying the availability of post-MD training positions for foreign countries at particular schools to the 'record of return' of trainees from those countries.

While there may be further scope for tightening the monitoring and enforcement of visa entry conditions, however, we suspect that national control of entry of selected GOFMS into 'permanent' physician supply must derive largely from domestic licensing, funding, training, and other physician resource policies. Some progressive steps are already being taken, not the least of which would appear to be the recent initiative (spearheaded by the Medical Council of Canada) to eliminate enabling certificates which were providing a means of circumventing pre-requisites for provincial licensure.

There would appear to be a strong case for rationalizing the funding of post-MD training positions, including those involving GOFMS, so that there is some overall (at least provincial, if not national) control over the total funded positions, the specialty mix of those positions, and the funding sources for them. The present situation in most provinces, of positions being funded from a variety of sources for a variety of individual institutional reasons, under the overall management of no one, seems to serve the objectives of many individuals and institutions, but fails to serve those for whom the training system is ultimately designed - the Canadian public. We do not feel that the present post-MD funding situation in most provinces is one that should be emulated or allowed to persist. We discuss this in some detail in the appropriate dedicated section below.

There are undoubtedly a variety of other approaches that would quite successfully ensure that visa trainees either leave the country or leave the practice of medicine after a reasonable period of training. (On this, we would agree with the FPTACHHR (Canada, 1990b) that the Employment and Immigration Canada policy of providing a one-year education-related employment entitlement to visa trainees upon completion of their formal training may be counter-productive from a Canadian perspective, and that, at the very least, there should be close monitoring, by that agency, of

the record of exit from Canada, of physicians who avail themselves of this option). Similar approaches could be applied to ensure that visa physicians either return home or continue to practice only under the restricted conditions for which they are granted entry. Options here include the issuance of restricted (and time-limited) licenses by provincial licensing authorities, or restricted rights of access to provincial medical plans. On the latter, the successful legal challenge of British Columbia's Bill 41, should not, in our view, be seen as an impediment to policies designed to enforce written commitments of visa physicians (in part because there is compelling legal opinion suggesting that the judgement in that case was seriously flawed and should not be viewed as binding on other provinces (Lepofsky, 1989); and in part because such policies would not be intended to affect all physicians, but rather as an 'enforcement' tool to ensure that written contracts of visa physicians are upheld).

The general guiding principle should be that, if visa entrants decide to seek permanent residence in Canada, they should not be afforded automatic access to provincial medical insurance plans. Of course it is much easier to suggest such a policy than to enforce it. Visa trainees may, for example, complete a residency training programme, then perhaps undertake a two-year fellowship, at the end of which they have been in Canada for six or seven years, are highly valued by the institution where they are based, and are meeting a regional specialty need. They are probably as close to "immovable objects" as one is likely to find within physician resource policy. But there are many more situations that are far more clear-cut, such as visa physicians who enter under geographically restricted circumstances but somehow find their way into urban settings.

Of course the problems posed by attempting to enforce exit from Canada of individuals granted temporary visas ought to be a strong motivation to focus on the first of the three strategic components, that being the reduction of situations "requiring" visa entrants.

In short, the policy options for addressing GOFMS sources of new supply should be a package of initiatives (i) to reduce the need for selected visa entrants (through reviewing the population's need for some

of the positions presently filled by these individuals, and then by encouraging more Canadian graduates into the necessary situations presently satisfied by visa entrants); (ii) to monitor and enforce the conditions of entry for selected entrants; and (iii) to use non-selected (Canadian and permanent resident) GOFMS entrants more creatively than has been the case to date, to further reduce the need for selected entrants.

Policies intended to reduce Canada's needs for selected GOFMS are considered throughout the remainder of this chapter. We have attempted to provide some direct policy options for addressing the inflow of selected GOFMS and the entry into medical practice of non-selected GOFMS. In this respect, we might add that it is our view that, as between these two categories of GOFMS, preference should be given to non-selected GOFMS simply because they are Canadian citizens or permanent residents to whom the country has made a variety of social commitments. This is not to suggest that these commitments should include either unlimited publicly supported access to the clinical training necessary for licensure, or . automatic rights to practice medicine in Canada. Rather, opportunities for moving non-selected GOFMS into situations presently filled by selected GOFMS (particularly visa trainees in residency programmes), or into situations not requiring licensed physicians but where a medical background and training would be beneficial, should be explored at a national level.

Finally, we note that there are a variety of quite specific recommendations in the 1986 FPACHHR report on GOFMS with which we agree, but which we see no point repeating here. We recommend that the report be revisited by the Conference of Deputy Ministers of Health in conjunction with our analysis and recommendations above, with an eye to reviewing the current relevance of, and progress on, the recommendations in the 1986 report.

Post-MD Pre-Licensure Training

We offer analyses and options in two generic policy areas under this heading. These are (a) the numbers of post-MD training positions available and the nature of the clinical exposures provided by those positions, and (b) the development of return-in-service upon licensure policies as a means of addressing geographic distribution and other

service-related problems.

a. Numbers and Clinical Exposures

Funded internships allocated through the Canadian internship matching service should continue to be treated as part and parcel of Canadian MD training programmes. The annual number of funded post-MD pre-licensure positions for graduates of Canadian medical schools should approximate the number of Canadian medical school graduates times the length of pre-licensure training (presently one year, soon to be two years in all provinces).

The clinical settings provided for internship training would appear to require major overhaul. Most physicians do not end up practising in environments similar to those in which they receive most of their internship training exposure (tertiary-care hospital environments). Yet the ethos of most medical school environments is such as to promote procedure-based, and technologically-oriented medicine which can be readily compartmentalized into sub-specialties, which often requires relatively less clinical judgement (as distinguished from technical skill) than is (or should be) demanded in the majority of actual practice situations, and the majority of which never takes place outside academic tertiary or quaternary institutional settings. It is through these atypical and compartmentalized environments that most rotating interns pass on their way to licensure.

This results in licensees who are ill-prepared to practice in situations other than those with which they became familiar during medical school and internship. The process encourages, and rewards, professional choices at odds with public needs. But even those who do choose to practise in specialties or locations of relatively greater population need, too often find that their education has left them 'naked and vulnerable'. As one interviewee put it, "if you want a different kind of physician, you have to train them in the real world".

The physical distribution of post-MD pre-licensure training positions should be re-examined, and then re-aligned, probably at a provincial level although the overall mix of settings might be best determined inter-provincially. We heard of the need for many more non-tertiary care

hospital settings, and for relatively much more exposure than at present to traditionally under-emphasized areas of importance such as chronic care, post-operative care, urban ambulatory care, mental health, and rural area practice. It cannot be overemphasized that we heard complaints that even graduates of family practice programmes which were making some effort to provide additional non-urban practice exposures felt ill-prepared for rural area practice. We found this particularly disturbing in light of Evans' (1973) early 1970's observation that medical schools were beginning to shift the emphasis away from specialized hospital-based service training. Yet eighteen years later this continues to be identified as a major and significant problem.⁵ It is difficult enough to attempt to encourage graduates to establish rural lives and practices. If they feel unprepared to meet the professional challenges in such situations, they are certainly going to be even less inclined to make some of the necessary personal sacrifices.

Solutions to this problem are not, of course, independent of solutions to other problems such as the provision of clinical service by post-MD trainees, considered below. But it would seem that the imminent shift from a one-year to a two-year pre-licensure requirement affords a (perhaps unique) opportunity, not only to reverse some of the more perverse incentives and irrational mixes of clinical experiences inherent in present pre-licensure training, but perhaps even more importantly to begin a fundamental and essential re-building of the medical training

⁵ Of course this is an equally serious consideration with respect to post-MD residency training, which we consider below. In both cases we recognize that there is more to solving this problem than physical re-location. Program re-structuring may require some faculty re-location, or the negotiation of faculty relationships for clinicians not presently found in great numbers in academic 'environments'. But this may have a variety of benefits, including a shift in the ethos of the academic environment. Finally, the success of any such relocation policies will hinge on the willingness of students to take up opportunities at the available settings. While we cannot pre-judge whether this represents a potential problem we would observe that any adjustment difficulties are likely to be short-lived. Students already within the training process during the period of adjustment are likely to be more resistant than future entering cohorts, for whom the availability of locations and opportunities will be accepted as 'part of the landscape'.

ethos. At the very least, the extra pre-licensure internship period should be used to ensure that medical students receive significant exposures in areas of need (e.g. chronic care, rural area practice) rather than to provide more opportunities to specialize.

On this point, we would suggest that everything possible be done to ensure that pre-licensure post-MD training requirements end up (at the end of this process of change) being consistent across provinces. Failure to achieve this fundamental requirement would call into question the feasibility of a national strategy on physician resource policy. Inconsistent provincial standards are likely to induce interprovincial flows of trainees that may not align with relative geographic requirements, and may subsequently have adverse effects on attempts to improve the geographic distribution of physicians. For example, if some provinces in relatively short supply decide that they could improve this situation by maintaining the current one-year pre-licensure requirement, MD's who might otherwise have sought pre-licensure training in that province might now seek it elsewhere, to ensure that they emerge with an inter-provincially portable license. Since physicians tend to practice where they train, this could adversely affect the distribution of physicians.

b. Return-In-Service Policies

One set of options for alleviating a variety of physician resource problems would involve a requirement (which would be known to entering students at year 1) for a period of paid public service, either immediately prior to, or upon licensure. Such policies would need to be carefully co-ordinated with the options we describe below for addressing teaching hospital specialty service requirements, so as not to adversely affect MDs' decisions regarding specialization.

There are a number of specific models that would need to be examined in more detail, although a combination of options is likely to best meet the numerous problems described earlier. Possibilities might include rural area service for a period of time inversely proportional to the 'remoteness' of the area (would address geographic distribution problems);

or service as surgical assistants or emergency room staff in urban or rural hospitals, under salaried arrangements (would partially address hospital service problems, particularly in urban teaching units, and could reduce fee-for-service costs in these areas).

A basic principle underlying these options is that none of them would involve fee-for-service remuneration; they would be, and be seen to be, public service in return for public education⁶ on the way to practice in a publicly funded health-care system. A second principle should be that none of the public service arrangements would be in areas or situations of perceived excess, or even adequate, supply (e.g. urban general practice). A third principle is that the public service opportunities would require ongoing monitoring and adjustment to new situations of relative need.

Residency Training and Specialty Certification

In Chapter 4 we suggested five fundamental problem areas relating to residency training: (a) overall number of residency training positions; (b) the specialty mix of the residency training positions; (c) the organization and location of the training programmes; (d) the funding of post-MD residency training; and (e) the clinical exposures provided to residents. Analyses of options for addressing each of these problem areas follow.⁷ Once again, however, this organization is for convenience only; the areas are inter-related.

a. Overall Number of Residency Training Slots

We proceed from the fundamental premise that instruments ought to align with targets. Because residency training positions are intended, first and foremost, as the instrument to complete the education of Canada's future medical specialists, then it follows that the number of residency positions funded in the country for these educational purposes

⁶ This leaves open the question of the nature and extent of public support for that education.

⁷ We treat b) and c) together, because many of the policy options bear concurrently on both.

should be determined through consideration of only three factors: the number of graduates of Canadian MD training programmes; the desired mix for Canada of general/family practitioners to specialists, and the post-MD training periods required for each type of training. We suggested in Chapter 4 that the current complement of positions funded by Ministries of Health alone is well in excess of the number that this approach suggests. Furthermore, if our recommendation on undergraduate enrolment is adopted, then even with the universal adoption of a compulsory two year pre-licensure programme, the number of positions presently funded by Ministries of Health will exceed the number required for educational purposes.

Thus we recommend that the overall number of residency positions funded in Canada for graduates of Canadian medical schools be brought into line with the number of positions required for the completion of their training. Assuming adoption of the two year post-MD pre-licensure training requirement by all provinces, an undergraduate entering class of 1600, 3% attrition during undergraduate training, a 50:50 split of those undertaking two years of pre-licensure training and those going on for Royal College specialty certification, and an average post-MD training period of 5.5 years for the latter, the positions required for specialty training (beyond the first year of post-MD training) would amount to 3492 (776×4.5). There are presently about 4500 specialty training positions (excluding family practice) funded by provincial Ministries of Health alone (CAPER, 1990).

Of course an additional 1600 positions (allowing some room for upgrading and a third year for a small proportion of trainees) would be required for those completing the two-year family practice requirement, and 776 post-MD year 1 positions would be required for those proceeding to Royal College accredited specialty training. But this generates a total of about 5870 positions, approximately 10% less than the present 6531 Ministry-funded positions, despite the fact that the uniform two year pre-licensure requirement (which is built into this calculation) is still some years off.

While we recognize that this is very much an illustrative 'back-of-the-envelope' calculation, and that some of the assumptions may not turn out to be as accurate as one would wish in a more formal ascertainment of the necessary post-MD complement of positions, we believe the 5870 figure is based on a sufficiently conservative set of assumptions to be able to support the recommendations that follow. Certainly we heard nothing that would suggest that adjustments to the key assumptions, within likely ranges, would alter the fundamental conclusion that provincial Ministries of Health are presently funding many more post-MD residency positions than can be justified by the educational requirements of the Canadian training system.

At the very least this suggests that a shift to a standard two year post-MD pre-licensure training requirement should not imply a need to increase the present complement of Ministry-funded post-MD training positions. But if the size of the training establishment is to be brought into line with the training requirements, there would seem to be compelling justification for 'deep' cuts (in the order of 10% by the time the two year requirement is in place) in the overall numbers of post-MD training positions funded by provincial Ministries of Health in Canada.

This recommendation is contingent, however, on a number of other recommendations that arise out of an important corollary to the thesis that the number of post-MD training slots should align with only educational needs for Canadian MD's. The corollary is that needed clinical services presently provided by residents, but which are not essential to the training experience of the residents, must be provided by some other configuration of health-care personnel. Here the target or objective is the provision of service; we should not assume without critical examination that the most efficient way of providing the service is through the use of residents and their clinical supervisors.

We recommend that specialty training programmes be examined to ascertain the extent of the clinical exposure that is necessary to the education of the resident, as distinct from clinical service provision by the resident. This will vary by specialty and by training site, but is a necessary component of the process of re-aligning training slots with

training needs. The analytical approach to this review should be one of parcelling out the residency experiences into: a) clinical activity that contributes directly to the education of the resident; b) clinical activity that does not contribute to the education of the resident (either because it does not relate to clinical situations which would face the certified specialist in that area, or because it is redundant) but which nevertheless can only be provided by individuals with equivalent to the resident's level of clinical skill; and c) clinical activity that does not contribute to the education of the resident and, furthermore, could be performed by someone (medical staff, resident, intern, medical student, other health professional) with 'lesser' clinical skills. While we recognize the practical problems inherent in attempts to separate education from service, and understand that all clinical training will have some service benefits,⁸ it became clear to us through interviews and our review of the literature that there are significant amounts of service provided by residents that have absolutely no educational content or purpose.⁹

The success of attempts to rationalize the number and mix of residency positions funded in Canada is critically dependent on this fundamental re-alignment of means and ends, because a significant proportion of post-MD training is, in fact, devoted to the provision of clinical service. Furthermore, significant shares of this service provision are provided by GOFMS, recruited specifically to fill post-MD positions, but largely for the purpose of providing service! These then become unplanned, and often unneeded additions to physician supply (see above, on GOFMS). It may be too much to expect that this review of activities will come about without some clear impetus. A clear inter-provincial commitment to moving toward the target of 5870, and a binding timetable for its achievement, is likely to provide that impetus.

⁸ As Maudsley (1986) notes, "learning by doing under supervision is the essence of clinical education" (p. 449).

⁹ Maudsley (1986) is very articulate on this point as well.

Service needs that would be left unsatisfied as a result of the systematic examination of the clinical content of residency training programmes and the rationalization of the numbers of funded positions will need to be met through one or more of a wide variety of possible delivery models. Here it is not clear that there is any single preferred option, so we offer no specific recommendation. Rather, we suggest that a number of options be examined. Without intending to exhaust the possibilities, we note that these might include:

- (1) creation of a new category of health-care personnel, the hospital registrar, or senior house staff, or.... Such positions could be filled by any licensed physician with the necessary training (including possible upgrading of skills). But we are not suggesting the creation of a whole new set of positions into which hospitals would recruit visa physicians. In particular, such positions should be rather attractive options for some proportion of newly certified specialists. If positions prove difficult to fill initially, there are a variety of adjustment processes or policies that could be harnessed to alleviate such 'shortages', including adjustments to methods of payment or to income levels, and to methods of recruiting. If all else fails (and we emphasize that this is very much a 'last resort' approach to establishing this new category of hospital staff), all Royal College certificants might be expected to provide some period of unsupervised staff service (including, perhaps, intern and resident supervision) in sites with clinical service requirements formerly filled in part by residents. The intent would be that these staff would provide the services requiring specialist skill but that were not contributing to the further education of the residents where residents are still in place. They would also provide services in sites where residents are no longer present because of residency mix and site rationalization (see points b and c immediately below). In order to compensate for the extended period prior to independent practice, resident stipends might be increased, and reasonable registrar remuneration would be essential. This latter option has a number of attractive characteristics. First, it offers the potential of providing significant amounts of the service presently provided by residents. Second, it will facilitate the rationalization of the funding of services provided by residents (see below). The major disadvantages of this option are that it may be viewed as 'coercive', and that the extension of the pre-independent practice period might make it more difficult to attract students into residency training. But if this policy is implemented in conjunction with the options outlined above (and below with respect to geographic distribution) regarding public service in areas of need for all new licensees, this should not pose a significant problem provided that the policy development in these areas is integrated carefully.
- (2) development of upgrading opportunities that would facilitate the hiring of urban general practitioners to hospital staff positions.

These physicians would be primarily intended to provide those services not essential to the preparation of residents for specialty practice. This option has a number of apparent attractions. First, it would remove sources of urban physician oversupply and sources of pressure on fee-for-service practice plans. Second, the upgrading might be a reasonable activity to be taken on by medical schools which would be training fewer undergraduates and post-MDs. Third, this would provide opportunities for paid skills upgrading for general practitioners, and would provide attractive options for those seeking non-fee-for-service practice environments. A disadvantage of this proposal is that it replaces the training of residents with a form of continuing education for licensed physicians. The proposal would thus also require the development of competence testing tailored to the situations in which the upgraded general practitioners would be working. Another potential disadvantage of this option might be the practical problems of maintaining intra-institutional income equity, and developing reasonable lines of accountability, while at the same time attracting energetic general practitioners to these hospital-based situations. On balance, however, we feel the option has merits, and is at least worthy of more detailed development and testing. Although it may appear to be a costly proposal, there is no obvious reason why it should be more costly than present arrangements, and every likelihood that it would turn out to be less costly.¹⁰

- (3) there is presently a resource that may be significantly under-utilized because of the manner in which medical schools and their affiliated teaching units are funded. We refer here to the clinical supervisors of post-MD trainees, whose interest in those trainees is as much financial as it is educational. If the trainees represent a significant source of service income for the supervisors or their institutions, yet the trainees themselves provide significant shares of the service, it stands to reason that a less service-driven model of funding for education-related activity, and less supervisory responsibility (because more of the country's service needs would be met by individuals not in training programmes), should mean that these clinical faculty could devote more time to providing service, and being paid for services provided personally. We return to this issue below, in our discussion of funding for post-MD training programmes.

¹⁰ On the clinical practice side, general practitioners paid fees-for-service in the community are removed, and remunerated through some other means that would not require the payment of 'overhead' to the practitioner. On the training side, there would be fewer residents being trained and, although one might require more general practitioners than the residents they would be replacing, this would to some extent be a 'one-time' training adjustment. The costs of 'maintaining' the practitioners during upgrading would exceed the resident salaries, but the periods would be relatively short, and these costs could be amortized over the active practice life of the practitioner. Of course this provides only the bare outline of a model, and a more detailed assessment of costs and benefits would need to precede the implementation of any such plan.

- (4) we heard claims in interviews that many services provided by residents not only do not require or enhance their clinical skills, but do not require the skills of a licensed physician. Consideration should be given to creating staff positions for other health-care personnel to provide these services.
- (5) in the short run, many of these needs may continue to have to be provided by GOFMS. But because it will no longer be training positions that are at issue, the need for visa trainees should decline. In their place, provinces might recruit visa physicians on strictly-enforced limited-term staff contractual engagements, and should continue to explore ways of utilizing non-selected GOFMS in some of these situations. The use of GOFMS should not, however, be viewed as a permanent solution. Some combination of (1) through (4) above, plus other possible options, should reduce the need for GOFMS in relatively short order.

These five options all entail the provision of services which are presently provided by medical residents. They are provided in sites which may not host residents after residency programme rationalization, or they are services which do not contribute to the training of residents by enhancing or using relevant specialty skills and knowledge. We note in passing that these suggested options seem consistent with the recommendation from a recent examination of the implications of reductions in the number of funded residency positions (MacLeod and Ryten, 1990). The authors noted that "an increase in residency slots is not a panacea for solving all perceived needs for residents", and recommended that "funding be sought to conduct a survey of service needs and the use of alternatives to residents for the provision of service".

Finally it is important to note that considerable concern was expressed about the proclivity to increase the length of residency training programmes. Our calculations above of the number of funded positions necessary for educational purposes do not attempt to adjust for all future changes in lengths of residencies. In light of the apparent extensive provision of non-education-related service by residents, we would suggest that initiatives to increase the length of accredited programmes require serious examination. While accreditation is clearly the responsibility of the national Colleges, the financial support of the implied training requirements is not. Mechanisms need to be developed to

ensure that decisions regarding the length of accredited programmes are taken collaboratively, by the Colleges, the training institutions and the funding agencies. Any extensions should be instituted only after the systematic evaluation of the educational content of all training programmes recommended above.

b. Specialty Mix, and Location, of Residency Training Positions

In his 1973 address to the Association of American Medical Colleges, John Evans observed that "the output of specialists of a given type seems to relate more closely to the prestige of the specialty and the momentum of the residency training programme than to the need for its products" (Evans, 1973, p. 980). Our synopses of problems and potential solutions identified in interviews suggest that little has changed.

As we noted in Chapter 4, the problem here is straightforward. We heard repeatedly that the mix of residency positions in Canada today was the product of (in about equal parts) historical accident and the relative persuasiveness of department heads and residency programme directors. We were given a number of examples of clear mis-alignment of population needs and specialty training mix. There seem to be two issues for policy-makers and education stakeholders: 1) the development and ongoing maintenance of information systems that will provide a more reasoned structure on which to base the national mix of training positions; and 2) the development of organizational mechanisms for converting the information into adjustments in the mix of funded positions.

The development of a reasonable, and reasonably acceptable, solution to this problem hinges in part on the restructuring of academic medical centre funding (see below), and in part on the replacement of the current institution-specific systems of bargaining among department heads, deans and residency programme directors. New co-ordinating bodies (either nationally or regionally) that would have responsibility for the oversight of all residency positions funded from all sources, will be necessary. Furthermore, funding and allocation mechanisms will need to be developed

that recognize individual provincial funding responsibilities.¹¹ But this process will also depend fundamentally on the development of better information systems.

On the latter, we see the need for a national modelling capability that would take information on the age and sex structure of the existing practising physician supply, by type of practice or specialty, and information on the practice life-cycle of different specialties, to project to various future dates the likely specialty-specific supply in the event of no new sources of supply. Provinces and territories could then feed into this modelling process their projections of needs by specialty at those same future points, taking into account factors that they collectively felt were relevant (e.g. rural needs for generalist specialists, present urban oversupplies of general practitioners, emerging new effective technologies), and using whatever forecasting methodologies they collectively felt to be most appropriate (e.g. aggregations of estimates generated by local planning bodies; needs-based estimates developed at the provincial level). While we do not claim to have the specifics developed, we do believe that it is possible to develop a forecasting process to which all provinces would subscribe and, more important, that such a process is essential to an improved correspondence between training programme mix and population needs. Out of this process would emerge desired specialty training mix, which would be subject to ongoing adjustment.

We would see the modelling effort becoming more sophisticated over time. But the lack of such a capacity at present must not be interpreted as a need to continue with the current anarchy in the organization of residency training. We heard enough common complaints about shortage specialties, and about highly technical training programmes that were training individuals because they were high quality programmes rather than

¹¹ For example, one cannot expect an individual province to provide the necessary additional funds if the centralized allocation process determines that an increased proportion of the total training positions will be sited in that province. But it should not be impossible to develop pooled funding mechanisms that take account of such concerns.

because the individuals were needed by Canada, to be able to suggest with confidence that a collaborative effort involving provincial and territorial Ministries of Health, Deans of Faculties of Medicine, national Colleges, and perhaps provincial and national medical associations, ought to be able to propose a more rational mechanism for ascertaining the appropriate mix of specialist residency positions than is evident at present. Medical educators could quite reasonably respond to claims of irrationality in mix, by arguing that no one has indicated to them what the mix ought to be. But those same educators have shown little inclination in the past to recognize a leadership void and attempt to move into it (Ball, 1990). Yet we suspect they would not wish to have a mix imposed on them. Thus, our recommendation is that a collaborative process be launched, the purpose of which would be to produce, at regular intervals, recommendations regarding the national mix of residency positions by specialty which would more closely reflect the current and future needs of the Canadian population than is the case at present.

But the process cannot end with the development of the recommended mix of positions. A responsible co-ordinating body (or bodies) must be put in place to broker any necessary re-distribution, both within and between training establishments. The process in most provinces at present seems clearly unsatisfactory. Possibilities here include a joint Association of Canadian Medical Colleges/provincial Ministries of Health collaboration, or four regional bodies involving existing organizations, such as COFM for the five Ontario schools, working collaboratively with provincial Ministry of Health representatives. This latter option would likely entail the establishment of Western and Atlantic bodies with responsibilities for these regions. But the regional approach would still require, in our view, an over-arching 'national' effort to establish a desired national mix of positions, and an allocation of the positions for each specialty to the regional bodies. The performance of these bodies would need to be monitored, with the understanding that if they failed to achieve the desired redistributions, Ministries of Health as the major source of post-MD funding, and as the representatives of the public interest in residency training mix, would step in.

These co-ordinated regional bodies (or a single national body) would also then have the considerable responsibility of examining the mix of training sites and allocating provincial funding to the various institutions. Our discussion suggests that there are far too many distinct residency training programmes in the country. The tendency, as we noted in Chapter 4, is for each medical school to attempt to establish a training programme in each of the approximately 50 certified specialty areas. As the latest edition of CAPER illustrates, the schools have been remarkably successful. While we recognize that it is extremely important to have programmes in the core primary specialty areas, and in some of the less primary specialties, affiliated with each of the country's medical schools, we found widespread agreement that it is just as important to attempt to rationalize many of the other training programmes, by developing regional centres of excellence, and even by developing shared training capacity among institutions.

There may be compelling reasons, for example, for maintaining four residency training programmes in rheumatology and in nephrology in Ontario (despite the fact that one site accounts for about three-quarters of the total of about 20 residents in each case). But one could be forgiven for feeling that the reasons are not obvious. Nor need we pick Ontario to find what struck us as rather remarkable examples of apparently inefficient approaches to training Canadian specialists. We heard repeatedly about the need for critical mass to maintain quality training programmes. Yet CAPER indicates that in 1989/90 there were five training programmes in paediatric infectious diseases in the country, training a total of 7 residents, and there were four rheumatology programmes in the western provinces training a total of seven residents. These are not isolated examples (nor do we mean to 'point fingers' at them in particular), but they point to the need for a major overhaul of the size and location of post-MD training programmes in Canada.

In the extreme, a reduction and re-allocation of training sites might involve the wholesale revision of the goals and objectives of entire medical schools. For example, suggestions were put to us in interviews that medical schools should tend to specialize more, so that for example

one might see the conversion of some existing schools to establishments that specialize in the training of family practitioners and 'generalist specialists', and that pursue research in those areas. Such schools might even be logically located in places different than those where one presently finds medical schools. One might question the wisdom of having every one of Canada's medical schools in a major urban centre, when significant proportions of Canada's clinical needs are in settings outside those centres. This model would see the urban-based quaternary care centres serving also as the source of specialized clinical research information to those schools whose primary purposes were not the training of sub-specialists and the development of research in sub-specialty areas. The approach has considerable appeal, and if we were to be able to start from a blank slate, it is quite conceivable that something akin to this would emerge. But whether it is realistic given the constraints represented by the fixed costs of establishing new institutions, and the political hurdles that would need to be overcome, is a more difficult question. Certainly the lack of movement to date on equally compelling and far less disruptive policy fronts does not offer cause for optimism.

In fact the whole process of rationalizing the mix and sites of specialty training will undoubtedly be fraught with a variety of complex practical problems. But we see such a process as an important test of the will of the provinces and a wide range of stakeholders within them, to develop a national strategy, for it is here as much as anywhere where the need appears obvious, where approaches to meeting the need seem relatively clear, and where such collaboration, co-ordination and commitment will be necessary to meet that need.

The rationalization of the locations of residency programmes (with or without the wholesale revision of missions or relocation of entire schools) can be justified on two very important grounds, both of which ironically relate to issues of critical mass. The first is the economic notion of economies of scale. There are fixed costs associated with developing and maintaining a training programme in any given specialty area. Each additional programme incurs similar fixed costs, regardless of the number of residents actually put through the programme. Thus there

are compelling economic arguments for consolidation of many of the smaller training programmes. The second justification for rationalization is quality of education. If it is true that a critical mass of residents is essential to the quality of the educational experience, then it must be that many of the present programmes (despite their Royal College accreditation) offer less than optimal educational experience to their residents. At the very least, it seems that there would be considerable variation in the quality of those educational programmes. This, in itself, should be sufficient to justify the consolidation of programmes. It is mathematically impossible for every programme at every site to be of above-average quality. When small numbers of residents are involved, there seems no justification whatsoever for not concentrating those residents in the site or sites that can provide the best quality education (assuming of course that we can solve the service replacement problems, as outlined above). Furthermore, site rationalization can be carried on concurrent with the rationalization of the overall mix of specialty positions; it too must be an ongoing process which will have to take account of adjustments to the desired mix of specialists in training.

Of course we are well aware that such a rationalization of residency training programmes would not be without problems, and that some quarter may have to be given in some instances, at least on economies of scale grounds, because regions that have difficulty retaining specialists will be loathe to give up those training programmes no matter how small the programmes are. We would offer two responses to this very legitimate concern. The first is that the establishment of inefficient, and perhaps lower quality, training programmes is not the appropriate solution to geographic distribution problems. We discuss several policy approaches for addressing issues of maldistribution in the relevant section below. Second, this line of argument is difficult to sustain in the cases of Ontario and Québec, where one finds most of the instances of irrationality in residency programme location and numbers.

c. **Funding of Post-MD Residency Training**

There are three important areas of concern related to the funding of the post-MD training establishment. The first is the manner in which the trainees are paid, and just what it is for which they are receiving public funds. The second is the multiplicity of funding sources for post-MD post-licensure positions, the apparent absence of overall control or co-ordination of these sources of funding, and the resulting lack of control of numbers and mix of specialists becoming certified in Canada. The third is the issue of 'under-subscribed' residency programmes, i.e. programmes where the number of funded positions may be appropriate for Canada's needs, but where insufficient numbers of Canadian students choose to enter the specialty programmes.

Professional associations of interns and residents in this country have argued successfully in negotiations with provincial Ministries of Health that a significant component of what they do during their residency programmes is the provision of service, for which they should be reasonably paid. (There are a number of other issues of concern to these associations, such as hours and conditions of employment, which we tend to agree are often legitimate areas of concern, but which are not the subject of the present report.) We have argued above that there is a critical need to separate service provided as an essential part of training, and that provided by residents because it is intended by others that residents should play a service role.

We agree that residents should receive reasonable stipends that acknowledge their education-related service contribution. They do in fact provide medical care services to the public, and should be reimbursed for them. But we noted in Chapter 4 that the public appears to be paying twice for services provided largely by residents - once in the form of the resident's salary, and again in the form of fee-for-service payment to the clinical supervisor. This practice should be eliminated, by ensuring adequate non-fee payment to clinical supervisors for the activity of clinical supervision, and adequate 'apprenticeship' salaries for the residents. Furthermore, clinical supervisors should receive no remuneration whatsoever for services provided by residents which are not essential to their education. We return to this theme below, in our

discussion of the funding of academic medical centres.

The multiplicity of funding sources relates directly to our discussion above of the number of funded positions required for the educational purposes of graduates of Canadian medical schools. The problem is not that over 15% of all post-MD training positions are funded through non-direct Ministry of Health sources¹², but that these positions may be established for non-education-related reasons - they serve a number of different purposes, for a number of different funding sources, which tend not to communicate with each other on the broader issues of overall training requirements. We do not profess to have a comprehensive understanding of the multiple sources or the dynamics underlying the emergence of many of these positions. This is in large part due to the fact that no one with whom we spoke appeared to have a firm grasp of this situation. Nevertheless, a number of directions for change would seem to be indicated.

It is probably impossible, and also probably not desirable, to attempt to move toward a model of single-source funding (i.e. positions funded only through Ministries of Health or equivalent). However, we feel that there are strong grounds for a more detailed examination of the sources of funding for all positions in Canada, followed by a source-by-source examination of the purposes of the positions, and then the development of policy initiatives which will ensure the consistency of purposes, numbers, and outcomes. Here we can only offer a few illustrative examples.

First, there are a number of positions in Canada funded by foreign countries, for the purpose of providing clinical training opportunities for their own students. These arrangements offer benefits to Canada in the form of additional students to ensure the necessary critical mass in some programmes, and the provision of limited amounts of clinical service. They offer benefits to the source country in the form of high quality post-MD training, although legitimate concerns are raised, here and in the

¹² Some positions are funded by hospitals which, of course, derive the necessary funds from budgets provided largely by Ministries of Health.

United States, about the relevance of the exposures gained to the mix of priorities to which the graduates will return (see, e.g., Schroeder, Zones and Showstack, 1989). These should in general be 'win-win' situations. They immediately become 'lose-lose' situations if the students end up staying in Canada. Even if the graduates are highly skilled clinicians who might provide important clinical expertise to the Canadian population, they represent a net loss to Canada i) because they become an unanticipated source of increased physician supply which may expand the provision of service beyond what Canadians collectively choose to spend on medical care, ii) because they put financial pressure on their clinical colleagues (as one interviewee put it, "one more mouth at the trough"), and iii) because they undermine the perception of Canada as a source of high-level training in the eyes of the country from which the student came. The loss to the source country is obvious.

In this situation (and we admit to not knowing how common it might be), more concerted efforts are needed to ensure that these arrangements are enforced. Eliminating a country's access to Canadian training resources in direct proportion to the number of that country's students who do not in fact leave Canada upon completion of training, seems a reasonable approach. Similar approaches might see institutions with non-Ministry funded positions whose visa trainees end up staying in Canada losing the equivalent in Ministry-funded positions (if they have any), although it is not clear what degree of control (if any) the teaching units themselves might have over the eventual decisions of the trainees. One could also simply deny licensure to foreign physicians who come to Canada for training purposes only under an explicit agreement that they will return to their native country upon completion of their training.

Other positions are funded directly out of affiliated teaching hospital budgets. If hospitals are able to do this, and proceed to establish such positions without the support of the Ministry providing the budget, and in spite of an overall plan for the number and mix of post-MD training positions, there would appear to be a number of possible routes of sanction. Clearly the institution's budget should be re-examined if it is able to establish training positions out of a budget intended for the

operation of a tertiary-care hospital. But if the institution has simply gone this route because it sees this as the least costly means of providing needed services, then just as clearly the institution and the Ministry may need to renegotiate the size of the establishment's operating budget, or the funding model for the institution. Another option might be the elimination of Ministry-funded positions from institutions which establish positions from other non-approved sources.

Other similar examples, of particular agencies associated with specific diseases establishing and funding residency programmes in those areas, suggest similar approaches. What seems essential is that there be an overall co-ordinating mechanism for monitoring the entirety of the Canadian residency establishment, funded from all sources, and that part of the responsibility of this body, or group of bodies, should be the alignment of mix and numbers of new certificants of the Royal College with Canadian requirements as established by this co-ordinating body. While this may all sound terribly centralist, it was something that was seen as a very high priority by virtually everyone to whom we spoke who had a view on this subject, and we cannot imagine it being worse than the process and the situation at present.

Our third issue is the 'under-subscription' by Canadians of many residency training programmes. The first point we wish to reiterate in this regard is that one cannot tell, simply by examining statistics produced by CAPER, the extent of this problem. The existence of large numbers of GOFMS in many residency programmes does not necessarily imply that Canadians are disinterested. It may simply be a reflection of there being more slots in total than are required for the purposes of the training of Canadian physicians, and the mis-alignment of the mix of slots with Canadian requirements. It is essential that the rationalization of the numbers and mix of training positions occur before one attempts to correct a problem that may not exist.

Assuming that this process of rationalization leaves programmes with Ministry of Health-funded positions which do not attract Canadians, then there would be cause for the development of corrective policies. This issue is addressed below in the context of specialty shortages and

physician remuneration. We offer only a brief preview here.

The impediments to students entering particular specialties were presented to us as a combination of relative prestige, lifestyle and relative income. If the first of these is to be addressed effectively, it must begin within the medical school environment (see below in our discussion of the role of academic medical centres). Environments in which power, prestige, and perks accrue to role models in areas least needed in the broader community are unlikely to be able to train physicians in the proportions needed in that community.

To some extent the lifestyle issues cannot be solved directly, and so must be solved through compensatory measures. One cannot suddenly arrange the world so that all pregnancies culminate during regular working hours, or so that all cardiac arrests occur between the hours of 8am and 6pm. Nor can one convert relatively more stressful clinical work into less stressful work involving less clinical uncertainty and technical skill. But coverage problems are problems of numbers. The more people one has sharing responsibility, the less onerous becomes the chore of being on-call.¹³ Some of these problems will solve themselves as emerging specialties such as neonatology become more mature (so long as site proliferation does not outpace the development of the specialty!); others such as in the case of geographically remote situations, will require specific remedies, some of which we discuss in the relevant section below. Furthermore we feel that financial compensation has been inadequately and insufficiently applied to address these types of problems.

Financial instruments for encouraging the uptake of less desirable specialties come in a variety of options which run the spectrum of the training/practice life-cycle. We discuss below the notion of providing residency stipend bonuses for individuals choosing (and completing) residencies in particular specialties. We also discuss some possible models for income bonuses to practitioners in certain specialties. These

¹³ This should not be interpreted as a call for more physicians. The solutions may involve more of some particular types of specialists, and more physicians in some geographic locations. Increasing the overall supply is neither a necessary nor a sufficient solution to these problems.

do not exhaust the specific possibilities, although all options reduce to supplementing incomes, during training, during practice, or both. It may be that the amounts involved will have to be substantial. On the other hand, if students are not training for the positions most required and valued by society, then it would appear that society's valuations are somehow not being translated into appropriate relative incomes. We return to this issue in our discussion of physician remuneration.

The flip side of the issue of offering positions but having no one show up, is that there may be situations of Canadian students wishing to undertake training in certain areas of Canadian need, but where the programs have never materialized. We turn to this issue in closing out our discussion of residency program numbers and mix.

d. Residency Training 'Curricula'

This issue has two aspects: the actual mix of programs offered, and the clinical exposures offered in those programs. As we noted in Chapter 4, the lack of capacity for training 'generalist specialists', and for providing effective preparation to all specialties for practice outside highly supportive tertiary-care hospital environments, are two of the major problems facing medical education in Canada today.

The solution to the first problem would seem to be to establish a number of accredited residency programs in general skills areas tailored to non-urban hospital-based settings - general surgery with skills in obstetrics, general practice with skills in anaesthesiology, etc. It is not that programs in general internal medicine, for example, do not exist. Rather, it seems that positions in those programs are used largely as entrées to sub-specialties in the later years of the residency. One finds relatively few R-4 and beyond positions in general internal medicine (CAPER, 1990), which we interpret to mean that few certificants prepared and expecting to practice in non-urban hospital settings actually emerge from the training establishments. Ministries of Health might hasten this process by making available special programmatic funding for the purposes of developing, implementing, and evaluating, such new programmes. Preference for the location of such programmes should be given to schools

that have a proven record of programmes that have produced clinicians willing and able to function in these areas of need.

This suggests that effort should be put into a reverse-sub-specialization process. But the Ministries of Health should be more than the source of funding. They should be leading participants in the process of estimating the need for new programmes, and in determining the appropriate mix of residency positions, on an ongoing basis. On the other hand, they should not be without partners in this process. The Royal College should be encouraged, as part of its mandate as a collaborative partner in the development of physician resource policy for the country, to take a much broader perspective when considering the certification of new specialties or the accreditation of new sub-specialty training programmes. The number of recognized specialties has increased by over 50% in the past two decades! Each new recognized specialty initiates a new round of programme development pressure which, in turn, creates counter-pressure to the establishment or enhancement of more generalist residency programmes.¹⁴ In this respect, once again the Québec experience may be instructional, since the pace of proliferation has been much more guarded there.

Since the Royal College is responsible for accrediting new training sites, it also seems reasonable to expect it, as part of its interest in maintaining the highest possible level of educational quality, to promote site amalgamation, or inter-institutional collaborative programme development, to retard the pace of total programme site proliferation. The co-ordinating body (or bodies) suggested earlier might, as part of its (their) mandate, identify opportunities for amalgamation, with the Royal College then having the responsibility of assisting the multiple institutions in the development of joint programmes which meet

¹⁴ Of course much of the initial pressure for Royal College recognition comes from the medical schools, through interest in having sub-specialty programs accredited for special recognition. This suggests that those seeking the recognition must be required to work in collaboration with other interested parties, including the universities and the provincial Ministries of Health, prior to seeking accreditation for programs in new areas from the Royal College (Canada, 1990b).

accreditation standards.

There would appear to be scope as well for collaboration involving the Royal College, the College of Family Physicians, and the Medical Council of Canada, to set examinations, and to accredit certain programmes, which will ensure the preparation of certificants who are able to provide care in the settings where care is most needed. If incentives are required to bring the post-MD training curricula along, there would seem no more effective way than to design examinations that weed out graduates of programmes which do not adequately prepare graduates for these settings. As an example, a certification examination for general internal medicine that requires, *inter alia*, the demonstration of some clinical proficiency in a setting without an extensive support network, put in front of examinees who have done little beyond rotating through internal medicine sub-specialties as presented in urban tertiary hospitals, is likely to be a stimulus to rapid change within the programmes in question.

It may also be that with the further development by the profession of 'clinical guidelines' based on evidence of effectiveness and cost-effectiveness, and on-line computerized clinical information databases, will come reduced pressure for sub-specialization because both of these initiatives will assist with the management and application of an ever-increasing body of clinical knowledge. Many students may choose sub-specialties because of a perception that clinical sub-specialty practice requires command of a more circumscribed body of knowledge than would general practice or a general specialty, particularly if the latter were to be practised in areas without an abundance of secondary or tertiary referral resources. But such developments will require a significant increase in the number of individuals with clinical training who might be involved in the establishment, and integration into practice, of such guidelines. This links to our discussion below on the role of academic medical schools, but also points to their active participation in the revamping of post-MD training.

For academic medical centres, the task will be to co-ordinate their individual processes of allocating residency positions across specialty

areas, with the regional and national indications as to the appropriate number and mix. This will undoubtedly mean some significant changes in process and in centres of responsibility in some medical schools. As part of the process of recapturing residency training as an integral component of the education process, final responsibility in these matters should be vested in the Deans. The Deans as a group, in turn, must be encouraged to develop mechanisms for ensuring that the medical establishment takes a much broader view of its social mandate. We turn to this matter immediately after our discussion of policies to address specialty maldistribution.

Specialty Maldistribution

There is often a blurring of geographic maldistribution of specialists, and aggregate specialty maldistribution. One could, of course, have the former without the latter; it is even conceivable (although unlikely) that one might find the latter without the former. There currently appears to be some of both, but in this section we deal only with specialty maldistribution issues.

With respect to the overall mix of specialists, either practising medicine, or involved in research, teaching or other non-clinical activities, our discussion in Chapter 4 and elsewhere suggested two fundamental problems: (i) some specialties are simply less attractive than others as 'lifestyles'; (ii) the virtual absence of incentives (of any kind) that would align specialty career choices with population needs. This suggests that, at least in the longer run, the only viable solutions will be those that attempt to 'close the lifestyles gaps', and that serve to bring career choices and population needs into closer harmony.

Since there may be relatively little that can be done with existing specialists (it seems a bit unreasonable to ask thoracic surgeons, if one determined that they were in surplus, to retrain as psychiatrists), short term policies must continue to meet identified shortage situations through

recruiting GOFMS.¹⁵ The implications of specialty surpluses will need to be addressed through more global expenditure control policies, since the Canadian system seems particularly resistant to the notion of unemployed physicians. Such policies are considered in a separate part of this chapter.

But neither of these is a desirable situation, for the physicians involved, for the populations being served, for Ministries funding the care, or for prospective future specialists. Thus, work should begin in earnest to address the fundamental problems resulting in this mis-allocation of specialty resources. As with so many policy initiatives in this area, a variety of concurrent thrusts would appear to be warranted. The Royal College of Physicians and Surgeons of Canada should re-examine its processes of sub-specialty certification and accreditation, in order to slow the proliferation of new recognized specialties (which, in turn, tend to attract more students than are justified by population needs, for reasons outlined in Chapter 4). A number of other policy options for addressing problems identified in the areas of residency training and specialty certification, which have a direct bearing on the specialty maldistribution problem, were discussed above.

In addition, many specialty choice decisions (as noted in Chapter 4) are based on professional lifestyle-related issues (hours of on-call; lack of on-call coverage; amount of clinical uncertainty and practise stress, concerns about liability, etc.). Some of these are related directly to geographical distribution issues, which we address below. Other decisions are influenced through the medical education process, by the lure of relative specialty prestige. Still others are undoubtedly influenced by perceptions of relative incomes. A more careful consideration of what we already know about these determinants of specialty choice may assist in the development of fundamental incentive structures to better align those choices with population needs.

Provincial medical associations should examine internal fee schedule

¹⁵ There may be scope for offering specialty retraining to some urban general practitioners, but we did not explore this possibility in any detail.

structures to identify and remove clearly inappropriate perverse incentives encouraging the choice of less-needed specialties, and provincial Ministries of Health should explore other possible remuneration models or adjuncts, which might be used to influence career choices. Some of these possibilities are explored in more detail below in our discussion of physician remuneration. They might include residency salary bonuses, and income bonuses for specialties in relatively short supply. The problems with the former option are that higher salaries while in training may not significantly influence major life choices such as the choice of a specialty, and that they would need to be structured such that the bonus was paid out over the life of the residency programme in a manner that did not provide windfall gains for students who might subsequently switch residency programmes in mid-stream.

The problem with the latter option (practice income bonuses) is that it is difficult to eliminate or reduce the bonuses once (if) the maldistribution is redressed. Perhaps bonuses could be guaranteed for minimum periods of time (e.g. five or ten years) which might themselves be functions of the relative severity of the supply problem. For example, if a province faces an acute shortage of obstetricians, it might consider offering income bonuses, adjusted for part-time practice, for ten years commencing in four years' time (since those already in residency training programmes would find it difficult to shift specialties in mid-stream, and the only beneficiaries in the first four years would be already practising obstetricians). The guaranteed period of bonus could then be adjusted as the situation improves, ensuring that the bonus conditions that new graduates face upon certification are those advertised to them on entry into specialty training! While this would create windfall gains for existing obstetricians, it would also hopefully influence career choices. But to be successful, such a policy must take into account the fact that it is attempting to influence 'lifetime' choices of individuals. Policies can be turned on and off; careers cannot. Thus, the bonuses would need to be 'significant' in size and duration, and could be combined with geographic-related bonuses (discussed below) that could be used to influence choices of already practising specialists.

But there may be a more serious problem with all such income bonus policies, unless they are carefully developed as part of an overall national redistribution strategy. A single province offering significant income bonuses to certificants in a particular specialty may solve its problem at the expense of other provinces. Unless the policy draws more entrants overall into the specialty, and is co-ordinated across provinces, there is no assurance that its benefits will outweigh its costs. This may require inter-provincial co-operation to develop 'staggered' bonuses, the size of which might be proportional to each province's assessment of its relative shortage. Any such policies would require ongoing adjustment and fine-tuning, in order to establish the ordering and relative magnitude of the incentives.

Better information provision to prospective specialists might also assist in improved distribution. We discussed this option above under "Undergraduate Education", and will revisit it below under "Information Creation and Provision". In addition, issues of relative prestige, of lifestyles, and of adequate clinical supervision of some of the community-based specialties, could be addressed at least in part through changes within the sites, content, and clinical models embodied in post-MD training, and in part through new organizational models that address on-call coverage problems (see geographic distribution section below). In short, policies that are going to be effective in ameliorating specialty maldistribution must deal with the 'double jeopardy' faced by many specialties: low prestige and relatively low incomes.

It should be clear, then, that specialty maldistribution problems are, in fact, largely the by-products of other more fundamental problems in the training, certification and remuneration of specialists. Thus the recommendations and policy options offered within our discussion of each of these areas have a direct bearing back to the issue of specialty distribution. Once again, virtually everything seems to be linked to everything else, a strong rationale for a coherent overall policy approach rather than specific isolated policy responses to specific problems.

Role and Funding of Academic Medical Centres

In Chapter 3 we discussed the fundamental conflict between views of academic medical centres as largely professional training institutions, and as sites of more broadly-based medical higher education. This fundamental philosophic conflict must be resolved before a clear role for academic medical centres can be articulated. This, in turn must logically precede the development of appropriate funding models.

There is a growing recognition, in both Canada and the United States, that the autonomy of academic medical establishments has resulted in an inadequate self-examination of roles, functions, and outcomes, relative to the accountability entrusted in them by the public. In Canada, far more than in the United States, these enterprises (in all their dimensions) are funded largely from the public purse. It seems not unreasonable to expect them to be responsive to the needs and expectations of that public. While academic freedom is essential, and some academic autonomy is important, the former notion is used relatively loosely or uncritically, and many activities that should be influenced, even directed, by broad public interests, tend to hide behind its skirts.

An appropriate role for academic medical centres has been put very articulately by analysts and educators on both sides of the border. We agree with the growing number of informed observers (e.g. Iglehart, 1988; Schroeder, Zones and Showstack, 1989; Valberg et al., 1990; Murray, 1990; Dirks, 1990) who suggest that these institutions must re-align their activities, their size and composition, perhaps even their physical locations, so as to be better able to meet an expanding set of social expectations. As Murray (1990) so aptly notes,

"Society expects the medical school to train the right physicians for the future, in the right numbers, in the right areas of medical practice, and for the communities that need them. They also expect us to assist those physicians to continue to learn throughout their careers, and to provide them, through research, with better ways to care for people." (p. 24)

But the social contract does not end there, because "medical academia exerts a dominant influence on all aspects of medical care..." (Schroeder, Zones and Showstack, 1989), including the review and publication of the materials used to train new physicians, the determination of which areas of research receive funding, the accreditation of training sites and the licensure of physicians, the development, introduction and diffusion of

new diagnostic and therapeutic technologies, and so on; the influence of medical academia on medical care policy has been, and is pervasive (Fox, 1986). In this respect the Valberg report (Valberg et al., 1990) makes some very useful conceptual contributions by distinguishing between the roles of the medical schools and the affiliated clinical teaching units, and between the primary, complementary and discretionary responsibilities of each of the two types of institutions.

Our vision of an appropriate role for academic medical centres would encompass at least the following (in no particular order):

- (a) the training of physicians in the mix and numbers required by the populations which they serve, in a manner which prepares them not only to practice within the social context of the future in the clinical settings which will serve the greatest public good, but to adopt leadership roles in research, teaching and health-care administration, quality assurance and policy development;
- (b) the adoption of a leadership role in the ongoing monitoring of the numbers and mix of physicians and the appropriateness of the services they are providing, as well as in the design and delivery of undergraduate and post-graduate curricula which will best meet the objectives in (a);
- (c) the development of a research enterprise that re-balances basic, clinical and applied health services research to align the mix of faculty research effort more closely with the expected payoffs to the public's health and well-being; this does not mean dictating what research shall and shall not be undertaken; rather, the development of faculty and curricula more responsive to the broad social context of medicine and the non-medical determinants of health should create, as a by-product, a broadening and re-balancing of the research enterprise;
- (d) the adoption of a leadership role in the continuing education and continuing competency assurance of clinicians practising in Canada;
- (e) the provision of highly specialized diagnostic and therapeutic services to those patients for whom such interventions represent cost-effective approaches to the management of identified illness;
- (f) the adoption of a leadership role in re-aligning the activities and the funding of the components of the academic enterprise, so as to ensure that activities are tailored to meet the needs for which they are designed, rather than to respond to available funding.

While we found a growing acceptance of the notion of a broader social responsibility, what appear to be missing are (i) a common understanding between these institutions and the Ministries in each province responsible

for their funding of what these social contracts ought to entail, and (ii) agreed-on mechanisms for reviewing the performance of those institutions in fulfilling those social contracts. This seems an essential first step in the revision of the activities undertaken within academic medical schools and affiliated teaching units, and the negotiation of appropriate funding models for those activities. In the remainder of this section we offer a number of principles and recommendations relating specifically to the funding of those activities.

Of paramount importance will be the disengagement of the academic medical centre from its recent growing reliance on clinical earnings. As we noted in Chapter 4, this growing importance of practice plans as sources of academic funding has caused medical schools to be viewed frequently as 'trade' schools within University environments. The sources and actual and estimated amounts of funding for the academic enterprise have been the subject of a number of detailed reports in recent years (e.g. Valberg et al., 1990; Woods Gordon, 1989; Saskatchewan, 1989; University of Manitoba, 1985). An examination sufficiently comprehensive to allow us to make detailed recommendations was well beyond the scope and expectations for the present study. Once again, we offer some basic principles which we believe should govern the funding of the disparate mix of activities. We do not propose that each academic centre should adopt an identical funding model; however we do suggest that all funding models for schools in Canada should be consistent with these principles.

First, all funds for all aspects of the academic medical centre mission (with the exception of funds gained by individual investigators for specific research projects) should flow through a single office of responsibility at each centre. This would serve to recapture some semblance of control over the mix of activities and programmes, to rectify a situation in which power rests "...with the heads of the clinical departments and the heads of the divisions since they control most of the funding". Medical centres which have grown up as "... a confederation of semiautonomous baronies" (Ginzberg, 1990, p. 143) seem hardly likely to meet societal expectations of them.

Second, we believe that there is no place for fee-for-service clinical earnings within the academic enterprise, for reasons which we

attempted to detail in Chapter 4.¹⁶ This is not to say that appropriate funding should not be made available for clinical activity undertaken for academic purposes. But the funding should not be in the form of payment for particular items or occurrences of clinical service, and the availability of the funds should therefore not be dependent on the provision of such clinical services.¹⁷

Third, funding should be linked as explicitly as possible to academic goals and their enabling functions. Furthermore, the proportions of total funding allocated to each function should bear a close relationship to the importance of that function in the medical centre's entire academic enterprise. (For example, if a centre has as one of its major goals the provision of post-MD training for rural area family practice, a share of its total operating budget which is commensurate with that commitment should find its way to that particular programme.)

Fourth, funding should be provided in the form of 'envelopes', each of which would be associated with a particular goal and functional area, and adjusted over time in relation to the effectiveness of the area in meeting the goal. The 'envelope funding' would be based on the resources required to fulfil those roles, including consideration of infrastructure or overhead. In this way, it would be relatively straightforward to estimate the cost of, and provide envelope funding for, an institution to

¹⁶ As Ginzberg (1990) has articulately noted in the U.S. context, "Faculty practice plans, now the major source of support for medical schools, are inappropriate, since they thrive on highly specialized, high-tech procedures that have very little to do with the education of medical students".

¹⁷ This is not without its practical problems. Most faculty, including many full-time faculty, are engaged to some degree in clinical activity (Barer, Kazanjian, Pagliccia et al., 1989). Where this is truly 'private practice', unrelated to the educational mission of the academic institution, we see no reason that individual faculty should not continue to negotiate their own terms and forms of payment with the provincial medical plans. To be consistent with the principle enunciated here, however, the institution would have no call on any portion of that remuneration, and the institution in turn would negotiate payment with the individual faculty members consistent with their academic time and activities.

mount a new programme. To reduce duplication of effort in designing funding models which attempt to disentangle the fixed and variable costs associated with the variety of roles and activities of academic medical centres, provinces and centres should collaborate to develop or engage the necessary modelling and costing expertise at a national or inter-regional level. The development of these models should involve the collaboration of medical educators, representatives of the likely sources of funding, and financial analysts. Caution should be exercised to guard against the uncritical adoption of status quo assumptions in the development of these models (as, for example, one finds in the Valberg et al. (1990) report).¹⁸

Fifth, where new funding is to replace existing practice plan-generated earnings associated with the supervision of post-MD training, there should be clear recognition that the stipends paid to the trainees are in part a recognition of their service role, and that the public should not be paying twice for the same services. Funds made available to academic medical centres for the purposes of clinical supervision should be clearly identified as such (appearing as components of the envelopes in support of post-MD programmes), and should (consistent with the first principle above) flow first to central offices (e.g. vice-president or decanal level) responsible for the centre's educational commitments, not to department heads or clinical programme directors.

Sixth, all Ministries with an interest in the role of the academic medical centres should be involved in negotiating levels and models of funding with the academic institutions, and in sorting out the allocation of those funds from the various Ministries and among the various universities. This will require that the affected Ministries collaborate to identify independent and co-operative areas of responsibility; the increasing reliance on medical plan earnings would seem to be a result, in part, of provincial Ministries' failure to engage constructively in this

¹⁸ As an example, the approach to developing funding models for the various different medical centre functions in Valberg et al. (1990) assumes quite explicitly that medical residents will continue to play much the same role as at present in providing clinical service, and that clinical supervisors will be the recipients of part or all of the income associated with that service.

manner. This may mean the internal allocation of funds from one Ministry to another, for earmarking to academic medical centres. Funding made available to medical centres should be sufficient only to fulfil roles agreed to as being consistent with the institutions' social contract; there is no room for the fiscal size of the academic enterprise to be determined by the ingenuity of the academic faculty in generating clinical earnings. This is simply inconsistent with reasonable societal expectations of academic medical institutions.

Seventh, a corollary of principles four and five above is that funding for academic medical centres should not be developed on the basis of 'per student' allotments. This explicit type of linkage has represented an impediment in the past to the rationalization both of undergraduate and post-MD training capacity. While funding envelopes would be sensitive to the variable costs associated with each student, they would also recognize the fixed costs of developing and supporting each functional area. A model based on funding envelopes would also facilitate adjustments to the mix of activities within a centre's mission. For example, a reduction in the size of the undergraduate class concurrent with a new initiative involving the development of clinical guidelines would not necessarily or automatically result in a reduction in a centre's global operating budget.

These principles, taken as a package, suggest a model of global academic medical centre funding where the globe is determined through the identification of the products and activities of each centre, and the application of funding models developed for each type of activity. Negotiations should occur between provincial governments and educational institutions or collections of institutions, rather than between individual institutions and individual Ministries. For example, there has been some discussion in Ontario of funding possibly flowing through some central representative agency such as COFM, which would then be responsible for the allocation of undergraduate enrolments and numbers and mix of post-MD training positions among schools. This is one possible model. Newfoundland funds the enterprise through a single Ministry, which eliminates the potential of split jurisdiction and activities falling

through the cracks. We feel that the benefits and costs of alternative models have not yet been fully explored. But there seems to be a general consensus that present models are not serving the public or the schools very well. What seems to be missing is a mechanism and a catalyst for change.

Whatever models are adopted in each region of the country, the contracts with each institution (or group of schools), the funding models developed for each type of responsibility area, and the activities and outcomes associated with the funding, should be routinely evaluated and modified as necessary.

We recognize that a wholesale restructuring of the funding of academic medical centres, taken in conjunction with the rationalization of post-MD training programmes described above, will inevitably have serious implications for certain affiliated teaching units, programmes and individual faculty. For example, many geographic full-time clinical faculty have come to expect house staff assistance as part of their academic 'contract'. But these proposed changes would be a source of considerable benefit, to society, to academic medical centres (which would be freed from their perverse dependence on clinical earnings), to post-MD trainees (who would receive clinical exposures more consistent with their training needs because they would be less driven by service considerations), to the medical community at large (which would no longer be in direct 'competition' with the academic community for limited clinical practice funding), to part-time academic appointees who have for years provided educational service without remuneration, and to those full-time faculty within academic institutions who have suffered in the past because the nature and funding of the enterprise has been dictated to such a large extent by departments and programmes able to generate relatively more in the way of clinical earnings.

Furthermore, there is nothing in what is proposed here to suggest that geographic full-time faculty could not be reimbursed at levels that would ensure that academic careers remain an attractive option. This is not to imply that these faculty should receive amounts equivalent to their gross fee-for-service billings (as was suggested by one interviewee). On

the contrary, they should receive remuneration commensurate with their academic roles, seniority and performance within the academic enterprise, which would include those benefits to which academic faculty in all disciplines are entitled, bearing in mind some of the non-economic advantages of an academic appointment relative to private practice. Some academic physicians who have been generating practice plan incomes well in excess of average may abandon the academic enterprise because of the high personal opportunity cost. On the other hand, some may be better served by alternative funding arrangements. This will depend on the remuneration levels and negotiations within each centre.

These alternative funding arrangements would mean the elimination of pressure to generate clinical earnings in order to support research (although other vehicles for funding research would perhaps need to be enhanced), and would mean that clinical faculty would be able to devote more time to clinical training and research. In short, no policy is without its beneficiaries and its 'losers'. But, on balance, the benefits of this set of policy guidelines would seem to far outweigh the costs, for most affected parties.

Geographic Maldistribution

To solve the problems of geographic maldistribution of physicians does not mean to equalize population:physician ratios for all regions by types of physician. There are many communities in this country with populations too small to support most specialists, and some where the support even of a general practitioner is not practical. The spatial distribution of populations and the incidence and prevalence of illnesses requiring the attention of different specialties means that equal geographic distributions are an inappropriate objective for physician resource policy.

On the other hand, equitable or reasonable access¹⁹ for all Canadians

¹⁹ Unfortunately the words 'equitable' and 'reasonable' do not have precise, quantifiable meanings. In fact, what is reasonable for one party will seem unreasonable to another, and reasonableness or perceptions of equity will often depend on where one sits. While guidelines (e.g. one specialist of type x to serve every 15,000 individuals) might be developed to assist in physician resource planning, there are still going to be clear geographic inequalities in access, particularly to sub-specialty care, because there are many small communities in Canada. But unequal

(even if the access takes somewhat more effort for those in less highly-populated areas) to necessary clinical services is an appropriate objective for public policy, and more in line with the spirit of the foundations of Canadian universal medical insurance. But this does not provide much of a guide as to how to improve the present situation. Increases in overall physician supply over the past decade (and before) have been well in excess of rates of population growth, yet have resulted in increased, rather than decreased urban/rural (and inter-provincial) disparities.

Because of the distribution of Canada's population, we do not feel that this problem will ever be solved to everyone's satisfaction, particularly if it is viewed narrowly as a physician resource problem. But even if the notion of using non-physicians were to become more widely accepted (and we believe it should; see below), there are still no reasonable indicators of 'equitable access' which, if met, would mean that all claims of distributional inequity would cease. This is not news, but it should give pause to those faced with the task of improving the geographic distribution of medical capacity.

If one chooses to treat this as a problem which can only be solved through physician resource policies, then satisfactory solutions may continue to be elusive. While we offer some suggestions here that we feel are worth exploring, and that would almost certainly be more successful than the patchwork of policies that has existed to date, we are not at all confident that the effects of our suggested approaches would constitute a 'solution' to this problem. Many of the underlying causes identified in Chapter 4 are simply not going to be responsive to public policies, or would be effectively addressed only at an unacceptably high cost.

The problem has historically been seen as a physician maldistribution problem. Such a framing of the problem encourages the search for physician-based solutions, and in fact entrenches a view that excludes by assumption other possible approaches. Yet regions such as the Northwest Territories and the Yukon (Borsellino, 1990b) appear to have demonstrated

does not necessarily mean 'inequitable' or 'unreasonable'. In the end, the latter must be political decisions.

not only that not all rural area problems need to be addressed with 'physician solutions', but that non-physician solutions are often at least as effective, and more enduring.

This suggests two quite different approaches to improving the distribution of accessibility to primary health-care services, each of which we describe briefly below. We recommend the adoption of some combination of the two, as the best hope of improving the distribution of service availability.

There is now widespread acceptance of the notion that non-physicians can provide a wide spectrum of primary care services, traditionally viewed as within the exclusive domain of individuals with MD training, with at least equal quality and outcomes. Such evidence has existed in the scientific literature for many years. We do not propose to 'rehash' that literature, or to review the reasons why physician substitutes have not been trained or deployed in Canada (see, e.g. Spitzer, 1984). But the establishment of some new training programmes for extended duty nurses, physician assistants, and other personnel who are able to provide some of the services traditionally provided by physicians would seem appropriate in light of our recommendations for reductions in the numbers of physicians being trained in, and entering practice in, Canada. The development, location and funding of such programmes should be considered as key components of a new national physician resource strategic policy package.

Increasing the availability of non-physician personnel in rural areas to provide many entry-point services, and to serve as 'gatekeepers', represents a more realistic long-term solution to service provision for many of these regions. Our vision of the deployment of such personnel would see them employed as front-line personnel within regional service networks. They would be able to call on regional physician consultants based in larger centres, and these consultants (general and family practitioners, or generalist specialists who wish to serve as primary care consultants) would in turn call on regional referral 'hubs' with

specialists trained specifically to serve non-urban settings.²⁰ While this approach is not without its problems (supervision and availability of referral resources, liability, and the current 'shortage' of nurses being three of the more obvious ones), we neither found nor heard compelling arguments against the rejuvenation of the idea of using physician substitutes in situations where physician recruitment continues to be problematic.

With or without the training and deployment of physician extenders or substitutes, improvements in physician distribution in Canada will require a concerted assault along the entire spectrum of policy avenues illustrated in Figure 6.1. Until now, attempts to improve geographic distribution have amounted to a general 'trickle-down' policy of increasing supply,²¹ or piecemeal approaches (as, for example, with northern/isolation income programmes such as those in B.C. and Ontario, or the differential fee levels programmes in Québec and Manitoba, or the recruitment of GOFMS to serve many communities unable to attract Canadian-trained physicians), concentrating largely on financial incentives. The

²⁰ This is clearly not the only possible model. The actual configuration of tiers of ever-more-specialized consultants may depend, in part, on the availability of telecommunications and computer networking to clinical information databases, or to centrally-based consultants (e.g. at academic medical centres), and the availability of transportation systems that would make 'taking the patient to the care' more effective and efficient than the reverse.

²¹ There is an extensive literature on this topic, the primary objective of which seems to be to ascertain whether supply-side policy can improve distribution. The findings, predictably, are mixed, although there is certainly some evidence from the United States that distribution does improve with increasing supply (see, e.g. McConnel and Tobias, 1986; Williams et al., 1983). But these studies do not address the broader issues of the costs and benefits of overall supply increases, relative to other, more targeted initiatives for improving the geographic distribution of medical services. None examine the costs of the inevitable increases in urban supply that accompany such non-specific approaches to improving distribution. Furthermore, the Canadian 'market' context is very different from that in the United States, from where much of this literature is drawn. A perusal of the international reports in the appendices makes it clear that distributional problems persist even in countries with physician supplies per capita well in excess of those in Canada and the United States.

results have at best been equivocal (Anderson and Rosenberg, 1990; Copeman, 1980). We are unaware of any jurisdiction that has attempted to design and implement a systematic, co-ordinated, life-cycle-wide set of initiatives, although attempts to integrate a number of the necessary pieces have been made in Québec, and some components exist in various forms in most regions (e.g. Manitoba has a fee differential programme, location incentive grants, income guarantees, bursaries, and other initiatives). A relatively comprehensive plan has recently been proposed in Alberta (Alberta, 1990a,b). A national strategy along these lines would, we believe, be a world-first, and would command attention from many other jurisdictions grappling with similar problems, but it would require a significant commitment of resources and co-ordinated policy attention.

We offer the following as a general description of what an extreme version of such a policy package might look like. It might involve or include (without intending to be exhaustive):

- science enrichment programmes for rural area high schools where such seem warranted;
- career counselling for rural area high school students (see, e.g., Manitoba Medical Association, 1989);
- the 'reservation' of significant numbers of undergraduate medical school places for individuals willing to practice in rural areas as a return-in-service arrangement upon graduation;
- the restructuring of medical admissions criteria so that factors other than pure excellence in traditional pre-medical science courses are given more weight, or extra weight is given to students from rural areas;
- the restructuring of undergraduate medical education to inject more community and ambulatory practice exposure, issues of broader determinants of population health, etc., particularly in years 3 and 4;
- the structuring of family practice programmes to provide more rural area clinical sites by contracting with more clinical faculty from rural areas for supervisory roles;
- the enhancement of rural area exposure within the anticipated extension to basic post-MD pre-licensure training;
- the development of significant compulsory rural area rotations and more community-based exposures for all but the tertiary

hospital-based sub-specialty residency training programmes;

- the development of new residency training programmes designed explicitly to prepare specialists to serve as rural regional consultants;
- financial incentives (both at the training and practice stages) to encourage choices of specialties in short rural supply;
- income incentives to encourage the location of practices in non-urban settings;
- a variety of other incentives and initiatives (such as opportunities for subsidized continuing education, rotational relief, etc.) to attract and retain physicians in rural areas;
- academic medical centres as the 'hubs' of 'on-call' clinical decision-making support networks, and as regularized sources of locum or other relief for rural community physicians.

This is a comprehensive (some might say impossibly complex) approach to the problem. It cuts across virtually every one of the other policy areas which we address in this report, and the specifics of many of the suggestions are dealt with in more detail in their respective sections. But for all its complexity, the list above does not even touch on policies that might be required to meet the needs of physicians' families in order for residence in smaller communities to be and remain an attractive option. In fact, attempts to develop solutions to problems of geographic distribution reveal more clearly than any other area of physician resource policy the linkages among the various issues and policy instruments.

A comprehensive approach such as that suggested here should be seen as an attempt to circumvent some basic problems with existing geographic distribution programmes. Specifically, these initiatives (such as Ontario's Northern and Isolation Allowance programme) attempt to influence choice of location largely after the medical education socialization process is complete, and must work with what the medical establishment has chosen to admit to the training process, the mix of specialties determined by the training establishment, and the effects of the training experience. A more comprehensive approach would see different types of students enter training, a different set of exposures, influences and expectations during training, a set of financial incentives that begin during training to

encourage particular choices that might improve the probability of physicians choosing rural practice, and other non-income incentives to improve recruitment and retention for rural areas.

A number of the components within this package are predicated on a presumption (widely supported) that individuals from rural areas will be more likely than students from urban settings to return to practice in rural areas (see, e.g. Carter, 1987). While enhancement of science education and career counselling in rural area high schools may seem a bit beyond the scope of physician resource policy, they are consistent with this view of the strong influence of 'home town', and also with the view (expressed to us) that rural area high school students tend to receive poorer quality education in subject areas likely to channel them into or qualify them for medical careers.²² We are unaware of the evaluation of any programmes that have attempted to channel more rural students into medical schools through such initiatives, although we were informed that some programmes for such channelling of native students have recently been established in Alberta. As with any new initiatives the processes and outcomes deserve ongoing monitoring. But the facts that (i) there was general consensus, from the literature and our interviews, about the importance of the geographic origin of students, and (ii) there appears to be widespread concern that rural area high school education and counselling are inadequate to channel students in the direction of health professional careers, suggest that initiatives of this sort should be considered for inclusion in a national physician resource policy strategy. They are also consistent with our view that geographic distribution can only be influenced by a 'cradle to grave' set of policies.

We introduced above the notion of reserved undergraduate MD training positions, and of adjustments in the selection criteria, in the context of our discussion of admission policies. The former is likely to be one of the more effective components of this package, and has considerable appeal because even the recommendation of 1600 entry level positions is well in excess of what the country requires if most of the graduates are going to

²² This problem appears to be particularly acute with respect to native students (see e.g. Borsellino, 1990a).

settle in urban settings.²³ A policy structured so that, for example, there would only be 800 'open' positions, with the remaining 800 being available to students willing to commit at the front end to pre-determined practice arrangements in designated non-urban areas, would almost certainly improve the distribution of physicians. Such a policy would not necessarily need to be viewed as a permanent fixture. Once pre-determined distributional objectives are met, the policy could be adjusted or eliminated. The usual issues of the legality and enforceability of such contracts would need to be considered in the process of implementation, but we cannot see how the result could be less effective than the present arrangements (despite the contention of one interviewee that "people who are in rural areas not because they want to be but because they have to be tend not to be very good doctors"). On the other hand, and as discussed elsewhere in this section, if policies requiring all newly trained physicians to provide limited public service in designated situations (including rural area practices) were adopted, then the policy of reserving admission spots might be redundant.

The next four components of the policy package all involve the development of more non-urban-hospital-based clinical exposures during the training process. They are premised on two putative influences on choice of location: preparedness for rural practice, and influence of location of training. As we noted in Chapter 4, one of the most often cited problems in interviews was the fact that most medical education in Canada at present does not prepare graduates for practice in environments that lack the extensive referral and support networks found in large urban centres (this impression was also conveyed in results from recent Alberta surveys (Alberta, 1990b)). These policies would be designed to inject

²³ As we have noted elsewhere, it makes little sense to sustain a level of domestic undergraduate training capacity predicated on numbers required to meet all Canadian needs, if in fact the graduates repeatedly demonstrate that they will not meet the rural area needs. If domestic training programs are not structured to meet those needs, then their capacity should be adjusted accordingly. The result would certainly be an increase in the proportion of new licensees who are GOFMS, but this can hardly be sustained as a credible defense of the existing capacity if the capacity is 'failing to deliver'.

more opportunities for exposure to practice in rural areas, to community-based ambulatory practice, and to entire programmes tailored for rural areas. In so doing, they would provide a more balanced set of training 'sites' to the student, thus reducing the predominant influence of the tertiary hospital-based practice milieu. In this respect, the role of the Royal College of Physicians and Surgeons of Canada in accrediting training sites may require examination. If part of the problem of restricted rural exposure opportunities for generalist and primary care specialists is related to a lack of accredited rural area sites, then a re-examination of the applicability of present accreditation standards to non-urban non-tertiary hospital settings may be indicated. Alternatively, academic medical centres may need to be more creative in enticing rural area physicians to become involved in the academic enterprise, so that more rural area sites become integrated into accredited programmes.

In the extreme, a national strategy might involve the designation of one or more health sciences centres as specialized family practice and generalist specialist rural area training institutions. Such centres might also then serve as the logical sites for national training programmes for some allied health professionals (e.g. extended role nurses) who would be serving primarily in northern and other rural areas. While we have not had the opportunity of exploring this particular proposal in detail, on the surface it seems to be worthy of further consideration as part of a national strategic review.

Residency stipend bonuses might be offered to students choosing to train in specialty programmes tailored for rural area regional consultant practices (under a stipulation that the bonus must be returned if the certificiant fails to practice for at least some pre-determined period of time in such a situation). Similarly, undergraduate student loan remission programmes for graduates agreeing to practice in designated rural areas for specified periods of time would have the same purpose. But there are problems of enforcement and 'collection' with all such schemes. Furthermore, financial incentives may be more effective in the context of geographic distribution if they are targeted directly at the determination of practice location. Here there are numerous options that

have been or might be considered, including rural area income guarantees, isolation allowances, differential fee levels, etc.²⁴ The specific form seems far less important than the general approach of attempting to attract some physicians to rural areas through making their income prospects significantly better than in other locations.

Finally, as we have already noted, it is well known that income is often not the deterrent to rural area location or retention. Problems of a social, familial, cultural, and lifestyle nature are significantly less tractable than income issues. There are certainly some possibilities here. Alternative methods of payment, such as regional capitation for general/family practice, might make possible shared arrangements that reduce on-call responsibilities.²⁵ The provision of funds for travel for continuing education, for the out-of-area university education of children, and for other 'amenity benefits' that might make practice in rural areas more attractive, are all possible approaches to increasing recruiting and retention rates. The development of clinical rotation

²⁴ In this regard, the sense we have been given about the problems with regionally-designated fee differentials in Québec is that they are insufficiently sensitive to the heterogeneity of non-urban situations. It seems clear that a two-level differentiation does an inadequate job of providing reasonable incentives, and it is not surprising to find physicians clustering near the differentiating 'borders'. Fee differentials (or preferably income bonuses; see our discussion elsewhere) might instead be structured as linear (or even exponential) functions of distance from nearest major urban centre, nearest minor urban centre, and so on. The idea would be to ensure that there is no significant advantage to establishing practices just outside urban centres, where there are no particular needs for more physicians, and to ensure that the financial rewards are significantly greater for physicians practising in northern isolated areas.

²⁵ Of course if a capitation model of funding primary care is adopted more generally, then this in itself should mean there will be less opportunities for urban general/family practice. While there may be no end of worthwhile things one can do for one's patients in order to maintain urban incomes in the face of a 'patient shortage', there are somewhat more limits on the size of the potential patient pool. Some urban practitioners are likely to move to areas where patients are relatively more abundant. Moreover, some 'urban' practices would have increased incentive to enrol 'rural' patients, and develop ways of servicing them. In both cases access for rural patients would improve.

models whereby faculty of medical schools, or regional locum pools, rotate through rural areas on a regular 'exchange' basis so that those living and practising full-time in those areas are provided with regular opportunities to practice in urban areas, to take vacations, or to avail themselves of continuing education opportunities at those medical schools, all offer promise. The extent of such relief could be tied to the distance of the physician's practice from the nearest major urban centre. As we have noted elsewhere, rural area living is simply not going to be attractive to many physicians (or their spouses or families), no matter what the incentives. But the possibilities for using educational milieu and a variety of 'carrots' to make such situations more attractive have clearly not been exhausted. Considerably more could be done if, indeed, this is a high priority policy problem.

Of course there are also a number of possible policy 'sticks', some of which have found use in Canada, with (at best) mixed success. One might, for example, use hospital admitting privileges or regional 'billing number' quotas as vehicles for restricting the numbers of urban general practitioners. But for such policies to be applied as part of a national strategy, the designation of areas still requiring physicians of each specialty would need to be undertaken nationally. The major problem with this type of policy is that, in practice, it differentially affects new entrants, without providing any 'carrot' to go with the 'stick'.

Furthermore, geographic distribution problems are not such as to require that every physician spend a lifetime in such areas. Suitably designed incentive packages will attract some physicians for varied periods of time.²⁶ The remaining requirements must be met through the use of other personnel (and foreign medical graduates) who may be more willing to live and work in these areas. But as we noted in Chapter 4, the reduction of Canadian reliance on GOFMS to fulfil rural area needs seems of paramount importance, for reasons extending beyond geographic maldistribution.

Finally, we feel that it is important to reiterate that very few, if

²⁶ One could even conceivably structure graduated bonuses tied to length of tenure in designated under-serviced areas.

any, of the suggestions offered here are novel. The problem, and the solutions, have been around for a very long time. To some extent, it is a problem that will always be with us, because it 'comes with the territory'. Recent investigations, such as those in Alberta (1990a,b) and Manitoba (Manitoba Medical Association, 1989), have taken a far more comprehensive look at this single issue than we could possibly undertake in a project of this breadth. Those reports are worthy of national examination. What we are suggesting is consistent with the recommendations emerging from both of those investigations: that the best chance to improve this situation is represented by a set of initiatives that deals directly and concurrently with the many underlying causes of the problem. We would also reiterate that the inter-related nature of geographic maldistribution problems and solutions to other important components of physician resource policy is seldom taken into consideration in investigations that focus solely on this problem. Any policy package to improve geographic distribution must be crafted as part of an integrated physician resource policy initiative, in order that solutions to this problem do not simply create other problems of equal import.

Patterns of Medical Service Utilization

There would seem to be two complementary approaches to improving the health of the public through improving the quality of the medical services provided in Canada. While the intent of such policies is to align practitioners' clinical approach with the best available information on the effectiveness or cost-effectiveness of alternatives, either for diagnosis or therapy, it may be useful to distinguish between those policies the objective of which is to influence future practice patterns, and those that review past patterns against pre-determined criteria and implement policies intended to influence changes in those patterns in the future.

The former include the development of clinical practice guidelines, and the further development of processes (or 'transmission belts') to encourage their transfer and implementation in clinical settings. We feel that these are high priority objectives for public policy in the physician

resource sector which should most logically be components of a national policy because of their high fixed costs and their general applicability. We note elsewhere that clinical practice guidelines represent a major potential source of 'uncertainty reduction' which may have effects on students' choice of specialty. They are also a concrete means of disseminating the results of clinical research to the community of practising physicians, and they may reduce individual physicians' risk of adverse outcomes in malpractice actions.

But the resources which a society chooses to devote to such developmental activity will only be effective if the guidelines 'bear fruit' in the form of appropriate changes in patterns of clinical practice. Here, limited experience to date with transmitting the guidelines to the 'coal-face' has not been an overwhelming success (Lomas, Anderson et al., 1989; Lomas and Haynes, 1988; Eisenberg, 1986). Further effort is needed to investigate effective mechanisms for ensuring the uptake of these guidelines. In this respect, our recommendations relating to 'competency assurance' in the following section are highly relevant.

Possibilities within the latter category include quality assessment activities, practice pattern review, the application of feedback mechanisms and their evaluation, and competency assurance. These activities all form components of what is now widely labelled as "quality assurance" (Centre for Health Economics and Policy Analysis, 1990). The last of these (competency assurance) we consider in the following section. Quality assessment involves observation or measurement of clinical practice, and assessment against clinical guidelines or other standards of practice. Practice pattern review involves a more aggregative statistical approach to comparing individual practitioners' patterns of medical fee billings with peer norms. Both can and should be associated with methods of channelling the information so generated back to the practitioners who are the objects of the assessment or review. This feedback stage is a fundamental and necessary step in converting 'assessment' to 'assurance',

although it is not sufficient.²⁷

The statistical review of patterns of billings is carried out in most provinces, and did not surface as an issue in interviews. Such reviews are never realistically going to be able to do more than pick up gross abuses, or quite abnormal patterns of practice. It seems worth noting that these reviews of patterns of billing medical plans exist only because of the existence of fee-for-service remuneration (see our discussion below on methods of remuneration). However, any reimbursement system will require an audit process to ensure public accountability and quality of care. The distinction between this type of activity and what is more normally thought of as quality assurance is that the focus of quality assurance tends to be specific types of services or activities, whereas with 'patterns of practice review' the 'unit of analysis' in the first instance has been the gross billings, or billings for individual fee items (which are often not linked to particular procedures) of individual practitioners; only later in that process might individual activities of a practitioner be examined.

With respect to the development of clinical practice guidelines, and other quality assurance activities, we see considerable scope for a national strategy involving the collaboration of a variety of national and regional organizations. There is widespread interest across the country in the further development of quality assurance, but there are uneven inter-provincial resources and capabilities in the area. We see this activity as falling clearly within the domain of the medical profession because it is an issue related to the content rather than the context of practice. The leaders in this area should be the Royal College of Physicians and Surgeons, the College of Family Physicians, the provincial licensing authorities, the provincial medical associations, and some or all of the academic medical centres. These groups should be spearheading the development and transmission of clinical practice guidelines, and the

²⁷ One can of course 'feed back' all the information one wants to practitioners. If their clinical practice does not respond or adjust to information where such response is indicated, then the conversion of assessment to assurance falls one critical step short.

ongoing review of their application and effectiveness.

While issues of staging, responsibility and implementation will require much more development, here it seems worth noting by way of illustration (and without intending to imply anything about the relative importance of the roles of the stakeholders noted above) that there would seem to be at least four distinct roles for academic medical centres in this area, which have obvious links to other sub-sections of the present policy discussion. First, academic medical centres would seem to be the logical source of information on research results (both original and syntheses of extant literature) that might form the developmental basis for guidelines, a source of expertise for training clinicians in the critical review of such research, and a source of some of the expertise for guideline-promulgating consensus panels. Second, they could play a key role in monitoring and identifying areas of practice or types/locations of facilities where guidelines are most urgently required, or where existing guidelines are not being applied. Third, they could assist with the development of, and participate in, local area quality assessment programmes. This might include the training of experts in these activities (see, e.g., Berwick, Godfrey and Roessner, 1990), as well as part-time involvement of some faculty in the activities. Finally, academic medical centres are the obvious source of expertise for continuing education and skills upgrading programmes for clinicians who are identified as being deficient in specific areas of clinical knowledge (such programmes presently exist but are not widespread in the country).

This has clear links back to our earlier discussion regarding the role and funding of academic medical centres, undergraduate and post-graduate curricula, and career choices of individuals with MD training. First, these areas of activity represent reasonable components of a broader social contract for such centres. Second, they are consistent with our suggestions regarding the functional redevelopment of the funding of these centres. Third, the integration of quality assessment activities within the academic environment would have beneficial 'second order' effects because they would become central influences on the medical education process through their visibility in the activities of the

centres. Finally, the expansion of quality assessment activities will inevitably create new career opportunities for individuals with MD training and an interest in ensuring that Canadians receive the best possible medical care that the available capacity and technology can provide.

The development of clinical practice guidelines is also extremely important to physician resource planning. If, for example, guidelines reveal that x% of a particular class of services (e.g. a particular procedure, or all services provided by a particular specialty) presently provided are inappropriate, one should be able to translate this in the first instance into policies for competency assurance, and secondarily into policies governing undergraduate training, post-MD training, and entry of GOFMS to practice.

This is an extremely contentious issue. The literature on inappropriate care is dominated by research from the United States, but evidence is also beginning to be amassed from other countries (Canada, England, Israel, Switzerland) suggesting that inappropriate care shows no regard for international borders (Brook and Vaiana, 1989; personal communication, Robert Brook, 1991). This research is demonstrating, with remarkable consistency, that 15% - 30% of a wide range of provided services are inappropriate (Lomas, 1990b).²⁸ Furthermore, the phenomenon "is not explained by high - or low - rates of use in an area; by the kind of health-care facility; or by any of the usual physician characteristics such as age, specialty, or education. Rather, the most important factor seems to be the practice style of the individual physician" (Brook and Vaiana, 1989, p. 1; also see Brook et al., 1990).

Research on inappropriate care in Canada is in its infancy. This has led some Canadian observers to suggest that the extent of inappropriateness found elsewhere (particularly in the United States) is a product of the other systems, and that the results are not generalizable to Canada. We believe that this is a 'challenge' that should not be

²⁸ In fact much higher rates have been found in certain jurisdictions and for certain procedures (see Roos and Roos (1990) and other literature referenced therein).

ignored, because it is of critical importance to the health of Canadians. While the development of clinical practice guidelines should be a high priority, there is room for the concurrent comparison of present patterns of care against standards already established. We recommend, therefore, that an estimate of inappropriate care provision in Canada be developed on the basis of areas of practice for which guidelines or standards promulgated by physicians already exist. The development of a 'minimum (conservative) figure' in which all parties would have confidence, would allow debate to move beyond discussions about whether 5%, 15%, 25% or some other proportion of care provided to Canadians is inappropriate, to the much more important collaborative deliberations over corrective policy (Woodward and Stoddart, 1990).

Regulation and Licensure

There are a number of initiatives, all of them representing relatively significant change to the physician resources sector, that we deal with under the regulation/licensure category. Perhaps the most fundamental of these is movement in Canada toward the elimination of exclusive fields of practice (which serve to restrict unduly the activities in which health professionals other than physicians might engage), and their replacement by a more circumscribed set of exclusive acts (that can be undertaken only by individuals with medical training) and reserved titles (for individuals with specified training and other qualifications). Whether this is the best way to address the fact of overlapping 'scopes of capability'²⁹ has yet to be established. But whatever means are eventually adopted to this end, it is time that the Canadian regulatory environment develops its own equivalent of clinical practice guidelines, perhaps labelled "scope of practice guidelines", which would have the effect of aligning 'scopes of capability' with scopes of practice. Without movement in this fundamental area, achievement of the over-riding objective for physician resource policy articulated in

²⁹ By 'scopes of capability' we mean those functions and acts for which training and examination have established individuals' clinical competence.

Chapter 3 will remain elusive.

We would hope that our recommendations elsewhere on reductions in medical school enrolments, and reductions in the use and mobility of GOFMS, might accelerate the pace of this restructuring. If they do not, and if cost-effective personnel substitution is a goal of health human resource policy in Canada, then perhaps the cuts in the medical training establishment will need to be deeper. There is little mystery in the fact that scientific evidence and practical experience in rural areas of Canada, illustrating significant opportunities for expanded practice of, for example, nurse practitioners, seem seldom to be translated into educational and regulatory revision. But it does seem ironic that scopes of practice tend to be very elastic - expanding when physicians are not available, contracting when they are. The fact is that this 'double standard' will continue in the face of a slack, and growing, physician supply (Lomas, Barer and Stoddart, 1985).

A second major area of needed reform is the component of quality assurance activities represented by maintenance of clinical competence throughout a physician's practice life. This is an essential component of efforts to ensure quality health care for the Canadian public, it is consistent with a number of related policy initiatives in other areas of physician resource policy, and it is too important to be left as a voluntary activity if the present level of interest in it among physicians is indicative. As Denis Kendel observed at a recent CMA meeting,

"...we are...not dealing with a captive group which is highly compliant with procedures aimed at performance audit. We are, rather, dealing with a very independent-minded group of individuals who are rather defensive of their perceived 'right' to practise medicine as they see fit"

(Medical Post, September 11, 1990. p. 47).

Yet surely a profession that has been granted the privilege of self-regulation by the public in return owes the public a more systematic way of assuring that its practitioners remain up-to-date on evolving information about effective medicine.

There is, predictably, considerable disagreement about whether continuing competence assurance (CCA) should be voluntary or compulsory and, in either case, where responsibility for the activity should lie.

Maudsley (1990) recently noted that "licensing authorities have the unique, legislated responsibility for ensuring the continuing competence of the practising profession". The Canadian Medical Association is on record as being opposed to any initiatives that are not voluntary in nature (Medical Post, *ibid.*). How one could ensure continuing competence without some form of mandatory CCA, in light of the fact that many of the profession would decline to be involved in a voluntary process (Medical Post, *ibid.*), is not clear, at least to us. Some representatives of the licensing authorities appear to support this interpretation, although it is certainly not a universally held position.

We do not wish to imply that the logistics of mandatory CCA are without problems. The development of guidelines alone is a tremendously complex undertaking (Roos and Roos, 1990; Lomas, 1991). Attempting to compare patterns of practice against such guidelines, and to develop effective mechanisms for altering those patterns, will require ingenuity, commitment and cooperation. The task may not be impossible, but it should not be under-estimated. We feel that considerably more resources and effort should be invested in CCA activity, commencing immediately. Furthermore, we would support (at least initially) a voluntary programme, provided it involved clearly articulated procedures which served to assure all relevant parties of the continuing competence of all physicians licensed to practice medicine.³⁰ This may, however, be a contradiction in concepts!

Current problems in the development of CCA range from a lack of validated processes for assessing competence in all areas of medicine, to issues of procedural and legal jurisdiction, through to a variety of issues relating to avenues of recourse in the event of demonstrated inability to meet CCA standards. We do not claim to have intimate knowledge of the complex variety of issues that would require attention in each jurisdiction in Canada. But we do feel that this is an area worthy

³⁰ Any such programs will need to be outcome- rather than process-based, unless there is clear evidence of a strong correlation between process and outcome, and will ideally involve not only those agencies responsible for clinical competence but also agents of the public, who in the end have the greatest stake in continuing competence.

of considerably more examination and effort, and agree with Maudsley (1990), that it is an area in which licensing authorities should assume much greater responsibility.

Continuing competence assurance has a variety of links to other policy areas. Perhaps the most obvious is to our earlier recommendations with regard to undergraduate enrolment. We agree wholeheartedly with the Royal College's view that "... maintenance of competence...[should] be based upon the principle of continuous improvement and enhancement of competence rather than a punitive ...approach" (RCPSC, 1990). Nevertheless, it is certainly conceivable that CCA activities might result in a lowering of the average retirement age of practising physicians. This could obviate the need to reduce undergraduate enrolment,³¹ or justify re-adjustments to that complement in the future. We would hasten to add, however, that the prospect of mandatory CCA leading to the earlier exit from practice of some physicians, some time in the future, should not be interpreted as a rationale for leaving undergraduate entry class sizes as we find them today. The feasibility, effectiveness, and effects, of CCA are certainly not yet known and, in any case, are some years off. Effective CCA programmes might eventually justify increased opportunities for the training of new physicians. There will be time enough to make any appropriate adjustments to undergraduate education when the evidence appears.

³¹ Interestingly, the recent initiative in British Columbia to begin the development of a physician pension fund could have the (presumably unintended) consequence of making mandatory CCA activity more acceptable to the profession in that province. While many physicians continue to practice in their later years through a love of the profession and a deep regard for their patients, we have often heard claims that many continue because they cannot afford not to. For many of this latter group, CCA might be viewed as an extremely threatening activity. On the other hand, if a reasonable pension arrangement were available, they might face CCA processes far less often. We do not wish, however, to leave the impression that we either support or oppose the British Columbia pension initiative. It appears to offer some interesting possibilities, and some potential implications that have certainly not received much public debate. But because it was still in the process of 'happening' during the writing of this report, it would be premature to comment further until more details are available.

This recommendation recalls our Chapter 3 discussion of the manner in which medicine's private participants fit within the publicly-financed system, and the role of medicine in the broader objective of enhancing the health of the public. We have argued elsewhere that there is a fundamental need for medical education, for example, to align itself more closely with the public interest. There is a similar need for the bodies who have been granted responsibility for protecting the health of the public through regulatory avenues to effect a similar re-alignment. Notions that members of the medical profession have some 'unassailable right' to practice without regard to advances in clinical knowledge, clinical decision-making, or evidence of efficiency, or to access public institutions without regard to the opportunity costs of doing so, run 'hard up' against the over-riding objectives of physician resource policy. Furthermore some of these notions clearly ignore the distinction between the content and context of practice. But if the medical profession fails to monitor adequately the content of practice, through activities such as CCA, then it risks intrusion by others into an area where public representatives have no particular desire (or skills) but may have an obligation to tread.

Finally, on the issue of certification and licensure, we recommend that all necessary efforts be made to ensure that inter-regional portability of licenses is assured, so that individuals with similar training and certification can move freely within the country. In this regard, efforts underway in association with the restructuring of the requirements for the LMCC (Federation of Medical Licensing Authorities of Canada, 1990), which are intended to have the effect of reducing the inter-provincial variability in routes to this examination process, appear to us to be consistent with this recommendation. If, as Maudsley (1990) suggests, the source of variability in licensing standards rests with individual provincial and territorial licensing authorities' post-graduate training requirements, then this is an obvious and beneficial area for all regional jurisdictions to collaborate to resolve a national problem. If not here, then where?

Remuneration for Medical Services

As we noted in Chapter 4, section C, no method of paying for medical services is without its effects on other physician resource issues. Nor is there any objective, value-free way of determining even an 'optimal mix' of payment approaches. But any detailed examination of methods of payment (and there have been too many to cite) has revealed that each of the common methods has attractions in certain situations and not in others, and that if a method is used in an inappropriate situation, it is likely to lead to undesirable side-effects. Thus, interviewees provided examples where salaried payment has turned out to be disastrous, and also suggested that medicine has come to be dominated by (in the words of one) "prostitution by professionals because of fee-for-service". We recognize that no remuneration method is free from potential adverse effects, but we believe that there is plenty of middle ground, and a reasonable approach for finding it.

Our discussion in Chapter 4 identified some of the major problems with current arrangements for remuneration of physicians, and hinted at some criteria or principles that we feel should guide the evolution of remuneration policy in this country. Given the extensive list of major problems associated with the dominant place of fee-for-service payment, we feel that it is past time for a serious reconsideration, undertaken at a national level, of this approach to payment for medical care. The fundamental principle underlying this reconsideration should be the consistency of methods of payment for particular functions and types of service with the nature of the specific services and the over-riding social objectives of physician resource policy more generally. Different functions and services meet different objectives; there is no reason that virtually all should continue to be remunerated in one way.

In more concrete terms, we are suggesting that fee-for-service as a method of payment should be replaced where it cannot be shown to meet the goals of such policy (or where other methods would accomplish the same objectives more effectively). If the method of payment *per se* is not accomplishing anything constructive, then the rationale for its continued existence is unclear. At the very least, the 'burden of proof' must shift

to those who would claim that the benefits of this particular method of payment outweigh its increasingly obvious costs.

There would appear to be some obvious situations where changes in remuneration policy are warranted. These might be the subjects of a first round of payment reform. The first of these has already been discussed in some detail in the section above on the funding of academic medical centres. We find no compelling social value to having fee-based payment associated with either education or service provision within academic environments. Indeed, we have suggested (and we certainly heard from a broad range of stakeholders) that this method of payment is the source of many serious problems in the organization and financing of academic medicine.

The two objectives of most relevance in this context are the training of medical students and the provision of specialized tertiary/quaternary care for large areas (often entire provinces or beyond), although we do not wish to imply that these functions exhaust the social mandate of academic medicine. There seems no compelling rationale for reimbursing the supervision of medical students on the basis of fees for the services provided under supervision by the students. As for the fact that academic centres play an important role as regional specialty resources, once again fee-for-service seems an inappropriate means of funding such resources. These highly specialized, relatively uncommon personnel and facilities play an 'option demand' role, in the economist's jargon. That is, they do not simply provide services to individual patients, but represent the availability of a very specialized response for a larger population, some of which may come to need the services and facilities represented. This suggests that communities must be willing to pay for the availability of these services, whether they are used or not, and irrespective of how heavily they are used (within the constraints of the capacity provided). This line of argument suggests the need for a wholesale re-examination of the manner in which academic medical centres are funded, a re-examination which we understand is already beginning to occur in some quarters.

A second focus of attention in the first round of payment reform should be the whole area of primary care. The objective of a primary care

physician is generally to serve as the front line, or entry point, for a particular set of patients; to manage the overall care for those patients through a combination of personal care provision, and referral to other resources as needed. Once again it is difficult to see how the payment of item-specific fees for particular services is an effective or efficient means of payment for this management role. Viewed another way, we might ask what it is that fee-for-service payment accomplishes in the context of primary care. We certainly heard, in the course of our interviewing, about many 'negative' accomplishments. The main defence of fee-for-service reimbursement was that it preserves a private business ethos for the individual practitioner, and that it provides an incentive to 'work hard'. If this particular method of payment is needed to ensure that individuals who are highly trained at (largely) public expense, who as a result assume privileged positions in society, and who as a result of our public insurance plans enjoy comfortable standards of living and important shielding from normal business cycles (none of which we suggest are inappropriate), 'work hard' in serving the public, then we need to seriously re-examine the types of individuals being admitted to and graduated from medical schools, their academic role models, and the content and ethos of the medical education process!

Our view (and we are not alone) is that Canadian physicians are among the most committed, conscientious and responsible anywhere. We do not attribute this to the way in which they are paid for their services! There would seem to be little defence for fee-for-service payment for primary care within the context of the objectives outlined in this report. The context of medicine has perhaps outgrown the existing payment arrangements, yet under a publicly financed system there has been no reason for the profession to initiate the necessary changes. Instead, the fee schedule has come to be used as a tool of income policy by both parties to the negotiation process, and that process has come to consume so much energy and passion that everyone appears to have lost sight of the fundamental erosion of logic in the arrangement.

Here the concept of capitated payment would seem to be far more consistent with the objectives of primary care. It involves the

reimbursement of a practitioner for the total primary care of a particular patient for a particular period of time. There is a literature on ways of making capitation payments sensitive to the characteristics of a practitioner's patient population, there is already limited Canadian experience with such payment methods, and there are ways of adjusting these for the effects of patient 'sharing' among primary care practitioners. We do not offer details here, nor do we claim that such schemes are without their problems; suffice to note that developing reasonable and fair levels of capitation-based payment pales in comparison to many of the other problems in the physician resource sector. It is even possible that some jurisdictions may feel that capitated payment combined with some more circumscribed use of fees-for-service (for example for services provided above and beyond the terms of the capitation contract), would provide the most appropriate method of funding primary care.

Specialized services (whether or not based in academic medical centre environments) which represent 'option demand' for particular populations, should be funded on the basis of global contracts, in return for which the service is made available to those populations under negotiated terms and conditions. If, for example, there is a single MRI facility in a province, it makes little sense to fund the practitioner(s) reading the images on a fee-for-service basis. Similarly, provincial oncology services might be reimbursed in this manner, with budgets being established on the basis of anticipated patient loads and the implied service requirements. We do not wish to suggest that negotiating arrangements satisfactory to all parties would be a trivial process. But we feel that the alignment of payment method with social objectives is sufficiently important to be worth the effort, and there is no reason (that we can establish) that such revisions should not be possible and practical.

Methods of remuneration other than fee-for-service also seem to offer some significant advantages for other functions. The remuneration of emergency room 'staffing' comes to mind as one clear example. While one can debate at great length the appropriate role for hospital-based

emergency rooms (an issue we do not address here), in general these facilities serve a function of providing emergency response capability for a community. If this is the objective of having that service, there is no compelling reason to reimburse the practices which fulfil that function on a fee-for-service basis. Sessional payments seem far more appealing. After all, we see no reason that a physician's income (direct or indirect) for a ten hour shift in a hospital emergency room should be dependent on what comes through the front door. The fact that the physician is physically available is as important to the community as the actual set of medical services provided during the ten hours. Part of the process of negotiating terms and conditions for this type of service would involve the rationalization of emergency room capability for each community. For example, a number of interviewees suggested that Vancouver was "polluted" with under-utilized emergency room capacity, and that these facilities were difficult to staff, because of the fee-for-service method of payment. Perhaps there are too many emergency rooms, and perhaps fee-for-service is not the appropriate way to remunerate that function.

A similar line of reasoning suggests that provinces should continue to develop relatively lucrative non-fee-for-service arrangements for new graduates willing to meet community needs in less well-served areas (see also our discussion of geographic distribution above). Combinations of non-fee lump sum contractual arrangements and access to fees-for-service might be used by provinces with specialty shortages to attract the necessary specialists from provinces with surpluses. There would seem to be considerable scope here for national, or at least inter-regional strategies that might, for example, see surfeit provinces transfer funds to those provinces or territories attempting to attract the necessary specialists. Of course such transfer arrangements could be structured to be contingent on the actual relocation of physicians (which would not be without monitoring problems). If the amount of the transfer is less than what the source province was paying the practitioner who moves, but is sufficient that, in conjunction with payments from the receiving region, it motivates the relocation, then both provinces, and the affected practitioner, are made better off. The availability of such subsidized

situations is, of course, related back to our earlier discussion of specialty shortages and residency mix rationalization, and represents just one possible option for adjusting the mix and location of specialists in the country.

Radiology and pathology have probably been the subject of more concern and more studies than any other areas of medical care in Canada over the past decade, although few of these have resulted in papers in professional journals. These categories of service have shown the most rapid increases in use (and cost) in virtually every region of the country. They have proven remarkably resistant to serious policy challenge, despite the fact that a variety of potentially worthwhile options have emerged from these studies. While payment by fees-for-service has some intuitive appeal for these types of services, we feel the directions to be explored here involve a fundamental shift away from direct payment of such services by provincial and territorial medical plans. Again, this is not a new idea, but one that has turned out to be remarkably resistant to serious implementation attempts.

In the context of primary care, the practitioner is the 'consumer' of diagnostic services. Primary care practitioners' capitation payments might include funds to be used to purchase diagnostic services from private radiology and pathology practices which would, in turn, be free to compete on service and price dimensions for the business of the primary care practitioners. Regulations would be required to prohibit, or govern, the ownership involvement of primary care practitioners in diagnostic practices, and one would certainly need to guard carefully through practice pattern monitoring against potential under-use of diagnostic services, but again we do not see the implementation problems as being insurmountable, and we see a number of potential advantages to patients and Ministries of Health in this type of system.

Primary care practitioners should be free to negotiate individual arrangements with private diagnostic practices. These might include sub-contracting of capitated services, whereby a general practitioner might negotiate a capitated payment with a private laboratory, in return for which the laboratory would provide all necessary laboratory services for

that practitioner's practice for an agreed period of time.

For many of the more common specialty services, fees for service may be the most appropriate form of reimbursement. Again, however, we suggest a systematic examination of the objectives of the functions or services, and of the advantages and disadvantages of alternative methods of payment in meeting those objectives. While this detailed, function-by-function analysis is unfortunately not something we could include within the time frame of this study, we have offered examples of areas where we feel there are already sufficient grounds for major policy change, and have offered examples of the types of analyses we feel are warranted.

Changes in methods of remuneration, as with any other major policy shifts, require sensitivity and a reasoned and reasonable 'adjustment path'. Changes of this nature should be developed collaboratively; that is, the direction of change can be established, but the details of how and when one arrives at the fully implemented new models must be matters of collaborative development between the funding agencies and the affected professionals. Two concerns expressed by the profession - lower incomes and loss of autonomy - in non-fee-for-service situations, are not inextricable implications of alternative remuneration arrangements. One Ministry of Health official suggested that Ministries should be making the alternatives to fee-for-service relatively more, not less, lucrative, in the interests of reducing reliance on fee-for-service as a payment modality. While we have suggested that further review be undertaken to determine the method for remunerating each function or type of service, that most closely aligns with public objectives for the service or function, we do not see this as a particularly onerous task.³² It should not be allowed to emerge as a mechanism of delay.

An important component of this restructuring of the payment for physician services in Canada will be the development of more broadly conceived "master agreements" (or their equivalents) in all regions, that address structures and processes for negotiating reasonable levels of remuneration, irrespective of method of payment. Our understanding is

³² On the other hand, it would take more time than we could allow within the framework of the present study.

that, to date, master agreements have dealt largely (or even exclusively) with fee-for-service negotiations. In the much more 'eclectic' remuneration environment being suggested here, this exclusive pre-occupation would no longer be appropriate. In fact the development of some 'generic' components of such master agreements might be matters for inter-regional discussion.

Methods for dispute resolution will be a critical aspect of these agreements governing the process of negotiating reasonable levels of remuneration. As we note in Chapter 4, the continued absence of agreement on methods for dispute resolution in some provinces continues to be a major point of contention, and the source of much sound and fury. But it would be naive to suggest that there is a single correct approach that would fit all provinces and territories. To suggest that interest arbitration³³ should exist everywhere simply begs other questions. For example, what should be included for consideration (fee levels only, utilization, incomes, manpower, internal allocation of fee changes...?), what form should the arbitration board or panel take, and what type of arbitration should be involved (final offer or something more flexible)? As with methods of remuneration, there are advantages and disadvantages to different forms of dispute resolution, and we do not feel a compelling reason to recommend any specific approach for all jurisdictions or all arbitrable issues.

But we do feel that some institutionalized method of dispute resolution is essential, for the profession, and for the public, and should be embodied within each region's "master agreement". It would eliminate the threat of service withdrawals, it might reduce the time and energy presently devoted to the ritual of fee or income negotiations, and it should remove a point of contention that appears to us to be impeding the profession's involvement in much more pressing matters of physician

³³ By 'interest arbitration' is meant arbitration over the terms of the agreement. This is distinguished from 'rights arbitration' which deals with the enforcement of the agreement. In the context of negotiations over levels of fees or physician incomes, arbitration issues have almost exclusively (at least historically) dealt with the former.

resource policy!³⁴ In provinces strongly opposed to binding interest arbitration, other non-binding forms of resolution such as conciliation might be attempted for a period of three to five years. If it appears to be working, then the need for binding arbitration is avoided. If it is not working, then binding arbitration may be the only reasonable solution. This leaves open the issue of "arbitration over what?".

Where interest arbitration is adopted as the method of dispute resolution, the process of structuring arbitration panels, and of educating nominees becomes of critical importance. While the most common model appears to be a tripartite arbitration board, with a chair and a nominee selected by each party, this structure often ends up reducing to a decision by a 'judge'. Alternatives might include either larger panels (which are more costly and more time-consuming), or three-person boards comprised of 'equals', with rule by majority. There may be advantages in developing some continuity within these boards, so that the institutional history and understanding of issues of a broader social context are not lost at the conclusion of each round. The notion of regional boards (serving more than one province or territory) has considerable appeal, and would align closely with some of our recommendations below regarding the development and use of national information resources. This should be viewed as something to be examined in the longer term.

There are two final areas which seem worthy of comment within the context of physician remuneration: fee schedule relativities, and patterns of practice review. With respect to the former, and bearing in mind our view that fee-for-service should find much more circumscribed use in Canadian medicine, there are two inter-related issues. The first is the underlying purpose of a schedule of fees and a process for aligning fee relativities with that purpose. The second is the notion of developing

³⁴ There may be another compelling reason for entrenching a dispute resolution process in each region. The Hall (1980) review included binding arbitration in its recommendations. While many of the recommendations in that review favoured by Ministries of Health have been adopted, this one is still only partially in place. This has given rise to claims from the profession of "policy dishonesty" on the part of provincial Ministries of Health.

inter-regional comparability in those relative values.

We would argue that, in general, fee levels and relativities should not be used as instruments of broader physician resource policy (e.g. to influence specialty or practice location decisions). Suggestions were made, for example, that provinces should solve their specialty shortage problems by simply providing large relative increases in fee levels in those specialty areas. We feel that this is an impractical approach, for a number of reasons. First, the internal relativities are not presently (at least in practice) under the jurisdiction of those responsible for issues of physician supply and distribution, and we would not recommend that they become so. Second, adjustments of this nature in fee schedules would be difficult to reverse once a situation had equilibrated. Third, and perhaps most important, we do not feel that such an approach aligns with the purpose of a fee schedule (although we do not doubt that many would argue with our view of that purpose).

If fee schedules are viewed as instruments for remunerating professionals for the provision of specific services, on the basis of the time, human capital (technical skills and clinical knowledge), and other costs involved in those activities, then this leaves no scope for adjustments of the type just described. We suggest that incomes policy can and should be used as part of a physician resource policy package. But we feel that such policy must be structured around fee schedules, not embodied within them. Thus, offering concurrent limited time bonuses or lump sum payments alongside fee remuneration, as suggested earlier in the context of geographic distribution policy, would be consistent with both the objectives of the broader physician resource policy, and the purposes of the fee schedule.

We do not wish to suggest that the fee schedules in Canada are without their problems. But the problems are internal. They relate to the implicit relative values assigned to different activities, the mechanisms (or lack thereof) of relativity adjustment, and the types of factors that should be taken into account in the establishment of those relativities. There has been considerable work undertaken in this area, and we do not propose to repeat or review it in any more detail than was

provided in Chapter 4. Rather, we offer some more general observations on underlying principles.

We feel that, in principle, relative fees should take into account three factors: 1) the value of professional time (taking into account factors such as length of training, uniqueness of skills, complexity and uncertainty of knowledge base for which practitioner is responsible, stress and working conditions, etc.); 2) the extent to which the skills of the professional are indispensable to the performance of the service; and 3) complementary resource or input costs for which the attending practitioner is responsible. Of course each of these is complex and potentially value-laden.³⁵ There are well-accepted methods of ascertaining reasonable unit time values that recognize differences in levels of necessary technical and clinical knowledge, but it is more difficult to ensure that some of the less tangible factors are embodied. The other two factors are probably even less straightforward.

We do not wish to minimize the complexity of developing relative value fee schedules that attempt to comply with this set of principles. They represent a target toward which such development should strive. Once again, the process cannot be a one-time static event. The costs of providing services change, practitioners may become more efficient, and the capabilities of other health professionals may change. All these phenomena, and others, should affect relative values. Because the development of fee relativities will be complex, and will be constantly requiring change, we see this as an area where inter-regional

³⁵ Another factor which one might like to see reflected in fee relativities is the effectiveness of interventions. We are particularly concerned that fee schedule revision be sensitive to the emergence of evidence of effectiveness and efficiency, and of professionally developed clinical guidelines or less formal indications for appropriate use. In other words, the process should be sufficiently flexible to allow fees to 'go to zero' if procedures are shown to be ineffective or clearly inefficient. Ideally one might also like to see such items reimbursed only for sub-populations where such value has been demonstrated. Use beyond areas of demonstrated effectiveness should be compensated at the appropriate value-based level: zero. This may, however, be asking too much of fee schedules. This type of monitoring may, in practice, be better left to quality assurance and continuing competence assurance activities.

collaboration will be essential. If all regions agree to the principle of consistent relative values within fee schedules, then the impetus should be strong for cost- and effort-sharing among those parties who take on the task.

For the second factor, an over-riding principle should be that fee levels should reflect additional skills and training only in situations where those factors are critical to the effective execution of the activity for which payment is made. This moves one directly into considerations of overlapping scopes of practice among specialties, an issue clearly beyond the purview of the present project and beyond our personal area of expertise. But we might expect that medical associations, in collaboration with medical schools, and with the involvement of provincial and territorial Ministries of Health, could develop guidelines governing this process of establishing fee relativities.

As for the third factor (complementary inputs), there are a number of potential pitfalls. Again, we are able to offer here only some guiding principles. The development of tools for establishing these costs is well beyond the scope of this investigation; however, methods are currently under development for the Physician Payment Review Commission in the United States (Physician Payment Review Commission, 1990; Zuckerman, Welch and Pope, 1990). Input costs for particular procedures should be based not on what happens to be common practice, but rather on the basis of efficient, practical provision of services. The medical profession has used 'overhead costs' as an essential bargaining chip in its negotiations over fee levels during the past two decades in Canada. Yet the profession has been reticent to participate in the examination of those overhead costs, or in discussions about the efficiency of alternative approaches to practice organization. It struck us as odd that a profession which continues to be dominated by solo (or very small groups of) practitioners argues for increasing amounts of public money to support its preference for these forms of organization, despite the absence of evidence that such organization is either more effective in terms of impact on patient health status, or as effective but less costly than alternatives.

Another general principle, on this same point, is the need to ensure that fee schedules, or at least the application of them to individual practitioners, take into account the responsibility for those input costs. In situations where some component of overhead is not the responsibility of the professional (as is common for hospital-based specialists), there seems no reason to have the costs of complementary inputs paid to the professional. This suggests that schedules should move toward a disaggregation of the fees, for all fee items, into their professional (own time and skills) and input cost components, and perhaps beyond, to disaggregate types of input costs. In this way, physicians providing the service from settings in which they are responsible for the entire overhead could charge that component; physicians using public resources would not, or would charge only for that component of overhead (e.g. personal receptionist) for which they are responsible.

It is possible that a serious examination of relative fees using the principles enunciated here would reveal that the schedules applied in some provinces already do a quite reasonable job of maintaining intra-professional equity. It seems at least equally possible, however, that there are gross inequities within at least some schedules that warrant immediate or phased adjustment. At the very least, we can offer no compelling reason for assuming that the schedules are 'all right'.

One final aspect of the development of relative fees is the need for an ongoing adjustment process. Particularly with respect to the introduction of new procedural fee items, there seems a clear need to adjust both for the fact that, with experience, the necessary professional time will fall, and for declining complementary costs (usually as new technologies diffuse). Failure to make timely adjustments for these factors has been a major and, we feel, legitimate source of intra-professional friction over fee levels. In particular, it has tended to encourage high technology procedural medicine for reasons having nothing to do with the public interest.

We find considerable merit in the notion of inter-regional development of, and consistency in, relativities within fee schedules. Consistency across regions in relative (not absolute) fee levels has

considerable appeal, most notably because no one we interviewed offered a good reason not to strive for this, and because this would provide a compelling rationale for the inter-regional collaborative funding of the development and ongoing monitoring and adjustment of relativities. Again, getting there might require some effort because of the inconsistency in fee content of provincial and territorial fee schedules, but the task should not be impossible. Considerable effort has already been invested in the development of inter-regional fee comparison capability (through the Health Information Division of Health and Welfare Canada); the effort of developing inter-regional consistency should be able to be built onto that investment.

Global Expenditure Policy

At this juncture we bring together a number of considerations and criteria that have been raised and discussed above in different contexts, but all of which bear on considerations of overall fiscal policy in Canadian health care.

First, just as we have argued that one cannot establish a "right" number of physicians on the basis of technical concepts of need without regard to the costs and benefits, both of additional physicians and of alternative uses of scarce societal resources, so one cannot expect 'science' to determine the 'right' amount to be spent on health care. There will always be more that could be done, more needs that could be met (Wennberg, 1990), more identifiable situations where "one more physician" would generate unequivocal benefits. This does not, however, imply that societies would wish to devote more (or all) of their resources to health care, or to provide all physicians with the incomes that they feel are warranted by the nature of their work. In fact, no two countries have made these basic decisions in precisely the same way, and no two countries end up at precisely the same point, except for short periods of time and by coincidence. In the end these decisions must be societal decisions, taken collectively, using whatever evidence and information is available and seen to be relevant to the decision, but reflecting, ultimately, societal values, preferences, and judgements about which 'benefits' are

'worth' their 'costs'.

Second, we found a growing recognition across the country, including within the medical profession, of the need for budgetary control and reasonable predictability within a largely publicly financed health care system. The reality of the financing of public programmes is that the budgetary process is the point at which short run allocative decisions are taken, and tradeoffs considered, on behalf of the public. Fiscally open-ended programmes maintain an uncomfortable existence in this type of environment - they are not subject to the same processes of checks and balances (no matter how imperfect), and they eventually impose costs on other programmes or on the public, without the public having had the benefit of the opportunity to express modified allocative choices. We are not suggesting that there should not be fiscal room for contingencies. Rather, we would note that reasonably predictable, repeated, and unexplained increases in per capita medical care costs within open-ended funding environments are not the types of phenomena that could be categorized as 'one-time' contingency situations. The dynamics of medical care costs are such that there is no self-equilibration, because there are always more needs that could be met. Budgetary allocations should not be determined on the basis of physician supply, but on the basis of an informed social process that involves public decisions about allocation of resources.

Third, while quality assurance, technology assessment, and related types of activities are all worthwhile methods of improving the quality, effectiveness, and cost-effectiveness with which health care is delivered, we are aware of no evidence that would suggest that all such activities, taken together, will ensure the meeting of fiscal targets (Wennberg, 1990). This is not to suggest that such activities are not worthwhile in their own right. On the contrary, as we argue below, we believe that they have an extremely important role to play in determining the allocation of resources within health care. They should be encouraged and supported; indeed, they should be insisted on by responsible payors. But even if all information of this nature available today were to be embodied within everyday clinical practice, it does not follow automatically that

aggregate health-care expenditures would be any different.

The implications of these general principles taken together are that communities must make allocative decisions within the context of Canadian health care, because health-care providers and professional administrators will not make them, or will make them in ways, and to serve ends, which may not correspond to the priorities of the communities they serve. This is not meant as a criticism of the health-care system, or of the professionals who work within it. It is a statement of reality, a recognition that the system has not been designed, or the professionals who work within it empowered, to make those overall allocative decisions on behalf of the public.

There are any number of principles or criteria that could be used to make those allocative decisions. We suggest, for the time being, a very conservative approach. Given today's apparent social consensus, and taking into account current clinical and technological capabilities, there would seem to be no defensible justification for increases in health care expenditures (and certainly medical care expenditures) in excess of the product of rates of general inflation, population growth, and structural changes in the population which can be demonstrated to infer increased need for health-care resources (on this latter point, see, for example, Barer et al., 1987; Barer et al., 1989).

This is not intended to pre-judge what society may wish to allocate to health care in the future, particularly in the face of presently unanticipated major new 'breakthroughs' which would promise significant improvements in population health status. But on the basis of what is known presently, such an approach is clearly conservative, if not generous. In fact, there may well be sufficient evidence around to support a policy intended to establish a new base for medical and hospital expenditures significantly below current levels, simply on the grounds that some significant proportion of what is provided today is of no demonstrable health benefit, or could be provided more efficiently (either because the mix of resources, or the prices for the services, are

inappropriate).³⁶ We suspect that it would be difficult to 'rally the forces' around such a proposal; it is unlikely to receive public support (at least until the extent of inappropriate care provision in Canada is determined and becomes public information), let alone the participation of health professionals. Furthermore, it may be that the total resource commitment is 'about right', but that the mix of things done with the resources, and the types of resources we use, should be quite different. In any case, our mandate has been to attempt to develop a practical framework for an integrated national strategy for physician resource policy. In that spirit, we feel that the best one might reasonably expect in the short term is that this growing body of evidence might find successful application as the counter-weight to calls for expenditure increases in excess of the guidelines suggested here, and might even be used to support small reductions in, or re-allocations of, expenditures in this sector.

In light of this discussion, we recommend that public accountability and quality of health care would both be best served if all provinces and territories moved toward a system of resource allocation consisting of 'top-down' budgetary allocative processes, and 'bottom-up' evaluative and corrective processes. These latter might include quality assurance (including the development and implementation of clinical practice guidelines), the assessment and controlled diffusion of new technologies with an emphasis on substitution rather than layering and proliferation, the ongoing assessment of needs for institutional and community resources, and the like.

It seems important to emphasize that we are explicitly not recommending the adoption of only one approach to planning and policy formulation, but rather the combination of approaches. These must be concurrent processes, consistent with the multiple obligations of publicly elected representatives: to ensure that public funds are allocated in accordance with public interests to those areas which, in aggregate, will

³⁶ On this, see our earlier discussion of evidence of inappropriate care, and our recommendation to collate evidence on, and to estimate the extent of, such care in the Canadian context.

provide the greatest improvement in public well-being; to then manage the use of those funds to ensure that whatever allocation to health care (and related educational activity) emerges from the budgetary processes is binding; and to ensure that the allocation to health care provides the greatest possible enhancement of public health. Of course these need not be distinct decision processes; new evidence on more efficient delivery of particular types of services might be reflected in reductions in budgetary allocations, or it might result in decisions to 'do more good' within the existing budgets.

We see no need to suggest any particular model of budgetary allocation and control. Provinces and territories use a variety of models at present. Many others are under consideration. There is a dearth of evidence as to the strengths and weaknesses of alternative approaches. Québec has perhaps been the strongest advocate of a view that budgetary control and allocation, and policy development, is most effectively handled centrally.³⁷ On the other hand, a number of provincial commissions and task forces over the past few years have suggested adoption of 'regional envelope' models of allocation. The details have varied from report to report; the uptake of the recommendations has been underwhelming.³⁸

The underlying rationale for such models appears to be a conviction that smaller regions will be better placed to engage in, or at least to apply the results of, the 'bottom-up' sorts of activities mentioned above. They are also better placed than provincial or federal governments to establish regional priorities (Evans, 1973). It may be that in the long run decentralized budgetary control and accountability are the only practical means of creating responsiveness to inter-community differences in allocative and distributive preferences.

³⁷ It is interesting to note that although aggregate resource commitments are decided centrally, Québec is currently moving toward relinquishing control over specific allocations to regional budgetary authorities.

³⁸ The idea dates back at least to the Mustard Report (Ontario, 1974).

One significant danger we see with a policy of regional envelopes is that rather than taking seriously the task of internal regional allocation, regionally elected (if that is to be the model) authorities may use the structure as a forum for political posturing, for channelling community frustration against provincial authorities. (Depending on whether regions are also granted additional taxing authority, we can see this unfolding as a large number of 'federal-provincial style' feuds, within each province or territory; not a happy prospect). Another danger is that unless the level of basic information about effectiveness and efficiency available to the public improves, or unless the scope of allocative control is carefully selected and limited, the result may be unnecessary duplication of capacity. Clearly the further development and evaluation of allocative and control options is many major projects in itself.

One specific sub-component option within global expenditure control is income ceiling policies. We found surprisingly widespread support across stakeholders for such initiatives. This is, of course, only an issue in the context of open-ended fee-for-service remuneration. In that context, however, and depending on the processes for determining ceilings or 'cut-points', such a policy could be entirely consistent both with global fiscal accountability (as one vehicle for achieving that responsibility), and with enhancement of the quality of medical care. The sentiment that there are significant numbers of practitioners whose gross billings are incompatible with the provision of quality care is widely held, both within and outside the medical profession.

There are a number of possible justifications for some variant of an incomes policy. Perhaps the claim we heard most often was that, beyond certain levels of gross billings, it is difficult to believe that a practitioner can be providing quality, effective, care. If the only issue is quality of care, then there are recommendations elsewhere in this report that would make an incomes policy unnecessary. For example, if a comprehensive and mandatory system of continuing competence assessment were instituted, the quality-based justification for an incomes policy might disappear. If our recommendations regarding remuneration reform are

adopted, again the need for fee-for-service income-capping policies may be reduced, with the replacement of fee-for-service as the payment method of choice in many areas of medical care.

Another possible rationale for this type of policy might be an interest in providing opportunities for young physicians to practice within the constraints of global budgetary limits. In this situation, the motivation would not be quality of care, but rather income redistribution within the profession, and possibly maintenance of the size of the educational establishment. A third possible rationale is that income ceilings are but one of a package of medical expenditure policies intended to facilitate the practical application of global expenditure controls.

While the notion of income ceilings may have merit, the underlying rationale should dictate the approach, and the stakeholders involved. If the rationale is quality, then quality-related processes are clearly more suited to the task. If the rationale is income redistribution, then it would seem to us to be an area to be left to the prerogative of the medical associations (although Ministries of Health might offer incentives that would encourage redistribution if they feel such is desirable). If the rationale is as an instrument of global expenditure control, then clearly funding bodies must take the lead role, but they might reasonably expect to receive the support of the medical profession (after all, the speed with which global ceilings begin to bind on the majority of the income distribution is clearly a function of the nature and extent of any complementary individual income policies which bind on the minority).

We do not find individual income ceilings a particularly appealing policy option, although we would suggest that it might serve some purpose in the short run, while many of the other policies developed here begin to take shape and have effect. This is not because we feel that the current income levels, and particularly distributions, are appropriate. Rather, we feel that there are other policy initiatives that are better suited to meeting the possible objectives of an individual incomes policy. We have noted some of these above. Additionally, one might expect that with the development of the policies bearing on physician supply, and with the opening up of other careers in research or quality assurance for MDs,

pressure on global expenditure levels might diminish. Nevertheless we recognize that failure to initiate policy developments in these other areas may leave incomes policies as the 'last best' (or as the 'first but temporary') instrument for reducing pressure on global fiscal constraints. This in itself should serve as an impetus to the constructive and co-operative development of policies in the other areas noted above.

If income ceilings are to be considered, there are many variations, all of which would seem to reduce to time-dependent 'income triggers' (e.g. quarterly gross billing ceilings), volume-dependent 'fee-level triggers' (e.g. after the first 100 billings for procedure x, the fee paid drops to 60%), or combinations, and all of which could be developed with varying degrees of sensitivity to the mix of specialties involved. There seems little purpose in discussing detailed refinements in a document of this nature.

What does seem clear is that, with the possible exception of Québec, provincial and territorial efforts to establish and maintain global medical expenditure allocations have, to date, been only partially effective. The recent Ontario experience appears to have been the least successful (leading more than one observer to comment that "the biggest winner as a result of the medical profession's loss of the strike war of 1986 has been the medical profession"). Some provinces have had a variety of more-or-less binding medical expenditure 'caps' in place in recent years, but the effects appear to have been mixed and provinces appear to be willing to negotiate agreements that allow for expenditure increases in excess of the guidelines we suggested above as reasonable and conservative (Lomas, Fooks et al., 1989). We feel that there is considerable scope for a much more concerted effort to negotiate expenditure envelopes that are 'sealed', and then to ensure that they are 'delivered'.³⁹ Such efforts are completely justified on the grounds of quality of care, public accountability, and fiscal responsibility.

In the end, it may be that the enforcement of these sorts of controls

³⁹ The German experience described in Appendix G, and other literature on that experience cited in section 5C above, may be of particular interest in this respect.

is simply too fractious and politically bruising a process in a fee-for-service environment. Furthermore, imposing global 'caps' within such an environment tends to penalize, for example, a conscientious non-procedure-based general practitioner, or psychiatrist, and encourages each practitioner to compete for market share within a fixed-size market (which is why an individual incomes policy in conjunction with a global policy has some attraction). The obvious alternative is to abandon the fee-for-service method of reimbursement entirely. The alternatives - binding global ceilings with a fee-for-service system, or an alternative set of remuneration methods - could certainly be posed to the profession in each province or territory. The point that seems worth repeating is that there do not appear to us to be any compelling grounds for supporting medical care expenditure increases beyond what might be justified on the grounds of population growth, general levels of inflation, and other changes in population structure which can be clearly linked to increases in medical care needs.

There are, of course, an infinite number of ways of developing and enforcing budgetary policies. We see no reason to recommend a single national strategy, other than the general principle articulated above. But the failure of all regions to 'buy-in' to the notion that some variant of such a budgetary policy is essential invites inter-regional backlash and 'whip-sawing'. Certainly the wide inter-regional variation in real expenditures per capita, and in their rates of growth, provides bargaining points for medical associations. One province's behaviour can create significant political and fiscal externalities.

We close this discussion by noting that it appears to us that some form of global budgetary policy will be a necessary component of a responsible public policy package, at least in the short run. Over time this may become less important (because it may become less binding), but it will never be unnecessary in the context of the Canadian system. Publicly elected representatives cannot evade the responsibility for these fundamental allocation decisions. There may be considerable scope, however, for improving our ability to elicit the public's preferences on these sorts of major allocation choices, a topic which is included in the

next, and final sub-section of this chapter.

Information Creation and Provision

We deal separately with issues of 'creation' and 'dissemination' or 'provision', because to a large extent they are reactions to different sets of problems (although there is little point creating information if there are no plans for dissemination), they involve different types of activities, and they will inevitably require different sets of participants. There are situations where information deficits clearly exist; there are others where we have all the information we might need (or at least enough to know what is implied), but we are faced with problems of 'transmission', 'reception' or 'conversion': information is not getting to the appropriate decision points, those decision points do not have their receivers engaged, or the information-to-policy transmission belt is for some reason not operating. Neither information creation, nor provision/dissemination is likely to have much effect on the latter, unless it is felt that re-packaging, or different modes of communication, might alter the uptake of the information.

We note at the outset that we heard, in interviews, as much about information deficits (of all types taken together) as we heard about any other 'single issue'. As we noted in our Chapter 4 synthesis of problems, no amount of information is going to be enough to satisfy all parties at the policy table, in all situations. Perhaps more fundamentally, there is no information system that will by itself tell a society what its needs are, which ones should be met, and how best to meet them. Furthermore, different parties will, as they have in the past, continue to interpret information in quite different ways, even if they have previously agreed on precisely which information would best meet particular needs.

But even agreement on this latter, logically prior, point, is often elusive. Much of the Ministry of Health/medical profession friction over the years has been the direct result of the frustration of the former over the seemingly endless demands of the latter for 'more and better data'. For their part, Ministries of Health have been woefully negligent in creating information development and dissemination capabilities that would

make the provision of often basic data a routinized, low cost, accurate endeavour. Rarely have there been constructive attempts to reach agreement, not only on what data or information were necessary to inform a particular policy debate, but on the competing courses of action that might follow all possible information outcomes (in other words, the development of the policy decision trees). There are parallels that seem hard to avoid here, between clinical and policy decision-making processes. The medical profession is frequently accused of failing to apply fundamental principles of clinical decision analysis, particularly with respect to diagnostic choices. But policy stakeholders seldom consider the policy implications of alternative information content, or the actual useful information content of particular pieces of data, before requesting the data.

None of this should be interpreted as an argument for the cessation of information creation. But the failure to adopt policy change on the grounds of insufficient information is itself a policy. As one interviewee noted, while policy-makers may not have all the information they would like to support a policy of establishing global budgets, it is equally true that they do not have the information necessary to justify not establishing such limits. As we have attempted to stress at a variety of points elsewhere in this document, information can and should be employed in the policy development process. But it cannot 'make' the allocative or distributional decisions.

Nevertheless there are situations within the physician resource policy arena where more information, or better dissemination would in fact provide considerable guidance to the policy-making process, might promote better quality care through the elimination of inappropriate care, or might provide the means to better-informed public resource allocation decisions.

a. Information Creation

We see a clear need, as part of a national strategy, for the collective (federal/provincial/territorial) development of information systems that could guide the determination of numbers and mix of post-MD

training positions. Again we must emphasize that no amount of information will determine the 'appropriate' number or mix. But there is certainly considerable information that could be brought to bear that would ensure that those particular decisions align more closely with public needs and priorities. This information might be developed at the community level, or by each province or territory. It would need to be aggregated for the purposes of determining a national mix of post-MD positions, and then disaggregated again in the processes of allocating the mix of positions across regions and training centres. Responsibility for the latter phases of this process might reasonably be expected to rest with a national agency such as the Association of Canadian Medical Colleges.

We deliberately avoid attempting to offer details on how one might estimate regional needs for each type of specialty, because the development of the necessary information systems would not be a trivial undertaking. Information on substitution potential, referral patterns, age distribution and activity levels of existing practitioners, the demographic structure of the populations, and other relevant factors would need to be created and married. Regions would need to establish 'requirement guidelines', taking into account information provided to them on the prevalence and incidence of illnesses amenable to medical intervention, on 'scopes of capability' of various health professionals, and on the patient or illness load capacity of physicians within each specialty.

The academic training establishment cannot, and should not, be expected to develop the community and province/territory-level information on relative specialty and geographic priorities. Here there are a wide variety of possible models, of which we sketch out only one. We feel that an approach that would be consistent with the notion of a national strategy, and that would take advantage of the fixed costs of information generation, maintenance and dissemination, would be the development of a national information centre, with regional nodes, the responsibilities of which would include the development and dissemination of the types of information noted above, as well as information on activity profiles of existing physician supply, and other types of information indicated in the

section below on information dissemination, and suggested as useful elsewhere in this document.

There are a number of organizations already in place that might reasonably play important roles in this considerable responsibility. The new National Health Information Centre and the Canadian Medical Association, organizations with significant database development responsibilities and expertise already in place, come immediately to mind. The joint Federal/Provincial/Territorial sponsorship of a National Physician Database provides another example. But no single agency is likely to have the capacity or the interest to do this job alone; even joining forces they would likely fall short of meeting these particular information needs. The effort will have to be a collaboration, not only inter-provincially, but among stakeholders, and will have to draw on a disparate set of information sources (some of which already exist in certain parts of the country, others of which do not exist anywhere).

A second area of need revealed during the course of the present investigation was information on the effectiveness and efficiency of new and existing health-care technologies, and on alternative clinical, managerial, and organizational approaches to health-care delivery. Research in these areas is often complex and costly, and consideration must be given to the costs and potential benefits of the research itself. Again, if no decision-making body has any intention of using information which might result from costly (not only in terms of funds, but in terms of the opportunity cost of extremely scarce human research resources in Canada) research projects, then there seems little point in funding the research. This suggests the need for close collaboration between research funding agencies and provincial policy-makers.

There are, again, significant recent developments in this area, with the establishment of a federal Coordinating Office for Health Technology Assessment (CCOHTA), and a number of provincial counterparts. Here we see potential dangers of duplication, and a clear need for the national office to play a co-ordinating role. Furthermore, provinces such as British Columbia have significantly increased the availability of research funding in these areas; one concern, in fact, is that the availability of funding

may be getting ahead of the availability of researchers.⁴⁰ This links back to our recommendations at earlier points regarding the encouragement of more MDs into research careers, because much of the research in these areas benefits immensely from the involvement of researchers with some clinical background.

We feel strongly that a third area of information need where a national strategy should be developed, is in the area of health status/disability monitoring. Building on initiatives already underway or in place in Ontario and Québec, an ongoing periodic series of regional health status/disability status surveys should be established which are rich enough to support investigations into the broader determinants of health, to monitor key changes in health needs, and to support investigations into the relationships between health deficits and use of different types of health-care resources in Canada. Once again, while the conduct of such surveys is expensive, most of those costs are variable (that is, they are a function of how many surveys one fields, or how many interviews one undertakes). In contrast, there are high fixed costs associated with the prior developmental work. There would seem to be clear opportunities, as part of a national strategy, for provinces not yet involved in such efforts to build onto the developmental work that has already taken place in Québec and Ontario, and for those two provinces, in turn, to avail themselves of any advances in questionnaire design, field techniques, etc., that might emerge from work in other provinces. Above

⁴⁰ There is always the temptation for authors of reports such as this to stress the need for further research in areas of personal research interest. While that may appear to be the outcome here, in fact a number of interviewees, including representatives of the medical profession and the medical education establishment in Canada, made a special point of stressing the need for a significant re-balancing of basic biomedical research with research on the effectiveness and cost-effectiveness of clinical services and the determinants of health. They stressed that the greater impacts on the health of populations are to be found in these latter areas of investigation. Furthermore, recent organizational initiatives such as the establishment of offices focusing on technology assessment, funding initiatives such as those in British Columbia, and recommendations in a variety of Royal Commission and other reports, suggest a rather more widely held conviction with respect to these particular information needs and research priorities.

all, since the information needs in this area are not particularly region-sensitive, there seems no need to attempt to invent twelve wheels where one would suffice. There are also obvious reasons for attempting to ensure inter-regional consistency of the information generated through this type of field work.

There are undoubtedly other areas of information deficit that we have not explicitly identified here. Each informed observer would likely generate a different priority list. These, we feel, are all priority areas, but not all of the priority areas. There is a danger, however, in generating a long, mind-numbing, and expensive list of information needs, and then having information generation become the focus of 'policy' activity. We feel the need to reiterate, therefore, our strong feeling that 'information-related recommendations' should not be the only recommendations adopted from this report, and that information deficits should not be used as excuses for policy inaction.

b. Information Dissemination

Here again there is a long list of potential dissemination processes, targets, and content, of which we provide only a small, illustrative sampling. Specific targets of information include the medical profession, prospective new physicians, the academic medical centres, and the public.

For the profession, mechanisms must be developed for the effective dissemination of new clinical information, and particularly professionally-promulgated practice guidelines. Such information should also be available to provincial and territorial fee negotiation processes (where fee-for-service payment is determined to be the most appropriate form of remuneration).

For potential medical students, medical undergraduates, and post-MD trainees, we see considerable value in a national information resource that would provide data on regional physician supply by age, sex, specialty and area of practice, regional socioeconomic characteristics and other community descriptors, supply of complementary resources (e.g. institutional facilities, other types of health human resources, and other community resources and infrastructure), and other information deemed by

those facing such decisions as useful to informed decisions about choice of specialty and choice of practice location. The design of this information resource could incorporate features of the system described in the Belgian report (see Appendix E), and might be spearheaded by the Canadian Medical Association and the Canadian Association of Interns and Residents.

For the public, we have alluded to a variety of types of information that we feel would assist in the expression of allocative and distributive preferences. We do not claim to have any expertise whatsoever in the provision of such information to the public. We do feel the job done to date has been somewhere between 'non-existent' and 'clearly inadequate'. Included in the types of useful information would be lay-descriptions of updated clinical evidence on determinants of health, clinical interventions that seem to work, and those that don't, and for what segments of the population they appear to hold promise; a variety of self-help and self-diagnostic guides intended to make consumers more intelligent users of health-care services; and information on the allocation of public funds to, and within, health care in individual provinces, and nationally.

There are, at present, very few effective mechanisms and processes, either for disseminating information to the public, or for attempting to develop public consensus. Regional funding envelopes might offer some impetus for these, by making the size of population groups manageable and the consequences of decisions apparent. District Health Council-type models might also be used for this purpose. Academic medical centres would appear to have a key leadership role to play, as part of their social contract, in providing information to the public on clinical effectiveness and cost-effectiveness. We might reasonably look to these institutions to gradually supplant the Art Histers, the Gifford-Jones', and the National Enquirer (which one interviewee identified (not entirely in jest) as the primary source of health-related information for significant segments of the population).

We are being vague here because the more detailed investigation and development of effective vehicles for this purpose is a task well beyond

the mandate of this project, and certainly not an area in which we have any particular comparative advantage. It is, however, an area worthy of further investigation.

While we have made reference at a number of points to suggested responsibilities and policy staging, we have also introduced throughout section 6B a potentially mind-numbing array of policy recommendations and options, which should logically be distributed across the entire range of policy participants, and some of which must logically precede others. We now turn to some preliminary thoughts on the challenges for policy development and implementation.

Chapter 7: NEXT STEPS

How, When and By Whom?

In the preceding chapter we presented a series of options and recommendations which might be part of a framework or 'strategy' for managing physician resources in Canada.¹ At numerous points we have suggested possible roles that different parties or organizations might play in such a framework and we have stressed the importance of the timing of new policies. However, much more detailed attention to roles and timing is required if a national initiative is to be pursued.

It is extremely unlikely that any one party or organization can accomplish significant change in this sector on its own, due to the existing pattern of fragmented control over key areas of policy and the sheer complexity of the sector. Furthermore, pragmatism aside, consultation and negotiation among the parties affected by initiatives is desirable in and of itself. We believe that the most sensitive and innovative solutions to implementation and adjustment problems will be found by those closest to the problems, if they are committed to the search, and if they feel that important objectives are being achieved collectively and that they individually are being treated 'fairly'.

Some of the policy options discussed create new roles. Many of the options require the re-definition of existing roles. If the directions discussed in this report are to be pursued, then we would envision that a useful step would be the specification of a 'roles matrix' in which the implications of any adopted recommendations or directions for the roles of all affected parties in this sector are identified for discussion.

Similarly, a more detailed 'critical path' for policy development and implementation would need to be created and examined. Some of the initiatives suggested above must precede others, in order to enable a logically-phased development; in other cases, initiatives must proceed concurrently. Some are best viewed as long-term² approaches; others may

¹ As we have emphasized at a variety of places throughout the report, few of these options and recommendations are new. Many have, in fact, been 'around' for quite a long time.

² Several interviewees cautioned against this, professing to have little confidence in strategies that extended beyond current electoral cycles and stakeholder leadership. We agree that this will represent a

be expected to have more immediate impacts.

In the case of both the timing of policy development and implementation and the delineation of roles and responsibilities, however, more detailed work is premature until some consensus or decision has been reached on the elements to be included in a national or inter-provincial strategy for the sector or, indeed, on whether such strategies are even possible. Although we have discussed aspects of the set of options and recommendations presented in Chapter 6, section B with both representatives of provincial governments and numerous stakeholder groups, it is fair to say that none have been able to view and consider the entire package, nor the conceptual framework and unifying themes which underlie our analysis. It would seem both prudent and desirable to allow this to occur, and to obtain feedback which would be useful input to future stages.

We are particularly sensitive to the need to elicit the reactions of stakeholders whom we interviewed. There was an almost universal preference expressed by the individuals and groups with whom we met that they be offered an opportunity to comment on a draft document, prior to any discussion of 'implementation' possibilities. We understand and respect this. Moreover, it is important to allow for differences in possible implementation routes in different provinces and regions which may not be apparent to those (including us) removed from the setting. Finally, our experience with the interviewees has convinced us that their input will be critical to an identification of the 'nitty-gritty' barriers to change, the practical everyday concerns that will need to be addressed if major change occurs.

For those who commissioned this project, the issue may well be whether to proceed at all, at least as a group. Is the time 'right', and what might the 'first steps' look like? We comment briefly on these issues in the final two sub-sections of this chapter and the report.

formidable challenge.

The Current Environment

The nature of a report like this is that by design it focuses on problems. Too often the positive or encouraging aspects of a situation are ignored. We would be remiss if we did not report that there are a number of encouraging signals in this sector that suggest the 'time may be right' for collaborative initiatives between provincial governments and other key parties.

During the past year, several important conferences have been held by the Canadian Medical Association to address issues such as physician supply, stakeholder conflicts within the medical profession, and physician accountability. The Association of Canadian Medical Colleges has sponsored a symposium on the social responsibility of academic health sciences centres. Across the country, numerous other national, regional, and local organizations have held events the purposes of which resonate with the themes of this report. After a long period of discussion among provincial licensing bodies through the Federation of Licensing Bodies and the Medical Council of Canada it now appears that significant progress may be occurring on 'national' standards for licensure. Professional associations are warming to the promulgation of clinical guidelines. Colleges are giving quality assurance and maintenance of competence programs more serious consideration. Independent projects such as the Educating Future Physicians for Ontario project are beginning to appear, and some agencies, e.g. the Premier's Council in Ontario, are focusing on the design of mechanisms for strategic planning in the health human resource field.

This list is not exhaustive and it no doubt omits other initiatives worthy of note; however, it is indicative of widespread concern for the development of constructive actions on specific pieces of the 'problem-puzzle' in this sector. What is still missing, however, is the display of any vision or galvanizing leadership for the sector taken as a whole and as a system. Missing also are effective fora and vehicles for co-ordination along the policy continuum in Figure 6.1.

Nevertheless, there are some blocks on which to build. First, all parties in this sector share the most fundamental objective, that of

maintaining and improving the health of Canadians. Second, they know that change is coming, and appear to be ready, to varying degrees, to drop opposition to change in return for a serious role as a partner in managing and implementing that change. As long as a framework of improved accountability can be established, this is an opportunity which provincial governments should not pass up. Finally, there may be a dawning recognition among individual stakeholders that even their own agendas and interests are suffering from the 'tyranny of small decisions' that the present system of disjointed management, fragmented control, and poor communication perpetuates. Although we stop short of claiming that it is probable that the affected interests would take decisions in a collective forum that they historically have been unwilling to take individually, they seem more likely to be willing to do so now than at any time since John Evans (1973) first identified the basic problems of training, supporting, and managing "physicians in a public enterprise".

First Steps Toward A National Strategy

Our original intent was at this point to cull from the report the numerous specific recommendations or opportunities for inter-regional and national collaboration identified in preceding chapters and to attempt to meld them into a more formal strategy. This would be premature (and perhaps presumptuous on our part) however, given the extensive analysis above and the limited opportunity to date for either those who have commissioned the report or those who may be affected by its recommendations to discuss and comment on the report in its entirety.

Our assessment, therefore, is that an important next step would be to test, both informally and eventually more formally, the cautiously optimistic assessment of the current environment which we have offered above.

A variety of options may be available or designed for this purpose, including, but by no means limited to, the use of national or regional working conferences and/or stakeholder focus groups. We are likely not the most appropriate individuals to make these operational judgements, although we would be willing to discuss the advantages and disadvantages of alternative strategies with those who may be charged with making them.

Important objectives for this next stage should be to seek reactions to the framework, options and recommendations of this report. This would have two purposes. First it would allow the identification, from among the many recommendations and options, of the 'policy packages' (sets of policies which integrate actions on problems across the spectrum of this sector) which represent the 'best bets' for consensus. Second, where there appears to be less consensus, it would permit the isolation of the major impediments to consensus development and, perhaps, elicit some constructive approaches to promoting consensus in more contentious areas of policy development.

Although we envision this as a national endeavour, it may also be possible at this stage for provincial interests to identify opportunities for province-specific initiatives that are consistent with the principles and direction of the proposed national framework and that would constitute contributions to a 'national' strategy. To facilitate this next stage we

recommend the release and distribution of this report as a discussion document. As such it may be an important first step along the road to change by providing material for discussion, consultation and negotiation the problems and potential directions of change in the physician resources sector. It offers this material in one (albeit lengthy) place, but its length has enabled an important emphasis on inter-relationships, both of problems and policy avenues.

If there is to be further action toward a national strategy, framework, or understanding, however, we suggest that it will need to contain several important elements. First, the parties involved will need to identify and accept the principles upon which collaboration will be based. We have suggested a number of these throughout the report, including:

- agreement to a clear statement of policy objectives in this sector;
- respect for different sources of legitimacy in representing the public interest;
- circumscription of the role of experts to the areas of their expertise;
- alignment of private interests with the collective goals of a largely public-financed system;
- opportunity for representation and participation of parties affected by proposed changes;
- establishment of significantly stronger accountability mechanisms;
- a primary focus on improving the effectiveness of medical care or other health-enhancing activities rather than on expenditure control for its own sake.

Second, there will need to be clear evidence of commitment to change on the part of those purporting to catalyze and lead it. If provincial governments are to play this role, they will be expected to provide clear indications of the directions and targets of change and demonstrate consistency and resolve in their own policy decisions. Even in a collaborative environment it may be necessary for stakeholders to understand that change in some form will occur even if they choose not to

participate.³

Third, considerable time and effort will (as noted above) need to be invested in the assignment and negotiation of roles and responsibilities and the synchronization of policy development and formulation in different areas of the physician resources sector. Specific problems in this sector may be tackled in isolation, but they will not be solved that way.

Finally, the progress of any process that is set in motion toward a national strategy will itself need to be monitored against policy 'milestones' set in advance. It will also be essential that flexibility and adjustment capacity be built into the strategy. There are no 'permanent' solutions to problems in this sector.

³ Evans' (1973) specifically warns about this (p.985):

"It cannot be overemphasized that the success of the evolutionary and participatory approach to the development of a system of health services depends in large measure on the initiative and responsiveness of groups outside government. Unless the [stakeholders] participate responsibly and responsively, there is little doubt that the resulting pressures for cost control alone will force a more doctrinaire approach from government, with conformity, rigidity, and restraint replacing pluralism, flexibility and incentives."

BIBLIOGRAPHY

- A. Books, Articles and Presentations**
- B. Reports and Miscellaneous Other Documents**

BIBLIOGRAPHY

A. Books, Articles and Presentations

Adams, O. and Wood A. (n.d. 1990), "Physician Resource Planning - The 'Adjusted Service Target Approach': A Suggested Pilot Project", paper prepared for the Royal College of Physicians and Surgeons of Canada.

Adams, O. (1989a), "Canada One Country Among Many Grappling With MD-Oversupply Issue", Canadian Medical Association Journal 140(1):68-69.

Adams, O. (1989b), "Canada's Doctors - Who They Are and What They Do: Lessons From the CMA's 1986 Manpower Survey", Canadian Medical Association Journal 140(2):212-221.

Alexander, L.M. (1990), "High-cost Patients in a Fee-for-service Medical Plan. The Case For Earlier Intervention", Medical Care, 28(2):112-123.

Ali, A. and Blajchman, M. (1987), "Quality Assurance in the Use of Blood Products. Report of a Study: Stage II (Adult Patients)", Hamilton: Canadian Red Cross Blood Transfusion Services.

Alluise, J.J. et al. (1989), "Impact of IPAs on Fee-for-service Medical Groups", Health Care Management Review, 14(1):55-63.

American Medical Association (AMA) (1990), "The New Medicare Physician Payment System" in Proceedings of the Workshop on Behavioural Responses to the Implementation of the New Medicare Physician Payment Schedule, held November 15, 1990, Arlington, Virginia; sponsored by the American Medical Association, Chicago, and the Project HOPE Center for Health Affairs, Chevy Chase, Maryland.

Anderson, M. and Rosenberg, M.W. (1990), "Ontario's Underserved Area Program Revisited: An Indirect Analysis", Social Science & Medicine, 30(1):35-44.

Angus, D.E. (1989), "Review of Significant Health Care Commissions and Task Forces in Canada Since 1983-84", report prepared for the Canadian Medical Association, Canadian Nurses Association and Canadian Hospital Association, Ottawa, December.

Associated Medical Services (1990), EFPO NEWS, 1:1, Hamilton: EFPO Coordinating Centre, McMaster University

Association of Academic Health Centers (1990), Human Resources for Health: Preparing for Tomorrow, UNC, Chapel Hill, North Carolina.

Association of Canadian Medical Colleges (1987), Summary of the Second Annual Physician Manpower Conference, October 18, Calgary, Alberta.

Ball, T. (1990), "Will Academic Medicine Meet the Challenge of the 90's, or Should Society Invest Elsewhere?", presentation to the Joint Retreat of the Council of Ontario Faculties of Medicine and the Ontario Council of Teaching Hospitals, March 5; Alton, Ontario.

Baltzan, M. (1973), "Medical Care Costs ~ Physician Manpower: A New Economic Theory", Canadian Medical Association Journal, 108:388-393.

Bankowski, Z. (1987), "A Wasteful Mockery", World Health, April:3-4.

Bankowski, Z. and Fulop, T. (1987), Health Manpower out of Balance: Conflicts and Prospects, Council for International Organizations of Medical Sciences.

Barer, M.L. (1988), "Regulating Physician Supply: The Evolution of British Columbia's Bill 41", Journal of Health Politics, Policy and Law 13(1):1-25.

Barer, M.L. and Evans, R.G. (1990), "Reflections on the Financing of Hospital Capital: A Canadian Perspective", HPRU Discussion Paper #90-17D, Vancouver: Health Policy Research Unit, University of British Columbia, Vancouver, B.C.

Barer, M.L. and Evans, R.G. (1983), "Prices, Proxies and Productivity: An Historical Analysis of Hospital and Medical Care in Canada", in E. Diewert and C. Montmarquette, eds., Price Level Measurement: Proceedings from a Conference Sponsored by Statistics Canada, pp. 705-777, Ottawa: Minister of Supply and Services Canada.

Barer, M.L. Evans, R.G., Hertzman, C. and Lomas, J. (1987), "Aging and Health Care Utilization: New Evidence on Old Fallacies" Social Science & Medicine, 24(10):851-862.

Barer, M.L., Evans, R.G. and Labelle, R.J. (1988), "Fee Controls as Cost Control: Tales from the Frozen North", The Milbank Quarterly 66(1):1-64.

Barer, M.L., Evans, R.G. and Stoddart, G.L. (1979), Controlling Health Care Costs by Direct Charges to Patients: Snare or Delusion?, Toronto: Ontario Economic Council.

Barer, M.L., Gafni, A. and Lomas, J. (1989), "Accommodating Rapid Growth in Physician Supply: Lessons From Israel, Warnings For Canada", International Journal of Health Services 19(1):95-115.

Barer, M.L., Kazanjian, A., Pagliccia, N., Ruedy, J. and Webber, W.A. (1989), "A Profile of Academic Physicians in British Columbia", Academic Medicine, 64:9, 524-532.

Barer, M.L., Wong Fung, P. and Hsu, D. (1984), "Referral Patterns, Full-time Equivalents, and the 'Effective' Supply of Physician Services in British Columbia", in J.A. Boan (ed.), Second Canadian Conference on Health Economics, pp. 285-336, Regina.

- Barer, M.L. et al. (1987), "The Impact on Medical Services Utilization of British Columbia's 1982/83 Physician Fee 'Giveback': Preliminary Results", Canadian Journal of Public Health 78(1):37-42.
- Barer, M.L. et al. (1989), "Trends in Use of Medical Services by the Elderly in British Columbia", Canadian Medical Association Journal 141:39-45.
- Barnett, P.G. and Midtling, J.E. (1989), "Public Policy and the Supply of Primary Care Physicians", Journal of the American Medical Association, 262(20):2864-2868.
- Bates, E.W. et al. (1987), "Assessing Process of Care Under Capitated and Fee-for-service Medicare", Health Care Financing Review, [ref to be completed]
- Beazley, G.G. (1987), "Canadian Undergraduate Medical Education: Family Physician Involvement", Canadian Medical Association Journal, 136(5):477-480.
- Becker, E.R., Dunn, D., Braun, P. and Hsiao, W.C. (1990), "Refinement and Expansion of the Harvard Resource-based Relative Value Scale: The Second Phase", American Journal of Public Health, 80(7):799-803.
- Bedford-Jones, J. (1990), "Ontario's Independent Health Facilities Act May Create More Problems Than it Solves", Canadian Medical Association Journal, 143(2):134.
- Berenson, R.A. (1989), "Physician Payment Reform: Congress's Turn", Annals of Internal Medicine, 111(5):351-353.
- Bernard, A.M. et al. (1990), "The Influence of Attending Physician Subspecialization on Hospital Length of Stay", Medical Care, 28(2):170-174.
- Berndtson, K. (1986), "Managers and Physicians Come Head to Head Over Cost Control", Health Finance Management, 40(9):23-24, 28-29.
- Berwick, D.M. (1989a), "Health Services Research and Quality of Care: Assignments for the 1990s", Medical Care 27(8):763-771.
- Berwick, D.M. (1989b), "Continuous Improvement as an Ideal in Health Care", New England Journal of Medicine, 320:53-6.
- Berwick, D.M., Godfrey, A.B. and Roessner, J. (1990), Curing Health Care: New Strategies for Quality Improvement, S.F.: Jossey Bass.
- Beutler, J.M. (1988), "Perspectives: A Nurse Anaesthetist", Health Affairs, 7(4):26-31.

- Birch, S. and Chambers, S. (1990), "Development and Application of a Needs-based Methodology for Allocating Health-care Resources Among Populations at the County Level", Hamilton: Centre for Health Economics and Policy Analysis, McMaster University, (mimeo).
- Birch, S., Chambers, S., Eyles, J., Hurley, J. and Hutchison, B. (1990), "Development and Application of a Needs-based Methodology for Calculating a Capitation Rate for a Comprehensive Health Organization", Working Paper #90-13, Hamilton: Centre for Health Economics and Policy Analysis, McMaster University.
- Birch, S. and Maynard, A. (1988), "United Kingdom", in H. Viefhues (ed.), Medical Manpower in the European Community, N.Y.: Springer-Verlag, pp. 159-203.
- Bock, R.S. (1988), "The Pressure to Keep Prices High at a Walk-in Clinic: A Personal Experience", New England Journal of Medicine, 319:785-7.
- Borsellino, M. (1990a), "Native Communities Struggling to Attract Physicians", Medical Post, 26(22):6.
- Borsellino, M. (1990b), "New Doctor Wonders What His Real Role is in Yukon", Medical Post, July 10, p. 32
- Bovbjerg, R.R., Held, P.J. and Pauly, M.V. (1987), "Privatization and Bidding in the Health-care Sector", Journal of Policy Analysis and Management, 6(4):648-666.
- Bowman, H. and Gross, M.L. (1986), "Overview of Research on Women in Medicine - Issues for Public Policymakers", Public Health Reports, 101(5):513-521.
- Brailer, D.J. and Nagh, D.B. (1986), "Uncertainty and the Future of Young Physicians" (editorial), Journal of the American Medical Association 256(24):3391-3392.
- Brook, R.H., Park, R.E., Chassin, M.R. et al. (1990), "Predicting the Appropriate Use of Carotid Endarterectomy, Upper Gastrointestinal Endoscopy, and Coronary Angiography", New England Journal of Medicine, 323(17):1173-1177.
- Brook, R.H. and Vaiana, M.E. (1989), "Appropriateness of Care: A Chart Book", Washington, D.C.: National Health Policy Forum.
- Brooks, E.F. et al. (1986), "Nurse Practitioner and Physician Assistant Satellite Health Centers. The Pending Demise of an Organizational Form", Medical Care, 24(10):881-890.
- Bui Dang Ha Doan (1988), "France", in H. Viefhues (ed.), Medical Manpower in the European Community, pp. 91-98, N.Y.: Springer-Verlag.

Bui Dang Ha Doan (1990), "The Debates on the Numbers of Physicians", Health Policy 15:81-89.

Calltorp, J. (1990), "Physician Manpower Politics in Sweden", Health Policy, 15:105-118.

Canadian Medical Association Journal (1986a), "Discrepancy Between Specialist and GP Incomes Major Issue Facing New BCMA President", Canadian Medical Association Journal, 135:375.

Canadian Medical Association Journal (1986b), "Remuneration, Encroachment by Specialists Among Concerns of GPs", Canadian Medical Association Journal, 135:1020-24.

Carr, S. (1986), "What Are You Fighting For", Canadian Doctor, 52(11):1, 4-8.

Carter, R.G. (1987), "The Relation Between Personal Characteristics of Physicians and Practice Location in Manitoba", Canadian Medical Association Journal, 136:366-8.

Chassin, M.R., Kosecoff, J., Park, R.E. et al. (1989), The Appropriateness of Selected Medical and Surgical Procedures, Rand Corporation Research Study, Association of Health Services Research and Health Administration Press.

Cherkin, D.C. (1984), "The Impact of Residency Training on the Productivity of Family Physicians", Inquiry, 21(2):152-160.

Cherkin, D.C. et al. (1987), "The Use of Medical Resources by Residency-trained Family Physicians and General Internists. Is There a Difference?", Medical Care, 25(6):455-469.

Christianson, J.B. et al. (1990), "Institutional Alternatives to the Rural Hospital", Health Care Financing Review, 11(3):87-97.

Clancy, C.M. et al. (1989), "Physicians as Gatekeepers. The Impact of Financial Incentives", Archives of Internal Medicine, 149(4):917-920.

Cohen, A., J.C. Cantor, D.C. Barker and R.G. Hughes (1990), "Young Physicians and the Future of the Medical Profession", Health Affairs Winter, 138-148.

Cohen, L. (1990), "How Will Health Care Resources be Managed in '90s? FP-CMA Conference Asks", Canadian Medical Association Journal, 143(2):125-126.

Cohen, L. (1991), "Looming Manpower Shortage has Canada's Obstetricians Worried", Canadian Medical Association Journal 144(4):478-482.

Collins, M.F. (1987), "Today's Young Physicians. Factors that Shape Their Professional Lives", Consultant, 27(11):86-88, 91, 95.

- Conway, J.F. (1989), "It's Time for Canada to Finish Medicare's Job", Journal of Public Health Policy, 10(2):157-160.
- Contandriopoulos, A.-P. (1986), "Cost Containment Through Payment Mechanisms: The Québec Experience", Journal of Public Health Policy, 72(2):224-238.
- Contandriopoulos, A.-P., Laurier, C. and Trottier, L.-H (1986), "Toward An Improved Work Organization in the Health Services Sector: From Administrative Rationalization to Professional Rationality", in R.G. Evans and G.L. Stoddart (eds.), Medicare at Maturity: Achievements, Lessons and Challenges, Calgary: University of Calgary Press, pp. 287-324.
- Cooper, J.K., Heald, K. and Samuels, M. (1977), "Affecting the Supply of Rural Physicians", American Journal of Public Health, 67(8):756-759.
- Cooper, J.K., Heald, K., Samuels, M. and Coleman, S. (1975), "Rural or Urban Practice: Factors Influencing the Location Decision of Primary Care Physicians", Inquiry, XII(1):18-24.
- Copeman, W.J. (1980), "Underserviced Area Program: A 10-year Success Story", Ontario Medical Review, 523-4, 532.
- Cotsonas, C.E. et al. (1989), "Teaching the Tension: Residency Programs and Cost Containment", Family Medicine, 21(2):98-99.
- Council on Long-range Planning and Development, American Medical Association (1986), "Health Care in Transition: Consequences for Young Physicians", Journal of the American Medical Association, 256(24):3384-3390.
- Crandall, L.A., Dwyer, J.W. and Duncan, R.P. (1990), "Recruitment and Retention of Rural Physicians: Issues for the 1990s", Journal of Rural Health, 6(1):19-38.
- Cuyler, A.J. (1991), "Ethics and Efficiency in Health Care: Some Plain Economic Truths", Health Policy Commentary #C91-1, Hamilton: Centre for Health Economics and Policy Analysis, McMaster University.
- Deliege, D. (1989), "Assessment, Prevention and 'Treatment' of Oversupply of Medical Manpower" in Human Resources in Health Care - Proceedings of the 5th Symposium on Health and Economics. Antwerpen (Wilrijk), Belgium: University of Antwerp, November; 1-57.
- DeMarco, W.J. and Fox, B.B. (1989), "Creating the Climate for Effective UR", Health Care Strategic Management, 7(5):17-19.
- Deneke, J.F.V. (1988), "Federal Republic of Germany", in H. Viefhues (ed.), Medical Manpower in the European Community, pp. 99-123, N.Y.: Springer-Verlag.

Dionne, G., Langlois, A. and Lemire, N. (1987), "More on the Geographical Distribution of Physicians", Journal of Health Economics, 6:365-374.

Dirks, J. (1990), "Medicine at the Crossroads", University of Toronto Bulletin, Dec. 10, p. 16.

Dresnick, S.J. et al. (1979), "The Physician's Role in the Cost-containment Problem", Journal of the American Medical Association, 241(15):1606-1609.

Dussault, R. (1986), "Commentary" in R.G. Evans and G.L. Stoddart (eds.), Medicare at Maturity: Achievements, Lessons and Challenges, Calgary: University of Calgary Press, pp. 325-328.

Ebert, R.H. and Ginzberg, E. (1988), "The Reform of Medical Education", Health Affairs, 7(2):5-38.

Eisenberg, J.M. (1986), Doctors' Decisions and the Costs of Medical Care, Ann Arbor, Michigan: Health Administration Press.

Eisenberg, J.M. (1985), "Physician Utilization. The State of Research About Physicians' Practice Patterns", Medical Care, 23(5):461-483.

Eng, A.Y. (1990), "Governments Preach Restraint but Offer no Incentives", letter to editor, Medical Post, Aug. 21, p. 15.

Evans, J.R. (1973), "Physicians in a Public Enterprise", Journal of Medical Education, 48:975-986.

Evans, R.G. (1988a), "Perspectives: Canada. Split Vision: Interpreting Cross-border Differences in Health Spending", Health Affairs, 7(5):17-24.

Evans, R.G. (1988b), "Squaring the Circle: Reconciling Fee-for-service with Global Expenditure Control", HPRU Discussion Paper #88:8D, Vancouver: Health Policy Research Unit, University of British Columbia.

Evans, R.G. (1985), "Illusions of Necessity: Evading Responsibility for Choice in Health Care", Journal of Health Politics, Policy and Law, 10(3):439-467.

Evans, R.G. (1984), Strained Mercy: The Economics of Canadian Health Care, Toronto: Butterworths.

Evans, R.G. (1972), Price Formation in the Market for Physician Services in Canada, 1957-1969, Ottawa: Prices and Incomes Commission.

Evans, R.G., Barer, M.L. and Hertzman, C. (1991), "The Twenty Year Experiment: Accounting for, Explaining, and Evaluating Health Care Cost Containment in Canada and the United States", Annual Review of Public Health 12:481-518, Palo Alto: Annual Reviews Inc.

Evans, R.G., Lomas, J., Barer, M.L. et al. (1989), "Controlling Health Expenditures - The Canadian Reality", New England Journal of Medicine, 320(9):571-577.

Evans, R.G. and Stoddart G.L. (1990), "Producing Health, Consuming Health Care", Social Science & Medicine, 31(12):1347-1363.

Evans, R.G. and Stoddart, G.L. (1986), Medicare at Maturity: Achievements, Lessons and Challenges, Calgary: University of Calgary Press.

Farley, P.J. (1986), "Theories of the Price and Quantity of Physician Services", Journal of Health Economics, 5:315-333.

Federation of Medical Licensing Authorities of Canada (1990), "A Position Paper with Respect to the Enhanced L.M.C.C. as a Passport to Portability of Medical Licensure in Canada", ACMC Forum, XXIII(4):1-3.

Feldman, R. et al. (1989), "Health Maintenance Organizations: The Beginning or the End", Health Services Research, 24(2):191-211.

Firshein, J. (1986), "Physician Fees Important to Successful PPA Operations", Hospitals, 60(23):28.

Fisher, D. (1990), "The Attitudes of Physicians Toward Health Care Cost-Containment Policies", Health Services Research, 25(1, Pt. 1):25-42.

Fooks, C., Rachlis, M. and Kushner, C. (1990), "Assessing Concepts of Quality of Care: Results of a National Survey of Five Self-regulating Health Professions in Canada", Working Paper 90-7, Hamilton, Ont: Centre for Health Economics and Policy Analysis, McMaster University.

Fox, D.M. (1986), Health Policies. Health Politics: The British and American Experience 1911-1965, Princeton: Princeton University Press.

Freddi, G. and Bjorkman, J.W. (1989), Controlling Medical Professionals: The Comparative Politics of Health Governance, Newbury Park, CA: Sage Publications.

Freund, D.A. et al. (1985), "Factors Affecting Physicians' Choice to Practice in a Fee-for-service Setting Versus an Individual Practice Association", Medical Care, 23(6):799-808.

Fuchs, V.R. (1986), "Physician-Induced Demand: A Parable", Journal of Health Economics 5(4):367.

Gabel, J.R. and Redisch, M.A. (1979), "Alternative Physician Payment Methods: Incentives, Efficiency, and National Health Insurance", Milbank Memorial Fund Quarterly Health and Society, 57(1):38-59.

Gainor, C. (1988), "MDs' Manpower Figures Differ by 20% from 'Flawed' Government Numbers", Medical Post, October 4, pp. 1 & 15.

Gerrity, M.S., DeVellis, R.F. and Earp, J. (1990), "Physicians' Reactions to Uncertainty in Patient Care", Medical Care, 28(8):724-736.

Ginsburg, P.B., LeRoy, L.B. and Hammons, G.T. (1990), "Medical Physician Payment Reform", Health Affairs, Spring:178-88.

Ginzberg, E. (1990), The Medical Triangle: Physicians, Politicians and the Public, London: Harvard University Press.

Glaser, W.A. (1990), "Designing Fee Schedules by Formulae, Politics, and Negotiations", American Journal of Public Health, 80(7):804-809.

Godt, P.J. (1987), "Confrontation, Consent, and Corporatism: State Strategies and the Medical Profession in France, Great Britain, and West Germany", Journal of Health Politics, Policy and Law, 12(3):459-480.

Gravelle, H.S. (1985), "Economic Analysis of Health Service Professions: A Survey", Social Science & Medicine, 20(10):1049-1061.

Gray, C. (1990), "New Budget May Mean More Realistic Look at Health Care Costs, MD Says", Canadian Medical Association Journal, 142(8):871-872.

Greene, H.L. et al. (1989), "Physician Attitudes Toward Cost Containment. The Missing Piece of the Puzzle", Archives of Internal Medicine, 149(9):1966-1968.

Groot, L.M. (1987), "Incentives for Cost-effective Behaviour: A Dutch Experience", Health Policy, 7(2):175-188.

Halper, H.R. et al. (1987), "Federal Court Upholds State Ban on Balance Billing for Medicare", Business Health, 4(8):58.

Hanft, R. (1987), "The Need for More Physicians", Health Affairs, Summer: 69-71.

Harris, J.E. (1986), "How Many Doctors are Enough?", Health Affairs, Winter: 73-83.

Held, P.J. et al. (1985), "Containing Medicaid Costs in an Era of Growing Physician Supply", Health Care Financing Review, 7(1):49-60.

Hemenway, D. and Fallon, D. (1985), "Testing for Physician-induced Demand With Hypothetical Cases", Medical Care, 23(4):344-349.

Hemenway, D., Killen, A., Cashman, S.B., Parks, C.L. and Bicknell, W.J. (1990), "Physicians' Responses to Financial Incentives. Evidence From a For-profit Ambulatory Care Center", New England Journal of Medicine, 322(15):1059-1063.

Hertzman, C., Pulcins, I.R., Barer, M.L., Evans, R.G., Anderson, G.M. and Lomas, J. (1990), "Flat on Your Back or Back to Your Flat? Sources of Increased Hospital Services Utilization Among the Elderly in British Columbia", Social Science & Medicine, 30:819-828.

Hester, R.D. et al. (1987), "The Relative Value Scale: Reforming Physician Payment Policy", Journal of the National Medical Association, 79(12):1298-1303.

- Hillman, A.L. (1987), "Financial Incentives for Physicians in HMOs. Is there a Conflict of Interest?", New England Journal of Medicine, 317(27):1743-1748.
- Hillman, A.L., Pauly, M.V. and Kerstein, J.J. (1989), "How Do Financial Incentives Affect Physicians' Clinical Decisions and the Financial Performance of Health Maintenance Organizations", New England Journal of Medicine, 321(2):86-92.
- Himmelstein, D.U. et al. (1989), "A National Health Program for the United States. A Physicians' Proposal", New England Journal of Medicine, 320(2):102-108.
- Hohlen, M.M. et al. (1990), "Access of Office-based Physicians Under Capitation Reimbursement and Medicaid Case Management. Findings From the Children's Medicaid Program", Medical Care, 28(1):59-68.
- Hornbrook, M.C. et al. (1985), "Practice Mode and Payment Method. Effects on Use, Costs, Quality, and Access", Medical Care, 23(5):484-511.
- Horne, J.M. (1987), "Searching for Shortage: A Population-based Analysis of Medical Care Utilization in 'Underdoctored' and 'Undoctored' Communities in Rural Manitoba", in J.M. Horne (ed.) Proceedings of the Third Canadian Conference on Health Economics 1986, Winnipeg: Department of Social and Preventive Medicine, University of Manitoba, pp. 173-198.
- Houston, C.S. (1990), "Dare Saskatchewan Close its One-Doctor Hospitals?", Canadian Medical Association Journal, 142(5):467-8.
- Hsiao, W.C. et al. (1988a), "Results and Policy Implications of the Resource-based Relative Value Study", New England Journal of Medicine, 319(13):881-888.
- Hsiao, W.C. et al. (1988b), "Estimating Physicians' Work for a Resource-based Relative Value Scale", New England Journal of Medicine, 319(13):835-841.
- Hsiao, W.C. et al. (1987), "The Resource-based Relative Value Scale. Toward the Development of an Alternative Physician Payment System", Journal of the American Medical Association, 258(6):799-802.
- Hunter, S.S. (1990), "Levels of Health Development: A New Tool for Comparative Research and Policy Formulation", Social Science & Medicine, 31(4):433-444.
- Hurley, J. (1990), "Simulated Effects of Income-Based Policies on the Distribution of Physicians", Medical Care, 28(3):221-238.
- Iglehart, J.K. (1991), "Germany's Health Care System", New England Journal of Medicine 324(7): 503-508

Iglehart, J.K. (1988), "Medical Schools and the Public Interest: A Conversation with Robert G. Petersdorf", Health Affairs, 7(2):108-120.

Iglehart, J.K. (1986), "Canada's Health Care System. Addressing the Problem of Physician Supply", New England Journal of Medicine, 315(25):1623-1628.

Iglehart, J.K. (1985), "Where Money and Medicine Meet: A Conversation with HCFA Administrator Carolyn K. Davis", Health Affairs, 4(2):72-81.

Jacoby, I. (1981), "Physician Manpower: GMENAC and Afterwards", Public Health Reports, 96(4):295-303.

Jones, D. (1991), "Operating Room Closure in Digby Brings Rural-recruitment Problem into Focus", Canadian Medical Association Journal 144(3):333-335.

Judek, S. (1964), Medical Manpower in Canada, Ottawa: Queen's Printer.

Kazanjian, A. and Friesen, K. (1990), "Proceedings of the Workshop on Priorities in Health Human Resources Research in Canada", HMRU 90:2, Vancouver: Division of Health Services Research and Development, The University of B.C.

Kendel, D. (1989), "Medical Licensure in the 1990's and Beyond", ACMC Forum, XXII(2):1-4.

Kirchner, M. (1989), "Whatever Happened to the Great Doctor Glut?", Medical Economics, 66(11):138-142, 144-147, 151-155.

Kirchner, M. (1987), "Are Doctors Pushing Fees to a Breaking Point?", Medical Economics, 64(20):152-156, 159-162, 167-168.

Kirchner, M. (1985), "Who's Doing the Best Job of Holding Down Fees?", Medical Economics, 62(20):137-145, 149-166, 171-178.

Kirkman-Liff, B.L. (1990), "Physician Payment and Cost-containment Strategies in West Germany: Suggestions for Medicare Reform", Journal of Health Politics, Policy and Law, 15(1):69-99.

Klein, R. (1990), "Medical Manpower Planning: Dynamics Without Direction", Health Policy, 15:247-51.

Kletke, P.R., Marder, W.D. and Silberger, A.B. (1990), "The Growing Proportion of Female Physicians: Implications for US Physician Supply", American Journal of Public Health, 80(3):300-304.

Krasnick, A., Groenewegen, P.P., Pedersen, P.A., et al. (1990), "Changing Remuneration Systems: Effects on Activity in General Practice", British Medical Journal, 300:1698-1701.

- Kravitz, R.L., Linn, L.S. and Shapiro, M.F. (1990), "Physician Satisfaction Under the Ontario Health Insurance Plan", Medical Care, 28(6):502-512.
- Kruse, J., Phillips, D. and Wesley, R.M. (1990), "Withdrawal From Maternity Care. A Comparison of Family Physicians in Ontario, Canada, and the United States", Journal of Family Practice, 30(3):336-341.
- Ku, L. and Fisher, D. (1990), "The Attitudes of Physicians Toward Health Care Cost-containment Policies", Health Services Research, 25(1):25-42.
- Labonte, R. (1987), "Medicare in Australia: Should Canadian Doctors Envy Physicians Down Under?", Canadian Medical Association Journal, 13(8):888-892.
- Lakomski, A. (1987), "The Search is On ... Using a Physician Staffing Group", Ambulance Care, 7(2):14-15.
- Lalonde, M. (1974), A New Perspective on the Health of Canadians, (White Paper), Ottawa: Government of Canada.
- Leader, A. (1990), "Why Are Some Specialties so Unpopular?", Canadian Medical Association Journal, 142(4):287.
- Lee, P.R. et al. (1989), "The Physician Payment Review Commission Report to Congress", Journal of the American Medical Association, 261(16):2382-2385.
- Lepofsky, M.D. (1989), "A Problematic Judicial Foray into Legislative Policy-Making: Wilson v. B.C. Medical Services Commission", The Canadian Bar Review, 68:614-29.
- Lewis, I.J. and Sheps, C.G. (1983), The Sick Citadel: The American Academic Medical Center and the Public Interest, Cambridge: Oelgeschlager, Gunn & Hain.
- Light, D.W. (1988), "Toward a New Sociology of Medical Education", Journal of Health and Social Behavior, 29:307-22.
- Linton, A.L. (1990), "The Canadian Health Care System: A Canadian Physician's Perspective", New England Journal of Medicine, 322(3):197-199.
- Linton, A.L. and Peachey, D.K. (1989), "Utilization Management: A Medical Responsibility", Canadian Medical Association Journal, 141:283-286.
- Lohr, K.N., Brook, R.H., and Kamberg, C.J. (1986), "Use of Medical Care in the Rand Health Insurance Experiment: Diagnosis and Service-specific Analyses of a Randomized Controlled Trial", Medical Care, 25(suppl.):531-538.
- Lomas, J. (1991 forthcoming), "Words Without Action? The Production, Dissemination and Impact of Consensus Recommendations", Annual Review of Public Health 12, Palo Alto: Annual Reviews Inc.

Lomas, J. (1990a), "Finding Audiences, Changing Beliefs: The Structure of Research Use in Canadian Health Policy", Journal of Health Politics, Policy and Law, 15(3):525-42.

Lomas, J. (1990b), "Quality Assurance and Effectiveness in Health Care: An Overview", Working Paper #90-3, Hamilton: Centre for Health Economics and Policy Analysis, McMaster University.

Lomas, J. (1987), Health Manpower in Ontario: Distribution, Planning and Policies, background paper prepared for the Ontario Health Review Panel, February.

Lomas, J., Anderson, G.M. et al. (1989), "Do Practice Guidelines Guide Practice? The Effect of a Consensus Statement on the Practice of Physicians", New England Journal of Medicine, 321:1306-1311.

Lomas, J. and Barer, M.L. (1986), "And Who Shall Represent the Public Interest? The Legacy of Canadian Health Manpower Policy", in R.G. Evans and G.L. Stoddart (eds.), Medicare at Maturity: Achievements, Lessons and Challenges, Calgary: University of Calgary Press, pp. 221-286.

Lomas, J., Barer, M.L. and Stoddart, G.L. (1985), Physician Manpower Planning: Lessons from the McDonald Report, Toronto: Ontario Economic Council.

Lomas, J., Fooks, C. et al. (1989), "Paying Physicians in Canada: Minding Our Ps and Qs", Health Affairs, 8(1):80-102.

Lomas, J., and Haynes, R.B. (1988), "A Taxonomy and Critical Review of Tested Strategies for the Application of Clinical Practice Recommendations: From 'Official' to 'Individual' Clinical Policy", American Journal of Preventive Medicine, 4:77-94.

Lomas, J., and Stoddart, G.L. (1985), "Estimates of the Potential Impact of Nurse Practitioners on Future Requirements for Physicians in Office-based General Practice", Canadian Journal of Public Health, 76:119-23.

Lomas, J., Stoddart, G.L. and Barer, M.L. (1985), "Supply Projections as Planning: A Critical Review of Forecasting Net Physician Requirements in Canada", Social Science & Medicine 20(4):411-424.

MacFarlane, J.A. (1964), Medical Education in Canada, Ottawa: Queen's Printer.

MacLeod, W.B., Huras, P.W. and Burns, S. (1990), "Medical Manpower Planning", ACMC Forum, XXIII(4):28-33.

MacPherson, C.E. (1988), "Manpower Substitution in Mental Health Service Delivery", M.Sc. Thesis submitted to Department of Health Care and Epidemiology, University of British Columbia.

- Maheux, B. et al. (1990), "Female Medical Practitioners. More Preventive and Patient Oriented?", Medical Care, 28(1):87-92.
- Malcolm, L. (1990), "Service Management: New Zealand's Model of Resource Management", Health Policy, 16:255-263.
- Manitoba Medical Association (n.d. 1989), "Proceedings of the Invitational Meeting on Rural Physician Supply", mimeo, MMA.
- Markle, G.B. (1989), "Too Many of Us Are Just Plain Greedy", Medical Economics, 66(3):23-24, 27, 30.
- Maudsley, R.F. (1990), "Medical Licensure: Let's Not Lose Sight of the Objective", Canadian Medical Association Journal, 143(2):98-100.
- Maudsley, R.F. (1988), "Quantity and Quality in Postgraduate Medical Education: Meeting the Challenge", Canadian Medical Association Journal, 139:1134-1136.
- Maudsley, R.F. (1986), "Service and Education in Postgraduate Medical Education: Striking a Proper Balance", Canadian Medical Association Journal, 135:449-453.
- Maynard, A. (1990), "The Case of Britain", Health Policy 15:93-104
- McAuley, R.G., W.M. Paul, G.H. Morrison, R.F. Beckett, and C.H. Goldsmith (1990), "Five-year Results of the Peer Assessment Program of the College of Physicians and Surgeons of Ontario", Canadian Medical Association Journal 143(11): 1193-1199
- McCarthy, T.R. (1985), "The Competitive Nature of the Primary-care Physician Services Market", Journal of Health Economics, 4(2):93-117.
- McConnel, C.E. and Tobias, L.A. (1986), "Distributional Change in Physician Manpower, United States, 1963-80", American Journal of Public Health, 76(6):638-642.
- McLeod, C. (1987), "Autonomy at a Price", Canadian Doctor, 53(3):11.
- McMahon, L.F. (1990), "A Critique of the Harvard Resource-based Relative Value Scale", American Journal of Public Health, 80(7):793-798.
- McNamara, M. (1985), "Physician Payment: The Alternatives", Internist, 26(5):9-12.
- McNerney, W.J. (1970), "Why Does Medical Care Cost so Much?", New England Journal of Medicine, 282:1458-65.
- McNutt, D.R. (1981), "GMENAC: Its Manpower Forecasting Framework", American Journal of Public Health, 71:1116-1124.
- Medical Post (1986), "Income Disparities Still a Hot Issue for Doctors", Medical Post, 22(44):46.

- Michaelis, T. and Pierson, J. (1986), "Forecasting Physician Demand. A Localized Market Planning Resource", Health Forum, 29(2):26-27.
- Michaels, E. (1989), "The Sioux Lookout Program: 'So Many Problems, So Few Physicians'", Canadian Medical Association Journal, 141(8):812-814.
- Migué, J.-L. and Belanger, G. (1974), The Price of Health, Toronto: MacMillan.
- Miles, J.J. (1990), "Criminal Price-fixing and the Physician: What's Going On Here?", Medical Staff Counselor, 4(2):1-11.
- Miller, M.K., Dixon, B.L. and Fendley, K. (1986), "The Economic Costs and Benefits of Adding Medical Manpower to Rural and Urban Communities: A Human Capital Perspective", Journal on Rural Health, 2(2):17-36.
- Moore, F.D. and C. Priebe (1991), "Board-Certified Physicians in the United States, 1971-1986", New England Journal of Medicine 324(8):536-543.
- Moran, T. (1989), "Revamping of B.C. Health Legislation Place on Hold", Canadian Medical Association Journal, 141(5):439-440.
- Morningstar, L. (1986), "Cut Costs, Minister Warns Alberta Physicians and Patients", Canadian Medical Association Journal, 135(10):1180, 1184-1185.
- Morosini, P.L. (1988), "Italy" in H. Viefhues (ed.), Medical Manpower in the European Community, pp. 147-158, N.Y.: Springer-Verlag.
- Movassaghi, H. and Kindig, D. (1989), "Medical Practice and Satisfaction of Physicians in Sparsely Populated Rural Counties of the United States: Results of a 1988 Survey", Journal on Rural Health, 5(2):125-136.
- Muller, C. et al. (1977), "Cost Factors in Urban Telemedicine", Medical Care, 15(3):251-259.
- Murray, T.J. (1990), "The Social Responsibility of a Medical School: The View from the Fifteenth Floor", ACMC Forum, XXIII(4):23-26.
- Naylor, D. and Linton, A. (1986), "Allocation of Health Care Resources: A Challenge for the Medical Profession", Canadian Medical Association Journal, 134(4):333-340.
- Newhouse, J.P. (1990), "Geographic Access to Physician Services", Annual Review of Public Health, 11:207-230.
- Notman, M. et al. (1987), "Social Policy and Professional Self-interest: Physician Responses to DRGs", Social Science & Medicine, 25(12):1259-1267.
- Ontario Medical Review (1990), "Educating Future Physicians for Ontario (EFPO)", Ontario Medical Review, 57:3.

- Paterson, J. (1990a), "Confidential Study Damns Practices at Area Hospitals", Victoria Times-Colonist, Nov. 29, pp. A1-2.
- Paterson, J. (1990b), "GVHS: No Authority to Limit GPs with Hospital Privileges", Victoria Times-Colonist, Dec. 1, pp. A1-2.
- Perrin, J.M. and Valvona, J. (1986), "Does Increased Physician Supply Affect Quality of Care?", Health Affairs, 5(4):63-72.
- Petersdorf, R.G. (1987), "The Need for More Physicians: An Educator Responds", Health Affairs Summer: 72-74.
- Petersdorf, R.G. (1983), "Is the Establishment Defensible?", New England Journal of Medicine, 309(17):1053-1057.
- Phelps, C.E. and Parente, S.T. (1990), "Priority Setting in Medical Technology and Medical Practice Assessment", Medical Care, 28(8):703-723.
- Pineault, R., Contandriopoulos, A.P. and Fournier, M.A. (1985), "Physicians' Acceptance of an Alternative to Fee-for-service Payment: A Possible Source of Change in Quebec Medicine", International Journal of Health Services, 15(3):419-430.
- Politzer, R.M., Yesalis, C.E. and Katzoff, J.M. (1989), "The Hidden Future Supply of Foreign Medical Graduates", Medical Care, 27(11):1046-1057.
- Price Waterhouse (1990), "Health Human Resources Planning Project", Draft Report for Ontario Premier's Council on Health Strategy, Toronto: Price Waterhouse.
- Rabinowitz, H.K. (1988), Evaluation of a Selective Medical School Admissions Policy to Increase the Number of Family Physicians in Rural and Underserved Areas", New England Journal of Medicine, 319:480-486.
- Rayson, J. (1984), "Medical Manpower: The View from the BCMA", British Columbia Medical Journal, 26(5):270-272.
- Reinhardt, U.E. (1985), "The Compensation of Physicians: Approaches Used in Foreign Countries", Quarterly Review of Business, 11(12):366-377.
- Reinhardt, U.E. (1981), "The GMENAC Forecast: An Alternative View", American Journal of Public Health, 71:10, 1149-57.
- Relman, A.S. (1989), "The Changing Demography of the Medical Profession", New England Journal of Medicine, 321(22):1540-1542.
- Relman, A.S. (1988), "Salaried Physicians and Economic Incentives", New England Journal of Medicine, 319(12):784.
- Rice, T.H. (1983), "The Impact of Changing Medicare Reimbursement Rates on Physician-induced Demand", Medical Care, 21:803-15.

- Rider, W. et al. (1989), "Why are Some Specialties so Unpopular?" (letter), Canadian Medical Association Journal, 141:1122-1124.
- Rieder, M.J. (1990), "Letter to the Editor", Canadian Medical Association Journal, 142(11):1180-1.
- Ritsatakis, A. (1988), "Problems Related to Future Medical Demography in the European Community", in H. Viefhues (ed.), Medical Manpower in the European Community, N.Y.: Springer-Verlag, pp. 205-237.
- Rodwin, V.G., Grable, H. and Thiel, G. (1990), "Updating the Fee Schedule for Physician Reimbursement: A Comparative Analysis of France, Germany, Canada, and the United States", American College of Utilization Review Physicians, 5(1):16-24.
- Rogers, D.E. (1991), "Is Medical Academe Meeting Society's Needs of Tomorrow?", ACMC Forum XXIV(1):1-5
- Rogers, D.E. (1989), "Clinical Education and the Doctor of Tomorrow: An Agenda for Action", ACMC Forum, XXII(2):6-11.
- Roizen, M.F. et al. (1990), "Using Relative Productivity Assessments for Allocating Housestaff to Departments", Medical Care, 28(4):369-377.
- Roos, N.P. and Roos, L.L. (1990), "Limiting Medicine", Internal Document #17B, Toronto: Program in Population Health, Canadian Institute for Advanced Research.
- Roper, W.L. (1988), "Perspectives on Physician-payment Reform. The Resource-based Relative Value Scale in Context", New England Journal of Medicine, 319(13):865-867.
- Rosenbach, M.L., Harrow, B.C. and Hurdle, S. (1988), "Physician Participation in Alternative Health Plans", Health Care Financing Review, 9(4):63-79.
- Rossiter, L.F. et al. (1988), "Service Use and Costs for Medicare Beneficiaries in Risk-based HMOs and CMPs: Some Interim Results From the National Medicare Competition Evaluation", American Journal of Public Health, 78(8):937-943.
- Rubin, R.N. (1987), "Physician Reimbursement: The Environment for Change", Journal of Medical Practice Management, 3(2):96-98.
- Rublee, D.A. (1987), "Canada's Extra Billing Controversy Could Signify Implications for the U.S.", Business Health, 4(3):63.
- Ryten, E. (1990a), "Undergraduate Enrolment in Canadian Faculties of Medicine in 1989/90", ACMC Forum, XXIII(2):13-14.
- Ryten, E. (1990b), "The Output of Canadian Faculties of Medicine in 1990", ACMC Forum, XXIII(4):4-5.

Ryten, E. (1989), "The Output of Canadian Medical Schools in 1989", ACMC Forum, XXII(4):7-9.

Ryten, E. and Watanabe, M. (1987), "A Diagnosis of Doctor Glut Raises Doubts", The Globe and Mail, May 19, pp. A7.

Sackett, D. (1980), "Evaluation of Health Services", in J.M. Last, ed., Public Health and Preventive Medicine, 11th ed., New York: Appleton-Century-Crofts, pp. 1800-1823.

Sadowy, H.S. (1988), "The Physician Glut Suggests Struggles in Stemming Health Costs", Business Health 5(5):48-49.

Satkauskas, R. and Pavilanis, A. (1990), "The Plight of Immigrant Physicians in Canada", Canadian Family Physician Vol. 36: January.

Schieber, G.J. et al. (1989), "Physician Payment Research Efforts at HCFA", Health Affairs 8(1):214-218.

Schmidt, D.D. (1990), "The Feminization of American Medicine", Family Medicine 22(2):97-98.

Schneeweiss, R. et al. (1983), "Diagnosis Clusters: A New Tool for Analyzing the Content of Ambulatory Medical Care", Medical Care 21(1):105-122.

Schroeder, S.A. (1985), "The Making of a Medical Generalist", Health Affairs 4(2):22-46.

Schroeder, S.A. (1984), "Western European Responses to Physician Supply", Journal of the American Medical Association, 252:373-384.

Schroeder, S.A., Zones, J.S. and Showstack, J.A. (1989), "Academic Medicine as a Public Trust", Journal of the American Medical Association, 262(6):803-812.

Schutte, J.E. (1985), "Where Government is Trying to Wipe Out Fee-for-service", Medical Economics, 62(20):64-70, 74.

Schwartz, W.B. and Mendelson, D.N. (1990), "No Evidence of an Emerging Physician Surplus. An Analysis of Change in Physician's Work Load and Income", Journal of the American Medical Association, 263(4):557-560.

Schwartz, W.B., Sloan F.A. and Mendelson, D.N. (1988), "Why There Will Be Little or No Physician Surplus Between Now and the Year 2000", New England Journal of Medicine, 318(14):892-897.

Shimmura, K. (1988), "Effects of Different Remuneration Methods on General Medical Practice: A Comparison of Capitation and Fee-for-service Payment", International Journal of Health Planning Management, 3(4):245-258.

Silversides, A. (1990), "Academic Physicians are Learning Some Tough Lessons, Meeting Told", Canadian Medical Association Journal, 142(5):472-473.

Simpson, K.N. and Veney, J.E. (1988), "National Indicators for Health For All", Social Indicators Research, 20:533-548.

Singer, A.M. (1989), "Projections of Physician Supply and Demand: A Summary of HRSA and AMA Studies", Academic Medicine, 64(5):235-240.

Sisk, J.E., Dougherty, D.M., Ehrenhaft, P.M., Ruby, G. and Mitchner, B.A. (1990), "Assessing Information for Consumers on the Quality of Medical Care", Inquiry, 27:263-72.

Sisk, J.E. et al. (1987), "An Analysis of Methods to Reform Medicare Payment for Physician Services", Inquiry, 24(1):36-47.

Siu, A.L. et al. (1988), "Use of the Hospital in a Randomized Trial of Prepaid Care", Journal of the American Medical Association, 259(9):1343-1346.

Spitzer, W. (1984), "The Nurse Practitioner Revisited: Slow Death of a Good Idea", New England Journal of Medicine, 310:1049-51.

Stano, M. (1987), "A Further Analysis of the Physician Inducement Controversy", Journal of Health Economics, 6:227-238.

Stason, W.B. (1987), "What Cornerstone is Best for Physician Payment Reform?", Annals of Internal Medicine, 106(3):468-470.

Steinwachs, D.M., Weiner, J.P., Shapiro, S. Batalden, P., Coltin, K. and Wasserman, F. (1986), "A Comparison of the Requirements for Primary Care Physicians in HMOs with Projections made by the GMENAC", New England Journal of Medicine, 314(4):217-222.

Stevens, C. (1986a), "How General Motors Plans to Kill Fee-for-Service", Medical Economics, 63(12):208-218.

Stevens, C. (1986b), "Cutting the Federal Deficit by Squeezing Your Fees", Medical Economics, 63(1):25-31.

Stoddart, G.L. (1985), "Rationalizing the Health Care System", in T. Courchene, D. Conklin and G. Cook (eds), Ottawa and the Provinces: The Distribution of Money and Power, Vol.2, Toronto: Ontario Economic Council, pp. 3-39.

Stoddart, G.L. and Feeny, D. (1986), "Policy Options for Health Care Technology", in D. Feeny, G. Guyatt and P. Tugwell (eds.), Health Care Technology: Effectiveness, Efficiency and Public Policy, Montreal: Institute for Research on Public Policy, pp. 225-258.

Sullivan, P. (1990), "New, Validated Totals of MDs in Each Specialty Invaluable, CMA Says", Canadian Medical Association Journal, 142(12):1419-1420.

Sullivan, P. (1989a), "Are There Too Many Doctors? CMA Seeks 'Rational' Approach to Issue", Canadian Medical Association Journal, 141(5):432-433.

Sullivan, P. (1989b), "Latest Enrollment Statistics Indicate Canada will be Producing Fewer New MDs", Canadian Medical Association Journal, 140(1):61.

Sullivan, P. (1986), "Medical School Cutbacks Would be Unfair to Young Canadians, Conference Told", Canadian Medical Association Journal, 135(11):1299, 1301.

Tarlov, A.R. (1990), "How Many Physicians is Enough?", Journal of the American Medical Association, 263(4):571-572.

Thomas, D.R. and David, K.M. (1987), "Physician Awareness of Cost Under Prospective Reimbursement Systems", Medical Care, 25(3):181-184.

Traska, M.R. (1990), "Unbundling Could be Costing you a Bundle", Business Health, 8(3):20, 22, 24 passim.

Tuohy, C. (1986), "Conflict and Accommodation in the Canadian Health Care System", in R.G. Evans and G.L. Stoddart (eds.), Medicare at Maturity: Achievements, Lessons, and Challenges, Calgary: University of Calgary Press, pp. 393-434.

Uhlenberg, P. and Cooney, T.M. (1990), "Male and Female Physicians: Family and Career Comparisons", Social Science & Medicine, 30(3):373-378.

U.S. Department of Health and Human Services (1980), GMENAC Report: Modelling, Research and Data Technical Panel - Volume II, U.S. Department of Health and Human Resources, DHHS Publication No. (HRA) 81-652.

van den Bussche (1990), "The History and Future of Physician Manpower Development in the Federal Republic of Germany", Health Policy, 15:215-231.

Vann, J.A. (1987), "The Development of a PPO: A Competitive Case Study", College Review, 4(2):16-27.

Viefhues, H. (1988), Medical Manpower in the European Community, N.Y.: Springer-Verlag.

Watanabe, M. (1990), "Utilization Studies: The Alberta Experience", ACMC Forum, XXIII(2):1-11.

Waugh, D. (1989a), "I'm Not a Doctor, I'm a Specialist", Canadian Medical Association Journal, 141:231.

- Waugh, D. (1989b), "Why Are Some Specialties so Unpopular?", Canadian Medical Association Journal, 141:442.
- Weinkauf, D.J. et al. (1989), "HSOs: Ontario's Answer to HMOs?", Canadian Medicine Association Journal, 140(5):515-519.
- Wells, K.B. et al. (1989), "The Effects of Insurance Generosity on the Psychological Distress and Psychological Well-being of a General Population", Archives of General Psychiatry, 46(4):315-320.
- Wennberg, J.E. (1990), "Outcomes Research, Cost Containment, and the Fear of Health Care Rationing", New England Journal of Medicine, 323(17):1202-1204.
- Wilensky, G.R. et al. (1986), "Alternative Units of Payment for Physician Services: An Overview of the Issues", Medical Care Review, 43(1):133-156.
- Williams, A.P., Schwartz, W.B., Newhouse, J.P. and Bennett, B.W. (1983), "How Many Miles to the Doctor?", New England Journal of Medicine, 309(16):958-63.
- Williams, A.P. et al. (1990), "Women in Medicine: Practice Patterns and Attitudes", Canadian Medical Association Journal, 143(3):194-201.
- Williams, A. (1978), "Need - An Economic Exegesis", in A.J. Culyer and K.G. Wright, (eds.), Economic Aspects of Health Services, London: Martin Robertson, pp. 32-45.
- Willis D.P. (ed.) (1988), "The Changing Character of the Medical Profession", The Milbank Quarterly, 66(2).
- Wolinksky, F.D., Arnold, C.L. and Nallapati, I.V. (1988), "Explaining the Declining Rate of Physician Utilization Among the Oldest-old", Medical Care, 26(6):544-553.
- Woodward, C. and Adams, O. (1985), "Physician Resource Databank: Numbers, Distribution and Activities of Canada's Physicians", Canadian Medical Association Journal, 132(10):1175-1179, 1182-1188.
- Woodward, C. and Stoddart, G.L. (1990), "Is the Canadian Health Care System Suffering From Abuse? A Commentary", Canadian Family Physician, 36:283-289.
- Wright, R.D. (1974), "The Immorality of Excellence in Health Care", Virginia Quarterly Review, 50(2):175-186.
- Wright, S. (1985), "Factors Influencing the Location of Practice of Residents and Interns in B.C.: Implications for Policy Making", unpublished M.Sc. thesis, Vancouver: Department of Health Care and Epidemiology, University of British Columbia.

Wyman, M. (1989), "It's a Sad Day for Medicine in Ontario", Canadian Medical Association Journal, 140(2):202-203.

Yager, J. and Borus, J.F. (1987), "Are We Training Too Many Psychiatrists?", American Journal of Psychiatry, 144(8):1042-1048.

Zuckerman, S., Welch, W.P., and Pope, G.C. (1990), "A Geographic Index of Physician Practice Costs", Journal of Health Economics 9(1):39-69.

Zoler, M.L. (1989), "Fee-for-service Coverage Shifts", Medical World News, 30(17):43.

B. Reports and Miscellaneous Other Documents

Alberta (1989a). An Agenda for Action, Report of the Advisory Committee on the Utilization of Medical Services. Edmonton.

Alberta (1989b). The Rainbow Report: Our Vision for Health Vol.1 - III. Premier's Commission on Future Health Care of Albertans, Edmonton.

Alberta (1990a). Proposed Action Plan for Addressing Rural Physician Recruitment and Retention Issues- Draft. Prepared by Alberta Health and External Advisory Committee on Physician Manpower. June; Unpublished document, Alberta Health.

Alberta (1990b). Background Paper: Actions for Rural Physician Recruitment and Retention (Revised Edition). January; Unpublished document.

Association of Canadian Medical Colleges (1990), Canadian Medical Education Statistics, Ottawa: ACMC.

Canada (1990a), Health Personnel in Canada 1988, Ottawa: Health Information Division, Health and Welfare Canada.

Canada (1990b), "Report on Post-M.D. Clinical Training Positions", mimeo, Ottawa: Health and Welfare Canada, FPTACHHR Secretariat.

Canada (1990c), "Report on Physician Workforce in Canada", mimeo, Ottawa: Health and Welfare Canada, FPTACHHR Secretariat.

Canada (1989a), "Post-M.D. Training in the U.S.A.", mimeo, Ottawa: Health and Welfare Canada, FPTACHHR Secretariat.

Canada (1989b), "Quarterly Demographic Statistics", catalogue No. 91-002, Vol. 3(1), Ottawa: Statistics Canada.

Canada (1986), Report of the Joint Working Group on Graduates of Foreign Medical Schools to the Federal/Provincial Advisory Committee on Health Human Resources, Ottawa: Health and Welfare Canada, Secretariat of the Joint Working Group.

Canada (1984), Physician Manpower in Canada 1980-2000, Ottawa: Health and Welfare Canada, FPACHHR.

Canada (1975), Report of the Requirements Committee on Physician Manpower to the National Committee on Physician Manpower, Ottawa: Health and Welfare Canada.

Canada (1964), Report of the Royal Commission on Health Services, (Hall Commission), Ottawa: The Queen's Printer.

Canadian Medical Association (1989), Canadian Physician Resources: Concepts and Strategies for a Rational Approach to Physician Resource Planning, Committee on Physician Resources report submitted to CMA General Council, August 21, Ottawa.

CAPER (Canadian Post-M.D. Education Registry) (1990), Annual Census of Post-M.D. Trainees 1989-90, Ottawa: CAPER.

Centre for Health Economics and Policy Analysis (1990), Report of the International Conference on Quality Assurance and Effectiveness in Health Care, Hamilton: CHEPA.

College of Family Physicians of Canada (1990), Report on Manpower, Toronto: CFPC.

College of Family Physicians of Canada (1986), Report of the Task Force on Manpower, unpublished document.

Contandriopoulos, A.P., Fournier, M.-A., Castonguay, M. and Preker, A.S. (1989), "Comparison of Medical Manpower in Québec and in Certain Developed Countries", Report submitted to the Working Committee of the Standing Committee on Medical Manpower Planning in Québec, Montréal: GRIS, Université de Montréal.

Council of Ontario Universities (1990), A Proposal to Establish an Ontario Council of Health Research, Toronto: Council of Ontario Universities.

Hall, Hon. E.M. (1980), Canada's National-Provincial Health Program for the 1980's, Saskatoon: Craft Litho Ltd.

Health Manpower Research Unit (1990), Rollcall 89, Vancouver: Division of Health Services Research and Development, University of British Columbia.

MacLeod, S.M. and Ryten, E. (1990), "Report on Pilot Project Concerning Impact of Residency Reductions on Medical Education and Patient Care", unpublished Discussion Paper, Ottawa: ACMC.

Medical Council of Canada (1989), Annual Report, Ottawa: MCC.

Mendelson, M. (1988) A Time for Action: National Issues in Health Policy - A Report Prepared for the National Council of Welfare. Toronto.

New Brunswick (1989). Report of the Commission on Selected Health Care Programs. Fredericton.

Northwest Territories (1990a), "Description of Advanced Nursing Skills Inservice Program", Yellowknife, NWT: Nursing Services, Department of Health.

Northwest Territories (1990b), "Health and Health Services in the Northwest Territories", Report from the Territorial Hospital Insurance Services Board and the Department of Health, Yellowknife, NWT

Nova Scotia (1989a), "Physicians in Nova Scotia: A Human Resource Management Strategy", preliminary report to the Nova Scotia Royal Commission on Health Care prepared by Working Party on Physician Manpower Planning, mimeo, Halifax.

Nova Scotia (1989b), Report of the Nova Scotia Royal Commission on Health Care, Towards a New Strategy, Vol. I-III. Halifax.

Ontario (1989a), Access, Task Force on Access to Professions and Trades in Ontario, Ministry of Citizenship, Toronto: Queen's Printer for Ontario.

Ontario (1989b), Health Professions Legislation Review. Striking a New Balance: A Blueprint for the Regulation of Ontario's Health Professions, Toronto.

Ontario (1989c), Premier's Council on Health Strategy, From Vision to Action: Report of the Health Care System Committee, Toronto.

Ontario (1974), Report of the Health Planning Task Force (Mustard Report), Toronto: Ontario Ministry of Health.

Ontario Council of Health (1983), Medical Manpower for Ontario (McDonald Report), Toronto: Ontario Council of Health.

Ontario Health Review Panel (1987), Toward A Shared Direction for Health in Ontario, Toronto: Ontario Health Review Panel.

Ontario Medical Association (1990), OMA 1989-1990 Annual Report, Toronto: OMA.

Physician Payment Review Commission (1990), Annual Report to Congress 1990, Washington, D.C.: PPRC

Professional Association of Residents and Internes of British Columbia (1990), "Young Physicians' Perspective on the Future of the Health Care System in British Columbia: Concerns and Aspirations", submission to B.C. Royal Commission on Health Care and Costs, October.

Québec (1990), Reform of the Health and Social Services Network (Une Réforme Axée Sur Le Citoyen), Québec City: Ministry of Health and Social Services.

Québec (1989), Improving Health and Well-being in Québec: Orientations, Québec City: Ministry of Health and Social Services.

Québec (1987), Report of the Commission of Inquiry on Health and Social Services, Québec.

Québec (1970), Report of the Commission of Inquiry on Health and Social Welfare, Québec.

Royal College of Physicians and Surgeons of Canada (1990), Maintenance of Competence System, Ottawa: RCPSC.

Royal College of Physicians and Surgeons of Canada (1989a), Annual Report and Reference Handbook, Ottawa: RCPSC.

Royal College of Physicians and Surgeons of Canada (1989b), General Information Concerning Accreditation of Residency Programs, Ottawa: RCPSC.

Royal College of Physicians and Surgeons of Canada (1989c), General Information and Regulations on Training Requirements and Examinations, Ottawa: RCPSC.

Royal College of Physicians and Surgeons of Canada (1989d), General Standards of Accreditation, Ottawa: RCPSC.

Royal College of Physicians and Surgeons of Canada (1988), National Specialty Physician Review, Ottawa: RCPSC.

Saskatchewan (1990a), Future Directions for Saskatoon's Hospitals- A Plan for the Consolidation of Acute Care Services, A Study for the Saskatchewan Commission on Future Directions in Health Care. Saskatoon.

Saskatchewan (1990b), Future Directions for Health Care in Saskatchewan, Saskatchewan Commission on Directions in Health Care, Regina: Government of Saskatchewan.

Saskatchewan (1989), Towards a New Beginning, Review of College of Medicine, Saskatoon: University of Saskatchewan.

Stoddart, G.L. and Woodward, C.A. (1980), The Effect of Physician Extra Billing on Patients' Access to Care and Attitudes Toward the Ontario Health System, Background Research Study for Health Services Review '79 ("Hall Report"), Ottawa: Health and Welfare Canada.

University of Manitoba (1985), Institutional Self-study: 1984/85: Task Force Summary, unpublished mimeo, Winnipeg: Faculty of Medicine.

University of Toronto (1991), "Report of the Presidential Commission on the Future of Health Care in Ontario", University of Toronto Bulletin, January 21.

Valberg, L. et al. (1990), Conceptual Framework for Clinical Academic Units in Ontario Faculties of Medicine and Affiliated Teaching Hospitals/Academic Health Centres, Report from the Subcommittee on Modelling to the Task Force on the Staffing and Funding of Clinical Academic Units, Toronto: Ontario Ministry of Health.

Woods Gordon (1989), Cost/Financing of Clinical Medical Education, Toronto: Woods Gordon Management Consultants.

World Health Organization, Division of Health Manpower Development (1989). Financing Human Resources for Health: Report of an Interregional Seminar. Bangkok, March.

