Toward integrated medical resource policies for Canada: 5. The roles and funding of academic medical centres

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This is the fifth in a series of articles based on the report *Toward Integrated Medical Resource Policies for Canada*,* prepared for the Federal/Provincial/Territorial Conference of Deputy Ministers of Health.[1-3] The first three articles summarized stakeholders' views of problems in the physician resources sector[4] and identified and elaborated on the general themes of the report.[5,6] This is the second article to address a specific policy area.[7]

The current state of the academic medicine establishment was identified by interviewees inside and outside universities as one of the most serious areas of concern in the management of physician resources in Canada. We agree with the general opinion that the organization, funding and activities of academic medical centres are in urgent need of reform. The subject has received extensive and thoughtful comment in Canada,[8-15] but many of the issues appear to be generic to academic medicine in North America, as several critical US commentators have vividly illustrated.[16-22]

Many labels describe the academic settings within which medical education, research and service take place. The term "academic medical centre" is used here to mean the university faculty or school responsible for undergraduate medical education plus the affiliated health care institutions or agencies that provide sites for undergraduate or postgraduate training. We recognize that this definition may not always be appropriate. For example, at a recent policy workshop sponsored by the Centre for Health Economics and Policy Analysis, McMaster University, "academic health organization" was suggested and adopted. The term better conveys the desired focus on a broader definition of health and health care professionals. It also reflects the fact that there is often no single physical location or facility; rather, there is a network of facilities and units that require sophisticated management if they are to function cohesively. We endorse the use of this new label; however, to be consistent with our original report we will retain the use of "academic medical centre" here.

That academic medicine is not only unwell but also, in some cases, in apparent disarray is cause for serious concern. Through their education and research activities academic medical centres are at the heart of our ability to meet the future health care needs of Canadians. Furthermore, they represent a tremendous resource for leadership and are looked to for that leadership by many in the health care system. It is critical that academic medical centres

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have a set of clearly defined roles attuned to the needs of the populations that they serve and a funding structure appropriate for those roles.

Mission and roles

A fundamental problem with the mission of academic medical centres is that neither the public nor the representatives of the centres or their major funding agencies seem clear (much less in agreement) on the appropriate balance among the various roles. It is encouraging, however, that there have recently been considerable efforts at a process of clarification and negotiation.

Questions about whether academic medical centres are fulfilling their social obligations have proliferated during the past decade in the United States and more recently in Canada. There is general agreement on their traditional role as educators of future physicians, contributors to the training of basic scientists, sites of leading-edge basic clinical (and even applied health services) research, and sources of tertiary and quaternary care. However, there is far less agreement on the relative emphasis each role should have, whether the manner in which the centres have chosen to play the roles meets public expectations, the role of the centres in competency assurance through continuing medical education activities, and whether centres should also attempt to fulfil a much broader community service role.

A major cause of this lack of agreement is the absence of provincial (or broader) mechanisms by which all interested parties could develop and commit themselves to a "social contract." It may be desirable that medical centres differ in their mix of priorities, but even this is a matter of happenstance at present rather than the product of any formal, coordinated process.

For the public the main role of academic medical centres 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."[8] Medical education leaders in Canada and the United States are recognizing increasingly 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 . . . 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 who are more aware of the] social, environmental, and emotional factors bearing on health."[14] Thus, one of the most important roles for academic medical centres in Canada must be to ensure that the problem of "preparing doctors for medicine of the past"[14] is rectified. A secondary role of critical importance to the public is the provision of specialized tertiary and quaternary care.

The social contract does not end there, however, because "medical academia exerts a dominant influence on all aspects of medical care,"[16] 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, 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.*[23] In this respect the Valberg Report[11] in Ontario makes some 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 institution.

Our vision of an appropriate role for academic medical centres would encompass at least the following elements (in no particular order):

(a) the training of the number and mix of physicians that are required by the populations they serve, in a manner that prepares them not only to practise in the clinical settings serving the greatest public good but also to adopt leadership roles in research, teaching, health care administration, quality assurance and policy development;

(b) the design and delivery of the undergraduate and postgraduate curricula that best meet the objectives in (a);

(c) the adoption of a leadership role in the continual monitoring of the numbers and mix of physicians and the appropriateness of the services they provide;

(d) the nurturing of a research environment that balances clinical and applied health services research and is thus more closely related to expected payoffs to the public's health and well-being (this does not mean dictating what research shall and shall not be undertaken — rather, a greater responsiveness to the broad social context of medicine and the nonmedical determinants of health should create, as a by-product, a broadening of the research enterprise);

(e) the adoption of a leadership role in the continuing education and continuing competency assurance of clinicians practising in Canada;

**See the policy avenues in the Framework for Physician Resource Policy (Fig. 1) in the third article of this series.[6] Academic medical centres and their faculty members figure prominently in the full range of specific policy activities listed in that framework. Therefore, revisions to the role and funding of academic medical centres will have important implications throughout the medical careers of current and future Canadian physicians.*

(f) the provision of highly specialized diagnostic and therapeutic services for the cost-effective management of identified illness;

(g) the adoption of a leadership role in realigning the activities and the funding of the components of the academic enterprise so that they meet the needs for which they were intended rather than respond to available funding.

Although we found a growing acceptance of the notion of a broader social responsibility there is a lack of understanding and agreement between the academic medical centres and the ministries responsible for their funding of what these social contracts ought to entail and how the centres' performance in fulfilling them should be reviewed. These seem essential first steps in revising the centres' activities and negotiating appropriate funding models for them.

Funding

The balance among the roles of academic medical centres is increasingly affected by the sources and methods of funding. There is little likelihood of designing and fulfilling satisfactory social contracts until appropriate methods are developed for funding these institutions. We see five fundamental and related 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 academic clinical practice.

Multiplicity of sources

The sources of funding of academic medical centres include the provincial ministry responsible for university funding and the ministry of health (through both practice plan [fee-for-service] income and direct funding of programs, faculty members, research and teaching hospital overheads), the Medical Research Council of Canada, the National Health Research and Development Program, and student fees. In many provinces and for certain medical centres other sources will include other ministries (e.g., of labour and, in Ontario, of community and social services), workers' compensation boards and various sources of research funding. Included in the latter will be provincial research granting agencies (e.g., the BC Health Research Foundation), a variety of US funding agencies (e.g., the National Institutes of Health, National Cancer Institute, National Institute on Aging and Agency for Health Care Policy and Research) and some international agencies (e.g., the World Bank, World Health Organization, Rockefeller Foundation and Canadian International Development Agency). In addition, private sector sources provide research funding that may include the funding of faculty members.

However, it is not the rich variety of sources of funding that is the problem — indeed, we see this as a potential strength for academic medical centres. Rather, the problem lies with the lack of institutional control over the effects these sources have on the way the centres' missions are interpreted and put into operation. For example, the relative decline in importance (in most provinces) of funding from traditional education sources (e.g., ministries of higher education) has had dramatic effects not only on the mix of activities deemed important by academic medical centres but also on the centres' standing and functioning within their universities.

In several provinces the relation between academic centres and their parent universities has become increasingly strained as provincial grants to universities have been restricted. It is often alleged that universities view medical faculties as at worst "cash cows" or at best as better able to "fend for themselves" than other faculties. Medical faculties therefore appear to receive relatively lower priority in the queue for new education and research funds, which in turn creates pressure to generate revenue from increased clinical service activity. As the funding balance shifts, however, the "academic" standing of medical faculties is weakened and a vicious cycle is created.

Instability of sources

In our interviews we heard repeatedly that contributions from ministries responsible for universities have declined as a proportion of overall operating revenues of academic medical centres. It was beyond the scope of our investigation to confirm this view in every jurisdiction; however, we have no reason to doubt it. Nor do we have any reason to believe that such a shift in relative contributions is necessarily inappropriate. The mere fact that a centre becomes more successful over time in attracting competitive research funding will shift the relative shares of funding. More worrisome is the increasing importance of income derived from clinical service, which is discussed later.

In general, most revenue sources other than ministries responsible for universities are opportunistic, entrepreneurial or service-related. They are driven by activities that may be inconsistent with either social contracts for the centres or an overall physician resource policy that has more programmatic objectives (e.g., continuing competence, undergraduate medical education, postgraduate training and efficacy assessment). There is no guarantee

that this funding "crapshoot" will correspond or even come close to a funding model that might be developed from first principles (i.e., 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 close there is no guarantee that the internal allocation of funds across functions would correspond to the objectives and their relative importance.

A major problem is the instability of the more opportunistic sources of funding and their support, over time, of increasing proportions of the basic infrastructure of the academic enterprise. Academic medical centres, like most other institutions, tend to take on inertia and lives of their own. What used to be discretionary comes to be considered a part of the fixed infrastructure and its 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 the ministries responsible for universities, which see themselves as obliged to fund only the education and part of the research enterprise. Nevertheless, it seems likely that the centres' infrastructure — that is, the physical and human resources essential to the ability to meet core public responsibilities — has been squeezed to such a degree as to force centres to subsidize their activities with funds raised through complementary and discretionary activities.

Lack of correspondence of sources with functions

Clinical earnings have assumed importance for funding out of all proportion to what should be the objectives of academic medical centres.[11,15,16,20] Although the extent of this problem varies across medical centres (being particularly problematic in some Ontario schools) our interviews indicated that the problem is country-wide.

The growing importance of clinical earnings poses a problem, because it distorts internal decision making about the balance of programs and activities critical to the missions of academic medical centres. This source of funding also results in considerable time spent by senior administrators dealing with the allocation of clinical earnings. We were told by one interviewee that a large part of departmental meetings concerns issues of "overages," "ceilings" and the like. Decisions about the addition or expansion of clinical departments, the development of new programs, the allocation of resources to core programs and the allocation of faculty time to clinical service, research, and undergraduate and postgraduate 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.[15] It is also increasingly difficult to reward excellent clinical teachers and supervisors for their educational contributions. The long-term effects of this on the quality of education and research cannot be good.

Fragmented control over revenue

Academic medical centres typically "lack a system of governance that creates a framework of choice among competing priorities."[18] Recipients of funding (both research and clinical) tend to exercise control over the program and research agenda, and this produces a mix of activities misaligned with the centre's overall vision, role and objectives (if such exist). This has implications for physician resource policy, particularly the matching of postgraduate training sites and opportunities with areas of relative priority for the populations being served. The problem is integrally related to that of clinical earnings as a source of revenue.

Fee-for-service as a method of remuneration

Most of the problems we have described are exacerbated when academic clinical earnings are derived from fees paid for specific services. This method of payment encourages clinical service, particularly surgery and other procedures, often at the expense of activities that would be more in keeping with the mission and objectives of the academic medical centre.

In addition, when income from fee-for-service practice is a large proportion of the "academic" income of clinical faculty (including residency supervisors) a social training milieu is created that is inappropriate in conveying information about the broader context of medicine. We have had students complain to us that methods of increasing clinical earnings have come to dominate conversations among faculty members in some medical centres. We believe there would be a consensus that this does not represent a particularly healthy environment in which to be training our future physicians.

Toward new funding structures

The design and negotiation of new funding structures that decrease reliance on clinical earnings and are appropriate to the redefined mission of academic medical centres will not be easy. Universities, medical faculties and affiliated teaching institutions each have their own governance structure and relation with funding agencies; these will need to be

coordinated to achieve common goals. Moreover, we found little evidence in most parts of the country that the ministries responsible for health and education talk to each other about ensuring that the funding for academic medical centres and the manner in which it is provided are appropriate for the multiple roles that the centres are expected to play.* This also will need to be rectified.

Each academic medical centre will need to develop a funding model that is appropriate for its special characteristics. These models will have to include mechanisms to negotiate and coordinate the levels and sources of external funds as well as to allocate funds internally and to pay individuals. In our view the following general principles should be adopted in the design of these specific models.

First, 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. Although this may require complex arrangements (between the academic core and affiliated teaching institutions in particular) it would serve to recapture some control over the mix of activities and programs and 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 that have grown up as "a confederation of semi-autonomous baronies"[22] seem hardly likely to meet societal expectations.

Second, fee-for-service payment for clinical activity undertaken for academic purposes should be eliminated. Funding for these activities should be provided through specific programs and should include clear identification of funds for clinical supervision.

Third, funding should be linked as explicitly as possible to academic goals and their functions. Furthermore, each function's share of the total funds should reflect the importance of that function in the medical centre's entire academic enterprise.

Fourth, funding should be structured in the form of program budgets, each of which would be associated with a particular goal and functional area and adjusted over time in relation to how well the goal is being met. The funding would be based on the resources required to fulfil those roles, including infrastructure.

Fifth, when new funding is to replace existing earnings associated with the supervision of postgraduate 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 clinical supervision should be clearly identified as such (in the program budgets for postgraduate training) and, in accordance with the first principle outlined, should flow first to the central offices (e.g., of the vice-president or dean) responsible for the centre's educational commitments, not to department heads or clinical program directors.

Sixth, all ministries interested in the role of academic medical centres should be involved in negotiating levels and models of funding and in sorting out the allocation of those funds from the various ministries and among the various universities. The affected ministries will have to collaborate in identifying independent and cooperative areas of responsibility; the increasing reliance on medical plan earnings seems to be partly a result of their having failed to do so. The funding made available to medical centres should be sufficient to fulfil only the roles agreed on as consistent with the institutions' social contract.

Seventh, a corollary of the fourth and fifth principles is that funding for academic medical centres should not be developed on the basis of "per student" allotments. In the past this explicit type of linkage has been an impediment to the rationalization of undergraduate and postgraduate training capacity. Program budgets would be sensitive to the variable costs associated with each student, and they would also recognize the fixed costs of developing and supporting each functional area. Furthermore, a model based on program budgets would facilitate adjustments to the mix of activities that make up a centre's mission. For example, a reduction in the size of the undergraduate class concurrent with a new initiative involving the development of national clinical guidelines would not necessarily result in a reduction in a centre's global operating budget; however, it would likely change the relative size of program budgets for these activities as well as the negotiated time allocations and expectations of some clinical faculty members.

As a package these principles suggest a model of global academic medical centre funding determined through the identification of the products and activities of each centre and the application of funding models developed for each type of activity. There should be negotiations between provincial governments and educational institutions or collections of institutions rather than between individual institutions and ministries. Although the benefits and costs of alternative models still need to be identified and

We do not wish to imply that academic medical centres are underfunded in aggregate. We simply do not have the careful, considered analysis of objectives and the costs of meeting them that would be necessary to make such a judgement. Nor is it clear what the funding implications would be in aggregate of a new social contract with balanced roles.

discussed there seems to be a consensus that the present models are not serving the public or the schools very well.

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