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The Canadian health care system is currently in an era of reform and restructuring. Economic and political forces, changes in licensing and educational system as well as public expectations all influence change in this evolving health care delivery system. In contemplating change it is useful to remember the lessons of our rich surgical history so that the mistakes of the past will not be repeated. The Canadian Association of General Surgeons is well positioned to exert a leadership role in the evolution of surgical care in Canada. The role of the Association in the promotion of evidence-based surgery, continuing professional development and the provision of surgical services in rural areas is discussed in this paper.

Le système de santé du Canada vit actuellement une époque de réforme et de restructuration. Les forces économiques et politiques, l'évolution du système d'autorisation et d'éducation et les attentes du public sont tous des facteurs qui jouent sur les changements dans notre système de prestation de soins de santé en pleine évolution. Lorsqu'on étudie les changements, il est utile de se rappeler les leçons de notre riche histoire de la chirurgie afin d'éviter de répéter les erreurs du passé. L'Association canadienne des chirurgiens généraux est bien placée pour jouer un rôle de premier plan dans l'évolution des soins chirurgicaux au Canada. Ce document porte sur le rôle de l'Association dans la promotion de la chirurgie factuelle, le maintien du perfectionnement professionnel et la prestation de services chirurgicaux en milieu rural.

We are, in the words of that ancient Chinese curse, "condemned to live in interesting times." In such times, which necessitate change and adaptability to change, it is useful to contemplate the paradigm through which we view our current circumstances and future aspirations. Hence the title of this address.

The philosopher George Santayana stated that "Those who cannot remember the past are condemned to repeat it."[1] A contrary attitude was expressed by the American inventor and industrialist Henry Ford. He famously said, "History is bunk." Although it might be considered poor strategy in maintaining your attention, I shall not keep you in suspense by not revealing whose attitude I believe we should embrace. Rather I will state at the outset that I come down firmly on the side of Santayana. In planning our future I believe we must be prepared to consider and learn from our rich surgical history.

During this brief address I propose to touch on some of the elements of our history and discuss the current status of health care and surgical training, describing some of the forces that have created the current situation. Finally, I shall address what I consider to be some of the key challenges that face us as individual surgeons and as members of a national organization which must be seen to establish and promote national standards of excellence in general surgical care.

HISTORY OF HEALTH CARE DELIVERY

John Hunter is regarded by many to be the father of modern surgery. He established surgery as a scientific discipline with a firm grounding in pathology and physiology. He was the first to emphasize the importance of surgical principles in the decision-making process rather than the rote

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prescriptions of the barber-surgeons. His teacher, William Cheseldon, was the first to address the need for surgical training and led the campaign to separate the surgeons from the barbers in 1745. This led ultimately to the establishment of the Royal College of Surgeons of England. The surgical descendants of Cheseldon and Hunter included the great surgeons of the 19th century, not only in Britain but in Germany and America also. Bernard von Langenbeck established a system of residency training and spawned a new generation of legendary surgeons including Billroth and Kocher. In the late 19th and early 20th centuries the focus of surgical excellence shifted to America under the influence of such surgeons as Halsted. He established residency training in the United States based on the German model.

In this country, standards of specialist care were established with the founding of the Royal College of Physicians and Surgeons of Canada in 1929.[2] The College has undergone continuous change and evolution, which carries on to this day. Initially the organization was somewhat elitist, establishing a qualification known as the Fellowship, which was extremely difficult to achieve and designed primarily for those practising in academic centres. Subsequently it was recognized that standards needed to be set which could ensure an adequate level of competence for recognized community specialists. The certification program was established in 1942. Much of the College's business for the next 30 years was taken up with the attempt to resolve the problem of recognizing a dual standard of competence. Certificants of the College were not even considered members, and there was no attempt to enhance their continuing professional development. The issue was finally resolved in 1972 when the dual standard was abolished. Certificants were admitted to Fellowship and a uniform, high standard of specialist competence was established.

One of the other major issues with which the Royal College dealt was the content and organization of postgraduate training. In the early years, many postgraduate programs were entirely hospital based with little or no definition of learning objectives or provision for graduated responsibility. Training requirements could be met by spending the required number of years in different hospital programs while effectively functioning at the same low level of responsibility. Although the role of the universities in postgraduate training was recognized and established as early as 1950, in 1975 the Royal College decided that all training must take place in university-sponsored and integrated programs, which would ensure comprehensive and appropriately progressive training. Thus, by 1975, 2 important principles were established: there should be a single high standard of specialist care, and to achieve this goal training programs should be comprehensive with graduated responsibility and in a university-sponsored and supervised program.

Current forces affecting health care delivery

What of the present? What are some of the more contemporary forces affecting health care delivery and specialist training and practice?

At the end of the 20th century we are in the midst of unprecedented change in health care. National and provincial governments and the public recognize faults and inefficiencies in the system and that reform is necessary to identify and correct these.[3]

Some of the necessary reforms have achieved broad agreement. They include a need to:

- maintain a strong patient-centred approach to health care
- promote care in the community and in outpatient facilities
- emphasize health as a positive state of well-being and not merely as the absence of disease
- increase emphasis on population health
- promote greater individual responsibility for health.

There should be a careful needs assessment to determine what services are necessary to improve population health. These services will be provided in a multidisciplinary manner with multiple points of access to the system. They must be effective, efficacious and affordable.

One may debate the merits of some of these concepts. However, there is no doubt that there is a broad consensus on the need to redefine the "social contract" to ensure that the publicly funded system delivers value for money and that the outcomes have a positive impact on the health of the population. These reforms, if properly implemented, require resources for implementation and evaluation of their effect.

It is important to distinguish between health care reform and health care restructuring.[3] Health care restructuring is a process driven solely by the need to eliminate or reduce government deficits. It has resulted in hospital closures, fewer admissions, shorter length of hospital stay, contracting out of services, reduction in the work force and a marked decrease in infrastructure and capital budgets. One of the greatest challenges in the health care system in general and academic medicine, and surgery in particular, is to somehow rationalize and achieve reform in an era of budget cuts and restructuring.

How did these reforms come about? Certainly there has been a change in public policy across Canada that is remarkably consistent. The 1991 Barer–Stoddard report, which articulated public policy in respect of

physician training as well as the future of academic health care centres, was one of the major influences.[4] This report identified multiple problems that were perceived by influential stakeholders to exist in the health care system. These problems included:

- physician oversupply (this has resulted in a reduction in medical school enrolment, which is proving to be a short-sighted policy)
- physician maldistribution
- a lack of rationalization of residency positions (the allocation of residency positions was perceived to relate more to the service demands of the university departments and not to reflect the needs of society for practitioners)
- the funding of academic medical centres and fee for service remuneration.

As a result of the identification of these problems, multiple recommendations were made. These included the recommendation that residency training positions should be responsive to societal needs. We should be training residents to meet specific health care needs of the population and not necessarily to solve the service requirements of the academic health care centres. In keeping with this concept there is a need to promote the idea of generalist specialists who would practise in community hospitals and provide broad-based care. This has particular implications for our specialty.

Another area of particular interest to our specialty was recognition of the need to increase rural recruitment and exposure during training. There is also a need to improve utilization through the use of such tools as clinical practice guidelines, increased quality assurance activity and management techniques such as care maps.

What other influences affect the current practice of surgery and surgical training? The foregoing was largely a description of changes that affect clinical practice. Other forces have influenced the content of our curricula for both undergraduate and postgraduate training.

Licensing and accrediting bodies have had a marked influence on content of training. The Royal College has introduced requirements for training in several "generic" areas. These include communication skills, critical appraisal, quality assurance, biomedical ethics and research design. Everyone agrees that these are critical skills required of every specialist practitioner for current and future practice. The Royal College is further expanding the concept of generic competencies with the introduction of the CanMEDS 2000 project.[5] This project identifies 7 roles that every certified specialist will be required to fill. These roles are medical expert, communicator, collaborator, manager, health advocate, scholar and professional. We do provide training now to a greater or lesser degree in all of these areas, but there will be a need for a much more formalized curriculum with appropriate evaluation in future.

Licensing bodies have also been concerned about many of these generic skills. An increasingly knowledgeable, sophisticated and litigious public is much less accepting of anything less than excellent care and results. Consequently we have seen a marked increase in complaints to licensing authorities, many of which could be obviated by good communication and "people" skills. Because of this perception, licensing authorities in 1992 increased the requirements for postgraduate training from 1 to 2 years. They also introduced the Medical Council of Canada Qualifying Examination (MCCQE) Part II, which was designed to assess some of these skills in a more objective fashion. Recently they have introduced a new component for evaluation, which will look at public health, ethical, legal and organizational (PHELO) aspects of medicine. These will form a new, separate component of the examination process, and the components and objectives will have to be included in our own curricula.

Before addressing some of our future challenges, I would like to summarize what may be called the emerging new culture of medicine and surgery. In this culture there is a shift in emphasis on many levels: from an individual patient focus to concern for the total health of the population; from individual cure of disease to disease prevention. Providers will display less rugged individualism and more entrepreneurial teamwork in the phrase of one American commentator.[6] Care will be provided on an outpatient basis and in the patient's community as much as possible. There must be increased emphasis on cost-effectiveness, and there may be increasing use of alternative payment schemes for physicians.

It is easy for surgeons to say that this culture shift does not apply to them. We are, after all, rugged individuals who operate on individual patients with the object of a cure in a hospital-based system, cost be damned, and we expect to be paid! However, the shift is not absolute. Our surgical skills will always be needed to help individual patients to whom we owe our prime allegiance. However, in a globally capped system we must be prepared to defend our individual interventions as being truly effective and to justify their costs.

If we insist on using the most expensive treatments even if they are no more effective than cheaper alternatives, it will mean that cost-cutting measures must be taken in other areas. This will affect our options in some other areas or perhaps may affect our colleagues elsewhere in the delivery system. We must be prepared to realize the ethical consequences of this sort of resource allocation. If, on the other hand, an expensive operation or

intervention is truly more effective, we must assert our role as the advocate for an individual patient. We must also advocate for population health in such areas as screening for surgical disease in collaboration with colleagues in medicine and other disciplines.

Future challenges

What of the future? I would like to address 3 areas of challenge for us as individual surgeons and as members of this national organization. These areas are evidence-based surgery, continuing professional development and the provision of surgical services in rural areas.

Last year we were treated to a presentation by Sir Myles Irving on evidence-based surgery.[7] He provided, far more eloquently than I can, an insight into the necessity of adopting a critical evidence-based approach to the practice of surgery. I believe we must apply the techniques of the evidence-based approach not only to individual interventions but also to the evaluation of our health care delivery system. It is only in this way that we can achieve reform of the health care system in an era of restructuring and cost cutting. We must demonstrate to the public not only that our interventions are efficacious but also that the system which delivers the interventions is efficient.

At the Canadian Association of General Surgeons (CAGS) we are well positioned to take a leadership role in the promotion of evidence-based medicine and surgery. Dr. Robin McLeod, who is one of the foremost exponents of evidence-based techniques in North American surgery, has agreed to provide what might be described as a national journal club for all Canadian general surgery residents. She will do this under the aegis of the CAGS, supported by a committee with regional representatives and also with the generous support of industry. Johnson & Johnson has funded this venture with an annual grant of $25 000.00. Eventually this project may be expanded to include participation by the general membership of CAGS as a part of the Maintenance of Certification Program to which I will soon refer.

I feel certain that Santayana would have endorsed evidence-based surgery. After all, his admonition tells us to look at evidence, a concept that could easily be expanded not only to include the past but also the more contemporaneous evidence of controlled prospective trials.

Next I would like to address the issue of continuing professional development in the context of the new Royal College Maintenance of Certification Program. As of the year 2000 all fellows will be required to participate in this program in order to maintain their status as fellows and keep the designation FRCS.

This is a logical evolution in the mission of the Royal College to ensure the highest standards of specialist care. It is also timely considering the changing health care culture, the increasing emphasis on other generic specialist skills and an increasing public demand for accountability on behalf of physicians. There is little doubt that, had we not embarked on such a project, licensing authorities would have initiated programs that could have been much more intrusive of our professional autonomy. The proposed program is an extension of the voluntary Maintenance of Competence (MOCOMP) program. It is designed to be reasonably "user friendly" while being sufficiently stringent to satisfy the need for public accountability.

Once again I believe that, as a national organization, we are well positioned to provide a leadership role, which can be emulated by other societies. We have always had a well-designed and developed national meeting and have potentially very useful self-assessment and development devices in the CAGS examination and the evidence-based surgery project.

I believe everyone is now aware that the CAGS meeting will be held independently of the Royal College meeting in 2001. According to our recent survey, the membership wishes to have an independent meeting in the fall in centres that vary from year to year, with a high clinical content and in association with other sister societies. Maintenance of certification credits are also considered important.

Your executive and board will be working to make this a reality and hope to have a meeting that will attract not only our traditional attendees but also entice many of our other members with a well-organized, informative and attractive program.

One of the greatest challenges is the provision of surgical services to rural and remote areas of Canada. We must rise to the challenge presented to us by Barer and Stoddard and by Fred Inglis in his 1994 presidential address.[8]

Most general surgery programs provide exposure to community general surgery. Many allow for streaming of residents into academic or community career paths. A few provide post-fellowship training in community surgery and allow additional training in specialties such as orthopedics and gynecology.

There is an impending shortage of general surgeons, which Fred Inglis illustrated in 1994 and is underscored by Hugh Scully's 1995 specialty physician workforce study.[9]

A possible partial solution has been proposed by the Society of Rural Physicians of Canada (unpublished position paper on training for family physicians in general surgery) which is advocating strongly and lobbying effectively for the establishment of programs for add-on skills for family physicians in anesthesia, obstetrics and surgery. The society proposes that

specially trained family physicians could possess "shared skills sets" with their specialist colleagues that would make them equally competent in performing such operations as appendectomy, hernia repair and certain laparoscopic procedures. The training would be open to family physicians with a commitment to practise in rural settings. The procedures would take place largely in community centres under the supervision of certified and noncertified surgeons. Surgical skills could be considered as modular, with different trainees acquiring competence in different numbers and varieties of procedures. There would be allowance for university affiliation and continuing professional development.

This proposal is at odds with the official position of the CAGS. In 1992, in collaboration with the Royal College and the College of Family Physicians of Canada, we produced a position paper entitled "Guidelines for added surgical skills for family physicians."[10] We encouraged certain surgical skills such as removal of lumps and bumps, insertion of lines and tubes and resuscitation of trauma patients. However, our position has been and to date remains firm that surgery which enters body cavities should remain the province of full-time certified surgeons.

I believe that the members of the Society of Rural Physicians of Canada are sincere and well motivated in their desire to address a problem that both organizations recognize. We have areas of agreement, including the recognition that there is a problem in the supply of surgical services in rural and remote Canada which is likely to worsen. We agree that all Canadians should have reasonable access to high-quality health care including essential and emergency surgery. Surgical care providers must have demonstrated competence and a commitment to maintain it throughout their careers. We all agree that frontline surgical providers should not be on continuous call. Both organizations have advocated a maximum 1-in-5 call schedule.

However, I have several areas of concern, which, when viewed in light of our history and current societal pressures, I believe demand alternative solutions. These include first the definition of the problem. What is the actual need — the Society of Rural Physicians of Canada claims that 8% of the population live more than 120 km from a tertiary referral centre and most live in areas requiring more than 1fi hours' transport time to a tertiary centry. They do not consider distance from regional centres, which is the emerging model of care in most provinces.

Second, I do not believe that the competence of part-time general-practitioner surgeons is equivalent to that of full-time certified surgeons. We all know that appendectomy, for example, can be one of the most difficult procedures not to mention that misdiagnosis can lead to an inadequately trained surgeon trying to deal with any of the myriad conditions that may mimic appendicitis.

The society advocates laparoscopic procedures by general-practitioner surgeons. Laparoscopy, even in experienced hands, is fraught with potential complications, and I do not believe it should be practised by the occasional surgeon.

How many general-practitioner surgeons do we train? Do we need 5 for every small hospital to accommodate call? In parts of this country there may be 4 or 5 small hospitals providing surgical services within 2 hours of a regional centre where certified surgeons are available.

The concept of training in limited skills in a community apprenticeship model I believe flies in the face of our history and current societal expectations. We need comprehensively trained surgeons able to deal with all contingencies who possess all the other generic skills we now expect of certified specialists.

What is the academic home of this program? The proposal calls for university certification but envisages a principally community-based training system. Although I agree that academic university-affiliated programs can and are being set up in community centres, there is a potential for conflict of interest in community hospital training using an apprenticeship model when the object is recruitment to solve manpower problems.

THE SOLUTION

What is the solution?

It is easy for me from the comfortable confines of my ivory tower to criticize proposals made by frontline practitioners who must deal with the problem of rural care on a day-to-day basis. Training programs in general surgery are principally centred in urban university hospitals where most of the surgeons have become subspecialized. There is a sound basis for subspecialization in a growing literature, which suggests that surgical results in certain conditions are better if done by someone with special training and experience. Such surgeons may practise in a restricted field but with a greater depth of experience.

The challenge that faces us in the community, however, is the need for surgeons with a greater breadth of training and experience and this may cross traditional specialty lines. For instance, we may need generalists who can perform certain orthopedic and obstetric procedures. This situation is further complicated by the fact that not all community needs are the same. Some may need additional help in urology, others in gynecology and orthopedics. Several challenges emerge.

- We must define the magnitude of the problem and adjust our training programs accordingly. On a micro level we must be able to de-

sign programs sufficiently flexible to meet individual community needs.
- These programs must be intellectually rigorous and provide training to a single high standard.
- We must be able to demonstrate to the public that the standard is maintained by the delivery system.
- There must be provision for continuing professional development.
- We must give appropriate recognition to community surgery as a distinct specialty.

I believe we should be able to work with the Society of Rural Physicians, The College of Family Physicians, The Royal College, the Medical Council of Canada and other interested parties to enhance surgical care in this country. I remain convinced that the primary model must be that of certified full-time surgeons. This does not mean that there is no need for enhanced skills for family physicians but it does mean that there is a need to set some limits. I believe our original document on enhanced skills for family physicians is still valid. However, if an appropriate needs assessment demonstrates that the regional model is not adequate to meet the needs of a very small segment of our population we must be prepared to consider other models and participate in their development and evaluation.

The future of surgery is boundless. Advances in the next century will probably dwarf those of the last. We were given some insight into this future by Monaghan's presidential address of 1997.[11] Many serious surgical diseases may be curable with advances in genetic engineering. We will see the emergence of virtual technology and robotics. Surgeons will do fewer ablative procedures and more to correct or improve structure or function. It is apparent that the skills of the surgeon in the next millennium will be different from those that were expected of a new surgeon, even 20 years ago when I was in training. However, surgeons must still have skilled hands to practise their craft. They must also possess critical minds to evaluate the effectiveness of intervention, not only on individual patients but also on the broader population. As teachers we need not provide our residents with all the answers but we must provide them with the ability to ask the right questions. In the tradition of Hunter they must be able to apply principles to surgical decision-making. These principles cover not only surgery but also areas of ethics, critical appraisal, quality assurance and others. In the tradition of Santayana they must be prepared to study the past so that they will be better prepared to plan for the future. They must do all this in an ethical, compassionate fashion with excellent interpersonal and communication skills. Only if surgeons possess all of these high qualities of hand, mind and heart can they fulfil the definition of a surgeon so often quoted by Falah Maroun, my predecessor as Chair at Memorial University of Newfoundland: "A surgeon is gifted physician."

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