CANADIAN ASSOCIATION OF GENERAL SURGEONS
ASSOCIATION CANADIENNE DES CHIRURGIENS GÉNÉRAUX

Presidential Address, 1993. The General Surgeon Through the Looking Glass: Bright Reflections From a Tarnished Image

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The image of the general surgeon is suffering in the eyes of trainees, peers, the public and even general surgeons themselves. The magnitude and importance of this to the future of the specialty is reviewed. A diminishing number of graduates are entering general surgical training, and only one-quarter ultimately complete their training and remain in general surgery practice.
A lack of suitable academic role models and the dichotomy that exists between traditional insistence on uniform broad-based training for all and the realities of clinical practice are important parts of the image problem. This is particularly evident in small communities where the general surgeon may be ill prepared for the surgical needs of the community, or conversely where the present generation of general practitioners fails to recognize the capabilities of the general surgeon.
The public does not know the meaning of the term general surgeon and fails fails to recognize and reward its highly specialist nature.
Solutions to this image problem include the following: acceptance of and emphasis on the generalist nature of the specialty of general surgery; innovation and emulation of technologic advances but with careful evaluation; and reorganization of training programs with emphasis on core training in "surgery in general," flexibility tailored to ultimate career goals and preservation of in-depth general surgical experience for those who ultimately intend to serve its practice.

Les stagiaires, le public, les chirurgiens généraux eux-mêmes et leurs pairs ne voient plus le rôle du chirurgien général de la même façon. L'importance de cette détérioration de l'image du chirurgien général pour l'avenir de la spécialisation fait l'objet d'un examen. Un nombre moins élevé de diplômés s'inscrivent en chirurgie générale et seulement un quart d'entre eux terminent leur cours et pratiquent dans ce domaine.
L'absence de modèles universitaires convenables et la dichotomie entre la formation générale et uniforme pour tous les étudiants sur laquelle on insiste depuis longtemps et les réalités de la pratique clinique sont responsables en bonne partie du problème d'image. Cette dichotomie est particulièrement apparente dans les petites communautés parce que le chirurgien général peut être mal préparé à répondre aux besoins chirurgicaux de la communauté ou au contraire parce que la génération actuelle d'omnipraticiens ne reconnaît pas les capacités du chirurgien général.
Le public ne sait pas ce que c'est qu'un chirurgien général, ne reconnaît pas la nature très spécialisée de cette profession et ne lui rend pas justice.
Parmi les solutions à ce problème d'image, on compte les suivantes : acceptation et mise en valeur de la

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nature généraliste de la spécialisation de la chirurgie générale; innovation et émulation des progrès technologiques mais après une évaluation prudente; réorganisation des programmes de formation en insistant sur une formation de base en «chirurgie en général»; souplesse pour favoriser la réalisation des objectifs de carrière et préservation de la vaste expérience en chirurgie générale pour ceux qui ont l'intention d'oeuvrer dans ce domaine.

As I looked over the addresses of our past presidents, I realized how thoughtful and instructive each was, reflecting the professional interest, experience and personality of that individual. However, all were similar in that they reflected the concerns, diversity of interests and growing importance of the Canadian Association of General Surgeons (CAGS) as the voice of general surgery in Canada.

As articulated by Dr. Frank Turner:[1] "The day-to-day concerns of the working surgeon revolve around beds and operating time, which are strictly local matters, around income, which is a provincial matter, and around image and preservation of territory which *are* matters of our Association. We have paid lip service to improving the image of the general surgeon but have in fact done little about it."

Many of our members do not see the image of the general surgeon as a major problem. Our system of universal health insurance is buckling under the weight of constantly rising costs. Governments are scrambling for money while we complain bitterly about the effects of cutbacks and increased legislative involvement resulting in lack of professional autonomy. Although these factors are seriously affecting surgical care and practice, I suggest that there is an equally important arrythmia with regard to image that we should be addressing seriously.

To convince you of its magnitude, importance and changing face, I thought I would approach the problem by serving as a "looking glass" to see the image of the general surgeon from the point of view of ourselves, our trainees, our peers and the public.

Self-Image

I belong to the Division Of General Surgery of McGill University, commonly known by its eponym DOGS, and I think there really has been a feeling among general surgeons that our specialty is "going to the dogs." This was best expressed by Railton who, in his 1985 presidential address,[2] commented: "It is beset on all sides with surgical research funds being tightened or drying up, surgical fees being under attack, our surgical colleagues in other specialties somewhat successfully amputating musculoskeletal, peripheral nerve, plastics and burns, peripheral vascular and other problems from the general surgical body — not to mention the head and neck which everybody wants. Now the emergentologists want to do tendon repairs, treat shock, do peritoneal lavages, tracheostomies and cut downs. The intensivist is quite happy to take over nutritional, fluid and electrolyte problems, insert Swan–Ganz lines and treat sepsis. In the US urologists are repairing inguinal hernias, plastic surgeons are treating breast lumps and ENT surgeons are treating head and neck cancers." No wonder the general surgeon sees himself sinking into oblivion!

I think the self-image problem is also well expressed in "A rural surgeon's perspective on general surgery."[3] "Why not general surgery?" the author asks. "In addition to the problem of uncontrolled lifestyle, general surgeons have an image problem. Colleagues and patients consider them as 'just a general surgeon.' General surgery is perceived as having an erosion of operative case load to specialties and a lack of competitive certification. There is also a lack of academic role models, a perceived lack of practice opportunity, and poor relative reimbursement." A major part of the problem seems to be caused by our lack of suitable academic role models and the dichotomy that exists between training for general surgery and the reality of clinical practice. The educational emphasis has been to protect broad-based training and breadth of knowledge even in the face of insufficient cases to justify doing so. In actual practice special skills cannot be maintained, and it is difficult to defend the performance of high-risk procedures.

The American Board of Surgery (ABS) and the Residency Review Committee (RRC) in the United States believe there are nine primary areas of responsibility in which it is essential for general surgeons to have specialized knowledge and skills in both diagnosis and management, not to mention numerous secondary and tertiary components (Table I). The American College of Surgeons (ACS) issued a statement that "all surgeons who are certified by a surgical specialty board are qualified to practice in the areas defined by that board if they so desire and if they demonstrate the capability to do so."[4] I suggest that in reality, even with regard to the nine primary components, we really are not what we think we are.

Head and neck surgery is one of the primary components. Most gen-

eral surgeons would agree that surgery of the thyroid and parathyroid glands is within the scope of the general surgeon. A survey of 551 applicants who were admitted to fellowship of the ACS in 1988 revealed that the average number of thyroid procedures performed was 1.9 per surgeon. Only 319 of the 551 had done a thyroidectomy. For parathyroid glands, the numbers were even smaller (Table II).

Table I. Definition of General Surgery According to the American Board of Surgery (ABS)

Scope of education in general surgery
Basic sciences
Technical skills
Clinical knowledge
Maturity and judgement
Principal components
Head and neck
Breast, skin and soft tissues
Alimentary tract
Abdomen and its contents
Vascular system
Endocrine system
Trauma
Surgical critical care
Surgical oncology
(Balanced experience in preoperative, operative and postoperative care required)
Additional components
Cardiothoracic surgery
Pediatric surgery
Plastic surgery
Transplantation
(Experience in preoperative, operative and postoperative care required)
Additional components
Urology
Gynecology
Neurosurgery
Orthopedics
Anesthesiology
(Personal clinical experience required, but primary operative responsibility is not required)
Nonoperative management
Pancreatitis
Portal hypertension
Trauma
Critical care
Immunosuppression
Research
(Participation by residents and staff encouraged)

Adapted from Booklet of Information, American Board of Surgery, Philadelphia, Penn, 1992

In his 1990 CAGS presidential address,[5] Couture presented statistics from Quebec showing that the workload of general surgeons in head and neck surgery had markedly decreased over the previous 10 years and that training in this area in Canadian departments of surgery was considered mediocre by a majority of surgical chairmen. He was bold enough to suggest that "the necessity of keeping head and neck as a primary component of general surgery should be questioned," and "The role of general surgeons in head and neck surgery should be redefined." This precipitated an unexpected flood of opposing views.[6–11]

Brownell Wheeler analysed the 12-month operative experience in vascular surgery for the 544 general surgery initiates to the ACS in 1989.[12] Each of the index procedures had not been done by approximately 70% of the general surgical initiates (Table III). A few general surgeons did many vascular procedures; however, they constituted a small percentage of the whole group.

Of the 30 initiates who were identified as vascular surgeons on the basis of a certificate of added qualification from the ABS, 60% to 80% did none of the common general surgical procedures and less than 10% did 10 or more, yet all were fully trained in general surgery![12] Wheeler also examined the practice profiles submitted by 222 candidates for recertification in general surgery by the ABS during a similar period. They were 8 to 10 years older than the ACS initiate group and had been in practice over 10 years. Vascular surgery constituted only 3% of their total operative experience. The majority of their practice comprised gastrointestinal and abdominal surgery. Wheeler concluded that most general surgeons do no vascular surgery and most vascular surgeons do no general surgery. How-

Table II. Thyroid and Parathyroid Surgical Procedures. A Survey of 551 Applicants Admitted to American College of Surgeons (ACS) Fellowship in General Surgery, 1988

	Thyroid procedures		Parathyroid procedures	
Applicant data	**Performed**	**Assisted**	**Performed**	**Assisted**
Total no. procedures	1044	509	255	116
Average no. per surgeon	1.9	0.9	0.5	0.2
No. of applicants actually performed a procedure	319	180	123	67
Average no. performed per surgeon	3.3	2.8	2.1	1.7

Adapted from information provided by the American College of Surgeons

Table III. Twelve-Month Operative Experience in Vascular Surgery by 544 General Surgery Initiates of the ACS, 1989

	No. of procedures performed, %		
Procedure	**0**	**≥5**	**≥10**
Abdominal aorticaneurysmectomy	71	11	3
Aortofemoral reconstruction	74	6	1
Lower extremity bypass	69	17	9
Carotid thromboendarterectomy	73	16	9

Adapted from Wheeler HB: Myth and reality in general surgery. *Bull Am Coll Surg* 1993; 78 (5): 21–27

ever, 10% to 15% of surgeons in each group still cross over significantly. In Quebec, between 1979 and 1988, most vascular procedures were performed by "general surgeons" as compared with "cardiovascular-thoracic" surgeons[5] by virtue of Royal College of Physicians and Surgeons of Canada (RCPSC) certification.

A further look at the nine primary components reveals that whereas 90% of the 1989 ACS initiates in general surgery did 10 or more alimentary tract procedures and 10 or more abdominal procedures each year, only 36% did 10 or more operations in the category of breast, skin or soft tissue, and less than 5% did a similar number of endocrine or head and neck procedures. Less than 1% of the group performed an average of one procedure per month in six of the nine primary components.[13]

For most surgeons the bulk of general surgery consists of a relatively small number of operations that are performed with great frequency. Most of the so-called index cases of general surgery, such as hepatic and pancreatic resections, are quite infrequent. Indeed, the median number performed for most of the index cases is zero.[13] I am sure you are all aware of the implication of studies that relate surgical volume to surgical outcome.[14] Those who practise general surgery usually narrow their practice and become *de facto* specialists in gastrointestinal and abdominal surgery and whatever components of surgery in general are needed in their own practice area. Nowhere is this better seen than by looking at rural general surgeons.

Twenty-five percent of the US population live in rural areas. Half of the 70% of US hospitals that have fewer than 200 beds are found in rural areas. However, only 15% of surgical specialists are located in rural areas. Often, a general surgeon is the only surgical specialist in town. In 1985, the CAGS initiated a study by Inglis to identify the scope of surgical practice in smaller Canadian communities.[15] The 10 commonest procedures in towns with a population of 10 000 or less are shown in Table IV. Tubal ligations, cesarean sections, hysterectomy and fracture reductions are high on the list. These are not among in the nine primary components in general surgery, and even in larger towns gastrointestinal surgery is far down on the list. A recent study of surgery in Manitoba by Blanchard[16] showed the same striking disparity between nontertiary operations performed in the province as a whole and the general surgery procedures performed in the two major teaching hospitals. One surgeon's perspective on the rural surgeon is summarized thus: "Small-town general surgeons are truly general surgeons. They handle the more common and less complicated problems of orthopedics, urology, gynecology, otolaryngology, and thoracic surgery, in addition to a full complement of general surgery."[3] None of these are among the nine primary components of general surgery.

"It is a myth to believe that the practice of general surgery can be defined by major surgical organizations. General surgical practice is defined primarily by the prevalence of disease, by the local needs of the community, and by the preference of patients."[13] Patients in the large cities want to go to the "specialist," but those outside that environment often want care at home. As so aptly stated by Zollinger:[17] "The majority of patients have sufficient confidence in our profession to be operated upon in their nearby community hospitals." It is time for those of us serving as academic role models to recognize this.

Trainee's Image

What about the trainee's image of general surgery? In the United States, most medical school graduates are no longer entering surgical specialties, and decreasing numbers are going into general surgery.[18] Only 40% of surgeons certified in general surgery continue to practise general surgery as their primary specialty.[19] Although there is an oversupply of physicians, general surgery is an endangered specialty. As Walt noted in a letter to the *American Journal of Surgery*,[20] in the United States, "the latest 1992 projections of the Council on Gradu-

Table IV. Ten Most Commonly Performed General Surgical Procedures According to Size of Community, 1985

Order	Population < 10 000	Population 30 000 – 40 000
1	Cholecystectomy	Cholecystectomy
2	Herniorrhaphy	Herniorrhaphy
3	Tubal ligation	Appendectomy
4	Cesarean section	Breast biopsy
5	Appendectomy	Varicose-vein surgery
6	Hysterectomy	Thyroid surgery
7	Breast biopsy	Anorectal surgery
8	Fracture reduction	Colonic surgery
9	Anorectal surgery	Gastric surgery
10	Varicose-vein surgery	Small-bowel surgery

Adapted from Inglis FG: Symposium on surgical manpower in the smaller community. 2. The Canadian Association of General Surgeons' questionnaire: results and observations. *Can J Surg* 1986; 29: 166–168

ate Medical Education (COGME) have confounded the Graduate Medical Education National Advisory Committee (GMENAC) projections of 1980 and general surgery is now recognized as one of the so called 'stress' specialties in which it is predicted that there will be a deficiency of 6% in the number of general surgeons required for the nation's care in the year 2000," and there are projections of a 19.8% undersupply in 2010. In Canada there is already a severe shortage of general surgeons. Under the leadership of Frank Turner, Chairman of the CAGS Manpower Committe, a comprehensive review of general surgical manpower was conducted in 1988 as part of a national specialty review by the Canadian Medical Association and the RCPSC. It was concluded that there was at the time a definite shortfall of 62 general surgeons and most probably 122.[21]

An interesting study reported by Morgan[22] gives some insight into the appeal of general surgery. The University of Montreal was one of the first Canadian schools to have an undifferentiated core surgical program. All trainees entered "surgery in general" for their first 2 years. Over a 4-year period 103 entered that program. Their initial orientation (Table V) was 49 for general surgery and 50 for surgical subspecialties (4 were undecided). Of those whose first choice was general surgery, only 39% stayed; 37% went into other surgical specialties and 24% went into nonsurgical specialties. In fact, 27 (26%) of the whole cohort left surgical training completely, mostly for family practice or radiology. Before reaching their critical period of residency training and exposure to specialized general surgery, a career change took place. Clearly there is an image problem.

John Hinchey, during his presidency of the CAGS in 1987, addressed the general surgery manpower shortage looming in Canada.[23] Each year Canada produces 65 to 70 trained general surgeons who obtain their fellowship. An increasing number are women, and this has important implications for manpower in the future. Hinchey looked at residents granted their fellowship in general surgery in 1985 and 1986 and at their career goals. Fewer than 33% planned to stay in general surgery (Table VI), with a wide spectrum of surgical subspecialization being preferred (Table VII). Although the largest number of certificates of all the surgical specialties is given in general surgery, the number of surgeons who actually remain to practise general surgery (i.e., the number of practising general surgeons being produced in Canada) is about the same annually as for certified urologists, vascular surgeons, plastic surgeons or otolaryngologists.

US confirmation of this Canadian phenomenon is found in the statistics of the American College of Surgeons' "longitudinal study of surgical residents,"[24] which is the most comprehensive and accurate ongoing study available on this subject, currently in its 12th year. Of general surgery residents who began their training in the years from 1982/83 to 1985/86, an average of 33.8%

Table V. The Appeal of General Surgery for Surgical Trainees, University of Montreal, 1981/1982 to 1985/1986

Initial choice	No. of trainees	Ultimate choice, no. (%)		
		General surgery	Specialty surgery	No surgery
General surgery	49	19 (39)	18 (37)	12 (24)
Specialty surgery	50	9 (18)	27 (54)*	14 (28)
Undecided	4	1 (25)	2 (50)	1 (25)
Total	103	29 (28)	47 (46)	27 (26)†

*22 in same specialty, 5 in another surgical specialty
†16 in family practice, 4 in radiology, 3 in internal medicine and 1 in public health
Adapted from Morgan S: L'attrait de la chirurgie. *Scalpel* 1989; 3 (3): 13

Table VI. General Surgery Fellowships Awarded and Career Goals of Residents in General Surgery for 1985 (65 Residents) and 1986 (68 Residents)

Fellowships awarded/ career goals	1985, no. (%)	1986, no. (%)
Male	58 (89)	53 (78)
Female	7 (11)	15 (22)
Planning further training	44 (68)	45 (66)
Planning general surgery	21 (32)	23 (34)

Adapted from Hinchey EJ: Presidential address, 1987: the future of general surgery in Canada. *Can J Surg* 1988; 31: 94–96

Table VII. Career Goals of Canadian General Surgeons Receiving Fellowships in 1985 and 1986

Area of interest	No. (%) of surgeons
General surgery	44 (33)
Cardiovascular and thoracic surgery	25 (19)
Vascular surgery	12 (9)
Thoracic surgery	10 (7)
Oncologic surgery	10 (7)
Colorectal surgery	9 (7)
Intensive care	6 (5)
Pediatric surgery	5 (4)
Transplantation surgery	4 (3)
Plastic surgery	3 (2)
Liver and biliary-tract surgery	3 (2)
Head and neck surgery	2 (2)
Total	133 (100)

Adapted from Hinchey EJ: Presidential address, 1987: the future of general surgery in Canada. *Can J Surg* 1988; 31: 94–96

completed the 5th year. This rate fell to 24.8% when residents who subsequently branched into another surgical specialty (usually requiring prior completion of general surgery residency training) were excluded. Thus, although general surgery is the largest surgical specialty, only one-third of its residents complete training in this specialty and only one-quarter ultimately remain in the specialty. Of the residents who did not complete 5 years of general surgery training, approximately 28% went into other surgical specialties; 38% left surgical training. In 1989/90, of the 12 surgical specialties, only general surgery showed a decrease in the number of trainees from the previous year, declining by 195. Between 1983 and 1990, the number of general surgical trainees dropped by 9.3%.[18]

We have a real problem, and I would like to suggest that much of this is an image problem.

One explanation for the diminished appeal of general surgery to the trainee is summarized thus: "I like what you do in general surgery, but no way am I going to suffer the anxieties brought on by the tenseness of the work, the long hours, the economic return, when so many other specialties have a much better lifestyle and a much better economic return." An equally important concern expressed by the general surgical trainee is the question: Do I need to take an additional fellowship before I go into practice?[25] Clearly, the data presented show that many are now answering in the affirmative.

We have created, in our academic institutions, the false perception that a surgeon is incomplete without additional fellowship training. This problem is part of a larger philosophic re-examination being faced by all professions regarding the role of the broadly based "generalist" versus the more narrowly focussed "specialist," aptly addressed in recent presentations by Jordan,[25] Polk (Polk H: Unpublished observations, 1989) (Table VIII) and Folse.[26] For many, general surgery is a means to an end, and our image and identity are poor. This we must change. On the one hand are the regulating bodies "who believe the term 'board certification' should imply that the individual is an expert in all areas certified by that Board."[25] On the other hand "many academic institutions develop areas of special clinical expertise, and some professors [who serve as the role models] lead future trainees to believe [by example] that if they do not have extra experience in their area of expertise that they are not fully qualified to practice and are not sufficiently expert to claim such privilege."[25] Those of us who are in university centres may find it appropriate to limit our practice and our academic interests to a narrow field. Most of our patients are referred for specialist care, and without a doubt that care can be enhanced by allowing individuals to be devoted full time to a single area of interest.[26] It also provides the appropriate environment and expertise for training. However, in attempting to emulate their role models, trainees lose sight of the fact that a large proportion of surgical care is provided outside the university hospitals and large metropolitan hospitals. It is inappropriate that trainees should feel that they have to take an additional fellowship to obtain privileges in such hospitals for practice that will differ significantly from the model presented in our teaching institutions.

Table VIII. Role of ABS Certification Versus Subspecialty Certification

Role	Standard ABS certification	Subspecialty certification
Service to patient	More	Less
Identity to other professions	Poor (image issues)	Excellent
Education and training	Broad	Narrow
Basic research	Much	Little
Clinical advances	Fewer	Major
Role of general surgery	End	Means to an end
Costs	Probably lower	Probably higher and getting worse
Viability	Questionable	Advantages now

Adapted from Polk H: Unpublished observations, 1989

Peer's Image

How are we seen by our peers? A report entitled *Medical Specialties in Emergence or in Mutation*[27] that was submitted to the Quebec Government by a group convened to look at manpower needs for the year 2000 contained this passage: "Finally, immediately, one can announce without much risk the death in the near future by cachexia (barring harsh revision of the object of this specialty) of general surgery lacking the power to dominate in its entirety, growing sophistication in its field of competence."

The response of Jean Couture is revealing. "Such a falsehood cannot leave us indifferent. The unqualified authors of this Board have shown their profound ignorance of the role of general surgery in undergraduate and graduate training, in particular the part played by general surgeons in the development of the basic core essential to all surgical specialties. Moreover it does not take into account the definition of the content

of general surgery as proposed by the Royal College, American Board of Surgery, the American College of Surgeons, Quebec and Canadian Association of General Surgeons."[28]

Yet, in a sense, the Committee has a point. In the past we have been very slow to accept the new technologies, and we find ourselves excluded from the consulting and decision-making processes. Endoscopy is a good example; interventional radiology for intra-abdominal sepsis, biliary stenting and balloon dilatation for biliary obstruction are others. An inordinate amount of time was spent challenging these new technologies or leaving them to others instead of incorporating them into our own armamentarium.

Whereas Couture emphasized the role of general surgery in undergraduate training and the development of core knowledge, Williams[29] correctly observed that "Surgeons are poorly represented on most curriculum committees and many internists...claim that the teaching of surgical principles to medical students...is unnecessary. It is, therefore, not difficult to understand why many medical students graduate with the attitude that surgeons are mere technicians to be directed by internists, an attitude that can lead to inappropriate consultation and unnecessary, expensive investigations." At my own institution, I remain almost alone on our department executive in insisting that general surgery is the core of "surgery in general" and that general surgeons must always remain the directors of such a program and not abdicate this to surgical educators or be content to sit, with only a single voice, at a round table of all surgical specialties.

During my term as secretary of the CAGS, I was asked to address this commentary posed by a rural surgeon: "I am most concerned that new graduates keep sending many patients to tertiary hospitals that could easily be looked after in our hospital. Don't they realize that we trained in the great halls of learning as well?" We frequently receive letters that highlight the peer image problems facing the surgeon practising in the smaller or nonmetropolitan community. Another surgeon wrote: "It is probably useless, but as an elderly, trained general surgeon, my principal observation is that the young general practitioners who come to practise in our area simply do not know what a general surgeon can do and thus almost never refer fractures, plastic surgery, neck surgery, etc. to the general surgeon, but refer these procedures to the superspecialist....If there is any way that the training program might be adjusted to suggest that a well-trained general surgeon is capable of doing some of these procedures, I think it would be a benefit to everyone who is not in a teaching hospital."

The opposite side of the coin is reflected in comments from a surgeon who liked to do locums in isolated communities. "I am asked on the one hand to do general, or as I call it, 'omnisurgery' including cesarean sections and orthopedics, and because of volume problems, to take on general practice as well." He suggested, "CAGS should be training omnisurgeons for the future supply of surgeons in isolated or small towns in Canada. The problems of trauma and acute surgical emergencies (of all types and disciplines) are going to be serious and we are an endangered species!" Although I fully agree that we should be training omnisurgeons for smaller communities in Canada, this is not the responsibility of the CAGS; however, as an organization we have begun to have an impact on the chairmen of surgical departments and deans of medicine and are making them realize that the universities are not producing the type of surgeons who are needed in smaller communities today.[30–32] On the other hand, we can see that in those communities that do have well-trained general surgeons with broad capabilities (the "older surgeons") difficulties arise because the younger generation of family practitioners, having trained in an environment of fragmentation, new specialties and superspecialization, fails to recognize the capabilities of the rural general surgeon.

This problem was also highlighted in the CAGS survey of surgeons practising in communities of 50 000 or less.[15] A major complaint was that family practitioners in their own community were often bypassing the rural general surgeon and referring cases to the larger centres with the expectation that even routine procedures could be done better in the bigger centres. As stated in the Barer–Stoddart Report,[33] "The culture of tertiary care centres reinforces the view that practice in smaller communities implies second class medicine." Clearly, surgery in the smaller community is being threatened from two directions, and it seems that in part this is due to our poor image.

Public's Image

Part of the problem here is that the public does not know the meaning of the term "general surgeon." The public equates the "general surgeon" with general practice. There is a perception that we are generalists rather than specialists, and this needs clarification. Part of the problem stems from our own confusing definition of general surgery. I have already referred to the ABS and ACS definition and its problems in practice; how can we expect the public to understand what we do with a defin-

ition that occupies an entire page? The definition accepted by the CAGS after an extensive review of the subject by Mullins in 1983 is as follows:[34] "General surgery is that field of surgical skill that includes surgery of the head and neck, the alimentary tract, the chest, the breast, the endocrine system exclusive of the pituitary, the trunk, soft tissues and limbs, and vessels exclusive of the heart. It includes the management and direction of the care of multiple injuries. In some circumstances it includes the special designations of a general thoracic surgeon, vascular surgeon or pediatric surgeon, to indicate special training and competence in a restricted field." This definition is not much better than the ABS and ACS one!

The definition in the 1989 report on the future of general surgery by the American Medical Association's Council on Long-Range Planning and Development[35] is as follows: "...that operative discipline in which surgeons take care of and supervise the care of patients with multiple systems injuries, diseases of the gastrointestinal tract and endocrine glands, and hernias....More specifically, general surgeons treat problems related to obstruction or perforation of hollow viscera, manage hemorrhage from discrete points of bleeding, remove tumors, repair congenital and other structural abnormalities, drain abscesses, obtain tissue for pathological examination, and provide comprehensive management of trauma."

No wonder the public has a problem knowing what a general surgeon is.

Another measure of how the public (and therefore the politician) sees us is reflected in matters of compensation. Unfortunately, in America "The importance of what one does is measured by the income one receives."[25] In Quebec, there is only one surgical specialist with a lower income than the general surgeon and that is the neurosurgeon (Fig. 1). Since the cosmetic surgery of the plastic surgeon and the injury assessment and medical legal work done by orthopedic surgeons are not covered by provincial health insurance, these Quebec medicare figures do not reflect that the plastic and orthopedic surgeons are actually at the highest end of the income scale.

In addition to general surgery not being perceived as a specialty by the public, it also lacked, until recently, the technologic appeal of other surgical fields. For whatever reason, the use of technology seems to be rewarded financially whereas the ability to think and make decisions under pressure is not. By training, we certainly are a specialty. Our hours are longer and more irregular than those of other specialists. Generally, we deal with sicker patients. Decision making is absolutely essential compared with the largely mechanical skills required in some other surgical fields. Therefore, one would expect that financial remuneration should be among the highest. Nevertheless, an inequitable fee structure exists which in virtually every province makes the general surgeon the lowest paid of the surgical specialists.

Possible Solutions

In the minds of some, "general surgery" connotes a nonspecialty term and is used in a negative sense. There are those, therefore, who would like to discontinue the term. However, it is so deeply embedded in the vocabulary and usage of surgeons in this country that this is not likely to happen.[25] The Advisory Council for General Surgery of the ACS changed its name to the Advisory Council for Surgery, for these reasons. Yet only 6 months ago the Council spent half a day discussing whether the name should be

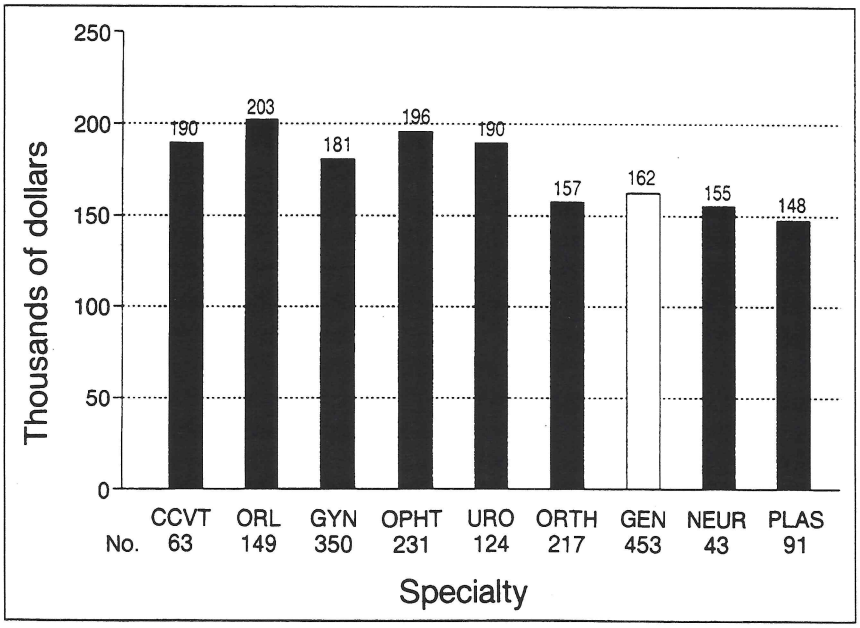

FIG. 1. Mean Medicare income for surgical specialists in Quebec for 1990 in thousands of dollars. CCVT = cardiac, cardiovascular and thoracic surgeons, ORL = otorhinolaryngologists, GYN = gynecologists, OPHT = ophthalmologists, URO = urologists, ORTH = orthopedic surgeons, GEN = general surgeons, NEUR = neurosurgeons, PLAS = plastic surgeons.

changed back. The Association of General Surgeons of Quebec is debating a name change. I strongly urge against this. We should be capitalizing on the generalist nature of our specialty. As so beautifully summarized by Claude Organ,[36] "General surgeons are the physicians best equipped by training, experience, research, education and commitment to manage surgical problems involving the total patient. The expertise and competence of general surgeons have been perennially recognized in the areas of wound healing, surgical metabolism, nutrition, cardiopulmonary resuscitation, inflammation, oncology, antimicrobial therapy, pharmacodynamics, fluid and electrolyte balance, multiple trauma, transplantation, intensive care management, and interventional skills."

Duff, in his CAGS presidential address,[37] emphasized that general surgery, one of the few "generalist" disciplines, finds itself at a crossroads. "Is there today and in the foreseeable future a place for a specialty that is generalist?" he asked. "Should we preserve our specialty as general surgery? Many will say no. They believe new knowledge and technology will inevitably create endless new subspecialties with each dealing with smaller and smaller parts of the human body. This view ignores totally the social notion of a specialty, who treats the whole patient and how delivery of surgical care is to be achieved with current and future constraints of manpower and facilities. It accepts the consequence of separating the patient from the disease, of no longer seeing the patient as a whole person." He emphasized: "Rather than playing down the general part of our name we should emphasize it and the importance of scientific generalism in today's medicine. In reality, we have always had this role....This generalist role is the reason general surgeons are so crucial in the community and teaching hospitals and why we are hearing so many concerns expressed about the impending shortage of surgeons for communities." "There are cogent arguments, based on economics and care-delivery issues, to preserve the specialty of general surgeons. Making this choice will commit general surgery to accept the concept of scientific generalism and to develop the specialty of general surgery in a social context."

I suggest that there are ways we can reassert the fact that we are specialists.

- Call yourself a "Specialist General Surgeon" or highlight the "General" like the General in an army. Thus, you are General Surgeon or Consulting Surgeon or a "Specialist in General, Gastrointestinal and Surgical Endoscopy," which everybody should be nowadays.
- Put on your business cards "Practice by referral only" or "Consultation by appointment."
- Do general surgery and not general practice. This is particularly important for those practising in smaller rural areas. If we want to assert ourselves, we cannot do general surgery and general practice and expect to be accepted as a specialist by our fellow family physicians or by the public.
- Constantly innovate, evaluate and emulate technologic advances.

Langer, in his presidential address,[38] reviewed the monumental contributions made by surgeons such as Hunter, Lister, Carrel, Halsted, Moore, Rhoads and Starzl, and emphasized the importance of maintaining strength in research to continue this process of evolution. However, as emphasized earlier, general surgeons have been slow to appreciate and incorporate emerging technologies that have threatened traditional practice, taking the attitude that, like Shakespeare's Hamlet, one could "Take arms against a sea of troubles and by opposing end them." Instead, we must be quick to appreciate the potential benefits of new technologies and incorporate them into our activities for the benefit of patient and surgeon alike. In contrast to the tarnishing resulting from the initial rejection of general endoscopic technology, witness the bright reflections generated by the success of laparoscopic surgery.

No new procedure in surgery has been introduced more rapidly or has captured the interest of the profession and patient population more than laparoscopic cholecystectomy. In 1991 it was reported as the "hottest" field in all of science for that year, outranking even such areas as the origin of human immunodeficiency virus isolates. John Hinchey and I undertook a survey on behalf of the CAGS to assess the status of laparoscopic general surgery in Canada.[39] We were both surprised and pleased to learn that within 15 months of the ready availability of video laparoscopic equipment in Canada, 85% of general surgeons responding had already learned to use it and were performing laparoscopic cholecystectomy. The entire community of Canadian general surgeons was quick to see the potential of this new minimal access surgery and to acquire the skills necessary for its performance, equally well applied by the surgeon in the smaller community as in the tertiary care centre and undertaken by surgeons of all ages and levels of experience with equal success. We found that there was a continuing relationship between the number of procedures attempted and the proportion of surgeons encountering a complication. Thus, continued vigilance is necessary as the indications for and applications of this new approach are extended, often without the traditional initial testing in animals.

The importance of ongoing, critical evaluation, traditionally a strength in general surgery, cannot be overemphasized. However, as pointed out by Turner,[1] "The field of laparoscopic surgery is exploding, and those who do not take time to master its intricacies are doomed to see their practices wither away as the consumer demands referral to a surgeon skilled in its techniques." It is clear that laparoscopic surgery is a but another technique, not a discipline. There is no need for a Canadian society of laparoscopic and endoscopic surgery. These techniques are part and parcel of the future of general surgery. We have nothing more in common with our colleagues in urology, gynecology or orthopedics because we are now all using a video laparoscope than we did when we all used a scalpel.

This leads to my next suggestion: as a profession, a specialty and an organization we must continue to oppose further fragmentation. Both the RCPSC and ABS have placed a moratorium on further subspecialization and the creation of certificates of special competence, which serve to fragment care. Subcertification will only intensify and increase turf battles to the detriment of patient care. Territorial battles typically arise when there is excessive specialization, too many superspecialists and too few patients. As pointed out by Silen,[40] we should not be seeking to create monopolies but rather be directed toward an overall improvement in the care of the whole patient. Community hospitals and the health care system cannot afford to replace retiring general surgeons with the several specialists that would be required to provide the same service.[41] However, it is entirely appropriate that the regulatory bodies continue to recognize and be involved in the accreditation of special training programs. The actual experience that can be achieved during a general residency training or clinical practice is determined by the number of cases available. Therefore, for uncommon and difficult procedures, a few centres with high volume must provide additional training for surgeons who will perform these procedures or the associated death rate may be higher than is ethically or legally defensible.[13] It is important to re-emphasize, however, the statements made by the ACS, endorsed by the CAGS, regarding the existing certificates of special or added qualifications: "The American College of Surgeons expects that all surgeons who are certified by a surgical specialty board are qualified to practice in the areas defined by the board if they so desire and if they demonstrate the capability to do so. Certificates of special or added qualifications are designed to recognize specialists who have acquired further education and training in a narrower discipline within that specialty. The existence of such certificates does not imply that a specialist who does not hold them should be excluded from areas of practice that are considered to be within the realm of the specialty as defined by the primary board....The granting of surgical privileges should be based on the surgeon's record of training, experience, and demonstrated performance in the areas of practice that are associated with the specialty, rather than being focused exclusively upon the holding of a certificate of special or added qualifications."[4]

One of the most important solutions, and one in which we are already beginning to see some bright reflections from the tarnished image, is in the reorganization of our training programs. They must become more flexible, and the training must be tailored to the predicted practice profile. The needs of surgeons practising in a nonurban area are totally different from those in a metropolitan area, as I have already demonstrated. A core curriculum for "surgery in general" has been approved by the RCPSC and already introduced in most surgical training programs in Canada. Included in the changes is a flexible year for those contemplating rural practice, whereby exposure may be obtained in specialty areas traditionally outside the scope of general surgery. This may replace the obligatory year of research in some programs, which is more appropriate to those contemplating academic careers. In addition, exposure to rural and community surgery and the unrecognized benefits of this practice described by Murphy[42] and Turner[1] are now available at most universities through rotations of up to 6 months during training. I have no doubt that this will be more effective in providing the much-needed surgeons for underserviced areas than the incentive and disincentive measures used by some provincial governments. It is certainly more appropriate than the misguided initiatives being undertaken in the province of Alberta to train family physicians in rural areas to perform certain surgical procedures with only a few months of additional training!

In addition to broad core training and exposure to rural practice, greater experience in the major general surgical procedures must be provided for those who will enter general surgery but not for those who will ultimately enter cardiovascular, thoracic, pediatric and plastic surgery, or other surgical subspecialties. We cannot afford to share these operative experiences with trainees who do not plan to use this particular experience. The work of Wheeler has clearly shown that although general surgical training

programs provide a much wider operative experience than will ultimately be required in most clinical practices, many general surgical residents still finish their training with no operative experience in several important index procedures. In 1989, the number of operations reported by chief residents completing their training was most commonly zero for pancreatic resection or drainage, hepatic resection, total gastrectomy, rectal prolapse, morbid obesity procedures and others.[13] It is clear that program directors will have to ensure more exposure to these procedures for the "general surgeons" if these trainees are to receive adequate training and not feel the need to take additional fellowship programs. "If all these cases are divided equally among all residents, no one gets enough.[13] We must tailor the experience of training for residents to their career goals. In addition to diluting the valuable index procedures, provision of full general surgical training to those not intending to practise in this specialized area detracts from the importance, stature and acceptance of general surgery as a true specialty. My own concept of the flexible training program of the future is illustrated in Fig. 2.

Finally, every medical school and major hospital should have a division or section of general surgery, indicating and recognizing its specialty designation. Special programs should exist in these divisions so that nonurban surgeons can, and should, return on a regular basis to update their skills and learn about technologic advances and new operations.

A patient's confidence does not come from a detailed knowledge of the disease or the surgical procedure but from their confidence in the surgeon. It is a very personal matter. "Currently, neither the patient nor the surgeon has usually had sufficient contact to establish a solid doctor–patient relationship. It will be up to the individual surgeon to make up for the new mandated methods of same-day hospital admission and operation, and the subsequent fewer postoperative days in the hospital"[17] by closer personal attention. "The surgeon is responsible for the decision to operate, for the preoperative care, the procedure itself, for postoperative management and follow-up, including an unbiased assessment of the result" as Williams emphasized.[29] He warned, "It may seem more convenient and possibly more economically advantageous to abrogate our responsibilities in one or other of these areas — but we do so at our peril....there is a real danger that surgeons will revert to the status of barber-surgeons, who simply did as they were directed by physicians."[29] As general surgeons we must not carelessly lower our level of traditional, individualized care and compassion for the "whole" patient.

"The greatest need for general surgery right now is to stand up proudly for what it is and what it does." We have a "vital role in the nation's health care system.... Jobs are plentiful for our graduates."[20] As our population grows older, the number of general surgical problems that affects the new vulnerable population of patients continues to grow. Good surgical judgement is cost-effective health care. We must speak out frequently to the public, our peers and the legislators to make them aware of the depth and breadth of our activities. Those of us in tertiary care hospitals and department chairmen and program directors must recognize that the majority of medical care and a large proportion of surgical care are provided outside the 3% to 5% of hospitals that are university centres and even outside large metropolitan hospitals. There, general surgeons are the primary providers of emergency, trauma, critical and metabolic care and provide expertise and treatment in many areas not adequately covered by other surgical specialists and nonsurgeons.[26] We must polish our

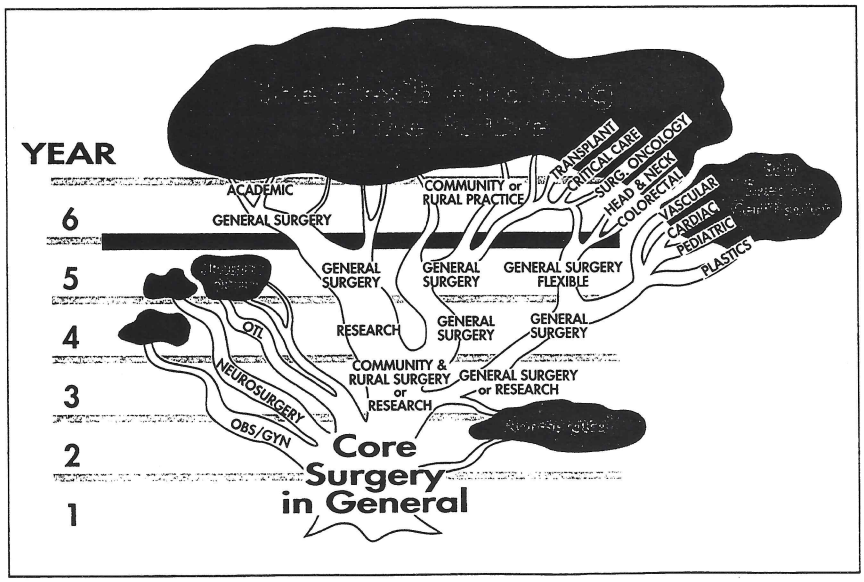

FIG. 2. Flexible surgical training of future. Only those branches passing through heavy bar at end of year 5 would be eligible to take general surgery certification examinations.

tarnished image and become more effective role models for medical students and surgical trainees, and we must do our best not to allow "conflicts between the demands of the operating room, the bedside, the lecture room, the laboratory and the committee room"[29] be our Achilles' heel. Despite all our problems, I do not know any general surgeon who would rather be doing something other than what he or she does and does well.

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