

# ON THE THRESHOLD OF ADOLESCENCE—THE TRAUMA ASSOCIATION OF CANADA AFTER 10 YEARS: 1993 PRESIDENTIAL ADDRESS—TRAUMA ASSOCIATION OF CANADA/L'ASSOCIATION CANADIENNE DE TRAUMATOLOGIE

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THE Trauma Association of Canada/L'Association Canadienne de traumatologie (TAC) is 10 years old. This is its tin or aluminum anniversary. Its constitution was approved at the Annual Meeting of the Royal College of Physicians and Surgeons in Calgary in 1983. Its first annual meeting was held in Montreal in 1984, presided over by Charles Burns, a man who recognized the needs of trauma victims and has campaigned for years to give the treatment of trauma a higher profile in Canada.

He has written the chapter on the TAC in the Medical Specialties Societies of Canada, published by the Royal College in 1991, edited by T.P. Morley.<sup>1</sup> I cannot improve on his account of the history that he has lived and documented but I wish to draw from this resource in describing our role as it appears from my perspective to have evolved after 10 years. I reviewed the minutes of meetings dating back to 1980, our newsletters, and have spoken to many of you by phone. I have also reviewed the presidential addresses starting with that of Leon Dontigny,<sup>2</sup> our fourth President in 1987, and those of David Wesson,<sup>3</sup> Peter Lane,<sup>4</sup> Stewart Hamilton,<sup>5</sup> Rea Brown,<sup>6</sup> and Michael Schwartz<sup>7</sup> published in the *Journal of Trauma*. Each address has added to the legend. Before the TAC the Canadian Association of General Surgeons (CAGS), which itself came into being in 1977, had a trauma committee chaired by Charles Burns.<sup>8</sup> The CAGS executive gave strong support to trauma care from the outset. This committee evolved to become a liaison committee with several other specialty organizations invited to join with the CAGS and became known as the Coordinating Committee on Trauma with representatives from with the Canadian societies of Orthopaedics, Neurosurgery, Urology, Plastic Surgery, Paediatric Surgery, Emergency Physicians, as well as General Surgery.

The Trauma Committee of CAGS in conjunction with the Royal College presented five trauma symposia from 1978 to 1983 at the Royal College meeting with speakers from several disciplines. These papers were published as a group in the *Canadian Journal of Surgery* and participants include several past and present executives of the TAC. In each of these Charles Burns was the chairperson, led the round table discussion, and summarized these.<sup>9-13</sup> The Royal College could not make room for a Trauma Symposium in its 1982 program. This is cited as one of the precipitating factors responsible for the formation of the TAC. On February 19, 1993, the founding members meet in Toronto to draft a constitution. At the time of the fifth CAGS Royal College-sponsored Trauma Symposium at the Royal College meeting in Calgary, September 20, 1983, the inaugural meeting was held, the constitution of the TAC was approved, and an executive was elected. Starting in 1984 and except for 1987 and 1991 when we held a joint meeting with the American Association for the Surgery of Trauma, we have met with the Royal College of Physicians and Surgeons of Canada.

I first learned of the TAC from a letter from Arnis Freiberg, who was plastic surgery's representative to this liaison committee and the first Treasurer of the TAC. He invited plastic surgeons to join the TAC, an organization that would attract specialists of different origins. This appealed to me since this would provide interaction with several other specialties. This year's program of 26 papers and posters has attracted submissions from individuals representing ten different subspecialties. The founding fathers recognized the complexity of multisystem trauma and the virtues of cooperative interdisciplinary activity. The original executive included two general surgeons, two cardiothoracic surgeons, and one from each of orthopaedic surgery, pediatric surgery, plastic surgery, neurosurgery, and emergency medicine. Seven of these nine came from Ontario and Quebec. The constitution states that the committees will be composed of three members, one from each of eastern, central and western Canada, although the constitution does not define the boundaries of these regions. In the 10 years that the TAC has been in existence there has been an increased execu-

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**Table 1**  
TAC Membership by specialties

	1984-1991	1992-1993
Total number of [active] members	496	152
General surgeons	29%	39%
Orthopaedic surgeons	16%	18%
Emergency physicians	15%	13%
Plastic surgeons	8%	7%
Neurosurgeons	5%	6%
Paediatric surgeons	5%	7%
Vascular surgeons	2%	1.2%
Cardiothoracic surgeons	2%	2%
Critical care physicians	1%	0.6%
Anaesthesiologists	1%	0
Otolaryngologists	0.2%	0.6%
Pediatric medicine	0	1.2%
Urologists	0.6%	0.6%
Not identified	15%	4%

tive representation from western Canada, but at present we have no representation from Atlantic Canada or francophone Quebec.

In 1984, Doctors Mattox and Oestern and, in 1985, C.Y. Cheng, the Chinese burn surgeon, were guest speakers. In 1987, the Fraser N. Gurd Lectureship was established, with Charles Tator the first speaker. Starting in 1988, the best clinical and research papers presented by a resident were acknowledged with prizes donated by the Merck Frosst Pharmaceutical Company.

Where does our membership come from? From a composite list including the founding members and all who joined up to 1991, 496 individuals are or have been members. Of these 29% were general surgeons, 16% orthopedic surgeons, 15% emergency physicians, 8% plastic surgeons, 5% pediatric surgeons, and 5% neurosurgeons (Table 1). To define our present membership I have included those who have paid the 1993 dues and those who paid in 1992 but are delinquent for 1993. We have 152 active members plus 64 residents. The active membership category includes 39% general surgeons, an increase from 29%, while the other groups have remained fairly constant. We have fewer members from several other specialties. At the present time residents make up 30% of our membership.

We have good representation from Montreal to the West Coast (Table 2). We need to strengthen our representation in Atlantic Canada and Quebec. Ten members have United States addresses. In 2 years we will meet with the AAST in Halifax. This meeting will be an excellent opportunity to raise the profile of the TAC in Atlantic Canada.

From the very beginning of the TAC the desirability of a National Trauma Registry as a priority was raised. Our Registry Committee have tackled this problem over the past decade. Meetings to define a basic subset to determine how and by whom data would be gathered and to try to achieve national uniformity have been

**Table 2**  
Origin of current membership (1992-1993)

	Active	Residents
British Columbia	13	10
Alberta	16	9
Saskatchewan	11	3
Manitoba	8	0
Ontario	68	22
Quebec	20	17
New Brunswick	3	0
Nova Scotia	5	1
Newfoundland	0	0
Prince Edward Island	0	0
United States	8	2
Totals	152	64

held. In 1992 a display of computer software from different hospitals and provinces that have registries and a meeting with these individuals was held. At present registries are developing at the provincial level in British Columbia, Alberta, Manitoba, Ontario, and Quebec. As a result of these prior meetings I would hope that the individual registries are developing some commonality in the basic data collected and compatibility of software programs. At present on a national basis we can get some information from Statistics Canada data based on a single discharge diagnosis termed the most responsible diagnosis assigned at the time of discharge, but as published these data lack the sophistication and refinement necessary to evaluate multisystem trauma. However, for a fee, Statistics Canada may be able to extract additional data on its tapes from the individual provinces.

I feel that our most important function is the exchange of scientific information at our annual meetings. Except for the years when we have met with the AAST where trauma is the only show in town, we have competed with up to 34 other organizations meeting with the Royal College. Many of us belong to multiple societies and we have always had conflicts. This year we have arrived a day early and have held our scientific meeting in one day although we have a joint symposium with the Canadian Critical Care Society later during the main Royal College meeting.

In 1984 the first joint TAC-CAGS-Royal College Trauma Symposium chaired by Charles Burns<sup>14</sup> was published in the *Canadian Journal of Surgery* following in the tradition of the CAGS Trauma Committee Symposia published earlier. In 1986, the *Journal of Trauma* agreed to publish selected papers from our meeting and seven papers from the 1986 meeting in Toronto were published in September 1987. In 1988, the *Journal of Trauma* was designated as the official journal of the TAC and our name was added to the front cover. Since 1991, we have been designated bilingually on the front cover. From 1988 onward a subscription to the *Journal of Trauma* was included in our annual membership fee.



Trauma Association  
of Canada  
L'Association canadienne  
de traumatologie

**Figure 1.** Logo of the Trauma Association of Canada/L'Association canadienne de traumatologie.

From 1988, the *Journal of Trauma* published the abstracts for our annual meeting papers. The publication chairpersons have been effective in gathering manuscripts from each of our subsequent meetings and having these reviewed quickly. From 1988 onward, from 9 to 14 manuscripts from our annual meeting have been published as a group within 1 year of presentation in the same issue as the Presidential Address. At present Doctor Peter Lane chairs this committee and Doctors David Mulder, David Wesson, and Michael Schwartz are on the Editorial Board of the *Journal of Trauma*. I think our scientific program and the quality of the published papers demonstrated exceptional progress in our first decade.

In 1988, because of the perseverance of Leon Donigny, a distinctive logo that is unmistakably Canadian was designed by Jean Bélair of the Medical Art Department of Hôpital du Sacré-Coeur de Montréal. This is on our letterhead and envelopes (Fig. 1). In addition to

trauma updates presented at the Royal College meetings of 1988, 1989, 1992, and 1993, the TAC have been cosponsors of regional trauma symposia across Canada and have supplied seed money where necessary.

The Medical Emergency Disaster Strategies Symposium organized by Murray Girotti in Montreal, and held on January 22 and 23, 1988, was a highly successful meeting and provided a modest profit for the TAC. These educational symposia are more important than ever with the advent of the Royal College of Physicians and Surgeons Maintenance of Competence Program or MOCOMP (registered trademark of Royal College of Physicians and Surgeons of Canada), since accessible, relevant, up-to-date continuing medical education will be a necessity for all rather than an optional luxury. The TAC has made great strides in 10 years since its formation, following the lead and hard work of Charles Burns and the founding members.

### THE TRAUMA PROBLEM IN CANADA

What is the size of the trauma problem in Canada? Although we do not have a national registry in place, Statistics Canada figures can give us some rough trends. I have reviewed the Statistics Canada publication entitled *Hospital Morbidity* for each of the census years from 1971,<sup>15</sup> 1976,<sup>16</sup> 1981,<sup>17</sup> 1986,<sup>18</sup> and for 1990<sup>19</sup> since 1991 (the most recent census year was not ready). Injury and poisoning are bracketed as a category designated 17 that includes all ICD-9 codes N-800 through N-999 inclusive, which also include complications of surgery. I have selected certain trauma diagnoses for the group referred to as the trauma group (Table 3). Note that a patient receives one discharge diagnosis per hospital separation (admission) that is termed the most responsible diagnosis, which is the one judged to be most dominant when a patient has been admitted with multiple diagnoses. Although multiple diagnoses, which characterize many trauma patients, are not indicated, some trends can be derived. In 1971, 16,546 Canadians per 100,000 population were treated in a hospital for some condition (Table 4). In 1990, 13,300 per 100,000 population were treated.

**Table 3**  
Categories included in trauma group

Description	ICD 9 Codes	Canadian Diagnostic List Code
Fracture skull, facial bone or intracranial injury	800-804; 850-854	176
Fracture spine or trunk	805-809	177
Fracture upper limb	810-819	178
Fracture lower limb	820-829	179, 180
Internal injury thorax or abdomen	860-869	182
Open wounds or blood vessel injury	870-904	183
Burns	940-949	185
Injury to nerves or spinal cord	950-957	186

**Table 4**  
Canadian trauma separations per 100,000 population

	1971	1976	1981	1986	1990
Fracture skull, face or intracranial injury	237	237	191	159	125
Fracture spine or trunk	84	83	71	69	64
Fracture upper limb	155	147	113	113	103
Fracture lower limb	244	254	215	221	216
Internal injury thorax or abdomen	28	26	26	24	22
Open wounds or vascular injury	162	129	100	87	72
Burns	51	43	33	26	20
Injury nerves or spinal cord	10	10	6	7	6
All trauma	970	931	756	708	627
All diagnoses	16,546	15,756	14,635	14,586	13,300
Population (millions)	21.57	22.99	24.34	25.31	27.15

## FIRES - PER 100,000 POPULATION

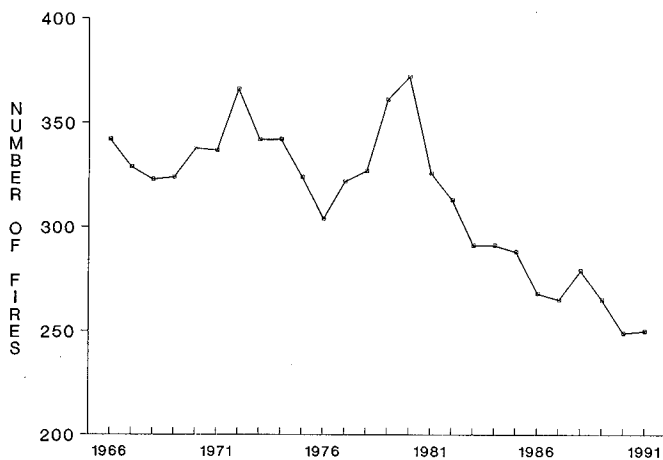


Figure 2. Fires in Canada per 100,000 population calculated on the basis of the censuses of 1966, 1971, 1976, 1981, 1986, and 1991.

The patients with the trauma diagnoses listed in Table 3 accounted for 970 per 100,000 population or 5.8% of all patients admitted in 1971, 756 per 100,000 population or 5.1% of these in 1981, and 627 per 100,000 or 4.7% of those admitted in 1990. Because of the large numbers this is a significant decrease at each interval compared with prior ones when trauma relative to all admissions is compared ( $p < 0.01$ ). The number of Canadians admitted for trauma in 1990 (170,000) would fill B.C. Place stadium three times.

I have followed the numbers for patients hospitalized for treatment of burns for several years and the role that Canada's 27 burn units play. The numbers of Canadians hospitalized for treatment of burns in 1990 compared with 1981 and 1981 compared with 1971 have dropped more than the numbers admitted for treatment of any of the other trauma subcategory. The decrease relative to all trauma diagnoses is significant over each decade 1971 to 1981 and 1981 to 1990 ( $p < 0.05$ ). Only the decrease in the category open wounds and blood vessel injury approached the magnitude of the decrease seen in burns relative to trauma overall (Table 4). Why?

Data are available for the numbers of fires in Canada as reported by the Fire Commissioner's annual reports.<sup>20</sup> Fires increased from 72,000 in 1971 to 79,000 in 1981 and decreased to 68,000 in 1991. However, looking at fires per capita there has been a progressive decrease, particularly between 1981 at 325 per 100,000 and 1991 with 250 per 100,000 (Fig. 2). The last decade was that in which the numbers of patients hospitalized for burns also decreased dramatically. Smoke detectors are now compulsory in all new buildings and must also be installed if a major renovation is performed. In the last 5 years the gradual ban of smoking has decreased the number of active smokers. Has this had an effect?

Factors contributing to the patients with burns admitted to Vancouver General Hospital grouped by

Table 5

Role of contributing factors in burns in patients admitted to Vancouver General Hospital

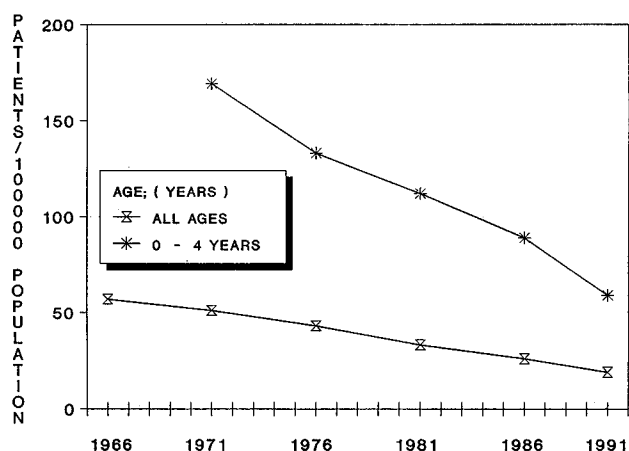
	1978-1982	1983-1987	1988-1992
Total number of patients	1043	890	693
Cigarettes	79	61	61
Alcohol	157	121	114
Gasoline		137	89
Drugs	20	32	30

No significant difference except Drugs 78-82 < 83-87, and 88-92.

5-year periods were analyzed (Table 5). A similar number of burns had smoking as a contributing factor in each period but the percentage of all admissions has increased because the total admissions are decreasing. Alcohol as a contributing factor has remained at about 15%. Gasoline was a contributing factor more often than alcohol in 1983 to 1987 and less than alcohol from 1988 to 1992. Drugs as a contributing factor increased from 1981 to 1991 compared to earlier; however, the true incidence of drugs is probably not known because patients often deny drug use. Another factor that is difficult to analyze is the practice of treating burns in the outpatient department that previously would have been treated in a hospital. Many patients who are treated now through the outpatient clinic of the Vancouver General Hospital would qualify for admission if the Advanced Trauma Life Support criteria for admission of a burn were followed. Unfortunately, economic pressure has closed beds and reduced nursing staff and there is often no room in the inn. With increasing frequency we have to refer large burns to Victoria, Calgary, and Edmonton because all ICU beds are full. In today's world a good outpatient follow-up mechanism with the support of home care nursing has changed the way that smaller burns are treated. I am sure that this applies to other types of single-system trauma.

Looking again at burn admissions to Canada's hospitals per capita population, the number of patients in the newborn to age 4 years group inclusive is roughly three times that of the total population but is decreasing at a comparable rate (Fig. 3). This group accounts for roughly one fourth of all burns admitted to Canada's hospitals. The majority of these are scalds. For this age group 99% of those admitted to the Vancouver General Hospital burn unit survived, whereas the mortality rate for the remaining patients admitted was 10%. This age group is an excellent group to target for prevention. Several brochures such as one created at the Hospital for Sick Children in Toronto entitled "Burns Scars Are For Life" highlight the home hazards to this group of patients. This select group should be targeted actively with prevention measures and messages.

## BURN ADMISSIONS PER 100,000 POPULATION IN CANADA



**Figure 3.** Burn admissions to Canadian hospitals in each census year, 1966, 1971, 1976, 1981, 1986, and 1991, based on 100,000 population, plus burn admissions in the subset newborn to age 4 inclusive.

## MISSION STATEMENT

Many of you will wonder why I have continued to push for a review of our mission statement. I find it difficult to explain to those who might be interested in membership in the TAC who we are and what we do. A concise and accurate statement of the purpose, goals, and objectives that we have bounced back and forth this past year will help in interesting potential members as well as keep the executive and organization on course.

The constitution states that the purpose of the TAC is to bring together physicians and other health care providers who have a special interest in the care of injured patients to promote the highest standard of patient care, education, organization, and research in the field of accidental injury.

Our goals deal with (1) quality of care; (2) research; (3) efficiency of delivery of health care, particularly trauma care, and this would include universal access; (4) education of both health care professionals and also citizens in general; (5) rehabilitation; and (6) active support and participation in prevention programs. This last goal applies to our entire population and I think is vital.

This list of ten objectives defines how we plan to approach our goals:

We have just concluded our tenth annual scientific meeting. We need to decide if we continue to meet one day ahead of the Royal College in the 3 years out of 4 we meet with the College. The increased attendance at today's sessions indicates this move has been positive. We also need to decide if at some time we want to meet with other societies with whom we share common members or perceive a common bond, particularly the orthopedic surgeons and critical care physicians.

We publish two newsletters a year. I think that we could increase the amount of educational content of the

newsletters in addition to the nuts and bolts information of activities and announcements of the organization that makes up most of the contents. I hope that we will announce additional regional meetings and symposia in the future.

Our annual meeting papers have been published and our publication committee has done an efficient and effective job of reviewing these and submitting those that qualify for the *Journal of Trauma*. These have been published within 1 year of their presentation.

With the emergence of the maintenance of competence program (MOCOMP), we should initiate, promote, and participate in more regional conferences. However, since our financial cushion is not great, our liability in these must be carefully watched. Many of our membership participate in education by instructing Advanced Trauma Life Support and Advanced Burn Life Support courses.

A national trauma registry is still an objective toward which we are working. Provincial registries are evolving and hopefully can be incorporated into a national registry in time.

We have had research papers indicating interest and activity in several areas influencing trauma care. Traditionally, physiologic changes affecting multiple organ systems are felt to epitomize the trauma problem and have been fertile areas for research studies presented to the TAC. However, many of our grass-roots members have expertise in their own disciplines and should be made to feel welcome and encouraged to present their work to the TAC rather than restricting it to their own primary specialty society meeting. Epidemiologic and outcome studies are vital to trauma care.

Prevention is a key area. General hospital resources are diminishing. Beds and whole hospitals have closed in British Columbia in the last year. The most effective way to combat this is to reduce the incidence of trauma. The TAC has identified and supported specific measures, including issuing position statements on such issues as seatbelts, bicycle helmets, and support of gun control measures. We live in an era of corporate sponsorship. Perhaps some position statements on the hard sell, particularly of beer, a prominent part of sporting events, including team and event sponsorship, is needed. The companies themselves seem to have become more conscious of being responsible citizens but both the breweries and the cigarette companies continue to promote their products in a more subtle manner. Perhaps the explosion of logos on team uniforms, racing cars, and hockey cushions will render all logos unnoticeable. I would venture to guess that the cost in hospital care, medical fees, and human suffering from the effects of tobacco products and alcoholic beverages is similar and we know considerable. Smoking has become socially unacceptable. McLellan, Vingilis, Larkin, et al.<sup>21</sup> emphasized the role of alcoholic beverages in automobile crashes in last year's Fraser Gurd lecture.

I think that the industry makes some visible attempt to educate the public but at the same time seductive beer advertisements continue to appear on television.

We should continue to lobby governments for changes that can reduce the factors frequently associated with injury.

Disasters are happening closer to home. In the past 5 years we have witnessed mass shootings at two Montreal universities, l'Ecole Polytechnique (14 victims) and Concordia University (five victims), and a MacDonald's Restaurant in Sydney, Nova Scotia (three victims). Edmonton experienced a tornado in 1987. In the United States terrorist activities have occurred recently at the World Trade Center in New York. We must be prepared to handle multiple casualties. Are we ready?

For the last 2 1/2 years the Accreditation Committee under Charles Burns has worked intensively to define the different levels of trauma centers, the components thereof, and how these function in an integrated trauma system. We have just approved a document that will be forwarded to the provincial governments and the Canadian Council on Health Facilities Accreditation. We have dealt with a complex issue, trying to make it relevant in a large country with a widely spread population, and a heterogeneous distribution of health care resources each under separate provincial government jurisdiction, as well as to make it relevant to hospitals that may or may not have university affiliation with residency programs. I have been encouraged by the ability of the Trauma Center Accreditation Committee and our executive to sit down and work as a group. The document that emerges from the Vancouver 1993 meeting is but a start. Our role in the accreditation process has yet to be defined. Perhaps some of our members will be asked to be part of the team for site visits or will be asked to act as consultants. I hope that the exercise of the last 12 months will allow us to determine the most effective means of dealing with similar contentious issues in the future. I think an issue as complex as this needs broad input and total participation. This is difficult in a country that spans more than one sixth of the world's time zones and has 27 million people spread out over 4000 miles from coast to coast.

### CHANGES

The type of trauma we see in Vancouver and I suspect other parts of Canada has changed in the last 10 years. From a plastic surgeon's standpoint, I was accustomed to treating the effects of fist-induced injury whereas today more injuries are caused by knives and gunshots. A disturbing feature is the fact that more violence is happening in our public and high schools in a younger population.

We are losing a lot of skilled and well trained doctors

to the United States. From our own TAC membership, Ronald Walls, Director of the Emergency Department at Vancouver General Hospital, has left for Boston. James Kellam, an orthopaedic surgeon, who was the chair of our liaison committee, and Doctor Joseph Gruss, who gave the 1989 Gurd Lecture, have gone to the United States. The brain drain will likely continue, and unfortunately we in the TAC can do little to prevent it.

Anyone with contact with medical students knows that in the last year there has been a radical change in the way that students determine the type of career that they will choose following graduation. Students now must pick a career by September of the final medical year under the double threat of not getting matched to a career they want and also not even being guaranteed a position to get the required 2 years of postgraduate training necessary to get a license to practice in Canada. At the University of British Columbia our curriculum has been designed for students to get hands-on exposure to the various specialties late in third year and during the entire fourth year with the object being that they would pick a specialty field during internship or even later. Exposure to careers will have to occur earlier in the students' curriculum. Emergency departments are popular with students for electives. Those who work in emergencies will see more students earlier in their medical education and this will be an excellent opportunity to either interest them in trauma as a career but at least educate them in the sound principles of assessment of trauma patients.

I personally do not agree with students being forced to make the choice at this point. However, to counteract the brain drain, we must interest our students in treating trauma.

Maintenance of competence (or MOCOMP) is here. It recognizes three different types of CME. Type 1, or self-directed CME, includes reading journals; type 2 includes attending meetings, symposia, and courses; and type 3 is instructing, teaching, research, and writing papers. Most of us function in all three spheres. There will be an increased need for regional symposia and trauma conferences. We should be prepared to participate and support these and if necessary organize more.

### THE FUTURE OF THE TRAUMA ASSOCIATION OF CANADA

**Mission.** Let us continue to review and update our mission statement. This will keep us on track and will also allow us to articulate to potential new members what we do.

**Resident Members.** We presently have 64 residents out of 216 total members. We have encouraged them to join with a free subscription to the *Journal of Trauma* in the first year although we cannot afford this

in the future. Let us keep them interested in trauma. We need them to look after the patients. We also need them to keep this organization going. Those with contact with residents should encourage them to submit papers for the 1994 meeting. Encourage your former residents to apply for active membership in the TAC.

**New Members.** I would suggest that each of you take a few application forms home. If each of us could interest one or two colleagues who treat trauma patients as a part of their practice but may not necessarily consider themselves trauma doctors, it would enrich this organization. We must increase our representation from the ranks of emergency physicians as well as intensivists and anesthesiologists, who are heavily involved in the treatment of trauma patients. We have very few vascular surgeons and urologists. We have very few members from non-university cities although trauma accounts for 5% to 10% of all hospital admissions across Canada. In addition, we need to concentrate on increasing our profile in Quebec and Atlantic Canada, particularly since we will be co-hosts of the joint TAC-AAST meeting in Halifax in 2 years.

**Continuing Education.** We should sponsor, produce, and promote continuing medical education, including that aimed at prehospital care workers as well as that specific for physicians. We have the spectrum of expertise in the TAC to cover most aspects. I am not certain that we can continue to count on drug companies and equipment suppliers to support continuing medical education conferences as we have in the past. Users will have to pay an increasing portion of the costs in their registration.

**Support the Trauma Team.** I think at a time when hospital resources are shrinking and beds on each service are disappearing, it is important that we do not allow patients to fall through the cracks for fear that they may end up occupying a bed on our ward or service for a long time. Services that are hard hit by long-stay trauma patients such as neurosurgery must be supported by their colleagues in trauma centers in their quest for adequate beds. In this respect early liaison leading to earlier transfer to rehabilitation facilities may help relieve some of the pressure.

**Accreditation of Trauma Centers.** Let us complete the accreditation document and forward it to the provincial governments, to the Canadian Council on Health Facilities Accreditation, and other bodies who will be influenced by its contents. When the time comes we should be prepared to act as members of the accreditation team if asked or at least as advisors.

**Prevention.** Of all the activities that we could select, promotion of prevention of trauma is most important since we no longer have the resources and personnel in Canada's health care system necessary to comfortably look after our present workload, let alone a larger one. The number of trauma patients must be reduced. This can be achieved by increased public

awareness of hazards via television commercials and advertising in the print media, and with brochures in our hospitals and offices. Of major importance is better public education about the hazards of consumption of alcoholic beverages, and de-emphasizing the promotion of these that presently is associated without question as part of sporting events. Other measures such as reduced automobile speed limits at night, better driver education, effective and frequent driver re-examination, regulation of firearms, and education of the users of recreational vehicles including boats, snowmobiles, all-terrain vehicles, and dirt bikes are just some of the areas in which activity must be increased. Prevention is definitely the single most effective measure to permit a closer match between our overstretched hospital resources and a growing population, especially when we all know that no more money is forthcoming from government or any other source to hire more health care workers. At present our crisis is that fewer are being asked to do more. Prevention is our most effective weapon.

#### Acknowledgements

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