

Developing Academic Surgery in a Socialized Health Care System

A 35-Year Experience

Andre Duranceau, MD; Jocelyne Martin, MD, MSc; Moishe Liberman, MD, PhD; Pasquale Ferraro, MD

The most important benefit of a socialized health care system is the elimination of the threat of personal financial ruin to pay for medical care. Serious disadvantages of a socialized health care system, particularly in a university hospital setting, include restricted financial resources for education and patient care, limited working facilities, and loss of physician-directed decision making in planning and prioritizing. This article describes how a group practice model has supported clinical and academic activities within the faculty of medicine of our university and offers this model as a possible template for other surgical and medical disciplines working in an academic socialized environment. *Arch Surg.* 2012;147(7):668-673

A disadvantage of a socialized health care system (SHCS) in a university hospital is global budgeting under government control. This type of budgeting causes restriction of financial resources and facilities for education and patient care. There is a loss of physician-directed decision making in planning and prioritizing program development. Forces tend to limit the motivation of physicians to work hard.

The loss of numerous high-quality and well-trained individuals to well-organized and well-recognized US medical centers prompted us to establish a structure that would attract and retain these trainees within our environment. Is it possible, within an SHCS, to ensure excellence in clinical care while supporting teaching and developing research? Our goals with this work are (1) to describe how a group practice model has supported clinical and academic activities within the faculty of medicine of our university and (2) to offer this as a possible template that other surgical and medical disciplines working in an academic socialized environment might want to adopt in manners suited to their specialties.

Author Affiliations: Department of Surgery, l'Université de Montréal, Division of Thoracic Surgery, Centre Hospitalier de l'Université de Montréal, Montreal, Québec, Canada.

DEFINITIONS

Université de Montréal

The Université de Montréal (UM) is the largest French-speaking university in North America. Founded in 1878, it is financed by the Ministry of Education. Tuition fees are set by the provincial government.

Nominations and Positions

Appointments at the UM are separate from appointments to the staff of its university hospital. Hospital appointments, however, require a nomination or an appointment by the university. There are 2 categories of appointments. In the first category, a clinical nomination is needed for any contact with students or residents. It follows the nomination level of instructor, assistant professor, associate professor, and professor but carries no financial obligation for the university. In the second category, a geographic full-time (GFT) appointment is the same as a full-time equivalent (FTE) in the United States. It is a remunerated university position in which the appointee is paid an academic salary, which is ranked dependent on teaching and research. These positions may lead to tenure within the university.

University Appointment

Appointments to the Department of Surgery and the Division of Thoracic Surgery start at the instructor level. The levels of assistant professor, associate professor, and professor of surgery can be reached with probation periods between promotions. Nominations and promotions are assessed by departmental, faculty, and university committees. Academic criteria for nominations and promotions are more lenient for clinical positions with the justification that teaching by clinical faculty is not remunerated. Nomination and promotion evaluation for GFT positions follow strict criteria because of the financial implications of such appointments.

Centre Hospitalier de l'Université de Montréal

The Centre Hospitalier de l'Université de Montréal (CHUM) was created 15 years ago by the merger of 3 centrally located but separate French-speaking teaching hospitals. The merger prompted the construction of a new single-site university hospital, located at a distance from the university. The faculty of medicine and CHUM are administratively independent.

University Hospital Appointments

Academic vision, scope of programs, and working conditions are determined by each of the 8 surgical subspecialty services for themselves. Criteria for recruitment and appointment to the CHUM are based mostly on workforce needs and left to the planning of each service. The approval of the UM is required for recruitment. There is no university or university hospital group practice for the Department of Surgery. There is no financial obligation to the CHUM.

Socialized Health Care in Canada

In Canada, patients do not pay for medical care. The SHCS principles are set by the federal government and administered by the individual provinces. In Québec as in other provinces, health care is provided on a fee-for-service basis. Each medical act, diagnostic or therapeutic, is paid by a government health board. Remuneration is received, usually within 4 to 6 weeks. The fees are negotiated periodically by federations or unions representing specialists and generalists.

Medical Liability Protection in Canada

Medical liability issues in Canada are covered by a single mutual type of protection obtained from the Canadian Medical Protective Association. This protection offers representation, defense, and, if necessary, settlement to more than 95% of practicing specialists and generalists.

METHODS

For 35 years (1975-2010), we have reviewed recruitment, clinical activities, research funding, participation in professional associations, and peer-reviewed publications for the Thoracic Surgery Service of CHUM.

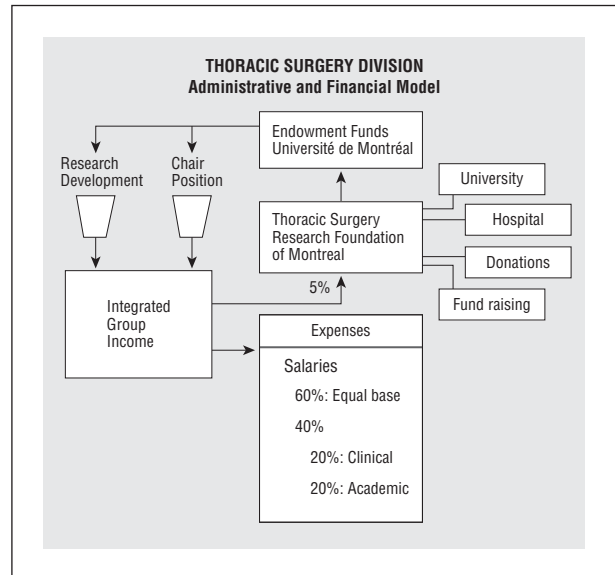


Figure 1. Thoracic Surgery Division administrative and financial model.

INTEGRATED GROUP PRACTICE

The group practice model developed during that period pools all incomes that result from professional expertise (clinical income and income from expert testimony, university academic salaries, and administrative responsibilities) into a single monetary mass. Royalties from publications and honoraria from invited lectures are left as incentives. After the deduction of administrative expenses, the remainder is redistributed as salaries to members of the group (Figure 1). Every member receives an equal base salary of 60%, whereas clinical productivity and academic and administrative activities are considered for the balance, regardless of appointment level. Allowed expenses include administration fees and financial reports. All secretarial and telecommunication expenses are covered. Professional group and society fees are reimbursed. Medical liability protection offered by the Canadian Medical Protection Association is included in the allowed expenses. Professional meeting participation expenses for scientific or administrative activities in recognized societies are reimbursed for 20 working days of activities. When participation is strictly as a passive presence in those same societies, 5 working days are allowed. Eight weeks of vacation time are allowed every year.

Governance in the group is transparent. A financial report is given every 2 weeks. Twice a year, complete reports are discussed with the administration. Salary redistribution is assessed and decided by the service chief after discussion with each member.

RESEARCH AND DEVELOPMENT FUND

The Research and Development Fund is integrated within the group practice model as illustrated in Figure 1. The model was inspired by the experience of the Duke Surgical Private Diagnostic Clinic, developed by Deryl Hart, MD, and refined by David C. Sabiston, MD.¹ In their model, a percentage of the clinical income is protected for the purpose of funding research and academic activities.

Five percent of our clinical income is taken on all reimbursements from health boards. These funds are transferred into a public foundation created for our service called the Thoracic Surgery Research Foundation of Montreal.

Table 1. Progression of Training Requirements

Surgeon No.	Additional Training Requirements	Year Recruited	University Position
1975-1985			
1	Thoracic surgery, Washington University, St Louis, Missouri		Professor
2	Thoracic surgery fellowship, Harvard University–Massachusetts General Hospital, Cambridge, Massachusetts		Professor
3	Thoracic surgery fellowship, Johns Hopkins University, Baltimore, Maryland		Professor; GFT/FTE 100%
4	Thoracic surgery fellowship in lung and esophageal physiology (2 y), Duke University, Durham, North Carolina	1975	GFT/FTE 100%, 1982
5	Research fellowship in esophagology (1 y) and cardiothoracic training, University of Chicago, Chicago, Illinois	1984	Solo practice
6	Research fellowship in lung mechanics (2 y) and general thoracic training (1 y), Mayo Clinic, Rochester, Minnesota	1986	Immigrated to the United States
1986-2010			
7	General thoracic surgery (1 y), Mayo Clinic, lung transplantation training (1 y), University of Pittsburgh, Pittsburgh, Pennsylvania	1997	Chair position in lung transplantation; GFT/FTE 100%; associate professor, 2009
8	Research fellowship: thoracic oncology (2 y) and MSc degree in epidemiology, Columbia University, New York, New York, and thoracic surgery oncology training (1 y), Memorial Sloan Kettering Cancer Center, New York, New York	2002	Clinical associate, professor, 2010
9	PhD degree in epidemiology and statistics, McGill University, Montreal, Québec, Canada, and cardiothoracic training, Harvard University–Massachusetts General Hospital	2008	Chair position in thoracic surgery oncology with GFT/FTE 100%; assistant professor, 2008

Abbreviations: FTE, full-time equivalent; GFT, geographic full time.

Table 2. Salary Scale of Remunerated Geographic Full-time/Full-time Equivalent Positions^a

Salary Year	Salary, \$			
	Instructor	Assistant Professor	Associate Professor	Professor
2006-2007	51 078	73 450	86 666	98 840
2007-2008	52 878	76 038	89 720	102 322
2008-2009	67 040	95 230	120 346	132 470
2009-2010	68 380	97 134	122 752	135 120

^aIn 2010, the total budget for the faculty of medicine was \$66 180 124. The Department of Surgery received \$4 058 267 for that period.

The foundation is public and fiscally recognized by the federal and provincial governments. It operates in parallel with the University Hospital Foundation and the Université de Montréal Development Fund. The main goal of the foundation is the creation of endowed chair positions within the university to establish GFT positions and support research, exclusively for surgeons of the Thoracic Surgery Service.

RESULTS

TRAINING REQUIREMENTS AND UNIVERSITY POSITIONS OBTAINED

The evolution of training requirements during the observation period are summarized in **Table 1**. During the initial 10 years studied (1975-1985), 4 thoracic surgeons were active in the service. They initiated the teaching program and allowed the establishment of the initial esophageal function laboratory and the first bronchoscopy and upper gastrointestinal tract endoscopy facilities for thoracic surgery. Of the 3 surgeons who joined the group during that period, 2 left, unsatisfied with the working conditions. One went into a solo career in thoracic surgical practice. The other accepted an academic position in the United States.

From 1986 through 2010, 3 additional surgeons were recruited. They were integrated into the group practice model described. Three of the 4 members in the service obtained a GFT/FTE university position. A major increase in activities occurred as the lung transplantation program emerged. Better expertise in thoracic oncology and tracheobronchial and esophageal surgery, including diagnostic and therapeutic endoscopy, was developed. A new investigation center for tracheobronchial and esophageal problems resulted.

UNIVERSITY FINANCIAL SITUATION AND UNIVERSITY POSITIONS

Table 2 describes the financial dimension of the UM School of Medicine and its Department of Surgery with the academic salary scale for a GFT position (FTE). The ratios of clinical (nonremunerated) to GFT/FTE (remunerated) positions in the Department of Surgery were 65:2 instructors, 79:7 assistant professors, 58:11 associate professors, and 13:14 professors. The ratios of academic to net income Thoracic Surgery Service positions were 156 245:968 438 (16.1%) for 2006-2007, 202 674:1 49 643 (17.6%) for 2007-2008, 271 616:1 728 562

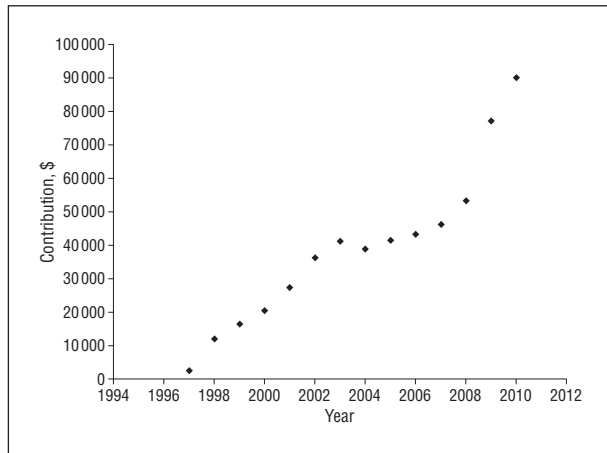


Figure 2. Thoracic Surgery Research Foundation of Montreal annual contributions of the group practice.

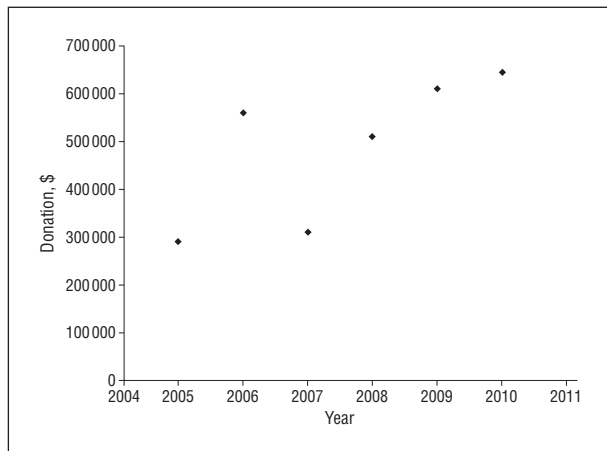


Figure 3. Thoracic Surgery Research Foundation of Montreal annual donations.

(15.7%) for 2008-2009, and 307 052:2 282 119 (13.5%) for 2009-2010.

GROUP PRACTICE AND DEVELOPMENT FUND

An effort at group practice occurred in 1980. This practice was discontinued by the merger of the 3 hospitals and the birth of the CHUM. Two major events occurred with this new structure: general thoracic surgery became an independent specialty, and a geographic teaching unit was created. The Thoracic Surgery Training Program became a reality. The group practice model with its development fund was established for the service at that time. On day 1 of their arrival, all new recruits accepted the integration of the development fund into the financial model of the group practice.

RESEARCH AND DEVELOPMENT FUND ROLE

The surgeons' contributions to their foundation are shown in **Figure 2**. Total yearly contributions made to the Thoracic Surgery Research Foundation from all sources are shown in **Figure 3**. These funds were accrued by donations from patients, individual families, companies, corporations, institutions, and other foundations. Fundraising events were organized.

Table 3. Endowment Funds for University Positions

Contribution by Position	Funds, \$
Chair position in thoracic surgery and lung transplantation	
Thoracic Surgery Research Foundation of Montreal	1 500 000
Montreal University Hospital Foundation (CHUM)	500 000
Private funding	1 000 000
Total	3 000 000
Chair position in thoracic surgery and oncology	
Thoracic Surgery Research Foundation of Montreal	250 000
Montreal University Hospital Foundation (CHUM)	500 000
Private foundation	2 250 000
Total	3 000 000
Chair position in thoracic surgery and esophageal diseases	
Thoracic Surgery Research Foundation of Montreal	750 000
Montreal University Hospital Foundation (CHUM)	500 000
Private foundation	1 750 000
Total	3 000 000

Abbreviation: CHUM, Centre Hospitalier de l'Université de Montréal.

The specific goals of the foundation were to create endowed university positions dedicated to the field of thoracic surgery. These positions aimed to attract, support, and retain new academically oriented thoracic surgeons. The expectations were to develop better patient care, teaching, and research. Endowed funds are expected to bolster total holdings by the university that should grow over time and support the professorship position indefinitely, regardless of who holds it, for the thoracic surgery service within the CHUM.

Table 3 describes the financing details of the 3 endowed chair positions for the service. Two have been established by the university since the beginning of activities 7 years ago (1 in lung transplantation and 1 in thoracic surgery oncology). The financing of a third endowed fund has just been completed for the creation of a position in thoracic surgery and esophageal diseases.

ACADEMIC ACTIVITIES

Research funds obtained, academic productivity, and participation in learned societies by members are summarized in **Figures 4, 5, and 6**.

COMMENT

In an SHCS, the development of an academic environment remains a challenge. Those of us within an SHCS who acquiesced to its development must accept the responsibility to achieve and maintain excellence despite this challenge. The loss of numerous high-quality and well-trained individuals to well-organized and well-recognized US medical centers stimulated our efforts to improve our development. Inertia at both the university and CHUM levels to "brain drain" issues was considered a sign of demotivation toward the selection and protection of excellence. This effect is still interpreted as a consequence of poor financing at the university and hospital levels. Financial restrictions within the university global budget over 40 years resulted in unremunerated teaching positions for most professors involved in teaching surgery. We feared that the end result would per-

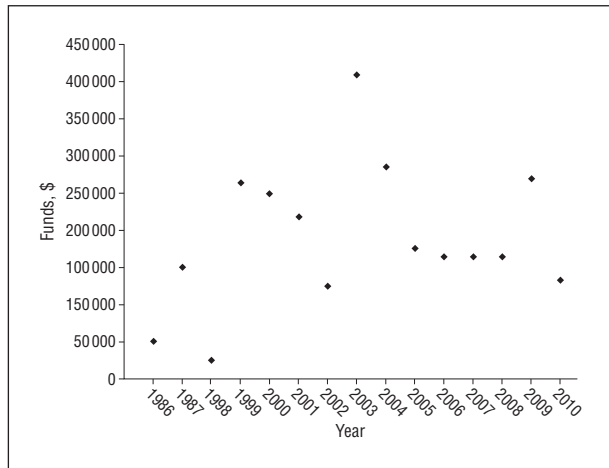


Figure 4. Research funds.

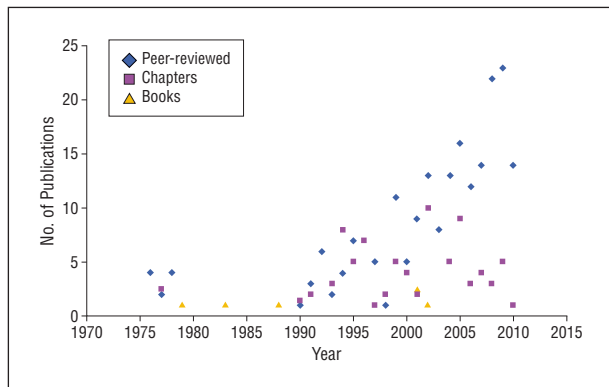


Figure 5. Peer-reviewed articles, chapters, and books.

haps be poor research efforts, weak or absent academic activities, and limited participation in learned societies.

Full-time positions with the possibility of tenure had been defined, proposed, and accepted by the university in the early 1950s to improve the quality of teaching. Considered "a career appointment by the university in a clinical science department of the faculty of medicine," such a position implied balanced clinical responsibility, teaching, and research activities.² After the initial implementation of these positions, prolonged budget restrictions for universities, coupled with unrealistic education fees, led to the progressive disappearance of salaried positions. Pro bono teaching became the norm at the undergraduate and postgraduate levels.

Entrepreneurial use of hospital facilities are not permitted in the Canadian Health Care System.³ The hospital cannot plan its progression as a nonprofit organization with volume-related financing. The yearly budget of the hospital remains a government decision. Physicians and patients are frequently considered liabilities because of the cost of implementing new technologies and the pressure exerted for more time, space, and personnel. The final authority for planning and allowing development belongs to administrators who are usually masked to scientific and technical development priorities. These administrators report to politicians. The university hospital functions on a global budget, and its departments function as service units with no budget of their own. In

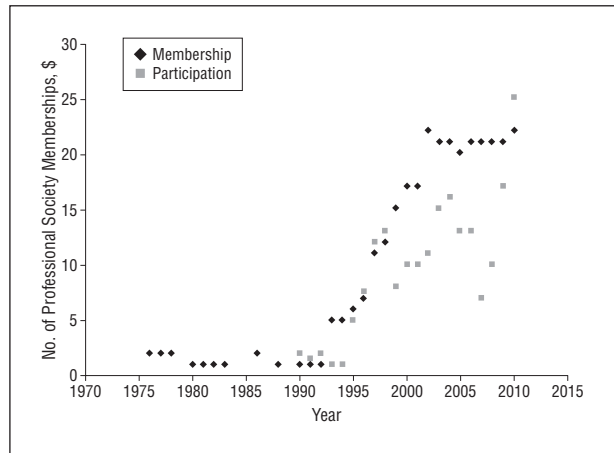


Figure 6. Participation in professional societies.

such a socialized health care environment, the choice becomes staying idle and enduring the stagnation imposed by the public administration policy or seizing the initiative and taking responsibility for finding the necessary financing to counteract the negative effects of the SHCS on academic work.

For a situation considered by many to be dismal, we undertook 3 steps to modify this evolution. The first step was a mandatory integration of all participants into a group practice of academic orientation that offered financial security while protecting time for teaching and research. The second step was the creation, by independent financing efforts, of full-time university positions with the possibility of tenure. Such positions are seen as recognition of the high-quality training and academic potential of new recruits. The third step was insistence at the hospital level that infrastructures be created to favor new surgeons and their academic goals.

The absence of a practice plan in the departments of surgery of both the university and the CHUM gave us room to develop a model of academic group practice. Investing 5% of our clinical income to promote our own development became the essential step in our evolution. It took a motivated group to accept that part of their income would be invested into a foundation whose goals were to help their university succeed in attracting candidates with the best training. This was a practice plan with a goal of free enterprise, circumventing the underfinancing of education and health care by the government. The idea of raising our own funds and transferring them to the university to create better material conditions for surgeons who opted for years of improved training gave us great credibility with our supporters. The donations from our clinical earnings, however, were not sufficient to realize a remunerated university position. These donations currently amount to approximately \$100 000 per year. Individual patients, families, communities, business groups, corporations, and private foundations were solicited to help us realize our goals. We received support from the University Hospital Foundation and the University Development Fund. Fundraising events were successful. Within 7 years, 3 university chair positions were financed with an endowed capital of \$3 million each.

Despite the progressive impoverishment of our medical school, we have held to the belief that tenured, GFT positions within the university remain the best approach to improve teaching and research.⁴ At the present stage of our evolution, tenure emphasizes the need to produce valuable research contributions. A tenured position also answers the question, "How do we pay for an academic recruitment?" Trower and Chart⁵ emphasize that tenured positions are a powerful draw for most scholars: they are first and foremost an economic security. However, they also induce more stress and greater pressure to conduct research, mostly during the probation periods before granting tenure. They allow for more involvement and influence in department and division governance. A full-time position with tenure conveys more status and respect. Although this is controversial, we believe that universities that do not offer tenured academic positions are at a disadvantage with regard to attracting and supporting the best clinical scientists. In our view, a service with a group practice plan that includes the availability of a tenured position with the university helps to ensure a proper environment for candidates who have shown a definite interest in an academic orientation.

The goal of creating our own university positions met an undercurrent of opposition. In 1999, the faculty of medicine suggested a \$1 million financing effort to create an endowed chair with a clinical, nonremunerated position. In our view, a \$3 million endowed fund was necessary to ensure the financing of a GFT chair position with protected research funds and the possibility of tenure with the university. These positions with the university could only be obtained if the recruited candidate was integrated into a group practice that favored protected time for research and participation in academic activities. The group practice removed the onerous aspects of such participation. A progressive increase in research funding, peer-reviewed publications, chapter and book authorship, and participation in professional societies was observed.

After establishment of a model of group practice that encourages academic achievement and invests in the creation of university positions, the Thoracic Surgery Service and its foundation had to become involved, as described earlier, in orienting the development of hospital facilities. As an example, the purchase of new state-of-the-art endoscopic diagnostic and ultrasonographic equipment, at a cost of \$1.5 million, became essential with the creation of the chair position in thoracic surgery oncology. It allowed, not without difficulties, the expansion of the early endoscopy and function evaluation unit into a new thoracic surgery center for the evaluation of tracheobronchial and esophageal diseases for the CHUM. The recurring costs of such a unit had to be negotiated with the administration of the hospital, despite sustained opposition by gastroenterologists, pulmonologists, and administrators. The presence of a significant clinical research effort gave credibility and eventually brought support for the project.

The criteria to develop academic surgery in an SHCS are the same as those in a free enterprise system: (1) the highest-quality clinical and research training; (2) a full-time academic position with the university with better material support; (3) integration into a group practice

that, while supporting balanced clinical practice, offers protected time and organization for teaching, research, and academic representation (solo practice in a university hospital is unacceptable because it cannot favor and develop an academic dimension); and (4) guaranteed support and protection at the hospital level. The personal motivation of recruited surgeons is as important as the support of the hospital and university environments if the entire endeavor is to be successful. Clear expectations must be communicated to new individuals regarding their role and expected evolution and contributions. The same commitment must be assured from the university and its academic center.

As a small group, we have invested in the development of our own Thoracic Surgery Service by the voluntary creation, as part of our group practice, of a research and development fund generated by investing part of our income into our own research foundation.

The model developed has currently been limited to a group for whom the academic dimension is important. The same model can certainly work for other services of the Department of Surgery if the same vision and motivation can be developed among their members. This dedication can be accomplished only with high-quality recruitment and the establishment of a quality environment for the surgeons recruited.

In the Thoracic Surgery Service of the CHUM, we think that this model should be proposed at the university level and applied to all services of departments of surgery in university hospitals to help recruit support and retain highly trained academic surgeons.

Accepted for Publication: December 22, 2011.

Correspondence: Andre Duranceau, MD, Department of Surgery, l'Université de Montréal, Division of Thoracic Surgery, Centre Hospitalier de l'Université de Montréal, 1560 Sherbrooke Est, Montréal, Québec H2L 2M1, Canada (andre.duranceau@umontreal.ca).

Author Contributions: *Study concept and design:* Duranceau and Liberman. *Acquisition of data:* Martin and Liberman. *Analysis and interpretation of data:* Liberman and Ferraro. *Drafting of the manuscript:* Duranceau, Martin, and Ferraro. *Critical revision of the manuscript for important intellectual content:* Duranceau, Martin, and Liberman. *Administrative, technical, and material support:* Martin, Liberman, and Ferraro.

Financial Disclosure: None reported.

Previous Presentation: Presented as The Joyce and John Benfield Annual Lecture at the University of Chicago; October 20, 2011; Chicago, Illinois.

REFERENCES

1. Hart D. *The First Forty Years at Duke in Surgery and the Private Diagnostic Clinic*. Durham, NC: Duke University; 1971.
2. Goulet H. *L'Enseignement Médical: Une Profession*. Montréal, Québec: Les Presses de l'Université de Montréal; 2008.
3. Reid TR. *The Healing of America: A Global Quest for Better, Cheaper and Fairer Health Care*. New York, NY: Penguin Books; 2009.
4. Chait RP, Chait RP, ed. Why tenure, why now? In: *The Questions of Tenure*. Cambridge, MA: Harvard University Press; 2002:6-31.
5. Trower CA, Chait RP, ed. Can colleagues competitively recruit faculty without the prospect of tenure? In: *The Questions of Tenure*. Cambridge, MA: Harvard University Press; 2002:182-220.