Most people—if they knew of Newfoundland’s existence more than ten years ago—regarded it as a most unlikely place for a medical school. Its chances of success were considered to be even less (in the minds of many) when it was learned that some applicants would be accepted one or even two years earlier than was usual in North America; that traditional departments would be greatly de-emphasized, with no departmental budgets; that the curriculum would be run by a committee including students; that the faculty would be smaller than in most schools: one hundred to one hundred and fifty full-time and a similar number on a part-time basis; that general practitioners would be active in both full-time and part-time faculty; and that students would have opportunities to see them in action during a mandatory clinical rotation in a selected cottage hospital or community hospital during the final-year clerkship.

Some of the reasons for the successful development of this school—for example, careful feasibility studies; obtaining written commitments in advance from government and the medical profession; its solution to the problem of new versus old teaching hospitals—are almost certainly relevant for other places. First, however, it would be useful to provide a background outline.

Before it became Canada’s newest province in 1949, after a very close vote, this large island (43,359 square miles) and its larger mainland extension, Labrador (112,826 square miles), had for four hundred years been known as Britain’s oldest colony. Archaeologists have established that Newfoundland, occupied first by Beothic Indians and Dorset Esquimaux, was visited by Vikings as early as 1000 A.D., although recorded history usually credits its discovery to John Cabot, who sailed from Bristol, England in 1497. In 1583 Sir Humphry Gilbert landed in St. John’s and officially proclaimed the sovereignty of Queen Elizabeth I.

Although Newfoundland eventually achieved dominion status, commercial, government, and military influences in both Britain and France conspired successfully for well over three hundred years to prevent permanent settlements. To mention only one example, the treatment accorded French Canadians by Britain after the Battle of the Plains of Abraham at Quebec was magnanimous indeed when compared with the treatment of would-be settlers in Newfoundland at the end of that
same war, during which St. John's was captured by the French in 1762 but later recaptured by English reinforcements—the Royal Americans from New York. Until 1820, except for earlier brief attempts, there was actually an official prohibition against settlement, mainly to protect the business interests of fish merchants from the West Country ports of England. As a result, the province remained underdeveloped. Its lines of communication were with Europe rather than North America, and St. John's, the capital, had closer ties with London than with Ottawa until after confederation with Canada.

Newfoundland's population in 1949 was three hundred and twenty-two thousand, 40 percent on the Avalon Peninsula close to St. John's. The capital city itself had fifty-seven thousand inhabitants and, apart from five communities along the transprovincial railway, over half the people lived in more than a thousand isolated fishing villages scattered along six thousand miles of indented sea coast. Confederation was followed by twenty years of phenomenal growth and change. The school population increased, and Memorial University College, founded in 1925 as a memorial to those who died in World War I, was raised to the status of a university in 1949. This was one of the first acts of the new provincial government under the leadership of Premier Joseph R. Smallwood, who merits unreserved credit for his support of education in general and Memorial University in particular. In 1961–62 the university, with twelve hundred students, moved to a spacious new campus on the outskirts of St. John's where two thousand acres (Pippy Park) were reserved for the university, a provincial College of Trades and Technology, and provincial government buildings. Today the province has a population of some five hundred and seventy thousand, with one hundred and thirty-five thousand in metropolitan St. John's. Memorial University has nearly ten thousand full-time equivalent students, including those at the western Newfoundland campus, a regional college at Corner Brook, a small and beautiful city of thirty-five thousand.

FACTORS ACCOUNTING FOR THE DECISION TO ESTABLISH A MEDICAL SCHOOL

One anecdote serves to indicate that formative influences developed with comparative rapidity: Ronald V. Christie, chairman of the Department of Medicine at McGill University (soon to become its dean of medicine) was one of the guest speakers at a Newfoundland refresher course in October 1958. He was favorably impressed by the keen interest of the eighty doctors attending the course—most of them general practitioners and doctors in charge of the twenty or more cottage hospitals developed throughout the province since 1934—and by the ward rounds he had attended with medical staff, one of the earliest medical residents in a formally approved post, and several interns.

During an after-dinner conversation, Christie asked about the possibilities of a medical school. The minister of health quickly replied, "I do not expect to see one in my lifetime." Leonard Miller, deputy minister of health for nearly forty years,
and director of medical services for several years prior to Newfoundland's entry into confederation with Canada, agreed that since no thought had been given to such a development, it would undoubtedly be many years in the future. Ian Rusted, medical consultant to the Department of Health and director of medical education at the St. John's General Hospital (the provincial referral center operated by the department), said he had no idea whether or not a medical school would emerge in twenty-five, fifty, or one hundred years, but felt it was important that small steps were beginning to be made, such as formal approval of intern and resident training at the General Hospital. He expressed what was then merely a vague hope that, if this were to be followed by other steps, such as the institution of appropriate science programs at the university, a medical school might develop sooner rather than later. None of those around the dinner table that evening realized that each of them was to play a significant role in the medical school that began only nine years later.

The minister and his deputy minister were preoccupied in 1957–58 with launching a Children's Health Plan that included payment of physician's fees. This was one of the first two or three major social medical developments that led, in 1968–69, to universal Medicare in Canada. Another was the 1960 Hospital Insurance Program to provide "free" inpatient care, at ward level, on a shared-cost basis with each province. From 1958 on, Rusted began a collection of information and opinions about medical schools from individuals at Canadian universities. Others became involved with interrelated activities, some of which will be reviewed chronologically.

1. In 1960 the Hall Royal Commission on Health Services, under the chairmanship of Justice Emmett Hall of Saskatchewan, was appointed by the federal government following a formal request for such action from the Canadian Medical Association. This wise course of action reduced political controversy while ensuring careful study with public and professional consultation. It is not without significance that the chairman of this important commission to study health services in all of Canada was from Saskatchewan. It was a Socialist provincial government in Saskatchewan that in 1962 introduced Canada's first government-sponsored universal Medicare plan. Its introduction caused a highly publicized "doctors strike," which was settled by Lord Taylor, then an English physician-politician who became president of Memorial University in 1967.

The Hall Commission held hearings in all Canadian provinces. While in Newfoundland they received from the Newfoundland Medical Association (NMA) a brief that concluded with the statement: "We would like to see more young Newfoundlanders studying medicine. Because of the heavy financial requirements of a course in Medicine, we believe that this objective could be attained by the establishment of a Medical School at St. John's and we recommend that consideration should be given to this possibility." The commission, in 1964, submitted an impressive report to the federal government including amongst its findings the following:

a) That four or possibly five new medical schools were required in Canada and
that one of these might be in the Atlantic region: a French-language medical school in New Brunswick, where 40 percent of the population speak French, or an English-language school affiliated with Memorial University of Newfoundland. Hitherto there had been only one medical school in Atlantic Canada, founded in 1867, at Dalhousie University in Halifax, Nova Scotia.

b) That the federal government should establish a $500 million Health Resources Fund (HRF), to be matched by each province, for construction or renovation projects designed to increase health sciences facilities.

The HRF was announced by the federal government in 1965. Of the total $500 million to be made available for approved projects, $25 million was specifically designated for the Atlantic provinces, on a per capita basis, without any requirement that it be matched by the province concerned. $175 million was to be held in reserve for projects of national significance.

It should be noted at this point that the Hall Royal Commission Report included a volume entitled *Medical Education in Canada*, edited by the late J. A. MacFarlane, dean of medicine at the University of Toronto; the director of research for the commission was Bernard Blishen, a medical sociologist. Both men were to play a significant role in Newfoundland.

2. September 1963 meeting with representatives of Memorial University, the Provincial Department of Health and the Newfoundland Medical Association. By 1963 Rusted had completed six years as an elected member of the Board of Regents of Memorial University and a similar period as chairman of the Medical Education Committee of the NMA while continuing to serve on a part-time basis as consulting internist to the Newfoundland Department of Health. Membership on the board of regents provided awareness of the rapid growth of the university and of the need for another science building—only one or two years after the move to the new campus. His membership on the Medical Education Committee of the Canadian Medical Association (CMA) and on the Council of the Royal College of Physicians and Surgeons of Canada provided close contact with developments on the national scene.

In August 1963 Rusted submitted a personal brief to Minister of Health James McGrath stressing the need for prompt studies, such as a Provincial Royal Commission, and prompt action. His recommendations included:

a) A meeting of representatives of the Department of Health, Memorial University, and the NMA. This took place in September with the minister and deputy minister of health; President R. Gushue and M. O. Morgan, dean of arts and sciences, representing Memorial University; and Rusted and A. M. House representing the NMA, House having become the new chairman of the Medical Education Committee. It was agreed subsequently that an invitation should be extended to Wendell MacLeod, executive director of the Association of Canadian Medical Colleges (ACMC) and to Chester Stewart, dean of medicine at Dalhousie University, to carry out a preliminary survey
and advise whether or not there should be a formal feasibility study concerning the question of a medical school in Newfoundland.

b) Immediate provision of bursaries or similar financial aid to qualified pre-medical and predental students at Memorial University, and later at the medical school, to remove the financial obstacles that had hitherto discouraged many qualified applicants. This was done within two or three months—and was even more sweeping than recommended. The assistance was to be repaid by service in the province on a year-for-year basis. Most of this plan was merged with federal student loans, as provincial finances became more difficult in 1969.

c) Appoint a special committee to look into Newfoundland’s medical problems, including the existing and future role of the St. John’s General Hospital. “I believe we may have lost the opportunity of erecting an entirely new hospital which would serve as a Provincial referral centre and which could have formed the basis of a University teaching hospital if it had been erected adjacent to our present University.”

3. *The MacLeod and Stewart preliminary survey* in May 1964 was one of the first actions by Memorial University. Their report recommended that a medical school feasibility study should be carried out as a matter of some urgency, and suggested that a university health sciences center concept be considered, adapted to the needs of Newfoundland.

4. *The MacFarlane Feasibility Commission* was appointed by Memorial University in June 1965, after several months of preliminary work by an advisory committee. Part of the costs of the commission were paid by a grant from the Commonwealth Fund of New York. Included on its Joint Advisory Committee were the minister and deputy minister of health; NMA representatives; a member of the university board of regents, Edgar House, as chairman, with three other representatives from the regents. The registrar of the Newfoundland Medical Board, the provincial licensing body, completed the committee.

The Joint Advisory Committee quickly decided upon J. A. MacFarlane as chairman of the Feasibility Commission, well aware of his major contributions to the Hall Royal Commission Study and Report. Following discussions with MacFarlane, Blishen was appointed director of research. He had in his possession all the IBM punch cards and other data used by the Hall Commission, including statistics concerning the numbers of doctors and other health professionals in Newfoundland. J. D. Eaton, professor of physical education at Memorial University was the secretary to this commission. George Wolf, president of the Association of American Medical Colleges (AAMC), and Christie, by this time dean of medicine at McGill University and vice-president of the Royal College of Physicians and Surgeons of Canada, completed the initial North American membership. Canadian consultants to the commission were J. A. McCreary, president of AAMC and dean at the University of British Columbia, who was later made a full member of the commission when McFarlane became ill, and MacLeod and Stewart. Stewart’s inclusion ensured the nearest medical school’s close involvement with the study.
Active discussions were taking place concerning the best British candidates for the Feasibility Commission when Premier Smallwood appointed Lord Brain, eminent British neurologist and author, a one-man Royal Commission on Health Services in Newfoundland.

The almost simultaneous appointment of two commissions with overlapping areas of enquiry might have caused serious conflict—and very nearly did. The Joint Advisory Committee met with Premier Smallwood and the minister of health, however, clarified the precise terms of reference of the two commissions, and agreed that liaison was essential. Since Lord Brain was president of the British Association for the Study of Medical Education, and John Ellis, dean of the London Hospital Medical College, was its secretary, it was agreed that Ellis would be sought as a consultant to both commissions with specific responsibility to provide liaison.

Blishen came to Newfoundland early in the summer of 1965 to survey the sociological aspects of the province that might have a particular relation to the feasibility of a medical school: the number of students completing high school, and the percentage continuing with postsecondary education; the number subsequently gaining acceptance at medical schools elsewhere; the origin of doctors coming to Newfoundland, and the length of their stay in the province. His study also examined the utilization of existing medical facilities and estimated further needs. The results of Blishen's survey are contained in Part I of the MacFarlane Commission Report submitted to the Memorial University of Newfoundland (MUN) in December. Beginning with the very first line of the introductory chapter, this report raised most of the critical questions and provided the key to some of the answers:

How does one judge the need for a medical school? Too often the answer to this question is based on the need to expand the supply of physicians in a particular province or region, and the nation. Such an answer, however, overlooks the number of other essential factors which must be taken into consideration... they include the following:

...to ensure adequate continuing educational opportunities for professional and auxiliary personnel; to establish models of health care of high standard for its constituent regions; and to conduct research appropriate in substance and diversity, not only for advanced knowledge in the fields of science essential to medicine, but also to evaluate—(a) its own educational operations, (b) the health needs of the community, and (c) the quality of care being rendered.

Principal Recommendations of the MacFarlane Commission

1. We recommend that planning for a health sciences centre be instituted as soon as possible and to that end the university proceed to seek a Dean of the Faculty of Medicine in the year 1966.
2. We recommend that a University Teaching Hospital, containing approximately 400 beds, be built on the Memorial University Campus...
3. We recommend that the University Hospital be under the direct control of the University which should be responsible for all matters of policy and expenditure. The staff of the Hospital must be chosen and appointed by the University...
4. We recommend that teaching units should be established in [other hospitals in St. John’s].

5. We recommend that a school for the training of nurses must be developed as part of the health sciences centre and in close relationship to the University Teaching Hospital.

5. **Brain Royal Commission on Health Services:** Lord Brain was appointed by the provincial government in February 1965 and visited selected portions of the province during that month and again in August.

In the first volume of his report, dated January 1966, Brain, while reserving a final statement until he could receive a brief from MUN based on the MacFarlane Report, made the following statements:

I have reached the conclusion that the provision of adequate medical services for Newfoundland in the future cannot be achieved without a Medical School in the province. . . . [Having considered the role a university hospital would play, Brain continued] It will be seen from the important responsibilities given to the University Hospital that it will, in fact, set the pace and determine the standard of medical care throughout the whole province. . . . *The whole success of the development of the health services . . . will depend upon the degree of integration between the University centre and the periphery.* The importance of this cannot be overemphasized.

Brain suggested plans similar to those recommended by the MacFarlane Commission for a phased approach, beginning with expanding the development of postgraduate training, with special emphasis on training for general practice.

By demonstrating how to provide a special vocational training for General Practice Newfoundland will be helping many other countries whose present inability to provide such a training greatly impedes the improvement of the whole of their medical education.

Newfoundland is almost uniquely placed to proceed in this way with the provision of an adequate number of inservice training posts . . . both inside and outside major hospitals. . . . Although there is a shortage of doctors the quality of doctors is high. . . . In brief there is a great tradition of General Practice . . . laid down in the past by men of skill and devotion.

In the introduction to the second volume, dated July, Brain wrote:

The Royal Commission sat in London on June 16th., 1966, when Dr. Ian Rusted, Acting Director of Postgraduate and Continuing Medical Education in Memorial University, presented the University’s Brief of Evidence. . . . I am very glad that, the Report of the MacFarlane Committee having been submitted to the Senate and the Board of Regents of the University, “both bodies have approved in principle the establishment of a Health Sciences Centre on the Campus.”

Brain solidly supported the MacFarlane Commission’s recommendations. He concluded: “I recommend the adoption of the Memorial University plan for the development of a medical school and that a University Hospital should be built on the campus as soon as possible.” In other sections of his report Brain dealt with the organization of health services throughout the province.

6. **Other committees.** A large number of additional individuals and groups were involved in detailed considerations of various aspects. A Senate committee, for
example, reported thoughtfully and positively on "Academic Implications of a Medical School upon Memorial University of Newfoundland." A survey of hospital needs in St. John's and the Avalon Peninsula by Woods-Gordon, a management consultant firm, was received in August 1966 in time to be discussed at a major planning conference in September. The most important aspects of all these various studies were summarized in the university's brief to the provincial government submitted in November.

7. MUN brief to the Newfoundland government. The earlier joint committee of the Senate and regents having completed its task, a new advisory committee to the MUN Board of Regents chaired by President (pro tem) M. O. Morgan was formed to incorporate all pertinent information as a basis for projecting the facilities, personnel, and funds that would be needed for both capital and operating costs of a health sciences center.

Included in the opinions summarized were those expressed during the planning conference held in September 1966 with representatives of the AAMC, ACMC, and British universities, chaired by J. F. McCreary. Group hearings were held with representatives of all health-related professions, all hospitals in St. John's, and all relevant departments within the university. The conference ended with a half-day of discussions open to the general public.

On 25 November a detailed brief was forwarded to Premier Smallwood, accompanied by a letter from President Morgan emphasizing the most important points.

8. Response from the provincial government. On 18 April 1967 the premier tabled in the legislature a copy of his letter to the president of Memorial University committing the Newfoundland government in the following terms:

We were greatly impressed by the thoroughness of the support studies as well as by the Brief. Your recommendations coincide with our settled policy . . . accordingly the Government must undertake to provide between $40 and $50 million dollars over the next five or six years to be expended on capital account for the necessary medical science facilities for a University Hospital . . . my colleagues and I expect to receive substantial assistance from the Health Resources Fund at Ottawa to enable us to meet these costs. Subject only to the receipt of such support, we are prepared to commit the Government of Newfoundland and Labrador to the necessary expenditures without in any way impairing the University's other operating and capital budgets.

The letter also contained reassuring references to the provision of operating funds and expressed pleasure that there would be prompt action to appoint a dean and to admit students by 1969 or 1970.

The first dean of medicine, Rusted, was appointed by June 1967, and, having been the director of planning and acting director of postgraduate and continuing medical education since 1966, he was able to begin full-time duties on 1 September. An associate dean was appointed very shortly thereafter: Kenneth B. Roberts, reader in physiology at the University of London and formerly senior lecturer in physiology at the University of Edinburgh. He had been a Ph.D. student of Lord Florey at Oxford and was a contributor to his textbook on pathology.
Although there were three major crises in the period 1969–70, which will be referred to later, it is probable that the general opposition was similar to that which develops in most communities when a major new institution is proposed. Any behavioral scientist would have predicted many of the events—and one or two did so.

Of the general forces, unquestionably the most important was the fact that “tight money” was appearing over the horizon by late 1966 and early 1967. Federal and provincial governments began to worry about inflation, about multiple requests for new hospitals or expansion of existing institutions, and about the anticipated costs of universal Medicare throughout Canada. All of this, with rising incomes and escalating labor and other costs, began to indicate that brakes would need to be applied, although it was not clear how soon and by what method.

In the Atlantic region of Canada, three of the four provinces were keenly interested in the question of a medical school: Newfoundland, New Brunswick, and Nova Scotia. Mutual agreement was needed for access to the HRF.

As mentioned earlier, the Hall Commission Report had included a reference to a French-language medical school in New Brunswick. This province launched its own feasibility studies between 1967 and 1970, but could not overcome several obstacles, including the fact that 40 percent of its population was French-speaking.

It was not unnatural that some individuals at Dalhousie University grew concerned that Atlantic Canada might not be able to support two medical schools. This attitude now seems to have virtually disappeared, and there has been increasing cooperation between the two medical schools in spite of the eight hundred miles separating them.

Frequent serious concerns were voiced, and given headlines, that there would not be enough qualified applicants or enough good faculty members; both proved to be incorrect. The applicant projections contained in the contribution of Dalhousie University's dean of medicine to the MacFarlane Commission led to his conclusion that “a second medical school [in the Atlantic provinces] will probably be required . . . as early as 1970.” In actual fact the addition of a new school greatly increased applications, not only from Newfoundland and other Atlantic provinces, but from all parts of Canada, the United States, and elsewhere. These approximate a thousand serious applicants yearly for the sixty-four places available.

**The First Crisis**

At the heart of this first crisis were the increasing signs of a financial recession and natural concerns about the magnitude of construction costs for a health science center, particularly the hospital portion.

The new dean and associate dean were in the United States, completing the first of a series of visits to other universities and medical schools, when they re-
ceived word that Premier Smallwood had announced that, primarily because of financial uncertainties, the implementation of Medicare would be delayed for a year, and, during an interview on a television current affairs program, questioned the need for the university hospital.

Rusted flew back to St. John's three days before Christmas in time to hear the television interview repeated, and was himself interviewed on the same program the following day. He quoted from the premier's letter and from Memorial University's brief to the provincial government: "It is the view of the Senate that a University Teaching Hospital on the campus, as recommended by Lord Brain, the MacFarlane Commission and the Planning Committee, is essential to a medical school." Rusted emphasized in the interview: "essential means precisely what it says—no hospital, no medical school." Continuing to quote from the brief: "It would be wiser for Newfoundland to be without the benefits of a medical school than to launch one poorly based on inefficient and inadequate facilities that would fail to attract and retain the calibre of teachers and scientists that will be needed if we are to avoid having these initial efforts end in failure." He also referred to Lord Brain's statement that "... the University Hospital ... will, in fact, set the pace and determine the standard of medical care throughout the whole province ..."

Rusted next quoted from his own letter acknowledging Memorial University's invitation to him to accept the position of dean of medicine:

I am now prepared to undertake this tremendous task—subject to the following provisions which appear to me essential if a Medical School in Newfoundland is to become a reality and is to remain a good one.

1. Because I have always been convinced that Newfoundland alone cannot, with certainty, guarantee the financial resources necessary to ensure the availability of adequate funds to construct and operate a Medical School and Teaching Hospital, I would require that the Federal Government be formally advised at the very beginning that this contribution by Newfoundland to Canada's total effort in medical education and research can be initiated only because of—and subject to—the availability of adequate assistance from the Health Resources Fund and, further, that this effort would not be initiated and cannot be maintained unless there is recognition by the Federal Government that they will have a responsibility for a significant portion of the operating costs.

2. In addition to the assurances contained in the letter from Premier Smallwood, dated 18 April 1967, I have been informed by Lord Taylor [the new President of Memorial University] that the Premier has agreed that the University Hospital referred to in his letter will be constructed on the campus of Memorial University. ... Without this assurance I would not be able to accept or continue in this post— for the important and basic reason that, lacking these modern, efficient and closely integrated facilities, we shall not be able to obtain sufficient qualified teachers and all our efforts would be doomed to failure.

Although there were great anxieties behind the scenes, the taped program was televised and received strong support by the general public and the media. Although faculty and staff appointments and other progress continued, however, the basic questions about a university hospital had not been settled.
By January 1969 there were satisfactory temporary buildings, and the outline of a curriculum had been approved by the Senate of Memorial University, although only the first two years leading to the award of a bachelor of medical science degree were provided in detail. A faculty of twenty-four was assembled by September, and the first medical class was admitted.

In spite of the foregoing events, and despite formal approval by the university of a functional plan for what was now conceived as a health and life sciences center, there continued to be a great deal of powerful opposition.

Late in 1969, the first of two university-government meetings took place to consider a long-term master plan for Memorial University's new campus. The recently appointed minister of health stated bluntly that he had the unenviable role of hatchet man as the province had no funds to begin even the preliminary site work on the northern campus, where the center and the engineering school were to be located. In addition, the financial difficulties were not only provincial: the federal government had placed an annual ceiling on the HRF.

The dean of medicine pointed out that although the federal government had indeed placed an annual ceiling on the HRF, the requests for support in 1969 had been less than the funds available. Substantial applications for at least $20 million had been anticipated for the health sciences center, but if these were to be delayed much longer the requests might well conflict with larger demands from other provinces. His own contacts in Ottawa had expressed surprise that the Newfoundland government, with carefully documented studies to support them and a well-thought-out functional plan, was not supporting this proposal vigorously. The dean was strongly supported by the president, vice-president, and board chairman in expressions of confidence that the proposed health sciences center was in Newfoundland's best interest and that there was no question of its being stopped at this stage. It was emphasized that positive support by the provincial government was needed if Newfoundland was to obtain additional capital funds from the portion of the HRF being reserved for items of national importance. This case would be strengthened by the fact that good students from other parts of Canada had already been accepted, and others were applying in large numbers; good faculty were coming from across Canada and—a final argument—the Federal Royal Commissioner, Judge Hall, had recommended another medical school in the area to help meet national needs.

The result of two meetings and a forceful luncheon meeting attended by the premier, his minister of education, and the president and vice-president was that sufficient provincial funds were allocated to activate immediate plans, and serious attention was devoted to obtaining some of the untouched reserve portion of the HRF. These efforts proved to be successful.
This episode was not quite so critical as far as the actual existence of the medical school was concerned. If it had not been resolved, however, the crisis over a university hospital would have recurred. The formulation of the solution began with a suggestion from the dean of medicine to the St. John's General Hospital that they should become a partner in the health sciences center (as if in a condominium). It would then be possible to adapt future use of the hospital's Forest Road buildings, under the same administration, to other necessary purposes: there was not, for example, a single active convalescent unit in the whole province at that time.

The minister of health in May 1970 had extended the courtesy of sending Vice-President Morgan a preliminary draft of a planning document prepared by his staff. It contained the statement:

For a Faculty of Medicine the University must have teaching facilities and . . . access to hospital beds. Eventually, within say ten to twenty years, these hospital beds should be located on campus. There is no need, however, to have such a University hospital built at the present time . . . but the General Hospital in St. John's must be improved substantially or cease to be the major provincial referral centre.

The suggested version returned to the minister read:

The University had adopted a unique concept of a medical school integrating the basic science and clinical teaching rather than separating them as in most medical schools. To maintain this basic concept the University will require for its Faculty of Medicine not only teaching facilities for its basic sciences, but also clinical facilities on the campus. . . . It has also been agreed that a Committee be established consisting of representatives of the Ministry of Health, the General Hospital and the University to determine the role of the General Hospital vis-à-vis the University Medical School both in the short run and in the long run. This Committee should determine what is essential to be done, where and when in relation to both institutions—as if they were a single institution. A University Hospital will have to be completed on the campus not later than 1978 to meet the growing needs of the University, of the City and of the Province.

The compromise had required full discussions at informal meetings attended by the minister of health, Morgan, and the chairman of the board of the General Hospital, G. C. Eaton—all of them, fortunately, far-sighted people. The public announcement was made by the minister, the Honorable Mr. Edward Roberts, at a public conference later in 1970 and was well received locally and nationally.

This action, plus earlier representations—especially those by the minister of health and, separately, by Lord Taylor and Vice-President Morgan to federal cabinet ministers, but also by Rusted and K. B. Roberts to the federal deputy minister, the Health Resources Fund Directorate and the Medical Research Council—resulted in the first release of $10 million from the reserve portion of the HRF. This meant that $30 million were provided as the federal share of the $45.3 million agreed upon as the capital cost of a modified health sciences center.
Apart from the familiar problems of labor strikes, causing more than fifteen months of lost time, and escalating costs, mainly between 1974 and 1976, this joint effort has been successful.

**DEVELOPMENT OF THE FACULTY**

As was said at the beginning, the possibility of attracting good faculty members to a new medical school in Newfoundland was regarded by most people as an unlikely dream. One early action that proved extremely helpful was the appointment of international advisory committees to assist in the selection of ten key faculty members, including all chairmen of clinical specialties. The designation "academic discipline" came to be used for groups in pathology and surgery, for example, that represent branches of learning in an academic setting, as distinct from a department of surgery or pathology in a hospital setting.

Each international advisory committee usually consisted of three individuals from Canada, two from the United States, and two from Great Britain. This meant that within a few weeks fifty to seventy well-known leaders in medicine had details of MUN plans and were providing valuable advice and assistance. As an example, the Pediatrics Advisory Committee included the professors of pediatrics at McGill University, the University of British Columbia, and the University of Toronto; the United States members were Charles Janeway, professor of pediatrics at Harvard University and pediatrician-in-chief at the Children's Medical Center in Boston, and Robert J. Haggerty, professor of pediatrics at the University of Rochester. Haggerty had already served as a consultant to the MacFarlane Commission and Janeway had given his advice and his name to the Janeway Child Health Centre in St. John's. One of two consulting members from Great Britain was able to attend the only meeting held by the committee during a pediatric congress at Toronto in September 1967.

It is noteworthy that the decision to appoint the first dean of medicine was made in June 1967, to take effect on 1 September; the dean-elect appointed the Pediatrics Advisory Committee and several others during the month of July; a long list was prepared by correspondence between committee members, and a list of three individuals was decided upon at the September meeting. The candidate at the head of the short list, John M. Darte, associate professor of pediatrics at the University of Toronto (a specialist in therapeutic radiology as well as in pediatrics), visited Newfoundland in November. Because the professor and chairman of pediatrics was also to be pediatrician-in-chief at the Janeway Child Health Centre, liaison committee meetings were held and a recommendation for this first joint clinical appointment was made to the board of both institutions. Before their formal decision late in January 1968, agreement was reached with the Department of Health on the sources of remuneration for this appointment and for others of a similar nature. An exchange of letters between the minister of health and the dean
of medicine confirmed this agreement. By the end of August, the first twelve full-time faculty members had arrived in St. John's.

Nonclinical Appointments

It should be obvious from the foregoing that before the new dean assumed his position there had been time for only the most tentative decisions concerning the ultimate faculty organization. In 1965–66, while Morgan was serving as president pro tem, he appointed Leslie Harris to carry out a study on university government. His report led to consideration of changes such as term appointments of deans and department heads, and paved the way for assessment of advantages and disadvantages associated with the departmental structure. This provided one of many interesting points to discuss with potential candidates for the post of dean during 1966–67 and with other subsequent candidates. K. B. Roberts was one of those who provided particularly thoughtful input to this problem.

After several months' discussions that included the pros and cons of departments versus institutes, a statement of faculty objectives was prepared and a decision was made to establish, on a completely nondepartment basis, the Division of Cell Studies, later termed cell sciences, and finally basic sciences. Interdisciplinary groups within this division would be encouraged, with provision for a smaller number of individuals who might function best on their own. Table 1 shows the groups proposed in 1968 as a preliminary basis for the three major divisions of the Faculty of Medicine. It was with this general outline in mind that active recruitment was pursued during the early years.

Community Medicine

It was recognized from the beginning that local and geographic considerations made it logical to emphasize areas such as genetics and epidemiology (or human ecology); to involve good general practitioners, and, in a variety of ways, to ensure greater community involvement than had frequently been the case in university medical centers. The unexciting records of many traditional departments of public health or preventive medicine, and the somnolence of most residency training programs in this specialty, did little to encourage a similar approach. The preliminary considerations surrounding an institute of cell sciences were extended to the possibility of an institute of community medicine, but the simplest and most flexible mechanism appeared to be the designation Division of Community Medicine. Inclusion of medical sociology and other behavioral sciences was an early decision, and the title was expanded accordingly to Division of Community Medicine and Behavioural Sciences. There was no intention that general practitioners or other clinicians would automatically be included, but that those with a definite interest and relevant skills would be identified as representatives of their clinical disciplines.
—just as clinicians with relevant research skills were included as members of the groups being developed in the Division of Cell Studies.

**General Practice**

The dean’s previous involvement with continuing medical education throughout the province and his strong support of the Newfoundland chapter of the Canadian College of Family Physicians made it relatively simple to continue a collaborative approach. In this instance the Advisory Committee on the selection of the professor and chairman was largely local in its composition. The first chairman, John Ross, was appointed as associate professor and chairman of general practice in 1970 for a three-year period. This policy of making initial appointments at associate or assistant professor levels for a provisional two-year period was usually followed in instances where a clinician had had no previous university appointment. Ross had been in charge of two cottage hospitals in Newfoundland for several years, during which time he had been active in the work of the College of Family Physicians and had carried out epidemiological studies employing the E-Book method of the Royal College of General Practitioners of Great Britain. His postgraduate medical training had included a year of surgery.
in England and a year of internal medicine and pediatrics in St. John's. Following completion of his three years as the first chairman, Ross has continued to function as director of the successful residency program. The professor and chairman of family practice is now Keith Hodgkin, well-known for his research and writings based in large part on his experience with a general practice group in England. There are now six full-time faculty members, at least two of whom have been active participants in the Division of Community Medicine.

**Division of Clinical Sciences**

Reaching a decision regarding the Division of Cell Studies and the Division of Community Medicine was less of a problem in the early days than selecting a suitable designation for those faculty members in the remaining third division. It was the original intention that this would include not only clinicians but faculty members whose research and teaching would be based on work with whole organisms or major body systems. The term Division of Clinical Sciences, however, clearly represents the major content of the division, and this has stuck.

Regardless of nomenclature the creation of these three divisions—a reversible experiment—has undoubtedly stimulated a great deal of thought among faculty members, and has continued to provide a partial antidote to the undesirable aspects of departments and the seemingly endless proliferation of subspecialty groups.

**Faculty Size**

After ten years there are now 120 full-time faculty members. An additional sixteen on a major part time basis might be designated geographic full-time in some centers. A majority of the other part-time faculty members are on a voluntary basis.

The ultimate size of the full-time faculty will be between one hundred and forty and one hundred and fifty. It was considered that a reasonable goal during the first few years would be a faculty with a mix of one-third Canadian, one-third from the United States, and the remainder from Britain or elsewhere. This proved to be surprisingly close to the pattern that developed. Since 1974 the percentage of Canadian graduates has increased to approximately half the full-time faculty, while the percentage (but not the number) of United States graduates has decreased to less than 15 percent.

**MEDICAL SCHOOL–UNIVERSITY RELATIONSHIP**

From 1967 to 1974 the dean of the Faculty of Medicine reported to the office of the president through the vice-president (academic) at a time when there was
only one vice-president. Since 1974 there has been a vice-president (health sciences) with responsibility for the Faculty of Medicine; for the School of Nursing; for studies of the feasibility of establishing other schools or programs in the health sciences; for government relationships at the ministerial level; and for some aspects of communication with other health professions and health-related institutions throughout the province.

Although the Faculty of Medicine was envisaged as part of a health sciences center, and, ultimately a life and health sciences center, financial constraints have limited construction, so far, to the Medical School and General Hospital. The library and animal care facilities are sufficient to serve the School of Nursing, now based in temporary buildings, and other health sciences and life sciences.

Academic Interrelationships

MUN has a bicameral governing body: the Senate is primarily responsible for academic matters, and the board of regents for final ratification of the programs approved by Senate and for their administration, including all academic and non-academic appointments, as well as control of property, revenue, and other university affairs of a similar nature.

The Faculty of Medicine is represented on the Senate, which consists of fifty members, by the dean and three elected members.

There has been collaboration and joint appointments among medicine and most of the other faculties or schools in the university. There is some concern at the present time that delay in constructing the planned life sciences units may affect some of the interrelationships between the life and health sciences. Interim or alternative linking mechanisms will be needed, for example, with the twelve biochemists in the Faculty of Science and the new Nutrition and Food Science Program recently launched by the Department of Biochemistry in cooperation with the Faculty of Medicine.

MEDICAL SCHOOL ADMINISTRATION AND GOVERNANCE

Based on the assumption that: 1) the faculty would not be large; 2) an interdisciplinary emphasis would be given to research and teaching programs; and 3) the traditional departmental structure would not be adopted, the major organizational emphasis has been programmatic.

Table 1 was prepared in 1968 for inclusion in the accreditation presurvey material for the first AAMC-ACMC site visit in June 1969. During 1968–69 all faculty members participated in discussions about curriculum, functional planning, and organization. A committee to produce a constitution and bylaws required more time than it took to write the Constitution of the United States, but eventually it was decided that committees should be relatively small, and that students and
senior as well as junior faculty from the three major divisions should be represented. In addition to the Executive Committee of the Faculty Council, the first standing committees were: admissions; curriculum; and student promotions. The Faculty Council includes all full-time faculty and representatives of part-time faculty and students. The elected Executive Committee chaired by the dean meets twice monthly to review matters pertaining to academic programs.

**Functional Mechanisms**

Faculty members are appointed to one of the three divisions, each of which is headed by an associate dean. Although there are no academic departments, within the Division of Clinical Sciences there is a professor and chairman for each clinical discipline in the academic setting. The clinical chairman serves as department chairman in a traditional sense within one of the affiliated teaching hospitals. The major responsibilities of the associate deans and of the clinical chairmen relate to resource allocation, recruitment, recommendations regarding promotion, tenure, and salary, and career development of faculty, staff, and students.

As the pattern became more settled (Table 2) it was recognized that matrix management and planned programming and budgeting (PPB) were among the fashionable terms for the methods that had evolved. Centralization of most service functions, with appropriate use of accountants and secretaries, was used to free senior faculty from budget preparation and timetabling. Programs are the responsibility of elected committees, supported administratively by an office and, in most instances, by an assistant dean. This type of matrix organization results in a very flexible interaction between those charged with resource management, program development, and operation.

There is a high degree of independence for individual faculty members, which facilitates interdisciplinary research endeavors and teaching. Communication is somewhat more difficult than in a departmental organization and requires constant deliberate emphasis. Particularly important is the interaction between the committee chairmen and/or assistant deans in charge of programs and the associate deans and clinical chairmen who are ultimately responsible for resources and "people" allocation. In order to facilitate this interaction and assure communication, a Dean's Administrative Group has emerged that includes assistant deans, associate deans, the senior administrative assistant to the dean, and the dean.

**Finances, Personnel, and Other Services**

Because the Faculty of Medicine is organized primarily on a program basis, there are no departmental budgets. The dean of medicine is responsible for the faculty budget, with assistance from a finance officer and his staff. The Finance Office is, in many respects, an extension of the university Comptroller's Office.
Table 2. Present Administrative Structure, Memorial University of Newfoundland
Faculty of Medicine

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<td>Admissions</td>
<td>Assistant Dean</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Assistant Dean</td>
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<tr>
<td>Graduate studies</td>
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<td>Research</td>
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<tr>
<td>Postgraduate studies</td>
<td>Assistant Dean</td>
</tr>
<tr>
<td>Continuing medical education</td>
<td>Assistant Dean</td>
</tr>
<tr>
<td>Medical practice</td>
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</tbody>
</table>
Similarly, administrative officers in the medical school who deal with personnel or admissions relate to the university Personnel Department and the registrar, as well as to the dean. The university comptroller and the Personnel Department report to the vice-president (administration).

The Newfoundland and Labrador Computer Services Corporation is mainly a creature of the university and the provincial government. The dean of medicine is a member of its board of directors; one of the latter serves on the university's Computer Committee.

Interrelationships of a similar sort exist between Medical Audiovisual Services and the university Educational Television Centre (ETV) and Photographic Services.

The Biomedical Library is part of the university library system and is linked by computer, telex, and telephone with the National Science Library in Ottawa and with the United States National Library of Medicine.

The Animal Care Area in the Health Sciences Centre, and the vivarium, located in another portion of Pippy Park about a mile away, are regulated by a president's Committee on Animal Care and by the director of animal care, who is a full-time member of the Faculty of Medicine. The life sciences use more than half the vivarium space and a minor portion of the area in the Health Sciences Complex.

RELATIONSHIPS WITHIN THE HEALTH SCIENCES COMPLEX

How does one integrate a general hospital, more than one hundred years old, with a new medical school on a new site as part of a health sciences center? Still more complicated is the Health Sciences Complex (HSC), the term used to include the Faculty of Medicine; the MUN School of Nursing, and any other such schools that may be added; the General Hospital on campus and on the Forest Road site four miles away; the General Hospital School of Nursing, and such other facilities as may be controlled by the Hospital Corporation.

Since close integration was accepted as a desirable goal it is not surprising that an integrating and coordinating committee proved to be a key feature of the recommendations brought forward by an Organization and Management Committee appointed by both institutions in 1973, with the assistance of a professional consultant. The committee recommended a three-level structure at the:

- Senior institutional level: the Health Sciences Complex Committee (HSCC).
- Executive level: the Integrating and Coordinating Committee (ICC).
- Operational level: joint, task-oriented, day-to-day interaction in various functional groups.

Table 3 summarizes the main interrelationships. In May 1974 the university and the hospital appointed their respective members to the ICC. They included the executive director, medical director, chief-of-staff, and director of nursing from the hospital; the dean of medicine, one of the associate deans, the director of the
MUN School of Nursing, and the project coordinator for the HSC and for the joint administration of the complex. Chairmanship alternates each year between the dean of medicine and the executive director of the hospital. As the committee functions by consensus, it is clear that the objectives of both institutions must be defined clearly, and that the areas of primary responsibility of each must be acknowledged and respected.

Primary responsibility for management of each of the major shared services within the HSC has been assigned to one of the two major users. For example, the General Hospital has assumed responsibility for dietary services and housekeeping. MUN is responsible for parking and traffic control, security, plant operation, exterior maintenance, and technical services. With respect to materials handling, it has been necessary to invoke the matrix concept: even though materials are received, stored, and distributed from a central area, a certain amount of decentralization was necessary in the teaching and research areas.

The Health Sciences Complex Committee (HSCC) was appointed in May 1976 with an initial membership composed of the chairman, vice-chairman, and one other member of the hospital board, and the vice-president (health sciences), vice-president (administration), and one board member from the university. The terms of reference include responsibility for planning and development of long-range conjoint programs that are not the exclusive responsibility of either organization; to advise on matters concerned with joint institutional relationship to other elements of the provincial health care delivery system; and to resolve any areas of dispute between the two institutions. The chairman of this committee also rotates yearly, alternating between hospital and university.
RELATIONS WITH THE PROVINCE, CITY, AND ORGANIZED MEDICINE

Relations between the university and the provincial government have, in general, been good. Memorial University has, however, shared some of the public criticism of universities in recent years—which makes it easier for governments to restrain budgets.

The estimates of the Faculty of Medicine are submitted to the vice-president (health sciences) and then to the Finance Committee of the board of regents and to the board itself. The budget is actually derived through the Department of Health of the provincial government, something that is unique in Canada, and that has, to date, been found to work well. Budget discussions between the vice-president, dean of medicine, and senior officials of the Department of Health are not conducted on a line-by-line basis, but provide an excellent opportunity for discussion of the health needs of the province and the extent to which the medical school might cooperate with the department. This close collaboration in articulating objectives and priorities has meant that the health department is able to speak positively for the budget and most of the programs of the medical school. Additional discussions are held, if necessary, with the Cabinet Committee on University Financial Affairs, but these meetings usually deal mainly with other university finances and plans. The president of the Treasury Board is chairman of this committee, whose membership has included the minister of education and health.

Municipal Relations

When the first class of medical students graduated in 1973 the mayor and the City Council tendered a banquet in their honor. There have been few reasons for formal contacts between City Hall and the medical school, however, largely because the provincial Department of Public Works has been responsible, alone or in cooperation with City Council, for many details of construction and services.

The St. John's Hospital Council, formed in 1969, has intermittently proved to be a valuable link between all city hospitals and the medical school. The chairman of the board of each hospital, the vice-president (health sciences), and the dean of medicine constitute the council, with an administrative secretariat composed of all administrators, and a Medical Advisory Committee with a representative from each hospital, usually the chief-of-staff.

Organized Medicine

The medical school has had, from the beginning, a liaison committee with the Newfoundland Medical Association (NMA), and, during the first few years, an advisory committee from the Newfoundland chapter of the Canadian College of Family Physicians. Perhaps more important has been participation of full-time faculty members in the activities of provincial and national professional associa-
tions. For example, the president of the NMA in 1977 is a full-time faculty member; other faculty members preside over or participate in major committees; the professor and chairman of surgery has formed a Newfoundland Surgical Society. The school’s continuing medical education programs reach all parts of the province, and are in part supported by the NMA.

From time to time there have been predictable stress factors that have affected relationships with organized medicine. Most recent has been the anxiety that new medical graduates might result in an oversupply of doctors at a time when governments are placing limits on Medicare and other health funds. A study of medical manpower by a joint committee of MUN-NMA, Department of Health, and the licensing board appears to be dealing effectively with this particular question—one that is a concern across Canada and involves the related question of medical immigration. To date, 75 percent of Newfoundlanders graduating from Memorial University appear to be remaining in Newfoundland. The number of doctors has grown from 330 in 1965 to 607 in 1975, and may reach seven hundred and fifty to eight hundred by 1985, but only if the same ratio is maintained between immigration and emigration. If 20 percent of students continue to come from and return to other provinces or countries, and if 25 percent of the Newfoundland graduates emigrate, the remaining graduates would do little more than counterbalance an attrition rate of 3 to 4 percent of eight hundred physicians.

PHYSICAL PLANT

The Health Sciences Centre, which has now been virtually completed, is considerably different in concept and size—six hundred and fifty thousand gross square feet—from the original center conceived in 1969. Total space for the life and health sciences center in 1969 was a planned 1.36 million gross square feet, with nine hundred and twenty-three thousand for the health sciences portion.

The original concept was described at a National Seminar on Planning and Construction of Health Sciences Centres in 1968, when brief papers were presented by Rusted and Roberts and by John Weeks of the British firm of planning and architectural consultants:

It consists basically of strands of buildings . . . one being a clinical line (where patients are in bed) backed up by [the second strand] a clinical service area and clinically related research areas. The third strand is a basic research and basic sciences teaching area. These will all be cross-connected regularly so that there is a continuous building with continuous corridors joining all parts. . . . There is not only communication inside this lattice horizontally, but also vertically, and so you begin to achieve what amounts to a three dimensional matrix of horizontal and vertical communications systems, giving access to a continuous building form. . . . The essential aspect of the concept will be to ensure that the building will be continuously communicable inside itself, all parts easily accessible to all other parts. . . . At any one moment . . . a shift in the interest boundaries between subdisciplines may occur or the actual positions of people may alter as they make another group
Because of financial limitations the original model was greatly altered. As one moves from east to west within the Health Sciences Centre, however, the activities and regions encountered change from teaching (mainly undergraduate) and largely basic research to increasingly clinical research, as the four “link zones” are approached, and then to the patient care areas, with greater than usual emphasis on ambulatory care. Phase I, the portion constructed between June 1972 and the end of 1973, when it began to be occupied, included the multidisciplinary teaching laboratories, animal care facilities, the library and adjacent audiovisual services, lecture rooms, cafeteria, office and research space for the Division of Community Medicine and Behavioural Sciences, and a few research laboratories.

Physical Configuration

The silhouette is low, with a maximum height of five floors. The lower two are considerably larger than the upper three, thus serving as a base for the nursing areas and research laboratories on the fourth and fifth floors, while also facilitating future expansion of these upper floors. The middle or third level consists largely of the electrical and mechanical substations, as well as less actively used areas, storage, for example. The center can be expanded as future needs may require. Initial inpatient beds number 380, but the support systems will serve an additional 200.

Link Zones

These are intended to be outstanding examples of interdisciplinary activities and are located at the interface between inpatient nursing units and some of the research laboratories, which contain equipment that will be used for diagnostic purposes as well as for research. The neurosciences staff, for example, will range from clinical neurologists and neurosurgeons to more basic neuroscientists as one moves away from the clinical areas. Other link zones are being occupied by nephrology, gastroenterology, and a clinical investigation unit, with endocrinology in an adjacent location.

Inpatient Areas

One of the unique features of the HSC is the design of the inpatient units located on the fourth and fifth levels, apart from psychiatry, a combined day care and inpatient unit, and the intensive care and coronary care units, which are on
the second level. Each level provides 164 beds with its own administrative control area that will handle the management, communications, and service linkage for the entire floor—virtually a minihospital. There are fairly numerous conference areas, multipurpose teaching rooms, and student laboratories on both levels. “Discussion alcoves” are strategically placed along the corridors for use during teaching rounds and by visitors.

**Ambulatory Patient Areas**

Special attention has been devoted to this section and its location on the main floor. In addition to consulting suites to be used at various times by different specialties, there is a large Emergency Department with a separate entrance, since the General Hospital acts as the major trauma center for St. John’s and a large outlying district. Next to the Emergency Department is a family practice area expected to function as a major community health center for a significant portion of the population in northwest St. John’s. A small family practice unit has been functioning in the temporary buildings since 1971. This has provided an invaluable trial period, and, for students, some visible and impressive role models.

**Planning and Development Committee**

The evolution of the foregoing plans was supervised by this committee, established in July 1971 as soon as funding was assured and project management and architectural firms appointed. Composed of representatives of the Faculty of Medicine, the General Hospital, the Department of Health, the Department of Public Works, and, as a nonvoting member, the project manager, the committee has had more than two hundred meetings, with necessity for formal voting on only two or three occasions. Indeed it is upon this basis of mutual trust and confidence that shared administrative arrangements for operation of the completed HSC have been derived and initiated. Participation in and input to the planning process was achieved by establishment of ad hoc “user” groups composed of faculty, physicians, and staff of the two institutions.

Charles Campbell, a United States hospital administrator, filled a vital role as health sciences coordinator for Memorial University from 1968 to 1974, when some of his duties were assumed by W. Drodge. Acting on behalf of the users, and in close liaison with the project manager, day-by-day monitoring of progress was achieved. This is particularly important when the project management and “fast track” approach to construction is adopted, with planning and construction proceeding simultaneously.

The Planning and Development Committee has provided excellent experience for its members, and has now virtually completed its outstanding work. The final
phase of the Health Sciences Centre is expected to be finished in March 1978. Some of the individuals have also been serving as members of the ICC since May 1974, thus providing continuity.

**STUDENTS**

The Admissions Committee is composed of not less than four elected faculty members, each of whom serves for two years, and a student representative elected by the medical students. An additional committee member is nominated each year by the NMA, and at least one committee member each year is selected from the Faculty of Science, usually from the Department of Chemistry. The committee functions as part of the Faculty of Medicine’s Office for Admissions and Student Affairs, which has a permanent secretary, an administrative officer, and an assistant dean for admissions, all of whom serve on the committee. To date, the assistant dean has been chairman, although this need not always be the case, since the chairman is elected annually by the committee.

**Origins**

Clear priorities have been established, with Newfoundland residents or landed immigrants given first priority; residents of other Atlantic provinces next, particular preference being given to New Brunswick students because there is no medical school in that province and because of an agreement between the two provincial governments and the medical school whereby the New Brunswick government pays $12,500 per student each year. A similar arrangement exists between New Brunswick and Nova Scotia, involving Dalhousie University. Next in order of priority are the remaining provinces of Canada, the United States, and other parts of the world.

The first three classes to be admitted were small. Thereafter, the usual pattern has been to admit fifty-six students into the first year of the medical program. An additional eight students, plus up to four replacements for any attrition, are permitted to enter at the second-year level, bringing the total of each class to sixty-four. “Advanced entry” students do not come from other medical schools; they represent an effort to achieve one of the objectives of the school: “to make it possible for students with various interests and backgrounds to enter medicine at more than one stage and to follow more than one path.” In addition to completion of the same prerequisites as applicants to the first year, the smaller group seeking admission directly to the second year must have a graduate degree or a very good major in biochemistry, pharmacology or physiology, or behavioral science. They must also satisfactorily complete a “make-up” course in the summer preceding admission to the second year.
Prerequisites

The minimum prerequisites may be summarized as at least one year beyond Grade XII, with university-level organic chemistry as the only mandatory requirement. Candidates are recommended to prepare for entry to medical school, however, by studying such subjects as biology, behavioral sciences, physics, and physical chemistry.

Most students admitted to the first year of medical studies have completed three years beyond Grade XII (Table 4). In Newfoundland and a few other Canadian provinces completion of secondary school occurs following Grade XI; in the majority of Canadian provinces the final year of secondary education is Grade XII (Grade XIII in Ontario). In Newfoundland the equivalent of Grade XII is provided by first-year studies at Memorial University.

Selection Process

Apart from the criteria applied to the two special groups—those admitted with only one year beyond Grade XII and those accepted for second-year entry—the admissions procedure follows a fairly conventional pattern: the first screening and ranking exercise is based on academic standing, with each geographic priority group being considered in turn; passage of the Medical College Admission Test (MCAT) is required of all applicants, although it is rarely a major factor in the final decision; the candidate’s written statement of his or her plans and the factors that have influenced their development, coupled with two required letters of reference, are carefully considered. Individual or small group interviews with up to six students form a part of the process in most but not all instances. If doubts remain after an interview as to the maturity of one of the younger group, the candidate is recommended to take another year at university before reapplying.

Women have been accepted on their merits, as with other applicants. Therefore that women constitute from 25 to 40 percent of each class. Whether or not this action is associated with significant problems is being examined.

Table 4. Composition of 1976 Entering Class, Memorial University of Newfoundland Faculty of Medicine

<table>
<thead>
<tr>
<th>Years of university</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>8</td>
<td>21</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Average age:</td>
<td>21.6 (Range 18–33)</td>
<td></td>
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<tr>
<td>Completed degrees:</td>
<td>22/56 (40%)</td>
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<td></td>
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<tr>
<td>Women:</td>
<td>17/56 (30%)</td>
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</table>
Implications of the Admissions Process

There has not been sufficient time to assemble and analyze the data completely, but a follow-up study of students who encounter difficulty in their course work indicates that the main source is unlikely to be academic, but more likely to be related to a student’s inability to deal with personal problems, pressure of the curriculum, or other stresses.

The younger students, only one year beyond Grade XII, compare favorably in this and other respects with entrants who have had three, four, or more years at university before being admitted. This appears to be supported by a preliminary analysis of their academic performance, summarized in Figure 1, which indicates that these “early entry” students tend to be found among the top ten students more frequently than among the bottom ten in each class. This remarkable achievement undoubtedly requires additional effort by the students and by some faculty members during first-year studies. A similar analysis is being made of the performance of “advanced” or late entry students.

EDUCATIONAL PROGRAMS

These are divided into five major groups:

Undergraduate Programs

A major consideration in the design of the curriculum was a reduction in the period of time between entry to the university in the premedical years and award of the M.D. degree. As noted already and also shown in Table 2, some students may attain the M.D. degree six years after completion of the eleventh grade in high school—a significant reduction in time.

Although the final year of undergraduate training leading to the M.D. degree has been designed as a clinical clerkship, partly replacing the traditional rotating internship, students require an additional year of training in a teaching hospital before being eligible for licensure in this and other Canadian provinces.

Students receive a bachelor of medical science degree on successful completion of the first two years of the medical curriculum, or upon completion of the second year, plus make-up courses in the case of the “advanced entry” group. Following this, they normally proceed to the third and fourth years of the medical curriculum. Students may elect to enter a M.Sc. or Ph.D. program (or change to another career) after having received a bachelor of medical science degree. This has been a rare occurrence, although existence of the alternative has been reassuring to several students who experienced serious doubts during the first two years in medical school.

The first year is designed around the major areas of cell studies (including
EARLY ENTRY STUDENTS
IN TOP TEN
IN BOTTOM TEN

1975

1976

1977

1978

1979

Figure 1. Preliminary analysis of the academic performance of early entry students, Memorial University of Newfoundland Faculty of Medicine. (Data courtesy of Professor R. M. Mowbray.)
biochemistry, microbiology, and molecular genetics), community medicine and behavioral sciences, and anatomy. From the earliest months of the curriculum, students attend with doctors the interviewing and examining of patients in many clinical settings, including a weekend in a cottage hospital.

Whereas basic science teaching in the first year is based on the cell, the teaching in the second year is oriented around the whole organism. The major emphasis is on physiology, with an extension into pathophysiology and illustrative pathological conditions where appropriate. At the same time, relevant anatomy, biochemistry, histology, microbiology, and pharmacology are incorporated by interdisciplinary teaching in each of the major body systems. Systems teaching takes up the major part of the second-year curriculum, but students also acquire clinical skills. This broadly conceived course includes not only history taking and physical examination but methods such as radiological and biochemical examinations.

The third year is oriented around disease processes and centers on special pathology, but with significant experience in the various clinical disciplines. There is a blurring of boundaries between the teaching of reproduction, growth and development, obstetrics and gynecology, and pediatrics. Similarly, there is a fusion of teaching between medicine and surgery. Community medicine is integrated into the program wherever possible. Most of the course subcommittees for the second and third years have been merged to reduce the number of faculty involved and to improve continuity.

The fourth year consists of a clinical clerkship, during which time the student is an integral part of a medical care team within the teaching unit of a hospital. A rotation through various clinical disciplines occurs, with experience in a community or cottage hospital being mandatory—yet popular. It ensures that graduates who may later select practice in a rural area can do so with the benefit of previous experience.

Periods for elective work are provided in the first, second, and fourth years of the undergraduate program, during which time the student explores in depth fields of his choice in Newfoundland or elsewhere. These are the best opportunities for students to plan their own activities, although the plan must be approved in advance and reported on by the student and his supervisor.

The fact that the curriculum is not organized in a traditional sense with departmental courses does not imply that the many basic and clinical disciplines are not being taught; these disciplines appear as integrated components within systems or clinical teaching. Radiology of the chest is taught in conjunction with systems teaching in the cardiovascular-respiratory system as an integral part of examination of the chest of a patient. Similarly, the microbiology of urinary tract infections is taught during systems teaching of nephrology and body fluids, and during the third year teaching of diseases of the kidney and genitourinary tract. Special anatomy and histology of the adrenal glands is taught during systems teaching in endocrinology. Faculty from various disciplines cooperate in the teaching in any one system.
Responsibility for the entire program leading to the M.D. degree, whether three or four years in duration, lies mainly with the elected Curriculum Committee, which in many ways is the counterpart of the undergraduate studies committee in other faculties of the university, all of them reporting ultimately to their Faculty Council and, through the Senate Committee on Undergraduate Studies, to the Senate. There is a coordinator for each year of the program.

**Graduate Studies**

Programs leading to graduate degrees at the master's and doctoral level were developed in 1970 on an interdisciplinary basis in the Faculty of Medicine. A graduate student may have a supervisory committee made up, for example, of a basic scientist, a biostatistician, and a clinician, depending on the nature of the research project or thesis topic. A Graduate Studies Committee of the Faculty of Medicine is represented on the committees and Council of the School of Graduate Studies. The formation of the graduate school with its own dean occurred in 1974; its constitution was approved by the Senate in 1975.

**Postgraduate Programs**

Various post-M.D. programs involve some one hundred and seventy-five persons. Because many students do only the one mandatory year of internship prior to obtaining a license to practice, the first post-M.D. internship year is under the direction of an intern coordinator and an Intern Subcommittee. One of the earlier responsibilities of the associate dean for clinical sciences was the coordination of all postgraduate programs, aided by an assistant dean for postgraduate studies, who chairs the Postgraduate Medical Studies Committee and who has now relieved the associate dean of most aspects of this program.

Two or three years of tentative discussions took place before the clinical faculty was ready for an associate dean—partly because time was needed to permit the modified chairmanship role to become clear. The first professor and chairman of medicine, A. R. Cox, was appointed associate dean for clinical affairs in 1972. Perhaps the best indication of the outstanding success of his efforts in these roles and as chairman of the Curriculum Committee for three years was his selection as dean in July 1974.

All interns and residents are registered with the university as postgraduate students, which entitles them to most of the same privileges as graduate students. All postgraduate programs have course numbers for university transcript purposes, and the students' in-training assessment reports have assumed considerable significance in their acceptance by the Royal College of Physicians and Surgeons of Canada for their specialists' examinations. The constitution of the Faculty of Medicine specifies that postgraduate students may elect voting members to the Faculty
Council. All postgraduate students are listed in the Educational Register of the provincial licensing body, the Newfoundland Medical Board. All Newfoundland hospitals providing any part of a postgraduate medical student's medical education are affiliated with Memorial University.

Continuing Medical Education

This was the first program established by MUN as recommended by Lord Brain's Royal Commission of Health Services and by the MacFarlane Commission. A. M. House became director of continuing medical education in February 1968, and has continued to fill this role admirably with the assistance of an administrative secretary and two part-time associate directors. Since 1974 the director has been designated assistant dean for continuing medical education.

Research

The list of interest groups in Table 1, especially for what are now called the divisions of basic sciences and community medicine and behavioral sciences, indicates some of the fields for research that were considered worth cultivating if this medical school was to concern itself with some of the problems relevant to its geographic area.

An example of epidemiological research is the study of hypertension in selected Newfoundland communities after initial base line studies had shown that mean blood pressure levels were higher in coastal fishing communities than in a control inland logging-mining community. Further projects were designed to assess environmental etiological factors, dietary and familial, for example, and to measure the outcome of therapy. Other community medicine projects have been concerned with new methods of providing care, such as a home care program that was launched on a carefully planned research basis in cooperation with three hospitals and a multidisciplinary team; a community health center model for a deprived community; and a family practice nurse program—also on a research basis.

A genetics group, composed of members from all three divisions, but mostly from the basic sciences division, has developed projects ranging from population genetic studies to detection of new or rare biochemical, cytogenetic, and immunogenetic disorders. Other individuals or groups have concentrated on cell growth, virus attachment proteins and cell receptors, mechanisms in steroid hormone interconversions, and studies of excitable tissue membranes using readily available marine forms.

In clinical sciences, research interests range across all subdisciplines from the physical genetics of schizophrenia, to investigations of protein binding in clinical interactions of loop diuretics, to animal studies of a mechanical heart and other circulatory assist devices.
In 1968, even before the arrival of the first faculty members, other than the dean, formal affiliation agreements were signed with the St. John's General Hospital (formerly 586 beds, now 354); the Grace General Hospital (approximately four hundred beds); St. Clare's Mercy Hospital (three hundred and seventy beds); and the Charles A. Janeway Child Health Centre (two hundred and eighty beds). It is worth noting that "the Janeway" was formerly the United States Air Force Hospital at Fort Pepperrell, the first of the "overseas" bases that resulted from the Churchill-Roosevelt "destroyers for bases" deal in 1940.

The completion of affiliation agreements, which stated the objectives of the institutions, the mechanisms for joint appointments, and regulation of clinical teaching units, coincided approximately with the inception of fully integrated postgraduate medical education programs for interns and residents by MUN. Since 1968 an additional affiliation has been completed with the Waterford Hospital in St. John's (formerly the Hospital for Mental and Nervous Diseases, with eight hundred beds; now four hundred and seventy beds plus an active day care and community care program).

Outside St. John's, affiliations have been completed with four other institutions or centers:

1. The Charles S. Curtis Memorial Hospital, at St. Anthony in Northern Newfoundland, the headquarters of the famous International Grenfell Association (IGA), which administers a network of hospitals, nursing stations, and community health centers in Labrador and part of the northern peninsula of the island portion of the province. Throughout this century thousands of people, many of them from the United States and Britain, and most of them volunteers (or WOPS: workers without pay), have contributed to the impressive work done by the IGA.

2. Western Memorial Hospital (261 beds), a newly expanded regional center in Corner Brook, located near the regional college of Memorial University.

3. The Baie Verte Regional Health Centre, three hundred fifty miles northwest of St. John's, serving a local population of seven thousand and several surrounding communities with a combined population of fifteen thousand.

4. Carbonear General Hospital, seventy miles from St. John's, serving thirty thousand people. This excellent new hospital is closely linked with MUN in a variety of ways, including telephone transmission of electrocardiograms and conference connections.

There are one or more university nominees on the board of each affiliated institution and on a liaison committee, which has been a very effective means of communication. The dean of medicine plays a key role on liaison committees, whose other members include a representative from both boards, the administrator and/or medical director, and the chief-of-staff.
Shea Heights Community Health Centre

In 1968 the most severely deprived community in the environs of St. John’s was selected as a site for a small community health center. Baseline research studies were first carried out and community representatives carefully chosen before any new services were introduced. The Shea Heights Community Health Centre was in place within two years and now has its own incorporated board of management, whose secretary is John Lewis, the clinical director from the beginning and a full-time faculty member in family medicine.

Through the Department of Health excellent informal links have been developed with selected cottage hospitals and community hospitals, as well as with individual physicians and group practices. The advent of the medical school also stimulated development or expansion of closely related organizations such as the Newfoundland Cancer Treatment and Research Foundation. A full-time faculty member heads the Canadian Red Cross Blood Transfusion Service, which supplies virtually all the province’s needs for such services.

**FINANCIAL BASE**

As indicated earlier, $30 million in capital funds have come from the federal Health Resources Fund, approximately $10 million of which required a matching amount from the province. The so-called multiplier effect of spending $30 million in the province was expected to generate most of that sum. Labor disputes, inflation, and cost escalations in 1974–76 were, however, largely responsible for an increase of $15 to 20 million more than the 1971 estimate of $45.3 million. Most of this additional amount has come from provincial funds, some of it returning in the form of taxes on equipment and materials.

**Operating Costs**

The Memorial University Act requires that there be no deficits, and there have been no major problems in achieving this. The flexibility permitted because of the program approach has simplified the transfer of funds from one budget category to another, if necessary.

The original aim of the first dean was that MUN should pay a basic faculty salary that would be derived from sources reflecting the activities in which each individual was engaged. This has been partially achieved, with clinical faculty members, for example. Most of these are considered to be contributing substantially to the attainment of the goals of the hospital in which they work, and up to 50 percent of their basic salary is therefore reimbursed to the university by that hospital. The
total amount for all affiliated hospitals was originally negotiated each year by the
dean of medicine and then included in the budget of the hospital. Until 1977 the
province, in turn, received 50 percent of the amount from federal funds because
federal-provincial hospital costs were on a fifty-fifty basis. From 1977 on, a new
arrangement has been made that involves a return to the province of a larger
percentage of income taxes plus a lump sum transfer.

The faculty budget—mainly tuition fees and provincial government grants—
has risen from $3 million in 1972-73, the first year in which there were four
undergraduate classes, to $617 million in 1977-78. This does not include the
shared-cost contributions from hospitals toward the basic salaries of full-time and
major part-time faculty and their secretaries. Also excluded are external research
grants, expected to approximate $1.5 million in 1977-78, and donations to
Memorial University for medical research by Medical Practice Associates from
its professional earnings.

Medical Practice Associates (MPA), a single group practice composed of all
full-time faculty members with clinical privileges, was legally constituted in 1971
on a pattern followed from the beginning. MPA, in essence, purchases from MUN
that portion of a faculty member's time to be devoted to medical practice. A por­
tion of the basic remuneration is therefore derived from professional earnings.
Another portion, up to 50 percent but not more than $15,000 a year, is derived
from the hospital in which the faculty member is primarily based, as noted earlier.
In some instances this, or another portion, comes from research sources. There
are fixed ceilings to professional earnings, which are similar for all specialties.

SUCCESES AND FAILURES

1. Objectives Successfully Achieved

• One can assume that the preparation of doctors is a major mission of any medi­
cal school, and it was a particular objective of Memorial University's school of
medicine to educate more doctors for Newfoundland, other Atlantic provinces, and,
to an appropriate degree, other parts of Canada, and elsewhere. There is no doubt
that this objective has already been achieved reasonably well. The extent of New­
foundland's future need for physicians is being carefully reassessed in conjunction
with similar regional and national studies.

• Great continuity has been achieved by reducing the barriers between the
various phases of medical education: premedical and medical; preclinical and
clinical.

• The opportunity for carefully selected students to enter medical school at an
earlier stage has lowered costs by reducing the number of years at university, and
results to date strongly suggest there are no significant disadvantages, apart from
having a more diverse first-year class.
• Creation of an opportunity for more highly qualified students to begin medicine at the second-year level (the three-year program) can be considered only a qualified success and will be referred to later as a partial failure. A number of good students were undoubtedly attracted by the opportunity to save a year, with the attendant financial saving. This program provided our principal opportunity to accept students from outside Newfoundland, partly because there were no graduate programs in areas such as physiology or pharmacology at MUN until very recently. It was considered important to reduce academic and geographic insularity by this and other means.

• The identification of priorities in clinical and community medicine, as well as in research, that were important to the province has steadily gained recognition.

2. Interdisciplinary Programmatic Approach

This method, involving a major deemphasis of the departmental structure, has continued to be the official policy of the school and has functioned successfully in spite of the difficulty experienced by a few individuals in adjusting to it. It is one reason why the faculty size has remained relatively small. It is completely accepted, for example, that the Curriculum Committee will delegate to a course subcommittee the implementation of that course and selection of the teachers involved, after consultation where appropriate with the clinical chairman or associate dean.

Several features of the interdisciplinary graduate program in medicine have been adopted by the graduate school as a whole, for example, selection of Ph.D. supervisors on an individual basis, thus providing a panel or list.

Postgraduate students (interns and residents) must clearly be directed by individual clinical chairmen or their delegate, but these programs are coordinated by the assistant dean for postgraduate medical education. The actual practice of each specialty in the hospital or ambulatory care setting must obviously be similar to that encountered in any departmental program, but the interdisciplinary activities have unquestionably increased and improved collaboration between specialties.

3. Service Programs

Although there have been one or sometimes two clinical chairmen who would prefer a departmental partnership, the single modified group practice, MPA, is generally accepted as a smooth-working approach to organized medical practice by full-time faculty members. In a day of increasing criticism of some aspects of the professional earnings of doctors, awareness of firm ceilings and donation of earnings above the ceilings to the university for medical research has created a favorable reaction by individuals and groups, ranging from members of the MUN Board of Regents to senior civil servants and others in government.
4. **General Practice (Family Practice)**

The relatively small but active group of full-time faculty members in this new academic discipline has demonstrated the importance of selecting carefully the key individuals to ensure that they would be regarded by the Faculty of Medicine and others in the university as being well qualified to function in an academic setting as well as in the clinical sphere of activities. In addition to serving as admirable role models, these individuals have contributed substantially to undergraduate teaching, to research, particularly in health care delivery, and to their successful postgraduate program. The residency program has developed gradually, with emphasis on selection of good candidates, careful planning of their program, and periodic evaluation throughout. The full development of family medicine will not be able to occur, however, until after its imminent move to the completed Health Sciences Centre. The fact that it has been able to function within the existing hospitals in St. John’s and to provide some of the best examples of cottage hospital practice and community health centers outside St. John’s and in the Shea Heights Community Health Centre has given important experience to undergraduate and postgraduate students and has stimulated and improved the quality of care in the centers concerned.

5. **Home Care**

A similar impact on the quality of health care has occurred with a *home care program* that began on a careful research basis, but has since expanded into an accepted and valued service.

As with most new medical schools there have been many programs that it would not otherwise be possible to develop: hypertension research and management; open heart surgery; renal dialysis and transplantation; and a good rheumatic diseases unit with plans for extension to an increasing number of rural areas as personnel become available, particularly physiotherapists and occupational therapists.

6. **Faculty and Students**

Emphasis on selecting good faculty and good students from the very beginning was clearly an important factor in the success to date. There is extensive faculty participation in academic, administrative, and service activities, largely because of the nondepartmental emphasis. Students are actively involved in curriculum planning and implementation. Use of their own initiative in planning their elective opportunities and their community hospital experiences has been impressive.

7. **Relocation of an Existing Hospital to the University Campus**

This must surely be one of the best examples of inhibiting the escalation of health care costs. Many new medical schools, whether academic medical centers
or health science centers, have encountered this problem and have felt impelled to create an entirely new university hospital with a university-appointed board of governors. The compromise adopted by Memorial University was actually a return to the original ideas suggested in 1963: relocating the one-hundred-year-old provincial referral center, the General Hospital, to the campus of the university, but with its own board of governors (including nominees from MUN) and a modified administrative structure very closely integrated with that of the medical school and the university.

Although there are drawbacks and potential disadvantages to the new arrangement, the advantages appear to be much more important. They include the following:

- Since the first Planning Committee meeting in July 1971 more than six years will have elapsed before final occupation of the Health Sciences Centre. The numerous intervening planning sessions have had an incalculable educational value for all participants.
- The MUN-General Hospital integration has avoided the duplication of services and also the competition for staff and patients that developed in so many other centers when a university hospital was built on campus and caused divided loyalties as to which staff members would leave and which would remain at the older institution.
- Even more important than the many millions of dollars saved by avoiding new construction and extensive renovations at the original St. John's General Hospital are the savings achieved by having one active care hospital instead of two, with the new Health Sciences Centre emphasizing ambulatory care, automated methods wherever possible, and close integration with home care programs, and with the convalescent and rehabilitation facilities, hitherto sadly lacking, that are now available in the Forest Road division. Since the latter will not require the same level of nursing care, operating costs will be significantly reduced.
- In addition to the experience gained by members of the Planning Committee, and, more recently, the ICC with its subcommittees, members of the executive and board of the General Hospital have gained useful experience in the type of problems that must be anticipated in future. In a province where hospital boards were virtually unknown until the past decade, this experience has been particularly valuable.

**FAILURES**

1. **Support for the Life Sciences and Nursing**

As a life and health sciences center, inadequate financial support to proceed with construction of the life sciences areas and permanent space for the MUN School of Nursing has inevitably led to inadequate interchanges between students and faculty in these disciplines and those in the other health sciences. The opportunity still exists for this situation to be corrected, and interim mechanisms are
being considered. A feasibility committee functioned actively during 1976-77 and some of its recommendations regarding other health sciences will probably be implemented, such as extension of an existing diploma program to provide a degree program, and initiation of a physiotherapy degree program.

2. Undergraduate Curriculum

- Structure and function of the Curriculum Committee and its subcommittees. The number of people serving on committees gradually became unnecessarily large and the role of various components not always sufficiently clear to some people. This meant that excessive time was devoted to details concerning implementation that might have been handled by individuals such as the "year coordinator," with or without the subcommittee responsible for that particular year or phase of the curriculum.

The Faculty Council, upon a recommendation from its executive, recently approved a major diminution in the size of the Curriculum Committee and modified its terms of reference so that the committee will deal primarily with major policy matters. The post of assistant dean for undergraduate education has also been established to ensure the presence of an individual with expertise in medical education methods and provide continuity to compensate for the periodic changes in members of the Curriculum Committee and its subcommittees.

- Insufficient emphasis on "teaching the teacher how to teach." Fortunately, many faculty members have not needed such instruction; others are improving their skills as a result of small group teaching where more than one faculty member is involved, often selected because of his or her differing capabilities. The audio-visual department offers opportunities for improvement of teaching effectiveness and one or two workshops on the subject have been held, but more needs to be done and this will be arranged by the newly appointed assistant dean for medical education.

- Evaluation. During the first few years the overall approach was a relaxed combination of methods—multiple-choice, short-answer questions, essay-type questions, and, in a minority of instances, project and subjective evaluations during tutorials. There would usually be one or two evaluations during each course unit, but single final examinations at the end of a semester were avoided. A pass/fail report is provided the university registrar for inclusion in the transcript. The official record of the Faculty of Medicine, representing the recommendations of the Promotion Committee to the dean's office, subdivides the passing category into outstanding, satisfactory, and borderline.

In recent years there has at times been an increase, probably excessive, in the number of evaluations. This has been modified as a result of the Curriculum Committee and subcommittee discussions, which include student input. Some of the students' concerns may have resulted from excessively competitive attitudes instilled in them during their efforts to gain entrance to medical school. Another
factor may have been the attitudes of several new faculty members in recent years who had not previously taught in medical schools or who had little experience in a variety of alternative evaluation methods.

- Questionable value of the bachelor of medical science degree. This degree has been awarded to all satisfactory students at the end of the second year in the M.D. program. One important reason for this was the provision of an exit point for students who changed their minds about a career in medicine, possibly to pursue nonclinical research with or without a graduate degree, or possibly because they preferred a teaching career built on the exposure to biological sciences already obtained. Another possibility considered originally was that a physician's assistant program could readily be created, if any students wished to adopt this approach, by adding a suitable academic year that would include the relevant clinical instruction. The last opportunity does not exist in Canada, and only three students have stopped at the B.Med.Sc. termination point. Several students who had serious doubts about their suitability for medicine during the first year or two were, however, greatly reassured by knowing that this exit point was available.

- Distribution of time devoted to community medicine and behavioral sciences in the first year. The first two or three entering classes followed the first version of the new curriculum, which devoted 20 percent of first-year curricular time to community medicine and behavioral sciences. The general format remains, although significant modifications have been made, partly because early introduction to various clinical settings whetted the appetite of students for still more of "the real thing," and partly because students and faculty during the more intensive second and third years of the program began to look with envious eyes at time that some of them considered should be put to better use. Another major change was the lengthening of the first year by transferring the six weeks of anatomy to the end of that year from the beginning of second-year studies.

CONCLUSION

The storms associated with this particular project were weathered, partly because the preliminary plans were carefully evolved with key representatives of the government, the health professions, and MUN actively involved; partly because major commitments were in writing; and partly because the time, although difficult in some respects, was right, such as its coincidence with the Hall Royal Commission recommendations, the Health Resources Fund, and national Medicare. "The right time" is unquestionably one of the most important ingredients for success in most major undertakings.

The time was also right in that key individuals were available with a serious interest in improving Newfoundland's health and education services. The contributions of many others not mentioned here are greater than one can do justice to in a summary narrative of this nature.