

Dalhousie Medical School—Present and Future



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Other articles in this issue describe the history of Dalhousie Medical School. A few comments on the present status and an outline of future plans may also be of some interest.

The present has of course been shaped in large measure by the ideas, the inspiration and the efforts of those who have gone before. One of these was the late Dean H. G. Grant. It was largely through his efforts that the Medical School was saved from closing during the depression of the 1930's. Then came the stormy years of wartime when the staff was depleted and the teaching programme accelerated. Finally the flood of veteran students created a new problem, and at the same time inflation robbed the Medical School of much of its

income. During his term of office Dalhousie Medical School grew in strength in spite of the fact that it had to weather one storm after another.

Dalhousie is the only Medical School in the four Atlantic Provinces. The population is approximately 1.8 million and is growing more rapidly than at any time in history. Of the fifty-five to sixty young men and women who enter the study of Medicine each year from these four provinces, almost all enroll at Dalhousie; and over seventy percent of the doctors who enter practice in the region are Dalhousie graduates. The question might well be asked: "How large should Dalhousie Medical School be in order to meet the two requirements of educating the sons and daughters of the Atlantic Provinces and providing most of the physicians who will serve this area in future years?"

No one has yet worked out an exact formula for estimating how many physicians are needed to provide adequate medical services to a given population. However, there are some criteria which give a rough approximation. Taking into account the present ratio of population per physician in the Atlantic Provinces (which is below the Canadian average), the proportion of Dalhousie students who remain in this area after graduation, the number of graduates from other universities who settle here, the increase in population, the loss of doctors by retirement, death and emigration, and var-

ious factors, it has been estimated that a minimum of sixty-five medical graduates per year would be required from Dalhousie University to meet the needs of this region. At present the graduating class ranges from forty-eight to fifty-four.

The Medical School has had to limit its enrollment to the number that can be accommodated in the laboratories of the basic science departments. The Medical Sciences Building, constructed in 1923, was designed to accommodate sixty students in Physiology, Pharmacology and Biochemistry. The Pathology Institute also provided for sixty students in a laboratory shared by Pathology and Bacteriology. Anatomy and Microanatomy in the Forrest Building, had the same capacity. All of these laboratories were shared by the two Faculties of Medicine and Dentistry, with fifty medical and ten dental students admitted to the first year class. After World War II additional laboratory facilities were installed to accommodate ten more students and the enrollment was increased to admit fifty-eight medical and twelve dental students.

Construction has just been completed on a new building to house the clinical departments of an enlarged Faculty of Dentistry. There can be no question of the need for this expansion, since these four provinces have the worst ratio of population per dentist of any region in Canada. Enrollments in Dentistry will go up from twelve to at least twenty-five students per year. Since the dental students take most of the basic science courses with the medical students, it is obvious that an en-

largement of the science laboratories is required to take care of the expanding enrollment in Dentistry. It seems reasonable to plan for an enlargement in Medicine at the same time to reach the goal of sixty-five graduates per year. The facilities are therefore being expanded as rapidly as possible to take care of seventy-five medical and twenty-five dental students in the first year, allowing for some "wastage".

Do we have the clinical facilities to train a larger class of medical students? The answer is an unqualified "Yes". Although Halifax is not a very large city, the hospitals serve as referral centres for the Province of Nova Scotia. Approximately forty percent of the patients at the Victoria General Hospital are from areas outside Halifax City or County. A considerable proportion of patients from outside Halifax are also cared for at the Children's Hospital, the Grace Maternity and Camp Hill. To put it another way, approximately ten percent of all patients hospitalized throughout Nova Scotia are referred to Halifax. These teaching hospitals therefore screen the "problem cases" from a population of approximately 700,000. Sixty-four percent of the total patient days in the Victoria General Hospital are for ward patients who are under the care of the active staff, jointly appointed by the University and Hospital. Although other teaching hospitals in Canada may be considerably larger in total bed capacity they do not have as high a proportion of patients in the teaching units. Dalhousie University is second only to the University of Toronto in the number of

teaching beds in the wards of its affiliated hospitals. Furthermore, although all of these hospitals have been newly built or renovated within the last ten years, there will be further additions within the near future.

It is clear therefore that the bottle-neck in expanding the medical enrollment is not in the clinical departments, but in the basic science laboratories. The correction of this problem is now well under way. Two years ago the Departments of Physiology, Pharmacology and Biochemistry gave a fine illustration of the co-operative attitude which is one of the most striking attributes of the staff of Dalhousie Medical School. Each department had its own teaching laboratory, the three differing markedly in design and equipment. The Professors decided that with careful planning they could design a laboratory bench and other equipment that would be satisfactory to all three departments. Two of the existing laboratories have therefore been re-designed, each to house forty-eight students, a total of ninety-six. They operate simultaneously and are used for all courses in Physiology, Biochemistry and Pharmacology. This remodelling has released the space formerly used for the teaching laboratory in Pharmacology, and this has been re-designed to provide four offices and research laboratories for staff members. This increase in facilities has among other things greatly improved our opportunities for obtaining highly qualified personnel.

Plans are now complete for changes in the Forrest Building to remodel

the space vacated by the Faculty of Dentistry. The Departments of Anatomy and Microanatomy will enlarge their teaching facilities to accommodate 100 students. The only other scientific departments requiring enlarged quarters are those of Pathology and Bacteriology, located in the Pathology Institute. The Government of Nova Scotia has approved an addition to this building which will more than double its size. This will include new teaching laboratories and lecture rooms for 100 students, as well as increased research facilities for both of the University departments. It is hoped that this building will be available in a little more than one year.

These expanded facilities will take care of larger student classes and should be adequate to accommodate all students entering medicine from these four provinces for a number of years. It must be emphasized however, that the provision of additional facilities for the students will not meet all of the requirements. More staff will have to be taken on to teach the larger classes, and well qualified personnel cannot be obtained today unless research facilities are also provided. An addition to the Medical Sciences Building will therefore be required to provide the research laboratories not only for the new staff in the basic science departments but also for the clinical departments of Medicine, Surgery, Obstetrics, Paediatrics, and the other specialties. The limited life expectancy of the Forrest Building will also make it necessary to look for additional quarters for the Departments of Anatomy and Micro-

anatomy, within the relatively near future.

In addition, increasing demands are being made on the Medical School for the extension of training programmes in fields related to Medicine. There is considerable pressure for the development of a School of Physiotherapy and Occupational Therapy. The clinical services of the Rehabilitation Centre are adequate to permit the training of students in these fields. However, the space required for such a school is very considerable, and at present is not available in the University buildings or the Rehabilitation Centre.

The hospital insurance programme will also require the training of a much larger number of senior nurses, some of whom may take such training in the Dalhousie School of Nursing, presently located in very inadequate quarters in the Dalhousie Public Health Clinic. The School of Pharmacy also needs new quarters. An addition to the Medical-Dental Library will also be required to provide more reading room space and additional stacks for journals and books. All of these requirements will have to be met in any future construction programme.

Turning to the educational programme of the School—pre-medical requirements are now a minimum of three years in a Faculty of Arts and Science, and more than half of the students enter Medicine with a Bachelor's degree. When the pre-medical requirements were increased a few years ago, the additional courses were for the most part in the Humanities. Dalhousie, like other medical

schools, is concerned that its graduates be educated professional men, not simply technicians.

The courses in the Medical School itself have been completely revised during the past three years. Before making any changes a committee of the Faculty studied all aspects of the curriculum and reviewed the various experiments in medical education which have been conducted in other centres. A great deal of thought and effort was given to the revision of the curriculum by this committee, which worked for more than one year.

During the past three years the revised curriculum has been in operation with a very considerable degree of success. A few of the features are worthy of note. The year is now divided into three terms of equal length, each of eleven weeks. An interval of one week is allowed for term examinations in November and February. The emphasis on entering Medicine has been considerably changed by making Biochemistry the major subject in the first two trimesters of the first year. Anatomy and Physiology gradually increase throughout the year. Some of the time formerly devoted to departmental teaching has been assigned to interdepartmental or co-operative teaching. The students see a few clinical demonstrations on patients in the first year to illustrate how the basic sciences are applied. During the third and fourth years the basic science teachers in their turn co-operate with the teachers in Medicine, Surgery, Obstetrics, Paediatrics, and the other clinical departments. The

fourth year is a clinical clerkship in which the students spend two months in Medicine, two months in Surgery, one month each in Obstetrics and Paediatrics, and two months divided among the other specialties. The students work in small groups during this year, and almost all of their time is spent in the teaching hospitals.

Unlike most Canadian medical schools, Dalhousie still retains control of the fifth year internship before granting the degree. Graduates of other schools, who receive the degree at the end of the fourth year, are required to take a rotating internship before they are eligible for the examinations of the Medical Council of Canada. Our students obtain the degree and the Licentiate at the same time. The only limitation is on their choice of hospital for internship. Dalhousie has arranged nine rotations made up of the most suitable teaching services in the various hospitals throughout the Atlantic Provinces. Each rotation includes four months in Medicine, four months in Surgery, two in Obstetrics and two in Paediatrics. The Faculty is fully convinced that a balanced rotation can be achieved more readily by using a number of hospitals than by having the student obtain all his internship in one institution.

The training of specialists is not primarily a responsibility of the University, but the teaching staff are involved in it within their respective hospitals. One of the problems is to obtain adequate instruction in the basic sciences for the specialists-in-training in the teaching hospitals. The University is now working out

arrangements whereby our basic science departments may assist the hospitals in this important aspect of training.

The continuing medical education of practitioners in the four Atlantic Provinces has also been accepted as a responsibility of the Medical School. The Dalhousie Refresher Course has been in operation for more than thirty years. This has been supplemented during recent years by short courses in the various specialties, and by lectures, demonstrations and clinics held at various centres throughout the four Atlantic Provinces. Members of the staff of the Faculty of Medicine and visiting lectures participate. This programme was sponsored initially by the W. K. Kellogg Foundation and is now supported in part by the Medical Societies of the four Atlantic Provinces, the Provincial Medical Board of Nova Scotia, and the College of General Practice of Canada. This Post Graduate Programme has grown to be one of the largest associated with any medical school on the continent. Over 10,000 physicians registered for the various programmes of the Post Graduate Division in its first six years of operation.

One of the major changes in the Medical School in recent years has been the appointment of a number of full-time staff members in the clinical departments. This has been started in the Departments of Psychiatry, Medicine and Surgery and will shortly be extended to the Departments of Paediatrics and Obstetrics. This development is in line with modern practices in other medical schools.

A debt of gratitude is owed to practising physicians in the Halifax area who have carried the tremendous burden of teaching medical students over many years. Their contribution to medical education will continue to be just as important as it always has been, but a number of full-time staff members are required to assist them in carrying the responsibility for the greatly extended programmes of undergraduate and graduate teaching, research, and the clinical programmes of the teaching hospitals.

During the past year the Medical School was visited by a team representing the Association of American Medical Colleges, the Association of Canadian Medical Colleges, the American Medical Association and the Canadian Medical Association. This Liaison Survey Committee is responsible for reviewing the programmes of all medical schools in Canada and the United States at periodic intervals. The report of the survey was very complimentary to Dalhousie Medical School. A few useful suggestions were presented for consideration, but for the most part the existing programmes and the proposed future plans were approved. One specific recommendation was that the Departments of Medicine and Surgery should each have at least three full-time staff members and the clinical departments of Obstetrics, Paediatrics and Psychiatry at least two. Increases in salaries for the present staff in the basic science departments and increases in the number of staff in keeping with the enlarged enrollment were also recommended.

These recommendations must of necessity lead us to a brief consideration of financial problems. The cost of operating a medical school is a very heavy one for any university to bear. In fact, it could not be carried without the support of Government. The annual budget for the undergraduate programme in Medicine at Dalhousie University is more than six million dollars. To this must be added an additional \$200,000 per year for research, most of which comes from the National Research Council, Department of National Health and Welfare, Defence Research Board, National Cancer Institute, and other fund-granting bodies. The cost of graduate medical education, the operation of the Dalhousie Public Health Clinic, and various other services are not included in these figures. To meet the recommendations of the accrediting agency by enlarging the staff of the basic science and clinical departments will require an increase in this budget of approximately \$150,000 per year. At present the four Atlantic Provinces are providing grants to the Faculties of Medicine and Dentistry. Generous increases in these grants have been approved this year by the Provinces of Nova Scotia and Newfoundland. It is confidently expected that larger grants will also be obtained from New Brunswick and Prince Edward Island.

A campaign for funds from the Medical Alumni and other physicians, under the chairmanship of Dr. C. L. Gosse, has also been very successful. This brought in gifts totalling \$150,000, which have provided the capital required for the changes in the Medi-

cal Sciences laboratories and the Forrest Building, and will go far toward furnishing the new laboratories for teaching and research in the Pathology Institute. Generous grants have also been obtained from the W. K. Kellogg Foundation for the Post Graduate Division and to add full-time teachers to the Departments of Obstetrics and Paediatrics.

In conclusion, the Medical School of Dalhousie University is, I believe, on the threshold of great advances. We have a staff in the basic science departments and in the clinical departments which is second to none among the medical schools in Canada. One principle from which we should not deviate is that Dalhousie Medical School deserves the very best in highly qualified staff. When any appointment becomes vacant a wide search for qualified personnel is made. There can be no doubt that the future of this Medical School depends upon the quality of the staff. Dalhousie has maintained very high standards in the past and has achieved an enviable reputation. We must go forward keeping pace with developments in other centres, and setting the pace in as many fields as possible. We have a sufficiently large body of candidates for admission to Medicine that we can select high calibre students. The quality of our students received special commendation from the Survey team this year. We have clinical facilities for undergraduates and graduate teaching in the affiliated hospitals which are of the highest standard and these will be expanded further in the next few years. The Medical

School laboratories are still very inadequate, but are being improved as rapidly as possible. Interest in medical research has increased tremendously in the last few years, as indicated both in the number of research projects acceptable to and the amount of funds forthcoming from national research organizations. The generous support of the Governments of the four Atlantic Provinces has carried a significant portion of the cost of medical education, so that students have not been burdened by excessively high tuition fees. These advances have been achieved through a very high degree of co-operative effort. The Faculty has worked together on a pleasantly harmonious basis, and it is only through the strength and co-operation of the whole Faculty, both part-time and full-time that future advances can be made.

The support of the Alumni has also been of vital importance. Campaign contributions have taken care of most of the immediate requirements for modification of the existing buildings. However, large future needs for expansion of the Medical Science facilities can be foreseen. Many universities receive a large part of their support from Alumni through annual contributions, often small in individual amount, but representing a very large and important total. It is our sincere hope that we may continue to depend upon the growing support of our Alumni and other friends in the medical profession so that Dalhousie Medical School will continue to be one of the outstanding centres of medical education in Canada.