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A STUDY OF CHANGE IN THE MEDICAL EDUCATION CURRICULUM AT DALHOUSIE MEDICAL SCHOOL FROM 1947 TO 1967

by

Deborah S. Kiceniuk

Submitted in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

at

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DEDICATION

To my parents . . .

Gordon Dickinson Duff (1919-1973)

Hilda Florence Duff (nee Nichols) (1918-1990)

You taught me valuable lessons . . .
to love and appreciate others, to value friendship and integrity, to do my best, and to finish what I begin

your lessons have helped me through my thesis journey

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ABSTRACT

Medical education curriculum change has been a source of debate among educators, and medical school faculty and students, since before Flexner's survey in 1910. The purpose of this study was to examine curriculum change and the events surrounding those changes from within and outside the medical school environment from 1947 to 1967. This study was a historical case study centred in the interpretive paradigm which told the story of curriculum change at Dalhousie Medical School from the point of view of those who worked or attended the School at the time under study. Consequently, the events related in this study were documented from the voices of faculty members, staff, and students, and from Dalhousie Medical School documents. Additional information was obtained from secondary sources written by historians.

The evidence revealed that Dalhousie Medical School's undergraduate curriculum underwent two decidedly fundamental changes, in addition to the many incremental changes, during the time frame explored in this thesis. These changes appeared to be cyclical in nature. Consequently, it is reasonable to assume that the curriculum is not often stable, but always undergoing some change in order to maintain an equilibrium. The evidence demonstrated that there existed both facilitators and barriers to curriculum change both within and outside the medical school environment. These facilitators/barriers may include the physical resources of the school, funding, scientific advances, and an adequate number of faculty members to teach. However, it may be impossible to prioritize these forces since they appear to act in a synergistic fashion, at times beyond the control of curriculum planners.

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CHAPTER 1

SETTING THE STAGE

The Flexner Report of 1910[1] cemented the basic sciences and clinical medicine into two separate entities within the medical undergraduate curriculum. Since then medical education has undergone several changes, and battles over the medical curriculum still rage among educators, physicians and regulating agencies. As late as 1997, Larry Cuban, in referring to the stability of the traditional medical curriculum, stated that there has been "change without reform."[2] Bloom confirms that while there have been changes to the curriculum, the underlying social structure of the medical school has remained unchanged.[3] In addition, the medical establishment has been under scrutiny from patients who claim that there is an increasing de-personalization of medical care and that physicians are very poor at the humanistic aspects of medicine.[4]

While there have been many examinations of objectives, goals and assessment techniques since the Flexner era, efforts have not been focused on the underlying philosophy

and theoretical constructs upon which these elements have been based. The failure of reformers to take account of these have led to more 'surface' changes that may hinder the more comprehensive 'deep' changes which may be required. This thesis will examine the changes to the curriculum at Dalhousie Medical School, Halifax, from post World War II to 1967. The era between 1947 and 1967 has been selected because of the distinctive changes which took place in medical education after World War II and because 1967 signaled the beginning of the new era which began at Dalhousie Medical School after the construction of the Tupper Building. Moreover, in order to understand why curricular changes take place in the current medical education environment, it is crucial to take a step backwards to examine, from a historical viewpoint, the forces which helped to change or stabilize the curriculum. Although it is realized that the dynamics of change in medical education are numerous and diverse, it may be assumed that curriculum development is an ideological process which intertwines many of the philosophical beliefs of those stakeholders at the time of changes, together with the prevailing social and cultural beliefs. Hence, it is necessary to discuss the philosophical beliefs upon which the missions of medical schools are based. In doing so, we

may better understand how changes can be made to further the educational mission of the medical school in the future. This thesis will explore three broad questions:

1. To what extent has the undergraduate medical education curriculum at Dalhousie been transformed since World War II?
2. To what extent has the undergraduate medical curriculum been marked by stability or change at Dalhousie since World War II?
3. What are plausible explanations for both curricular change and stability within Dalhousie Medical School?

Using the philosophy of education as theory, this exploration will be guided by four major philosophical concepts. These include but are not limited to the following: (1) the role of the teacher; (2) subject compartmentalization versus integration; (3) skills training versus education; and, (4) the notion of which knowledge is deemed to be valuable. Other concepts which may fall under the above broader concepts could include autonomy or as Charlton and Downie call it "a mind of one's own,"[5] humanism, critical thinking, values and moral education, technology, research funding, and preparing students for

their role in society. In this introductory chapter, I will first define terms which are central to this thesis followed by each of the four main concepts within the realm of medical education. Second, I will set the stage for this study by reviewing a brief history of medical education prior to 1910. Third, I will review some of the current literature which surrounds the history of higher education and medical education in North America. Fourth, I will describe the research methodology and methods which will shape and help guide the path to the completion of this thesis.

Definition of Terms

The focus of this thesis will be the changes and/or stability of the undergraduate curriculum at the Dalhousie Medical School, and the forces which appear to have contributed to these changes within the medical education environment. Broadly speaking the curriculum is a series of planned events intended to enable students to learn particular knowledge, skills, and values mainly organized by administrators to be carried out by teachers. The definition of the medical curriculum may vary from this slightly because it may be planned by committees or the teachers. Kelly distinguishes between the *official* or

intended curriculum and the *hidden* curriculum. The official or intended curriculum is "those activities that are planned or are the result of some intentionality on the part of teachers and planners."[6] The hidden curriculum has been referred to as "those things which pupils learn at school because of the way in which the work of the school is planned and organized, but which are not in themselves overtly included in the planning or even in the consciousness of those responsible for the school arrangements."[7]

In medical education, there is a distinction between what the students learn in the classroom, and the behaviors and knowledge to which they become socialized during the educational process. Therefore, it is necessary to distinguish among:(1) the intended curriculum, (that which has been outlined in calendars by the administration), (2) that which is actually taught by the teachers, and (3) that which the students learn, both implicitly and explicitly during the learning process. Although it is evident that "the journey from design to practice is far more zig-zag than a straight line,"[8] this study will focus on the intended or official curriculum as outlined through syllabuses and calendars. In doing so, it should be acknowledged that the limitation of examining written

documents is that one cannot assume what learning is implicitly transmitted to students in the educational environment through socialization or other behavioral processes. However, by examining written documents, one can establish the trends in educational thought and philosophies which can be considered a reflection of the process of change.

In general, the curriculum changes which have taken place within medical education have been varied, and span both ends of a continuum of change. In order to chart the course of curriculum changes for this thesis, I will lay the cornerstone now for two types of changes which will be explored, and which have been documented previously by Cuban. "Incremental changes" are those that are planned and are intended to enhance the existing deficiencies which exist in the curriculum. These changes try to leave the basic organizational features of the curriculum in place while adding on those changes which are deemed as improvements. On the other hand, "fundamental changes" are those that change the organizational structure of the curriculum because of dissatisfaction with the present curriculum structure. Changes which are fundamental in nature change the underlying mission, objectives, methods and roles so that what emerges is a new curriculum

structure.[9]

The philosophical concepts which will be the focus of this historical analysis are of crucial value and will be explained here in some detail.

The Role of the Teacher

In medical education, as with many other areas of education, the role of the teacher has changed. These changes vary but can be seen as a continuum from being teacher-centered to student-centered.[10] In the teacher-centered curriculum the teachers are the transmitters of knowledge and the students are the 'sponges' which 'soak up' the knowledge in order to learn the appropriate material. The activities in this approach are centered around didactic lectures whereby students have little control over what they learn. In a student-centered approach the students take more responsibility for their learning, may decide on their own learning objectives, and the resources to access in order to fulfil these objectives. The teacher's role is more supportive and he/she acts as a resource for the students. Obviously, closely linked with these concepts is the idea of self-direction in the learning process. For instance, the more student-directed the learning process becomes, the more necessity there is for students to be self-directed learners, and consequently, they must take a

more responsible role to choose their own learning activities. The most recent change in medical education which fosters this type of learning is the implementation of problem-based learning in the undergraduate medical curriculum - first officially introduced in Canada by McMaster Medical School in 1969. Since then other Canadian curriculum innovators have supported the notion of student-centered learning and many schools have implemented PBL into their curricula. This thesis will examine the change in the philosophical underpinnings associated with the change from a teacher-centered to student-centered curriculum during the period under study.

Subject Compartmentalization versus Integration

Peters has referred to the "non-compartmentalization of knowledge" as the issue of whether the forms of thought (which may be different than a school subject) should be taught "separately or linked together in some kind of 'topic' or 'project'."[11] I will discuss the issue of compartmentalization versus integration in terms of the disciplines or courses which are taught in the medical school. In medical education, the traditional curriculum separates academic courses or departments, such as anatomy, biochemistry, or pathology. Students do not encounter patients until later in their academic careers because it is

assumed that students need the 'building blocks' of the scientific disciplines in order to enter clinical medicine. In an integrated curriculum, the subjects, usually separated in the traditional curriculum, are taught in topic areas and are organized in such a manner that basic science and clinical medicine are introduced as an integrated whole. The critical issue for medical educators is whether the integrated or traditional curriculum better prepares students to become competent physicians. In addition, it is thought that integration can help students link basic and clinical medicine, stimulate learning, and reduce memorization of facts.

Skills Training versus Education

In recent years, the education of doctors has come under public scrutiny. Calman and Downie state that "from the public there was also criticism that doctors were poorly trained or not well-educated."[12] Peters suggests that education "relates to some sorts of processes in which a desirable state of mind develops," and "this development is usually thought to be intentional." He further contends that a person may be trained to perform certain skills, but not educated. In stating this, he refers to the fact that a person can perform a skill with determinism and intelligence, but has a limited conception of what he/she is

doing in the overall pattern of life - "he does not see its connection with anything else, its place in a coherent pattern of life."[13]

On the other hand, training is often seen as a series of activities which are linked to the performance of skills and are narrowly based. Peters also suggests that training is the "acquisition of appropriate habits of response in a limited situation" and "always suggests confinement." A person can be trained to be a secretary, mechanic, or historian, but can lack the overall vision of their profession within society. Education implies that one's outlook and attitudes have undergone a change, and that one has developed a new view because of what they have learned, or because of something that has happened during the educational process.[14]

Even with the fundamental and incremental changes taking place in medical schools over the last several decades, the predominant role of the medical school appears to be research, the publishing of scholarly articles, and acquiring funds for research. Stephen Abrahamson claims that it is time to "return medical schools to their primary purpose - education."[15] Walker states that the "training agenda" has been reinforced, and has served to mask the underlying mission of professional schools which should be

to produce citizens who have a well-rounded education.[16] Accordingly, I will explore whether the curriculum has remained stable, or changed its emphasis from either educating citizens for society or training physicians for a technological workplace.

Which Knowledge is Deemed Valuable?

At a given time, the curriculum may be seen as a representation of that knowledge which is deemed as being valuable or worthy. The selection of knowledge may be the reflection of social values, political forces within and outside medicine, and the opinion of particular educators who are responsible for constructing the curriculum. Peters (1966) has argued that education involves "initiation into activities or modes of thought and conduct that are worth while."[17] Furthermore, Schrag states that "whatever else it embraces, education includes the transmission of knowledge, broadly conceived."[18] Therefore, the knowledge transferred to the students through the curriculum may be, ultimately, a construction of the values and knowledge which are considered valuable at a particular time. Schrag, outlines several ways in which curriculum documents embody ideas concerning knowledge. First, these documents prescribe a selection of knowledge from the large volume of information which is known, thereby designating other

information as being unworthy of being included. Second, the knowledge which is selected for inclusion is outlined in syllabuses and therefore "reflect[s] ideas about the acquisition of knowledge." Finally, the selection of knowledge included in the curriculum is not comprised of mutually exclusive pieces of information, but is part of an integrated whole which reflects ideas about the "organization of knowledge."[19] Accordingly, one of the aims of this thesis will be to uncover, through examination of university documents, which knowledge has been selected for inclusion in the curriculum and how the selection of knowledge has changed over the historical period under study.

Literature Review

Upon completion of a literature search, it became apparent that there were a number of accounts of the history of medicine and medical schools. However, the accounts of the history of medicine, for the most part, reported on the developments in medical sciences such as the eradication of diseases, and the developments of new medical techniques. The history of medical schools, more often than not, dealt with institutional history. That is, many of these accounts described events surrounding institutional building, funding

allocation, and individual stakeholders who were significant players in the development of an institution.[20] The majority of authors who have focused on medical education were those who reviewed the history of American medical education.[21]

Although medical education in Canada has experienced many shifting currents over the past century, which are similar to those in the United States, there appears to be a dearth of information concerning the history of the medical curriculum in Canada, which in itself is just cause to explore in depth the history of an undergraduate medical curriculum. Furthermore, those authors who have attended to medical education history have generally reinforced the traditional institutional approach to history rather than linking curriculum changes to other schools or historical events in medical education. Although this thesis is a case study of Dalhousie, which by definition therefore focuses on the school as the micro-level of analysis, I will also juxtapose the school with other events occurring in other medical schools in North America, and in the collective medical education environment.

Dalhousie Medical School was first known as the Halifax Medical College and was formed in 1868 and was the sixth medical school to be opened in Canada. At this time, its

sole financial support was from student fees. However, due to financial difficulties and lack of space, the College closed in 1873. However, it re-opened in 1875 and for the next ten years it issued degrees separate from Dalhousie University. It was not until 1885 that students were given medical degrees from Dalhousie University. This arrangement was constant until shortly after the Flexner Report was published in 1910, when the Halifax Medical College became the Faculty of Medicine of Dalhousie University. With respect to examining curriculum change, Dalhousie Medical School has undergone incremental and fundamental curriculum changes since World War II. Consequently, it serves as an excellent case study and provides a classic opportunity to compose a historical account of both types of curricular change.

Setting the Stage

Most reports on the trends and historical landmarks of medical education never fail to mention the monumental contribution that Abraham Flexner made with his review entitled Report on Medical Education in the United States and Canada.[22] This report, requested by the American Medical Association Council on Medical Education, and funded by the Carnegie Foundation for the Advancement of Teaching, was published in 1910 and was, and still is, the centre of

much fervour in medical education. Although it was believed that it did not reveal anything new about the circumstances in medical education at that time, it brought public attention to the appalling state of medical education in America and Canada. This, in itself, brought changes in the medical curriculum, which were already in motion, to their complete fruition. Accordingly, the Report may have reached a lofty perch in the medical education literature not because of its revolutionary ideas, but because of its ability to stimulate profound social and curricular changes in medical schools at that time.

In the last half of the nineteenth century, medical education made great strides in reforming its structure and philosophy - the likes of which would not be seen in the next hundred years. Until the middle of the nineteenth century medicine "had no problem considering humans as wholes and in accepting social and psychological functions as decisive for the process of disease and healing."[23] This notion quickly faded with the influence of the German and British medical schools in the mid-nineteenth century. As Bloom writes, "In the United States education developed a hybrid form, borrowing mainly from the German and British sources."[24] This European influence was, in part, a result of the inadequacies in the teaching of sciences, such as

bacteriology, physiology, and micro-anatomy in the American medical schools at that time. Unfortunately for these new scientists, there were no laboratories or equipment - even in more advantaged medical schools - for them to carry on their research once returning to the United States. In 1888, William Welch stated that the "facilities and encouragement for carrying on scientific investigations in medical institutions of this country [US] are in general very meager,..."[25]

However, this new scientific idea of medicine was not upheld by all physicians, and there was much mistrust and opposition within the medical profession. Most of the opposition came from physicians who managed the proprietary schools, which depended on the fees paid by students for their continued existence. The administrators of the proprietary schools did not wish to see any change in the method in which medicine was taught, fearing they would not be able to maintain a high enough standard to provide a modern scientific curriculum - unless they increased their tuition, which could ultimately decrease their enrolments.[26]

Women medical students who were welcomed into medicine in the early to mid-nineteenth century were also affected by the scientific era of medicine. Early in the nineteenth century, when medicine was viewed as more of an art than a

science, women were deemed fit for medicine because of their nurturing, caring temperament. This "spiritual power of maternity"[27] was a formidable argument for women to be admitted into medicine. When medicine began to become more science-based and rational, these maternalistic skills of women became de-valued. Elizabeth Blackwell, the first woman to graduate with a medical degree in America in 1849, felt that the science-based, rational momentum in medicine would undermine the "women doctors' raison d'être."[28] This proved to be a reality when by the end of the century women were increasingly denied admission to medicine and clinical experiences in hospitals.

As more physicians became educated through the German system the scientific idea of medicine gained more support. A number of these pioneer medical scientists also gained positions of control in medical schools, which up until that time were still proprietary schools. Hence, reform was lurking in the shadows as Charles Eliot, President of Harvard University, stated in his report of 1870, "The whole system of medical education in this country needs thorough reformation" and, "the ignorance and general incompetency of the average graduate...at the time he receives his degree which turns him loose upon the community is something horrible to contemplate."[29]

In 1871, Eliot negotiated sweeping changes with the Harvard Medical School. The first was that the medical school was now under the influence and financial management of the university. Secondly, changes to the curriculum saw an expansion to a three-year, nine-month program with written examinations introduced into each course. Furthermore, the sequence of courses would now follow a logical manner, with the sciences preceding clinical work. Third, for the first time the medical curriculum would include the laboratory sciences. This arrangement represented the first time in American medical education history that science was a legitimate part of the medical curriculum. One of the leading sciences which changed the method in which disease could be observed was pathology. This occurred mainly because of the development of the microscope, which was available at reasonable prices by the mid-nineteenth century and contributed to the "development of cellular pathology and the correlation of clinical symptoms with cellular changes in organs."[30] Clinical medicine at this time was largely taught by ward rounds in the hospitals given by physicians who could not obtain faculty appointments. Students were often given Saturdays off so they could attend these rounds which consisted of following the physician around the ward and trying to vie

for a place near the bedside so they could hear and see what was being presented.[31]

Although Eliot's changes led the way for other medical schools, there were other broader reasons for the universities and medical schools to seek alliances. The uniting of professional schools and universities came at a time when the universities were aspiring to objectivity and universality - attributes encompassing the meaning of university. The universities considered themselves the authorities in the teaching of academic subjects in a higher manner than could be achieved at any other institution. Therefore, at a time when medicine was entering the scientific age and becoming a paradigm of rationality and objectivity, it became crucial that the universities gain control over these schools. Unknown to Eliot at this time, his reforms would lead the way for others to follow his model.

Not long after the changes occurred at Harvard, Johns Hopkins Medical School was established in Baltimore in 1893. This innovative school reinforced the scientific basis of medicine and was endowed by Johns Hopkins on the provision "that its major preclinical faculty members must devote their full time to teaching and research."[32] The school was led by prominent teachers such as William Osler (from McGill

in Canada), and William Welch, who believed that "laboratory techniques not only had produced great discoveries,"[33] but also inculcated habits in students such as "the quality of mind, the methods of work, the disciplined habit of correct reasoning, the way of looking at medical problems,"[34] which were necessary for competent physicians. In addition, Johns Hopkins had begun the trend to raise admission standards and improve the level of teaching, consequently setting a standard by which other medical schools were measured. Accordingly, it was Johns Hopkins Medical School that formed an alliance with the Council on Medical Education of the American Medical Association in 1908 to approach the Carnegie Foundation to sponsor an evaluation of the medical schools in the United States and Canada. This subsequent report became known as the Flexner Report of 1910.

In 1876, twenty-two medical schools in the United States joined forces and formed the Association of American Medical Colleges. This association made efforts to improve medical education through various methods including the establishment of licensure requirements and an examination board for most of the states.[35] By the early 1900's medical education had changed dramatically - not only had the curriculum content changed, but also the beliefs about *how* medical students should be taught. With the tremendous

influences which were present at this time in medical education, there should be no wonder that innovative medical educators faced many dilemmas as a result of this massive reformation. For instance, the advances in science, such as the germ theory of disease, caused a massive realignment in American values towards education and medicine. The proprietary medical schools could no longer provide the type of education required by the new medical-scientific model of education. In addition, the implementation of innovative curriculum design to keep up with scientific medicine required new sources of funding by which laboratories could be built and maintained. The need for additional funding for research created yet another reason for many medical schools to seek affiliation with universities. However, in cementing a bond with the universities medical schools had to relinquish a substantial amount of their independence.

Among the dilemmas permeating medical education reform at that time were questions concerning what shape medical education would eventually acquire. Speculations also arose concerning how the medical schools would cope with the massive changes to its structure and programs. Further to this, there were concerns over the new role of the teacher/scientist/physician, and how they would find the time to devote to all the required activities. Other

queries focused on the standardization of schools, and whether all schools would be required to conduct research as part of their educational programs. Consequently, at the beginning of the 1900's three distinct types of medical facilities were evident - the private medical colleges of varying merit, established universities, and hospitals of diverse origins and administrations. The course of medical education made it essential that these three institutions join and work together. However, the friction which resulted from these efforts created powerful resistance by one private group or another. Nonetheless, despite the barriers and discord, this problem had to be resolved if progressive scientific medical education was to evolve. By 1904, in an effort to control the rising number of substandard medical schools, the American Medical Association established the Council on Medical Education and Hospitals. As a result, the Council "established minimum standards for an acceptable medical school, inspected the schools, and published a list of schools that met the minimal standards."[36] Therefore, the Council brought to the public's attention the deficiencies in medical education in the United States.

In June 1910, 15 000 copies of the Flexner Report were printed and distributed. Flexner, a secondary-school

educator, had been commissioned in 1908 by the Carnegie Foundation to evaluate medical schools in the United States and Canada. The response to his report was immediate and varied. Some authors revered Flexner's ability to 'weed out' the troubles plaguing medical education at that time, while others refered to the famous report as a "classic of muckraking journalism."[37] The recommendations outlined in the Report, which secured in place the division between the basic and clinical sciences, have generally been implemented. It is evident from reading Flexner's ideas that the central focus of his analysis was that medicine had entered the scientific era. "A tone of medical positivism pervaded the book; medicine was regarded as an experimental discipline governed by the laws of biology."[38] Furthermore, "Flexner noted that the physician must be a scientist first and must know and utilize the scientific method on an everyday basis."[39] In addition to this, Flexner recommended that all faculty, both clinical and basic scientists, should conduct research. Notwithstanding his emphasis on scientific medicine, Flexner also recognized the need for the practitioner to be insightful and sympathetic, but acknowledged that these qualities were much harder to teach - "Specific preparation in this direction [was] much more difficult; one must rely for requisite insight and sympathy

on a varied and enlarging cultural experience."[40] Furthermore, he conceded that society was changing and that the physician's role would change with it - "But the physician's function is fast becoming social and preventive, rather than individual and curative."[41]

Flexner's abhorrence for the didactic method of teaching pervaded the report. He wrote that teaching by lectures alone was "utterly worthless," and left the students' sense of reality "pale and ineffective."[42] One of the longstanding problems in the medical curriculum is the requirement that medical students memorize large amounts of material to be recalled later during an examination. On this issue Flexner's views were easily discernible - he stated that the "student should be a thinker not a parrot,"[43] implying that students should be able to think for themselves, not merely recall information.

In summary, according to Flexner the ideal medical school should have three major characteristics. The first was that modern medical schools should be well equipped with laboratories and equipment, and that they should be in control of the teaching hospitals. Second, he thought that medical schools should only accept academically qualified students, which meant that the very minimum should be two years of college-level science. Lastly, he recommended that

critical research should be a part of every medical school and that this should permeate every level of teaching.

Medical Education After Flexner

Flexner's model of the curriculum changed little prior to World War II. Canada appeared to follow similar changes to its curriculum as those that were experienced in the United States. Nonetheless, there were several events that occurred during the time after Flexner's Report and before World War II, which would shape the direction medical education would take after 1950.

There are three types of historical accounts of higher education which have been reported in the literature. The first is a general account of higher education, such as Harris' report on higher education in Canada from 1663 to 1960, which includes a report on professional education. The second type are historical accounts of particular universities. For instance, two examples would be a history of McGill University by Frost[44], and The Lives of Dalhousie University by Waite.[45] The most comprehensive Canadian historical account of medical schools has been written by N. Tait McPhedran entitled Canadian Medical Schools: Two Centuries of Medical History 1822-1992.[46] Other authors have written general accounts of the changes in medical schools and medical education in the United States and

Canada.[47] The third type of historical literature and the more common form of historical descriptions in medical education are written about particular courses. An article by Hayter entitled "Physics for Physicians: Integrating Science into the Medical Curriculum, 1910-1950"[48], and a history of Anatomy at Stanford by Larry Cuban,[49] would be examples of this type historical description. Therefore, most historical accounts of medical education have focussed on particular courses and schools as their central concept without encompassing other events or schools which may have occurred in parallel to curriculum changes.

In 1976 Robin Harris wrote A History of Higher Education in Canada 1663-1960.[50] This appears to be one of the most comprehensive reviews of Canadian higher education and includes reports on the development of most of the universities in Canada. Harris divides his sections first into chronological eras and then by: (a) Institutional Development according to geographical area; and (b) Disciplines such as Arts and Science, and Professional Education. The sections on Professional Education include such disciplines as Medicine, Law, and Theology. On the other hand, N. Tait McPhedran wrote an historical account specifically concerned with medical schools in Canada from 1822 to 1992.[51] McPhedran's book begins by outlining

specific eras of development in the history of medical schools in Canada. McPhedran's book divides the succeeding chapters into the sixteen Canadian medical schools and discusses each on an individual basis. Although McPhedran's book deals explicitly with medical education in Canada, it deals very little with curricular change in medical education. As much of the information previous to the publication of the Flexner Report has been described in the section of this chapter entitled "Setting the Stage" (p.14), I will begin this review with the contributions made by this Report and then describe the events up to the late 1960's.

According to Harris, Flexner's 1910 Report transformed "medical education in the United States from an art to a science," and had a similar effect on Canadian medical education. At this time, Dalhousie Medical School, which was an affiliate of Dalhousie University, was described as "feeble," as were Laval at Montreal, and Quebec, and Western Ontario. On the other hand, Flexner described McGill and Toronto as "excellent" schools.[52] McPhedran contends that after the Flexner Report there was a flurry of expansion in institutional and curriculum development, combined with the addition of full-time faculty in the basic sciences.[53] Harris reports that as a result of the Flexner Report five of the eight Canadian medical schools joined with

universities and became faculties of medicine, but none of the eight medical schools in Canada were closed.[54] Halifax Medical College became part of Dalhousie in 1911, and by 1920, Queen's, Western, Laval, and Manitoba had followed by becoming integrated faculties of medicine within the respective universities. Referring to Alberta and Saskatchewan, Harris reports that in 1920 the "bases for two additional medical schools had been laid in the West."[55] He also reports that during this time McGill and Toronto embarked on institutional building, fostering the areas of laboratory science and forming alliances with teaching hospitals. These alliances led to the "appointments of two clinical professors" in 1921.[56]

Similar events occurred in the United States. However, the expansion of the remaining medical schools which existed after the Flexner Report was aided by the development of philanthropic foundations such as the Rockefeller Foundation in 1903, which upheld Flexner's idea that research and research facilities were an integral and necessary part of the medical school institution. This force, together with the formation of Johns Hopkins Medical School in 1893, facilitated the expansion of many research facilities in medical schools and saw university-based medical education firmly planted in America.[57]

At this time, medicine not only expanded its physical facilities, but also its subject areas in the field of public health and hygiene, mainly due to advances in pathology and bacteriology. The first of these departments surfaced at Western in 1910, and at Queen's in 1912.[58] These changes led to the development of Institutes of Public Health, and to other schools showing interest in this area of specialization.

The union between medical schools and universities almost immediately allowed the schools to hire full-time staff and to equip new laboratories through financial help which the universities could secure from government and philanthropic organizations - which invested generously in Canadian medical schools. In fact, in 1920 the financial assistance given by the Rockefeller Foundation totalled five million dollars: "$1 million to each of McGill and Toronto; $750,000 to the University of Montreal; $500,000 each to Dalhousie, Laval, Manitoba and Alberta."[59] As a result of these changes, by the "late 1920's all eight pioneer Canadian medical schools were rated Class A by the American Medical Association."[60]

By 1921 medical science was already highly regarded because of the strides it made towards the virtual elimination of typhoid, typhus, and smallpox. However, with

Banting's discovery of insulin, medical science received greater acclaim, resulting in an increase in the number of full-time clinical faculty, and subsequently, the amount of medical research which was being conducted. McPhedran states that the discovery of insulin led to the "federal government's decision to establish the National Research Council in 1934."[61] Furthermore, by 1938 the Medical Subcommittee of the National Research Council was formed - which later became the Medical Research Council in 1960.

Unfortunately the flurry of developments in the 1920's was followed by the depression of the 1930's, when many of the developments in medical education were halted. Some universities, including Dalhousie, survived by enrolling American students and charging them double fees. Nonetheless, despite the depression, McGill, Montreal, and Toronto made strides in clinical medicine. The undergraduate medical curriculum however remained unchanged. As Harris reports, "no further full-time clinical appointments were made and the undergraduate curriculum, though strengthened and refined, changed very little between 1920 and 1940."[62] There appear to be only a couple of exceptions to this trend with the introduction of Psychiatry to the undergraduate curriculum and the development of "a diploma course in art as applied to medicine."[63] However,

this development in Canada was not evident in the United States. Rothstein reports that in 1932 a "survey of 66 medical schools in the U.S. and 2 in Canada found that only 21 of them had departments of Psychiatry" and a major number of these were joined with neurology.[64] It appeared that social and environmental factors of disease had been supplanted by the organic emphasis on illness.

The concentration on postgraduate education after 1920 led to the establishment of the Royal College of Physicians and Surgeons in 1929, which assumed the responsibility of "certifying specialists in specific fields."[65] The initial membership was based on whether a person had a university appointment or on the person's experience and prestige. In 1946, almost twenty years after its inception, the College began to administer examinations for certification in all areas of medicine. Accordingly, by 1960 the College had certified as many as 8500 specialists in twenty different fields.

Before the outbreak of World War II, all qualified applicants were being admitted to medical school - that is, those with senior matriculation. The medical course was six years in duration with the final year as an internship. Of the six years, the first 2-3 years were made up of arts and sciences and the remaining 3-4 years were devoted to the

clinical portion of medical education. When World War II began, however, the medical schools supported the war effort by implementing expeditious training programs for physicians in order to prepare them for military service. As a result, Canadians worked and lived together in the wartime hospitals and "forged strong nationalist links in the previously fragmented Canadian medical profession."[66] Harris reports that after the war there was an increase in applicants to medical schools, which was in part, due to the number of veterans who wished to resume their medical education. The increase in the number of applicants to medical schools also led to a higher standard of requirements for admission; this included the addition of a personal interview which became a standard part of the requirements by 1960. During the war, physicians recognized that specialists earned larger incomes than generalists and received better positions. Consequently, many of the physicians who entered medical school after the war wished to become specialists, creating a shortage of general practitioners. As Harris contends, in spite of the fact that medical school enrolments had increased from "2877 in 1940 to 4244 in 1960,"[67] by the early 1960's there was a serious shortage of physicians in Canada; "by 1960 one of the most serious problems facing the Canadian medical profession was the scarcity of doctors who

proposed to become general practitioners."[68] Nonetheless, Canadian medical schools, responding to the demand for graduate education, developed specialist training programs.

Faced with increasing specialization, technological advances, fragmentation of the profession, and an information explosion associated with advances in medical research, the schools were beginning to envision problems with physical space, curriculum content, and teaching methods. Consequently, the universities, overwhelmed with increasing enrolments, "petitioned the federal government for financial support, arguing that universities were federal institutions, and therefore, a federal responsibility."[69] This manoeuver by the universities to secure federal funding, together with the impact of the Massey Commission (1949), helped to secure the notion that the federal government would fund universities.

As a consequence of the Massey Commission, the University Development Fund was formed, which was largely responsible for the expansion of the universities in the 1950's and 1960's. Accordingly, the expansion in university facilities and personnel provided the opportunity to increase medical research, which subsequently led to an increase in medical knowledge and information. With the increase in available knowledge, the medical profession

became more fragmented with the development of specialties and sub-specialties. For example, in 1929 there were only two medical specialties, but by 1993 that number had grown to over forty.[70] Appropriately, McPhedran has referred to the years between 1930 and 1960 as the "*Period of Incubation,*" whereby "basic science, research, and residency programs grew and were nurtured."[71] It was in these years that the stage was set for the introduction of universal health care in Canada, which began in the late 1960's.

By the time the 1960's arrived there was a move away from the scientific and materialistic emphasis of the pre-War era and a tendency towards love and togetherness as "'flower children' opted out of organized society to form communes and to dream."[72] In the United States this ideology manifested itself during the years of the Vietnam War when society protested against America becoming involved in the battle and public rebellion found its way into other forms including student protests in universities. Students were beginning to become more outspoken in declaring their desires.

The discovery of the Salk vaccine ensured that medical research would be considered a human necessity and Canada saw the implementation of universal health care, which was recommended by the Hall Commission on Health Care in 1965.

The impact of the increase and importance of technology and knowledge was being felt in the undergraduate medical curriculum, and although virtually left unchanged, it was "rapidly becoming a hodge-podge of increasing unrelated subjects."[73] Accordingly, the 1960's also brought with it the recognition that the medical curriculum was in need of overhaul, and many schools followed [Case] Western Reserve University's example and introduced social sciences as a vital part of the education of physicians. This was the first time since the beginning of the twentieth century when most schools were emphasizing the biological aspects of disease that the focus had shifted to more social aspects of medicine.[74]

The Hall Commission Report (1965) predicted that when universal health care was implemented, there would be a shortage of physicians in Canada. In response to this, the government set up the Health Resources Fund which allocated $500 million towards medical education in Canada. These funds, which became available in 1967, enabled established medical schools to expand their existing resources, the implementation of four new faculties of medicine at McMaster, Ontario; Sherbrooke, Quebec; Calgary, Alberta; and Memorial, Newfoundland. All of these had graduated their first classes by the early 1970's. The curricula in these

new schools were different from those in other schools in Canada - all four began with an integrated curriculum which had been resisted in the more established schools. According to McPhedran, the development of the Health Resources Fund "is easily the single most important factor ever to have influenced medical education in Canada."[75]

The monies from the Health Resources Fund also enabled medical schools to recruit full-time clinical faculty and replace part-time teachers. This led to town-gown conflicts, and to hospitals scurrying to find laboratory and office space for the new physician-scientists. The new recruits also took advantage of the increased availability of research funds made possible through government funding programs. McPhedran reports that "Medical Research Council funding grew from $2.3 million in 1960 to $153.2 million in 1984, and is directly responsible for the growth [in research programs]."[76]

As a result of the opening of McMaster's problem-based learning curriculum (PBL), and the integrated curricula at other newly formed medical schools, medical education in the 1970's was alive with the prospect of new types of evaluation. Other, more unobtrusive changes which were being developed at established schools such as Laval and McGill also had to be evaluated for accreditation purposes.

Beginning in the late 1960's and early 1970's full-time educators were hired to assist with evaluation processes and other duties with respect to the educational aspects of medical education. Medical schools, while undergoing self-evaluation of their curricula, were also experiencing accreditation by the Liaison Committee on Medical Education (LCME) which comprised a joint committee from the Association of American Medical Colleges (AAMC), American Medical Association (AMA), and the Association of Canadian Medical Colleges (ACMC).

The years between 1976 and 1992 were referred to by McPhedran as the "Years of Consolidation." These years represented a time when social values assumed the more materialistic attitudes previously experienced in the pre-War era. In conflict with higher public expectations about health care, health professionals emphasized salaries and personal lifestyles, resulting in a loss of professional prestige. Restraint was forced upon universities by a reduction in funds provided by government, although medical schools suffered less because of the availability of multiple funding provisions. Nonetheless, reduced funding was experienced in the research environment because of the overall decrease in government expenditures. In addition, more emphasis was placed on teaching, and faculty members

were beginning to experience increased pressure to involve themselves in the teaching aspect of medical education as well as their research. Contrary to this trend, and as a result of the reduced funding, the late 1970's saw a renewed interest in research by faculty, and this had "replaced education as the primary objective of medical faculties."[77]

Although both Harris and McPhedran succeed in depicting a broad view of higher education and medical schools in Canada, because of the breadth of information neither discussed in depth the curriculum changes which have occurred in this country. Both books are largely reports on institutional building and research/clinical faculty development as opposed to an account of the history of a medical education curriculum in Canada.

In 1993 W. Dale Dauphinee published an article entitled "Canadian Medical Education: 50 Years of Innovation and Leadership" in which he states that "the evolution of Canadian medical education over the last 125 years has closely paralleled that of the American system."[78] Two of the leading innovators whom he credits for this are Abraham Flexner and William Osler, each of whom had significant impact in Canada and the United States. The central focus of this article is on those individuals who made significant advances, in an innovative way, in medical education.

Dauphinee begins with the contributions by early innovators, such as H. B. Atlee, of Dalhousie who made great strides to develop university-based continuing medical education in the clinical setting, and advocated abandoning lectures in undergraduate education. As Dauphinee states "Atlee's sessions were conducted as 'clinics' and were not in lecture format." Furthermore, Atlee felt that "there were two things wrong with education: what they teach and how they teach it."[79]

Dauphinee, like McPhedran, refers to the 1960's as a time of "ferment and unrest." Many changes took place within medical education and many innovative programs were developed. Among these was the creation of the clinical learning centre at Queen's, which opened in 1972. The centre is still in operation and introduces students to various aspects of the physical examination and patient interview. Dauphinee also mentions the development of computer-based examination questions developed for the Royal College of Physicians and Surgeons by William Taylor of Alberta in 1968. Other innovations included a journal club and research program developed by Joe Dope at the University of Manitoba in the 1960's.

The remainder of Dauphinee's article outlines some of the current work being conducted in continuing and

undergraduate education. He concludes by stating that "we can trace Canada's recent successes to several factors: individuals with ideas and vision, and, equally important, a spirit of cooperation and purpose among national bodies and universities that has allowed the ideas and visions to develop."[80]

The following section of this review has evolved from the group of articles which focus on specific courses or particular schools. Since 1995 the journal *Academic Medicine* has published a section entitled "History of Academic Medicine" in which it has invited authors interested in historical developments in medical education to submit articles under this special section. Although the journal is primarily American, it has published some Canadian content. One such article was written by Charles Hayter entitled "Physics for Physicians: Integrating Science into the Medical Curriculum, 1910-1950,"[81] which reviews the history of physics at Queen's University in Kingston, Canada. This article addresses the long-standing problem of integrating basic and applied sciences into the medical curriculum. As Hayter states, "these subjects traditionally have been taught by pure scientists with little interest in the needs of medical students."[82]

Hayter begins his article by examining the history of

basic sciences in the medical curriculum and cites the early contribution of Robert Ramsey Wright, who played a significant role in maintaining the place of sciences in medical education as early as 1903. He also contends that physicians, at the turn of the nineteenth century, were quite sceptical towards pure science. In fact he reports that "this attitude of physicians, which often bordered on hostility towards scientists, restrained the teaching of science in medical schools in Great Britain."[83] In addition to this, scientists had neither the interest nor experience in medicine to integrate their specialties into the curriculum, which resulted in material that students perceived as irrelevant to their education. The emergence of Radiology in the late nineteenth century helped to alleviate this disconnection. The last section of this article is devoted to the efforts of John K. Robertson who was instrumental in the integration of physics into the curriculum at Queen's, where he taught from 1909 to 1951.

Larry Cuban's case study on Stanford Medical School's anatomy program from 1908 to 1990 explores several of the central questions in medical education in the late nineteenth century. Cuban contends that the central issues for medical education in the late nineteenth century were: "What do those preparing to become physicians have to

believe, know, and do, in order to practice first-rate medicine?" and, how can the medical schools best "communicate those beliefs, values, and knowledge, and skills?"[84]

However, one of the key questions which Cuban seeks to unveil and answer through his study is the seeming sturdiness of the 2 years of basic science and 2 years of clinical medicine curriculum instigated by the Flexner Report of 1910. He contends that the sturdiness of the 2 X 2 curriculum has survived in spite of political bargaining, and "intersected tidily with the university's research imperative."[85] Furthermore, he argues that the university's reputation rested on scholarly publications and research, and not on educational expertise. In addition, universities' graduate programs, promotion and tenure, and administration structure "supported and enhanced medical investigation."[86] In conclusion, Cuban claims that the 2 X 2 model of medical education allows medical schools to blend education and research nicely with physician education while offering the latest in medical research findings, and this contributes to the durability of the traditional curriculum.

There are several articles which have focussed on the history of higher education and medicine in the Maritimes. One such account has been written by Colin Howell (1992),

"Medical Professionalization and the Social Transformation of the Maritimes, 1850-1950." In his narrative, Howell investigates how the development of specialization, the standardization of technique - the new view of what constituted science - and the consolidation of professional authority did not serve to "supplant class relationships within modern society, but instead merely redefined the form that those relationships would take."[87]

As stated earlier, philanthropic organizations such as the Rockefeller and Carnegie organizations had a significant impact on the development of medical education in the Atlantic Region. Reid explores the impact of these organizations on the health, education, and economy in the Atlantic region in the 1920's and 1930's. Reid reports that, in the field of medical education, Dalhousie Medical School was given a grant of $500,000 in 1920 by the Rockefeller Foundation. Furthermore, the Foundations perceived the Maritimes and Newfoundland as "underdeveloped areas," while at the same time they were "treated as part of the North American mainstream."[88] Both these organizations invested a "combined total of more than $4 million in the Maritimes and Newfoundland between 1918 and 1940."[89] A large portion of this money was used for the completion of the construction of the Grace Maternity Hospital "which was

to serve as part of the clinical facilities of the medical school." In addition, the funds given to Dalhousie by the Foundations enabled the medical school to develop as a center devoted to public health and its community.[90]

Methods and Methodology

This project is a historical interpretative case study analysis which seeks to understand the contributing factors for the changes and/or stability in the medical undergraduate curriculum at Dalhousie Medical School from 1947 to 1967. Shafer states that there are several uses for history. For instance, he contends that we can gain an appreciation of past events as being similar to the present day ones. However, Shafer further asserts that this appreciation may or may not help us to solve present-day problems, but may help us to avoid them in the future. On the other hand, understanding past events which we may see parallelled today may help to guide current decision-making. In a broader context understanding the past can give us insight into the frustrations, motives, and beliefs of other people, and further our understanding of how the curriculum has evolved.[91]

The methodology of any research paradigm outlines a set of assumptions which are used to guide disciplined inquiry.

Historically, inquirers have focussed on what was termed *positivism*, which is closely associated with the natural sciences. Positivism sets out to extract general laws about society and social behaviour using a deductive method. This method uses quantitative data techniques and separates the researcher from those being researched to arrive at value-free set of conclusions. Latter-day social science researchers have deemed this style of research to be inappropriate because it does not appreciate individual social realties and does not uncover the underlying meaning of social activity from the perspectives of those being studied. Therefore, social scientists have developed several alternate styles which may be more appropriate for research on human social activity. Regardless of the adherence to one or the other set of beliefs, all proponents of a particular paradigm can be said to characterize their assumptions/beliefs under three basic questions. These questions include issues over ontological, epistemological, and methodological viewpoints.[92] In the following section I will outline my approach to the research, taking into consideration these three questions.

In keeping with the interpretive paradigm of research, and using the philosophy of education as an integral part of the analysis, I will seek to tell a detailed story of the

changes/stability of the curriculum at Dalhousie Medical School from 1947 to 1967. In doing so, I will comprehensively describe these events in order to understand how the curriculum at Dalhousie progressed in the years under study. Furthermore, in keeping with the interpretative historical method, I will seek to offer the best and the most likely account of the events surrounding the history of the curriculum. Using this methodology, I will aspire to interpret and explain the significance of past experiences, not merely to document them.

It is understood through interpretive narrative research, in the qualitative sense, that the facts are made up of the values, beliefs, attitudes of the various players who lived in the era being studied. Ontologically speaking therefore, the social reality is contextual and must be viewed from the standpoint of those being studied. Consequently, the story will emanate from the voices of significant participants at Dalhousie Medical School during the time under study. Epistemologically, interpretive researchers recognize the absurdity of stepping outside the context in which they are submersed, and therefore strive, to be as neutral as possible. Consequently, it is recognized that the researcher's values and beliefs may be entangled in the web of facts being examined and must be

acknowledged as an integral part of the research process. It must be recognized that the interpretation of history is by definition selective, and that within the tremendous amounts of available data the researcher must select those items that he/she deems most relevant to the subject of the investigation.

Historical researchers consider the plausibility of the facts as they have been recorded in the past, but these must be compared to other evidence for the same situation. Therefore, in examining the evidence one must look at those statements that appear not to be plausible as well as those which appear more plausible, remembering that certainty in historical research is often not possible. In historical research "absolute precision and certainty are impossible," but the researcher must strive for "intellectual rigor."[93]

Methodologically speaking, the interpretive researcher must rely on as many sources of data as are available. In addition, one must examine the evidence presented in its entirety and not miss evidence that would detract from the comprehensiveness and accuracy of the events. Therefore, in striving for intellectual rigour, we should include both supporting and opposing points of view as they exist in various sources of evidence.

In summary, I have striven to locate my research

methodology from the particular standpoint of an historical interpretive paradigm, and to describe the ontological, epistemological, and methodology standpoints from which I will approach this particular thesis. I will now turn my attention to the logistics of completing the research project.

Methods

The aim of this thesis was to describe the historical development of the undergraduate curriculum at Dalhousie Medical School from 1947 to 1967. The history of events has evolved and was compiled from primary sources, secondary sources, and in-depth interviews. The primary sources were available from the Dalhousie University Archives at the Killam Library, and from the records which were located on site at the Medical School. These documents are quite extensive and include university calendars, mission statements, minutes from curriculum committee meetings, and correspondence between the president of the university and various heads of departments and deans. These documents were examined for both discontinuities and continuities in order to determine what may have affected certain events or changes.

It is assumed that curriculum change is also a reflection of the beliefs of significant participants within

the medical school at a particular time, and that individual beliefs may differ depending on the academic training and cultural background. Accordingly, in addition to the document analysis, I have conducted in-depth interviews with a number of significant individuals who worked in the educational environment of the medical school or were students during the time being studied. The input from these individuals helped to create the historical events which have happened synergistically with the various changes in the medical education curriculum. In addition, comparisons were drawn with other medical schools, and the general medical education environment. Medical schools which have been chosen for the purpose of comparison, were chosen for their similar characteristics to Dalhousie, such as the University of Western Ontario, and others for their geographical connection, such as McGill University in Montreal, Quebec. Other schools were chosen for their innovative curriculum, and leadership in medical education at the time encompassed by this study. The secondary sources included journal articles and historical accounts written by historians.

The primary source documents were reviewed and categorized for: "(a) time of composition in relation to the matter observed; (b) the audience for which the document was

intended; (c) the intent of the composer."[94] The intent of the composer is an important aspect of trying to determine the plausibility and credibility of the document. After plausibility and credibility were established the documents were subjected to external and internal criticism, before the coding and analysis stages.

External criticism involves establishing the authenticity of a particular document or piece of evidence "to be certain that it is not a fake or forgery."[95] Establishing authenticity of a document especially means determining the author and date of an item, which can be achieved through one or all of the following techniques: "(a) content analysis, (b) comparison with the content of other evidence, (c) tests of the physical properties of evidence."[96] Establishing authenticity of archival data is most often performed by the archivists of the collection.

Internal criticism means establishing the credibility of the document. This is done by examining the contents of the document to establish whether the contents are "based on what the author directly witnessed or is secondhand information."[97] This process requires that a researcher examines the literal meaning of the document, as well as certain connotations or intentions that may be inherent in the meaning of the recordings. The researcher must follow

the "rule of context" which requires that the researcher "interpret the meaning of a any particular statement in view of what precedes or follows it."[98]

In reporting the detail of any document, several factors which may have created bias in writing the document, must be considered. One must consider the ability of the composer to report the evidence which could be affected by political, economical, or personal stresses. Documents may be more credible if they are composed at the time of the occurrence of the events rather than a lengthy period afterwards - i.e. diaries versus memoirs. In establishing credibility of a document one must try to establish the intent of the person who was writing it and the nature of the audience for which it was written. While trying to establish internal criticism the researcher should not use his/her values, beliefs and apply them to the historical scene he/she is studying - that is, one must employ "cultural empathy and historical-mindedness."[99] In the last stages of the process of internal criticism one must be aware of any evidence that may contradict the evidence for which credibility is being established. Similarly, evidence which supports other documents is also useful in establishing credibility, since single-source evidence has shaky credibility unless one knows for certain that it is

credible.

The methods used for coding data differ significantly from those used in quantitative research. The researcher organizes the data "into conceptual categories and creates themes or concepts".[100] The concepts for this project have been explained in the definition of terms and include the role of the teacher, integration versus compartmentalization of the curriculum, the value and selection of knowledge, and skills training versus education. The process of coding is entangled in the process of analysis and allows the researcher to review previous questions and reformulate them as necessary which brings him/her closer towards theory and generalizations. Coding also allows the researcher to reduce large amounts of raw data into manageable amounts which then can be categorized and compared. Three types of coding were employed - open, axial and, selective. Open coding was performed through the first pass of the data and its purpose was to locate themes in order to condense the large amount of data into appropriate categories. During axial coding, the second pass over the documents, the aim was to re-evaluate the original themes found in open coding and to begin to organize them into concepts. The objective was to examine relationships or interactions, and to look for concepts which may cluster together. During the final

pass over the data, the major themes were developed and it was possible to make further comparisons and contrasts. Conceptualization and analysis are interconnected to the research process and can occur simultaneously during data analysis.

There are five major qualitative data analysis techniques described by Neuman.[101] They include: successive approximation; the illustrated method; analytical comparison; domain analysis; and ideal types. The method of analysis used for this thesis was a combination of successive approximation and illustrative method. The method of successive approximation allows a researcher to move from vague ideas to concrete details to form a comprehensive analysis. For instance, one of the ideas surrounding the development of the curriculum is the changing role of the teacher. Asking questions throughout the research process as evidence is uncovered can lead to generalizations about this concept and its changing role over time. The illustrative method requires that the researcher "applies theory to a concrete historical situations or social setting, or organizes data on the basis of prior theory." In this way the theory can illuminate a specific situation and give meaning to the data. By using the theory of the changes in curriculum, such as the role of

the teacher, a researcher can examine evidence which portrays this concept and place it in the "empty boxes" of pre-existing theory.[102] In addition, there was an effort to contrast similarities and differences across other cases (medical schools) in North America in order to place Dalhousie within the context of the era with respect to medical education. These types of data analysis were used to complement each other and allowed the creation of an in-depth view of the historical events at Dalhousie Medical School.

1.This Report was a study of medical schools in Canada and the United States, commissioned by the Carnegie Foundation for the Advancement of Teaching and conducted by Abraham Flexner.

2.Larry Cuban, "Change Without Reform: The Case of Stanford University School of Medicine," *American Educational Research Journal*, 34 (Spring 1997) : 105-112 passim.

3.S.W. Bloom, "Structure and Ideology in Medical Education: An Analysis of Resistance to Change," *Journal of Health and Social Behavior*, 29,(December 1988):294-306. See also a discussion by Bloom on education as a process of socialization for the medical profession and its resistance to change this process despite curricular reform in "The Medical School as a Social Organization: The Sources of Resistance to Change," *Medical Education*, 23 (1989):228-241

4.D.Elpern, "On Learning the Art of Medicine," *The Journal of Continuing Education in Health Professions,"* 13 (1993):169-76.

5.K.C. Downie R.S. and Charlton B., "Clinical Freedom and a Mind of One's Own," in *The Making of a Doctor*. New York: Oxford University Press, 1992.

6.A.V. Kelly, "Curriculum Planning and Development-An Overview," in *The Curriculum Theory and Practice*. London: Paul Chapman Publishing, 1989,12.

7.Ibid., 11.

8.Larry Cuban, "Curriculum Stability and Change," in *Handbook of Research on the Curriculum*, ed. P.W. Jackson. New York: McMillan Publishing Company, 1992: 217.

9.Ibid., 218-219. Discussion by Larry Cuban on two types of changes in the curriculum.

10.R.M. Harden, Susette Sowden, and W.R. Dunn, "Educational Strategies in Curriculum Development: The SPICES Model," *Medical Education*, 18 (1984): 284-297.

11.R.S. Peters, *Perspectives on Plowden*. London: Kegan Paul, 1969.

12.K.C. Calman and R.S. Downie, "Education and Training in Medicine," *Medical Education*, 22 (1988): 488.

13.R.S. Peters, "Education as Initiation," in *Philosophical Analysis and Education,* ed. R.D. Archambault. New York: Humanities Press, 1972: 87-112 passim. See also R.S.Peters discussions on the aims of education and its relationship to training and education in "Education as Initiation" a printed version of his speech given as the Inaugural Lecture to the Chair of the Philosophy of Education at the University of London Institute of Education, delivered in December 1963. Also see R.S. Peters, "Part One: The Concept of 'Education'," *Ethics and Education.* London: George Allen & Unwin Ltd.,1966.

14.Ibid.

15.Stephen Abrahamson, "Time to Return Medical Schools to Their Primary Purpose: Education," *Academic Medicine,* 71 (1996): 1.

16.J.C. Walker, "Towards a Contemporary Philosophy of Professional Education," *Educational Philosophy and Theory,* 28;1(1996). See pages 77-79 for a discussion on the training agenda and its effects on setting trends in professional education.

17.R.S.Peters, "Education as Initiation," *Ethics and Education.* London: George Allen & Unwin Ltd.,1966: 55.

18.Francis Schrag, "Conceptions of Knowledge" in *Handbook of Research on the Curriculum,* ed. P.W. Jackson. New York: McMillan Publishing Company, 1992: 276.

19.Ibid., 277.

20. See Murray L.Barr, *A Century of Medicine at Western.* London, Canada: The University of Western Ontario, 1977 for a discussion on the medical school at Western. However, this Barr's account is mainly biographical and institutional, although contains some reference to the curriculum. See N. Tait McPhedran, *Two Centuries of Medical History: 1822-1992.* Montreal: Harvest House,1993 for a account of medical schools in Canada, but contains mostly stories of institutional building and not curriculum. See S.B. Frost, *McGill University, Vol.II.* Montreal: McGill-Queen's University Press, 1984 for some discussion on McGill Medical School and some mention of curriculum.

21.See B.Barzansky and N. Gevitz, *Beyond Flexner: Medical Education in the Twentieth Century.* New York: Greenwood Press, 1992 for a comprehensive review of the medical school curriculum. See K.M. Ludmerer, *Time to Heal.* New York: Oxford University Press, 1999 for a discussion on the evolution of managed care.

See W.G. Rothstein, *American Medical Schools and the Practice of Medicine*. New York: Oxford University Press, 1987 for a general account of American medical education in relation to the practice of medicine.

22.Abraham Flexner's survey of medical schools in North America entitled *Report on Medical Education in the United States and Canada*. Boston: D.B. Updyke, The Merrymount Press, 1910.

23.N. Tsouyopoulos, "The Mind-Body problem in Medicine," *History and Philosophy of Life Sciences*, 10 (1988), 58.

24.S.W. Bloom, "Structure and Ideology in Medical Education: An Analysis of Resistance to Change," *Journal of Health and Social Behavior*, 29 (1988), 295.

25.William Welch was one of the founding professors of the Johns Hopkins Medical School which began in 1893. This excerpt was from a speech and is found in K.M. Ludmerer, *Learning To Heal: The Development of American Medical Education*. New York: Basic Books Inc.,Publishers,1985.

26.Ludmerer, *Learning to Heal*, 187.

27.Elizabeth Blackwell was the first women physician to graduate from a formal medical school. She graduated from Geneva Medical School in New York in 1849. She also fought hard to overcome the scientific takeover in medicine. Her book about her medical career and work is entitled *Pioneer Work in Opening the Medical Profession to Women*. New York: Sources Book Press, 1895.

28.Ibid.

29.Comments on speech contained in K.M. Ludmerer, *Learning To Heal: The Development of American Medical Education*. New York: Basic Books Inc.,Publishers,1985,48.

30.W.G. Rothstein, *American Medical Schools and the Practice of Medicine*. New York: Oxford University Press, 1987, 71.

31.Ibid.

32.J.E. Deitrick and R.C. Berson, *Medical Schools in the United States at Mid-Century*. New York: McGraw-Hill Book Company, Inc., 1953, 13.

33.Rothstein, *American Medical Schools*, 155.

34.Ibid., 155.

35.Deitrick and Berson, *Medical Schools*, 12.

36.Ibid., 13.

37.See E. Ginzberg, "The Reform of Medical Education: An Outsider's Reflection," *Academic Medicine*, 68, (1993), 518-521; Bloom 1988, and Ludmerer 1985 for a review of the aftermath of the Flexner Report, 1910.

38.Ludmerer, *Learning To Heal*, 174.

39.H.S. Berliner, "Abraham Flexner and the Flexner Report," *A System of Scientific Medicine: Philanthropic Foundations in the Flexner Era*. New York: Tavistock Publications, 1985, 114.

40.Flexner, *Report on Medical Education*, 26.

41.Ibid.

42.Ludmerer, *Learning To Heal*, 175.

43.Ibid., 176.

44.Frost, 1984 previously cited is a two volume history on McGill University and includes brief sections on McGill's medical school.

45.P.B. Waite, *The Lives of Dalhousie University*. Montreal and Kingston: McGill-Queens University Press, 1994 is a two volume account of the history of Dalhousie University which includes some sections of the medical school.

46.McPhedran, *Two Centuries*.

47.Ludmerer, *Learning To Heal*, A Time To Heal; Rothstein, *American Medical Schools*; Barr, *A Century of Medicine*.

48.C.R.R. Hayter, "Physics for Physicians: Integrating Science into the Medical Curriciulum, 1910-1950, *Academic Medicine*, 71 (1996), 1121-1217.

49.Cuban, "Change Without Reform."

50.R. Harris, *A History of Higher Education in Canada, 1663-1960*. Toronto: University of Toronto Press, 1976.

51. McPhedran, *Two Centuries*.

52. Harris, *A History of Higher Education*, 12.

53. McPhedran, *Two Centuries*.

54. Harris, *A History of Higher Education*.

55. Ibid., 268.

56. Ibid., 269.

57. J.H. Means, "Homo Medicus Americanus," *Daedalus*, 92/4 (1963), 708-710.

58. Harris, 1976, 269.

59. McPhedran, *Two Centuries*, 15.

60. Ibid.

61. Ibid., 17.

62. Harris, *A History of Higher Education*, 401.

63. Ibid., 402

64. Rothstein, *American Medical Schools*, 154.

65. Harris, *A History of Higher Education*, 402.

66. McPhedran, *Two Centuries*, 19.

67. Harris, *A History of Higher Education*, 534.

68. Ibid., 533.

69. McPhedran, *Two Centuries*, 19.

70. Ibid., 17.

71. Ibid., 22.

72. Ibid., 23.

73. Harris, *A History of Higher Education*, 533.

74.Rothstein, *American Medical Schools*, 153.

75.McPhedran, *Two Centuries*, 24.

76.Ibid., 27.

77.Ibid., 37.

78.W.D. Dauphinee, "Canadian Medical Education:50 Years of Innovation and Leadership," *Canadian Medical Association Journal*, 148 /9 (1993), 1582-1588.

79.Ibid.,65.

80.Ibid., 69.

81.Hayter, "Physics for Physicians," 1121-1217.

82.Ibid., 1211.

83.Ibid., 1212.

84.Cuban, "Change Without Reform," 84-85.

85.Ibid.,112.

86.Ibid.

87.C. Howell, "Medical Professionalization and the Social Transformation of the Maritimes, 1850-1950," *Journal of Canadian Studies*, 27/1 (1992), 5.

88.J. G. Reid, "Health, Education, Economy: Philanthropic Foundations in the Atlantic Region in the 1920's and 1930's," *Acadiensis*, 14 (1984), 65.

89.Ibid.,65.

90.Ibid.,70.

91.See discussion on the nature of history in R.J. Shafer, *A Guide To Historical Method*, 3d ed. Illinois: The Dorsey Press, 1980, 1-11.

92.See E. Guba, "The alternate paradigm dialog" in *The Paradigm Dialog*, ed. E. Guba. Newbury Park:Sage, 1990. Guba introduces

three questions which can be applied to all research paradigms.
(1)Ontological: What is the nature of 'reality'?
(2) Epistemological: What is the relationship between the 'knower' and the known? (or the knowledge to be acquired)
(3) Methodological: How should the inquirer go about finding out knowledge?

93.R.J. Shafer, *A Guide To Historical Method*. Illinois: The Dorsey Press, 1974, 170.

94.Ibid., 83-84.

95.W.L. Neuman, *Social Research Methods: Quantitative and Qualitative Approaches*. Toronto: Allyn and Bacon, 1997, 401.

96.Shafer, *A Guide*, 130.

97.Neuman, *Social Research Methods*, 401.

98.Shafer, *A Guide*, 1980, 151.

99.Ibid.,165.

100.See Neuman, 1997, 421-424 for discussion on coding qualitative data.

101.See Ibid., 426-434 Neuman's discussion on methods in qualitative data analysis.

102.Ibid.,428.

CHAPTER 2

DALHOUSIE AFTER THE WAR

In 1947 the war was over but the after-effects would be felt by Dalhousie University for some time to come. President Alexander E. Kerr had assumed his position with Dalhousie in 1945. Coming from the Pine Hill Divinity School in Halifax, he was a surprise choice for the presidency to many people of the region, within academic circles, and to himself. Peter Waite reports that when Kerr received a call from the Chairman of the Board of Governors, Lieutenant-Colonel K.C. Laurie, informing him that Laurie was coming for a visit, Kerr expected he was going to be told who had been appointed as the new President of Dalhousie. Instead, he was offered the job. However, not all responses were favourable to his appointment as President. A number of faculty members, learning of Kerr's appointment, tried obtaining employment elsewhere in Canada.[1] When Kerr took over the presidency he had limited experience in dealing with large institutions such as Dalhousie. He was known as a narrow administrator,

unwilling to spend more money than was absolutely necessary. Kerr, being a teetotaler, hated alcohol and barred drinking from the campus; students caught consuming alcohol on the university property were threatened with immediate dismissal. Apparently this move to ban alcohol was contrary to what students were accustomed to with the previous president, and therefore some students raised concerns over what to do to socialize during their spare time. At this time, this ruling would have been viewed particularly unfavourably by the veterans, who were older than most students and used to much more independence. To Kerr's credit, however, was the fact that he possessed a broad view of education. In a convocation address in May 1949, he told his audience that "A university education is sterile if it does not result in lasting intellectual curiosity."[2]

The University at this time was suffering from space problems and the lack of student living accommodations. This was due, in part, to the influx of students after the war including the returning veterans. Dalhousie, like other universities in Canada, began to try to buy the old buildings which had been erected during the war near the campus. Other universities, like the University of Western Ontario, began campaigns to raise money to construct new buildings.[3] In Dalhousie's case, there were several

buildings in the proximity of the main university area, known as Studley Campus, that were acquired from the Department of Veterans Affairs and the Department of Public Works. However, the wartime buildings came to Dalhousie with a price, costing $21,000.00 per year to run to house veterans. Kerr, who objected strongly to this, contacted Gordon Isnor (a Senator) and an agreement was reached with the federal government to assist the university with the cost of veteran student housing.[4] This was an agreement between the government and all universities which were admitting veteran students. Consequently, according to the Veterans' Rehabilitation Act, the government paid Dalhousie a subsidy towards each veteran student, which was no more than $150.00 per veteran student plus the cost of tuition. By 1948-49 this amount was eleven percent of Dalhousie's income. However, in spite of this assistance, Dalhousie's space problems would not be alleviated until much later. The new Law Building (now the University Club) would not be built until 1950, and the Arts and Administration Building followed in 1951.[5]

Most universities in Canada experienced an increase in student enrollment after the war. In 1944-45, there were 775 students enrolled at Dalhousie. By 1947-48 that number had risen to 1874 students, of whom 872 were veterans.[6] The

number of veteran students would not decrease until the early 1950's.

The Medical School

The Medical School was situated on the lower campus, east of Robie Street from Studley campus, and comprised several buildings which were in close proximity to the teaching hospitals, clinics, and the medical library. The main buildings were the Forrest Building, the Medical Science Building, and the Pathological Institute. The Forrest Building housed the Anatomy Department and plans were being made for renovations for a medical museum and research facilities, paid for from a grant of $6,600 from the John and Mary Markle Foundation of New York.[7] Histology and Embryology were also taught in the Forrest Building and with the new renovations would also have laboratory space. The Medical Science Building, located on College Street and built with Rockefeller money in 1921, was considered a "modern structure especially designed for teaching and research", where the Departments of Physiology, Pharmacology, and Biochemistry were located.[8] The Pathological Institute on University Avenue, through an agreement with the Provincial Government, was used for teaching Pathology, Bacteriology, and Immunology. Also located in the area was the Dalhousie Public Health Clinic,

(later known as the Clinical Research Centre), which was built in 1924 to serve the needs of indigent Nova Scotians; the rich could afford their own physicians. The clinic served as an excellent out-patient clinical teaching unit and provided facilities for the study of preventive medicine, a discipline which would grow in importance in the latter half of the twentieth century with the increase in medical knowledge of the link between lifestyles and health.

Prior to 1938, the Dalhousie Medical Library collection was disorganized and scattered, and there were few reading rooms available. The library was located in front of the Forrest Building, where the Kellogg Library is today. Through the efforts of President Carleton Stanley in 1937, the $100,000 needed to build the new library was partially donated by the Carnegie Foundation ($50,000). Another large portion of the funding was acquired through J. C. Tory and Sun Life Assurance, and the remainder through private funds.[9] As a result, by 1947 the building was described as a modern library with a full-time trained medical librarian, reading rooms, and a collection of "over 17,000 volumes and most of the medical periodicals of the world....."[10] Indeed, Dalhousie claimed to have one of the finest libraries of any Canadian medical school at that time,[11] albeit this may have been overzealous on Dalhousie's behalf since Western reported having 33,000 volumes in its

collection in 1947.[12]

President Kerr was enthusiastically supportive of the Medical School's endeavours to provide the best clinical facilities for teaching. Kerr was committed to enlarging and improving the Medical School and its facilities. In his 1945-50 Report he commented that:

> the remarkable expansion of the Victoria General Hospital for the Medical School of the University cannot be too strongly emphasized. For the existence of a first class hospital is essential to the successful operation of a Faculty of Medicine, the primary task of which is the training of skilled and competent medical men and women: and the new Victoria General has been acclaimed by outstanding authorities in medicine as one of the best equipped hospitals in the British Commonwealth.

Kerr went on to comment that not only should the hospitals have the best equipment but that they should also "appeal to young able physicians and surgeons who wish to combine research in the problems of health with the practice of their profession."[13]

In 1947 the main teaching hospitals were the Victoria General Hospital, The Halifax Infirmary, The Children's Hospital, The Grace Maternity Hospital, and The Camp Hill Military Hospital (operated by the Department of Veterans Affairs). During the fifth year internship students also participated in rotations in New Brunswick, mainly at the Saint John General, but also at other affiliated hospitals. For instruction in mental diseases the students visited the

Nova Scotia Hospital in Dartmouth (NS). The hospitals were described as well-equipped, and provided ample "clinical material" (patients) for the teaching of medical students.[14]

At Dalhousie Medical School Dean H.G. Grant, known as 'Pat' to his close associates, had been Dean since 1932. He was well-liked, easy-going, and generous, but often stepped into tumultuous waters, especially where President Kerr was concerned. Nonetheless, this did not deter his ambitions to produce excellent physicians for the Atlantic Provinces, often keeping track of good students at Dalhousie, hoping that they would stay close to 'home' after they graduated.[15] Respected by his colleagues, Grant was reported to have been "quietly effective in developing Dalhousie in the 1930's," and continued to be devoted to "improving the level of practice of physicians."[16]

Whatever ambitions Dean Grant may have had at this time for producing physicians for the Maritime Provinces, were dampened by the inadequate facilities and lack of staff which existed at Dalhousie after the war. This situation was worsened by the enormous increase in the number of veteran students, who arrived home from the war wishing to finish their education or start new careers. In a letter from Dean Grant to Kerr, dated April 28, 1947, Grant revealed that "after next year's first year's class is admitted, we would have 108 veterans in the medical school,"

which would be approximately 50% of the total medical student population in the 1947-48 year.[17]

The serious overcrowding, as a result of the high numbers of students being admitted, made teaching the laboratory subjects difficult and complex. In Grant's 1947 yearly report to the President he revealed that "Because of the increased admissions, to the first year [59], all laboratories were seriously overcrowded, and in some departments (Histology and Physiology) it was necessary to repeat each laboratory class twice." The Dean concluded his report by admitting that Dalhousie was "suffering from post war conditions. The school is over crowded and we need more staff, more space and more facilities for teaching and research."[18]

Teaching and research space were not the only facilities needing attention. In 1947 Dr. M.G. Whillans, Head of Pharmacology, wrote to Grant relaying his fears over the "dangerous elevator" in the Medical Science Building. At this time the animal quarters were on the third floor of the building. The elevator was described as

> hand-operated and man-powered. Because it is so difficult to operate, loads for the animal quarters are carried, on the back whenever possible..... Animal refuse is tied into bags and thrown from the roof...[19]

Clinical facilities and equipment were also inadequate. Dr. H.B. Atlee, Head of the Department of Obstetrics and

Gynaecology, wrote a forceful letter to the Dean about the situation at the Grace Hospital in December 1948. He wrote that because of the lack of X-ray equipment it was impossible to get pictures done during labour. In addition, "The patient has to be taken by taxi to the V.G., has to wait her turn to the X-Ray machine, and then be taken back again." He went on to write that other things impinged on the ability to teach students: "We are a Salvation Army Hospital and the Army, in my estimation has lost that fine progressive reputation its founders gave it." The Salvation Army, in his view, was far more interested in getting away with spending as little money as possible. Other failings, according to Atlee, of the "unfortunate institution" were that it was an "architectural monstrosity" with "no real teaching facilities."[20]

Sources of Funding

Although the Rockefeller Foundation had contributed $150,000 in 1945 for rooms and equipment for teaching, inadequate facilities and poorly structured buildings would need additional attention in the next few years. To accomplish this, Kerr and Grant actively sought funds to try to build Dalhousie into the leading Canadian university in Atlantic Canada. At the spring convocation on May 13th, 1947, the President announced in his address that the

university was looking for funds from the public to support the university building new facilities. "Dalhousie is not only important but indispensable to the well-being of the whole North Atlantic area," he argued, and "a gift to Dalhousie is a contribution to the common good and an investment in the young people for whom we should be proud to provide an education..."[21]

In addition to gifts from philanthropic organizations and the public, funds were provided by the Provincial Government in the amount of $100,000.00. Kerr announced that this grant would be a contribution to the Building Campaign and would be used for buildings in Medicine and Dentistry. In addition, at a Senate meeting on October 14, 1947, it was revealed that "in the past three years the sum of fifty-five thousand dollars ($55,000) has been allowed for in the annual estimates of the governments of the Maritime Provinces and Newfoundland to assist the work of the Medical and Dental Faculties of the University."[22] Although this support helped alleviate some of Dalhousie's financial woes, this support did not compare to the larger sums acquired by other centres in Canada. In particular, Western (Ontario) received $630,000 for construction from the Ontario government during its campaign of 1945, in addition to its annual grant of $350,000.00. The school's goal of $2,500,000.00 was reached by 1952.[23]

The Rockefeller Foundation also contributed to Dalhousie in other areas. Kerr received a letter on June 13, 1947 from Norma Thompson, secretary of the Rockefeller Foundation in New York, informing him that "at a meeting of the Executive Committee....action was taken providing up to $19,500.00 to Dalhousie for the maintenance of teaching in psychiatry..."[24] The grant would provide $6,500 each year for the next three years for Psychiatry teaching. The total budget of the department at that time was $9,000.00, of which $2,500 was supplied by the university and the remainder by the foundation. The Rockefeller Foundation contributed financially to other departments at Dalhousie and renewed a grant for teaching facilities at the Victoria General Hospital until June 1948. The donations given to Dalhousie by the American philanthropic organizations might have been, in part, due to Dr. Grant's appointment to the presidency of the Association of the Canadian Medical Colleges, which was an affiliate organization to the American Association of Medical Colleges, and to the world-wide prominence of the Head of Psychiatry, Dr. R. O. Jones.[25]

By May 11, 1948, it was recorded that "the Medical and Dental Schools in the University are now receiving the following annual grants:

$50,000 from Nova Scotia
$10,000 from Newfoundland
$10,000 from New Brunswick
$3,000 from Prince Edward Island"[26]

Not only did the provincial governments provide funding to alleviate some of the space problems in the Medical School, but the Department of Veterans Affairs allocated funds for renovations to the attic of the Forrest Building which would accommodate the extra space needed for the influx of veterans.[27] Nevertheless, although the governments and philanthropic organizations were contributing to Dalhousie, the Medical School still relied heavily on student tuition as one of their major sources of funding.

Although the university was receiving financial assistance at this time, the cost of operating the Medical School, which was in addition to providing funds for capital expenditures, was also rising. From 1932 to 1947 the budget of the Medical School rose by $120,260.86.[28] In 1947-48 the operating budget for the Medical School was $217,330.62, which increased to $276,448.92 in 1949-50. Faculty salaries rose from $90,826.10 in 1945-46 to $130,491.30 in 1949-50. On the other hand, financial support for the school totalled $236,165.00, plus $150,000.00 from the Rockefeller Foundation for facilities, and $100,000.00 from the Nova Scotia government for buildings. Research grants from

outside sources totalled $18,900.00 of which $15,000.00 went to Biochemistry.[29]

Admission and Student Body

In 1944-45 there was a total of 175 medical students enrolled at Dalhousie which increased to 271 by 1949-50, with over half consisting of veterans. In 1946 there were fifty students admitted to the Medical School. As of 1947 that number rose to 58, of whom 51 were veterans; plus 12 dental students. In 1947, 300 applicants wished to seek entrance into medicine and very few students were admitted from outside the Atlantic Provinces.[30] In 1947 only 5 students were classified as 'foreign', there were only 2 women, and of the total of 204 students, there was 1 'Negro' student, who was in second year.[31] The 1947-48 Calendar stated that "Primary consideration is given to British subjects, especially residents from the Maritime Provinces and Newfoundland."[32]

The Medical School gave preference for admission to veteran applicants. They were admitted as long as they met the minimum scholastic requirements, and had satisfactory letters of recommendation. Dr. Atlee stated at a meeting of the Committee on Studies that "every effort should be made to accommodate extra students in this post-war period, even

if teaching standards were lowered."[33] At this time there were very few interviews conducted, although, occasionally the Dean or a delegate would visit the pre-medical schools in the Atlantic Provinces, and interview individual students or speak to the students as a group. For the incoming students in 1948 admission was based on scholastic attainment and well qualified veterans were given preference over civilians as long as their academic records were adequate. At a meeting on December 4, 1947 between the President, the Registrar, and the Deans of Medicine and Dentistry, it was agreed that for the next incoming class, "well qualified veterans should be given preference over civilians for the first thirty-nine positions in the medical school and the first eight in dentistry." Veterans and civilians would compete equally for the remaining positions, and it was proposed that women applicants were to "considered on the same basis as male applicants."[34] At that time there were fifty-eight placements available in Medicine and twelve in Dentistry.[35] In addition, in order to qualify for admission the veterans had to be eligible for benefits under the Department of Veterans Affairs. At the University of Western Ontario, the veterans were admitted to a special medical class which encompassed a five year medical program including the pre-medical year into the

medical school curriculum. This plan was introduced in order to relieve the congestion in the Faculty of Arts and Science due to the increase in the number of students entering the university after the war.[36]

In 1947-48, two years of college work after senior matriculation, which included Latin, were required before applying for Medical School. According to the 1947-48 Calendar the pre-medical courses required for entry into Medicine were: English 1; History 2; Mathematics 1; Chemistry 1,2,4; Physics 1; Biology 1, Zoology 2; and, an elective (German was recommended).[37] Although Latin was required at this time, at a meeting of the Senate on February 13, 1947 "Dean Grant informed the Senate that at a recent meeting of the Faculty of Medicine it was decided to abolish matriculation Latin as a requirement for admission to the first year medicine."[38] By January 29, 1948 the Provincial Medical Board (PMB) had agreed that "in the case of Dalhousie University, the Board will not hold matriculation Latin as a strict preliminary requirement for admission to the study of medicine."[39] At other schools the admission requirements were similar. In 1945 Western University Medical School implemented a revised curriculum of the two-plus-four program. That is, "two years of study in the Faculty of Arts and Science after Senior

Matriculation and four years of instruction in the Faculty of Medicine."[40] Students were required to take science subjects - such as Botany, Zoology, Physics and Chemistry - and Literature, History, Philosophy, Psychology, and Economics.

In 1947 the cost of tuition also increased; students previously paid $343.00 which rose to $404.00 for the 1947-48 academic year. The increase, approved by Dean Grant, was thought unlikely to "prevent many good students from coming to Dalhousie."[41] Furthermore, foreign students were required to pay $250.00 in addition to the regular tuition fees if they wished to study at Dalhousie.[42]

Scholarship assistance was minimal at Dalhousie Medical School at this time. In 1946, Dean Grant was attempting to persuade the Provincial Medical Board and the Medical Society of Nova Scotia to provide scholarships for medical students. Apparently the Medical Society was "well in funds now although not to the extent of the Provincial Medical Board," as Grant wrote to Kerr in 1946, and he pursued scholarships which would total $150.00-200.00 per year.[43] In addition, the Kellogg Loan Fund provided some financial assistance for students. The fund, valued at $16,500.00, had been set up in 1942 to help students through the accelerated program during the war in order to produce

physicians for service overseas. Approximately $4,000 of the fund was set aside for medical student loans at an interest rate of two and one-half percent, which would mature one year after the student graduated. All medical students were eligible and candidates were required to apply in writing to the Dean of Medicine.[44]

By September 1949, there were five entrance scholarships available to medical students valued at $500.00 each: one to a resident of Cape Breton Island; two to mainland Nova Scotia; one to New Brunswick; and, one to a resident of either Prince Edward Island or Newfoundland. Students were required to provide transcripts of matriculation and pre-medical records and three letters of recommendation "dealing with the candidate's truthfulness, unselfishness, idealism, and other qualities likely to produce a good physician..."[45]

The veteran students were much better off financially than their non-veteran counterparts. Under the incorporation of the Veterans' Rehabilitation Act, 1941, the federal government provided "$60 a month to support veterans who wished to attend university or do other training, $80 a month for married veterans, with an additional modest provision for dependents."[46] The government also paid fees due to the university, such as

fees for microscopes, equipment, examinations, and, laboratory deposits. The allowances were awarded for the amount of time equal to the time that the veterans had spent in service, which proved sufficient for most students to complete their education. If there were any fears that government-assisted veterans would take advantage of the money allowed them for their schooling, they were soon eliminated. As Dean Grant reported to the American Medical Society in 1947, the first year veterans were better students than the first year pre-war non-veteran students.[47]

The total cost of medical education for the five undergraduate years at Dalhousie in 1947 was $1610.00. This figure was higher than at nearly all of the other eight Canadian medical schools; the only exception was Western Ontario, which cost $1795.50. The least expensive was Laval in Quebec, which charged $1,110.00. These fees included registration, tuition, degree, laboratory deposit and caution money, library, health service and student societies.[48] In addition, medical students incurred fees not borne by other students. Microscopes, which were previously bought by the students through the university, were not available in the preferred size and quality after the war. As a result, "Until such time as microscopes are again available at a price within the means of the average

student, the University will rent to each student requiring an instrument a suitable microscope at $30.00 per session " and this would be paid at the same time as tuition. Other fees included the cost of 'Diagnostic Sets' for fourth year students, which included an otoscope, and other ear and eye instruments. Additional accessories included stethoscopes, skin pencils, thermometers, and a "hammer for eliciting reflexes."[49]

Medical students were required to pay for their certificates and diplomas. The M.D.,C.M. Diploma fee which was "payable before the fifth year or final examinations and returnable in case of failure" cost $20.00.[50] Furthermore, if students did not present themselves for their degree at convocation, they were required to pay an extra fee:

> additional fee when a degree is conferred *in absentia* at the Spring Convocation..... $10.00[51]

Graduates and Evaluation

The 18 men and one woman who graduated in June of 1947 with the degree of Doctor of Medicine and Master of Surgery (M.D.,C.M.) would be the last class to repeat the Hippocratic Oath in Latin; as of November 1947 the wording would be changed to English.[52] Candidates accepted for Medicine were required to pass five professional examinations. In addition, the work throughout the year was

also tested at Christmas and during the session, and these marks would be considered when computing the marks for each professional examination. The sessional examinations would be held on the dates set by the University and would be posted on notice boards throughout the School, and the professional examinations would be held at the end of each year. For example, part of the First Professional Exams was made up of one paper on each of Anatomy, Histology and Embryology, which were also tested during the session by both oral and practical examinations. Physiology and Biochemistry were tested orally and also by one written paper in the professional examination. In addition, during the year there were practical examinations in these subjects.

The Fifth Professional Exams, taken at the end of fifth year, were conjoint examinations conducted by the university and the Provincial Medical Board of Nova Scotia, as were some of the Fourth Professional Exams.[53] After successful completion of the fifth-year examinations students were awarded the degree and the license to practice. The testing method of the Final Professional Exam was both oral and practical in every major clinical subject. These subjects included Medicine and Therapeutics, Obstetrics and Gynaecology, Surgery and Surgical Anatomy.

There were a number of requirements with which students had to comply before being admitted to examinations. For instance, the School held the right to refuse a student access to examinations if he/she did not punctually attend classes 80 per cent of the allotted time. They also had to complete all sessional work and pass all of their previous examinations.

Before being admitted to the Final Professional Exams a student was also required to attend various rotations in the prescribed hospitals. In the 1947-48 Calendar it was stated that "attendance on at least 20 maternity cases and, in addition, the delivery under supervision of 10 cases" was required.[54] Attending post-mortems was also a prerequisite and students had to attend these procedures for a period of eight months at the Pathological Institute. Students were also expected to complete investigations "of domiciliary and occupational conditions in relation to the illnesses of an assigned number of patients of the Public Health Clinic."[55] In addition, students were obligated to gain a knowledge of dental conditions as they related to medical practice, and to complete a twelve-month intern rotation in the fifth year. This fifth-year internship was required at few schools in Canada and almost none in the United States. By 1950, the medical schools at McGill, Toronto, Western

Ontario, and Alberta graduated students at the end of the academic year, before the internship year.[56] At Western in 1945, the final-year (fourth-year) students applied for internship through the Canadian Intern Board. The aim of the Board was to make it easier for students to get internships without overstepping the individuality of the hospitals.[57] Therefore, the internship year at most schools was considered a graduate year, and not an undergraduate year as it was at Dalhousie.

The graduates, before being admitted to the Final Professional Exam, would also "be required to subscribe to the following declaration with regard to their age:

Halifax,_____19___

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery do hereby declare that I have attained the age of twenty-one years (or, if the case be otherwise, that I shall have attained the age of twenty-one before the next graduation day).

(Signed)_____[58]

Previous to be being admitted to the degree students would have to sign an oath or affirmation which was

presented in the 1947-48 Calendar in Latin, entitled **Sponsio Academica**. The affirmation was considered a declaration by the student to their dedication to the "art of medicine" and to promise to dedicate themselves to the proper practice of medicine in order to "unite the sick with health until they become well."[59]

The results of the examinations were posted in the Dean's Office and arranged in two lists; Pass and Distinction. In order to receive a pass mark a student had to achieve at least 50% in each subject. To be awarded a mark of distinction the student had to achieve a mark of 75% or better. Those students who received a pass mark were listed by name in alphabetical order. However, students who achieved a distinction mark were listed in order of merit. This method of publicly posting examination marks unnerved some of the most academically-minded students. One student recalled that some of the more apprehensive students would have to lessen their leeriness with several beers before reading their results, which were consequently read at a very early hour in the morning when there was little risk of confronting faculty members.

Faculty Responsibilities/Teaching

After the war practically all departments in the

Medical School were marked with increased activity. Most of the clinical teaching was conducted by practising physicians of Halifax on a voluntary basis, while nearly all of the basic science departments had full-time salaried heads of departments. In the 1947 yearly report Grant wrote, "Perhaps the most important forward step the Faculty has taken in many years has been the establishment of a full time chair of Medicine."[60] Dr. C.W. Holland received a basic salary from the University of $5,000 a year and was given the privilege of consulting to add to his income. In addition, by 1948, there were "three junior men who do part-time teaching two mornings a week" on a voluntary basis.[61]

In 1949 the new Department of Research Medicine was formed, under the auspices of the Department of Medicine, and Dr. Martin Hoffman from McGill was appointed Research Professor through funding from J.C. Tory. Unfortunately, this appointment would not last. In August 1951, referring to his frustration with the lack of progress and funds, Hoffman submitted his resignation to President Kerr stating, "the existing conditions do not make this [position] possible I have no alternative but to submit my resignation."[62] It is not clear from reading the records whether this department was re-established or whether a replacement was hired to succeed Dr. Hoffman.

Other than Medicine, Psychiatry was the only clinical department which had a salaried head of the department. Although Dr. Robert Jones was part-time, he was paid $3000.00 annually, from University funds.[63] This was made possible because of a grant from the Rockefeller Foundation to assist in the expansion of Psychiatric teaching, and to the Provincial-Dominion Health Grants.

In order to receive a clinical appointment a physician had to be appointed by the President, after which the appointment was approved by the Board of Governors. The heads of departments, with the permission of the Dean and the President, would explore the availability of potential candidates, by advertising either in journals or newsletters. In spite of the advertisements, more often than not, these potential candidates were found through colleagues in Britain or the United States. After an appropriate person was found, the name would be submitted to the President for approval and then 'rubber-stamped' by the Board of Governors.

Dean Grant thought that, ideally, all clinical departments should have a clinical teacher who was head of the department and paid by the University, and would be assisted by full or part-time teachers. Although the number of part-time teachers had risen to sixty-one by 1948,

these plans would not materialize until the early 1950's. In Surgery, Pediatrics, Obstetrics and Gynaecology, the heads of departments were all part-time voluntary teachers.

In an attempt to bring together the basic and clinical sciences a number of basic science teachers in Anatomy, Physiology, Biochemistry and Pharmacology were given appointments as consultants to the Victoria General Hospital. Dean Grant thought that this would improve "the hospital service and also the preclinical teaching."[64] The pre-clinical departments, although overworked, fared much better than the clinical with respect to full-time teachers. Grant writes in his letter to Kerr in 1948, "In our pre-clinical departments, that is Anatomy, Bacteriology, Pathology, Biochemistry, Physiology and Pharmacology all of the Professors and Assistant Professors are full-time."[65] At that time, Dean Grant was Head of Preventive Medicine and taught Hygiene, while Dr. Chester Stewart, who would later become dean of the faculty, was full-time in the department as Professor of Epidemiology and Nursing Education.

Although better staffed than the clinical departments, the pre-clinical departments were not without their woes. Pathology appeared to have considerable trouble trying to attract suitable staff. In 1948 the school was trying to hire an Assistant Pathologist and in response to an

advertisement in the British Medical Journal they received a letter from a Dr. Young of the University of Aberdeen, Scotland. He wrote:

> I showed your letter to my two senior lecturers but neither of them is interested. Their present salaries are not far short of the salary mentioned for your Assistant Professor of pathology and they are likely to receive some increment as from July 5, when the new National Health Services begins to operate in Scotland. Also, the war years interfered sadly with the training of pathologists so that the demand for experienced men in Scotland and in England now exceeds the supply.[66]

At times Kerr and Grant disagreed. More often than not it was over staff and salaries. On one occasion President Kerr was out of town and an agreement about the new staff member's salary had to be completed by telegraph between the Dean and the President. Grant was attempting to hire a pathologist, Dr. J.W. Abbiss from Birmingham England, and wished to compensate him for his travel. Somehow between telegraphs there was confusion concerning the amount of salary which should have been offered to Abbiss. On Kerr's return he discovered that Grant had offered the new pathologist $2500.00 salary plus $250.00 travelling expenses. Apparently, Kerr understood that the travelling expenses were to be included in the $2500.00 salary. In a terse, hand-written letter from Kerr to Grant on August 23, 1947 Grant was told in no uncertain terms to "set it straight."[67]

It was well known to the Dean and to the faculty that more money was needed not only to attract suitable staff, but also to encourage the current staff to stay at Dalhousie. The salaries were not always based on the years of experience as a report from the Department of Physiology reveals. Dr. Weld referred to a technician as he wrote: "..Brown has just been married and the question of salary becomes even more important....His years of service, & marital status entitle him to this [more money]...[68]

After the war many textbooks were out of print and long waiting periods before they were available were not uncommon. In a letter to Mr. W.L. Harper, the business manager of the university, from Dr. Mainland (Head of Anatomy), it was relayed that the book he wished to use for his course was out of print and would not be expected for two years. Dr. Mainland wished to make "multigraph copies" and distribute these to students at a total cost of $1365.00.[69] In his letter he asked for university funds to cover the cost, explaining that he would prefer not to raise the money by loan nor to take it out of his personal funds. In an effort to get the cost covered, he assured the university that if the students did not buy the books, he would cover the cost himself. In addition, he proposed a number of other scenarios and offered guarantees that the

university would not lose its money. For example, he promised that, if he were to get another job, he would buy the books and take them with him; if he were to die before they were all used....his estate would buy them; and, he also promised to house them where they would be safe from fire.[70]

By 1950 the staff had increased significantly to twenty-three full-time faculty and eighty-nine part-time. The cost of faculty salaries had grown from $90,826.10 in 1945 to $130,491.30 in 1949-50.[71] Although Dalhousie's staff had grown in numbers, there was still a lack of equipment, and most departments were overburdened with teaching responsibilities. This situation made research almost non-existent in the clinical areas and scarce in the basic science departments.[72] On February 11, 1947, Dr. Mainland reported to the Committee on Studies that there were six research projects being financed from the research fund with total expenditures of $1740.00.[73]

In 1949 Dr. Aitken, a part-time teacher in Medicine, wrote a report about his teaching responsibilities in response to a request from Dean Grant. The following excerpt is a section of his letter and outlines the type of teaching burdens most part-time teachers experienced at the school at this time:

1. 2nd year-----Physical Diagnosis (Neurology)

   Beginning (this year) on 26 Sept. and going on for the greater part of both terms— 6 hours per week, consisting of 7 hours preliminary lectures with the remainder clinical instruction.

2. 3rd year

   At present, one 2 hour session only per month at Camp Hill of group clinical instruction.

3. 4th year

   Instruction to clinical clerks attached to ward or APED

   (A) V.G.H. [Victoria General Hospital] wards--daily morning rounds.

   (B) V.G.H. APED [?]--Thursday morning.

   (C) V.G.H. Chest Clinic--Tuesday afternoon.

4. Miscellaneous--e.g., two Therapeutics to combined 3rd. and 4th. years given this term.[74]

The Curriculum of 1947

The medical curriculum of 1947 comprised five years of academic and clinical work. The first two years encompassed the pre-clinical subjects and included most of the basic sciences relevant to medicine, while the third and fourth years incorporated mainly the clinical subjects. The fifth

year consisted of a twelve-month rotating internship, during which students spent a period of time in the hospitals in the different clinical disciplines. Students were awarded their degrees and their licenses to practice after successfully completing their internships and the Final Professional Exams. As of 1947, the first, second and fourth academic years consisted of eight months (or 28 weeks) duration; beginning in September and ending the second week in May. The third year was 34 weeks in duration and the fifth year which began immediately after completion of the fourth year lasted twelve months. As of 1948, Western had reduced its academic year from thirty-six to thirty-two weeks. Apparently, this change at Western was an attempt to conform to the new regulations enforced by the College of Physicians and Surgeons of Ontario.[75] A synopsis of subjects by year in the curriculum including the number of required hours for each subject is displayed in Appendix One.

Departments and Courses

Basic Science

Dalhousie's basic science curriculum in 1947 was still taught on a discipline basis. This meant that subjects such as gross anatomy were taught over the first and second years of the basic science curriculum, parallel to other subjects

such as Biochemistry. At this time, some schools in the United States were teaching under the block system which saw students completing anatomy or biochemistry in a block fashion in first year. That is, they concentrated on the topic in a block and then proceeded to the next subject.[76]

The Head of the Department and Professor of Anatomy was Dr. Donald Mainland. Also in the department was Dr. R. Saunders who by September 1947 was assigned full-time as Director of the Medical Museums. In his place the Medical School hired Dr. I. Murray, as Assistant Professor, who graduated from Dalhousie in 1942. There was a part-time instructor, Dr. Roberta Nicholls, who was also a practising anaesthesiologist. She had been with the department since 1939 and assisted with the afternoon laboratory sessions. In addition, there was a full-time technician and other part-time demonstrators and a technician.[77]

Dr. Mainland, an educator at heart, wished to teach his students gross anatomy but aspired to "help students acquire a method of study rather than to accumulate facts."[78] Dissection was, he believed, an unfortunate necessity, for he felt that gross anatomy should have been taught with the living subject. This appeared to be one of the earliest acknowledgments at Dalhousie of the role that methods of education could play in teaching medical students. In spite

of his beliefs, dissection began in the first term and continued until the first term of the second year. The students studied the upper and lower limbs, abdomen, thorax, back, brain and spinal cord. During the second year students studied the head and neck and reviewed the material from the first year. The shortage of cadavers necessitated having six students share one body. Other teaching media included graphs, diagrams, and pictures. In an attempt to try to help his students to learn anatomy on living subjects, the students "carried out palpation and muscle testing on each other and occasionally on patients."[79] The required text was written by Dr. Mainland, Anatomy as a Basis for Medical and Dental Practice, although other books were available through the laboratory and in the library. The Anatomy Department was also responsible for teaching the 12 dental students and for a general course for arts and science students.[80]

Histology and Embryology was a smaller department affiliated with the Anatomy department. Dr. R. J. Bean was Professor of the department and Mrs. Elizabeth S. Bean was a part-time instructor. They were assisted by a part-time technician. However, by 1952, Dr. Bean and Mrs. Bean retired because of his ill health. The Histology course consisted of laboratory work comprised of two three-hour

laboratory sessions per week which extended throughout the first year. There were no lectures given on this subject; instead, "lantern slides both black and white and Kodachrome, are used to illustrate formal talks."[81] The students were required to examine between 100 to 150 slides for the year, but were not allowed to remove them from the laboratory. They were required to draw "each section in notebooks which must be kept in the lab."[82] The primary textbook was Bailey, Text of Histology. However, more books were available through the laboratory. Histology was also taught to the dental students who took the courses with the medical students.

In addition to the main Anatomy course, Dr. Mainland and Dr. Bean conducted a course in Embryology which was closely associated with the Histology course. This course was structured so that students attended one didactic lecture and one three-hour laboratory session per week throughout the first year. The content of the course dealt mainly with "the problems of fertilization, segmentation, the development of the embryo..."[83] Animals were also used for teaching in the lab, and students could work on samples from pigs, rabbits, chicks or humans.

The course in Structural Neurology, taught in second year primarily for medical students, was also the

responsibility of the Anatomy department. The main method of teaching was a combination of didactic lectures and demonstrations together with clinical lectures at the Dalhousie Public Health Clinic.

In 1947 Dr. C.B. Weld was Professor and Head of Physiology. Later he would also be appointed as 'Secretary to the Faculty'. He was remembered fondly by students as kind and a little eccentric, and known for his 'dog demonstrations' which invariably would not work. In these demonstrations, he would attempt to anaesthetize a dog in order to perform a procedure on the animal, who would promptly wake up at the most inopportune moment. In teaching sessions he would pose questions to students for which there was no feasible answer. When the students tried unsuccessfully to answer, he would inform them of the impossibility of answering; students soon learned not to attempt to answer his questions![84] Dr. Melville Schachter, a graduate of McGill, was hired just prior to the beginning of the Fall term of 1947 as Assistant Professor. Mrs. J.P. Milner, who received a Masters degree from British Columbia, and Mr. Carl Tupper, were also employed half-time as demonstrators.

Physiology consisted of both lab and lecture time and was given throughout the first and second years. In the

first year students studied elementary physiology as it related to the "fundamental application of physics and chemistry to physiology."[85] During the first year students attended two lectures per week, and in the second term they also attended two three hour labs per week. In the second year, students studied pathological physiology and covered some of the material given in the first year. There were two lectures per week during the second year and labs were held once per week during the first semester. Animals were used extensively for laboratory work. Consequently, students conducted experiments on frog muscle, turtle hearts, dogs, and cats. In the second year students conducted experiments on themselves and each other, which consisted of studies on "vision, hearing, basal metabolism, lung gases, blood gases, fatigue...."[86]

The Professor of Biochemistry was Dr. E. Gordon Young who was assisted by Dr. Robert Begg as a full-time assistant professor, and two part-time demonstrators. Unlike other departments, Biochemistry employed a "full time laboratory boy who is in charge of the stockroom and the preparation of solutions."[87] Dr. Young was responsible to give all the lectures in Biochemistry to the medical students. The first-year course consisted of laboratory work, lectures, and conferences with lectures of one-hour duration and the

labs lasting three hours. In the first year, the students studied static phases of biochemistry, while in the second year they concentrated on the more physiological aspects of the subject. Students attended two lectures and two three hour lab periods per week in the first term of the second year. Dr. Begg, in conjunction with the Departments of Pathology and Bacteriology, presented a course in Laboratory Diagnosis to third-year students.

The Associate Professor of Pharmacology was Dr. M.G. Whillans, who was also Head of the Department. The full-time assistant professor was Dr. John Aldous who would later assume the role of the head of the department. There were also three part-time workers: one lecturer and two demonstrators. The department was responsible for teaching medical students the course in Pharmacology and Materia Medica, which began in the second term of the second year and extended to the first term of the third year, with lectures continuing into the second term of the third year. In the first two terms of the course the students attended two lectures and one lab period per week (see schedule Appendix Two). The aim of the course was to "provide clinically useful knowledge of drug action and the fundamentals relating to the prescribing of drugs."[88] In an effort to make the lecture and laboratory work relevant to

clinical practice, Dr. Whillans expected that the students should conduct the majority of the experiments on themselves. According to the Zapffe Report it was reported that "sixty percent of the laboratory experiments the student conduct on themselves" and that, "Dr. Whillans feels that the students should have personal experiences with as many drugs as possible although the drugs that the students take are carefully chosen, both as to their nature and the dosage employed."[89] Other laboratory exercises included work on lab animals and making medicinal preparations. The principal textbook was Thanes, Fundamentals of Pharmacology, and students used Goodman and Gilman, The Pharmacological Basis of Therapeutics, as a reference text. A syllabus is included in Appendix Three.

The courses in Pathology, Bacteriology, and Parasitology were taught under the auspices of the Bacteriology and Pathology Department. This department was severely understaffed with only one instructor, who was also the Head of the Department. Dr. Ralph Smith, in addition to being the department head, was also the pathologist for the Province of Nova Scotia and worked only half-time with the department. The new assistant professor, Dr. J.W. Abbiss, was due to arrive from Birmingham, England on November 20, 1947 and would assume a full-time position with the

department. Dr. Smith was responsible for teaching all of the lectures in Pathology and received assistance in the lab from the pathology resident. The course in Pathology began in the second term of the second year and continued to the end of the third year. The first-year course dealt with elementary pathology and comprised two lectures followed by a laboratory session per week. In the third year, there were five lectures and two three-hour labs per week. The students studied up to 200 slides in the lab, and of the 150 or more autopsies performed each year they were required to write reports on six for which they had observed or assisted.[90]

Bacteriology, Immunology, and Parasitology was a combined course and was given in the second year through two lectures and two-hour laboratory sessions per week in the first term. Dr. Smith was also responsible, in conjunction with the Department of Biochemistry, for teaching part of the Laboratory Diagnosis course in which he taught hematologic techniques.

The Dean, Dr. Grant, was also Head of the Department of Preventive Medicine. He was assisted by Dr. C.B. Stewart, a full-time salaried faculty member whose title was Professor of Epidemiology and Nursing Education, and two volunteer instructors. Additionally, the department employed a full-

time statistician and a nurse.

Although he graduated from Dalhousie in 1938, Dr. Stewart completed postgraduate work at Johns Hopkins Hospital in Baltimore, Maryland. Consequently, he brought with him new teaching techniques that he wished to employ in his classes. Grant, realizing that this would be a digression from the normal classroom practices and not always enthusiastic about trying new things, "strangely" enough agreed to allow Stewart to try his methods. The result was that Stewart constructed, as he termed, "deceptively simple cases" for students to discuss in small group seminars (see Appendix Four), which were intended to supplement didactic lectures.[91]

During the first year students attended thirty-three lectures which dealt primarily with the History and Philosophy of Medicine; 1947 was the first year in which Preventive Medicine was taught in the first year. The course included many of the prevailing problems in medicine at that time, and the sociological and economic factors which related to medicine. Students were also introduced to elementary statistics from the standpoint of medicine. In the third year students were taught public health, epidemiology, maternal and child care, and hygiene. It was during the third year that students attended seminars where

they were encouraged to ask questions and solve the problems presented. Other sessions included debates between various authorities on socialized medicine. Zapffe and Anderson reported that these debates were "very popular with the students."[92]

During the last six weeks of the third year students were responsible to "visit homes of three clinical patients and write a report of the economic, physical and social features of the patient's environment."[93] In addition, the students accompanied inspectors from the Department of Public Health to conduct inspections of water, milk supplies, and restaurants. Between third and fourth year students were required to conduct a health survey about the public health services, medical services, and school health services available in their home community. A written report was submitted at the beginning of the fourth year. This emphasis on community and public is an indication of the contributions and the important role of bacteriology on medicine in helping to eliminate problems associated with poor drinking water and the spread of diseases by bacteria and airborne infection. During the fourth year of Preventive Medicine, students received instruction in biostatistics and gained practical experience in the immunization clinic.

Clinical Sciences

Many changes affected the clinical sciences just after World War II. The medical schools became affiliated with the hospitals, which became increasingly the sites for medical teaching as the doctors discontinued home visits, mainly because of the changes in medical technology and diagnostic aids which were available at the hospitals. In addition, the types of diseases which were being seen in the clinical areas were changing due to advances in bacteriology and public health. The teachers who had been recruited by the schools from the communities were being replaced by the full-time clinical teachers, although Dalhousie had only two paid clinical teachers at this time. Many of these changes transformed the way in which the clinical sciences were taught.

Classes in Medicine, Clinical Medicine, Therapeutics, and Physical Diagnosis were given by the Department of Internal Medicine. The Head of the Department, Dr. C.W. Holland, and a paid assistant professor were "assisted by a staff of nine voluntary teachers."[94] Although the Calendar of 1947-48 states that "the methods of examining patients [are] given to the students of the second and third years",[95] the students were not permitted to examine each other nor were assigned to "normal subjects."[96] Instead,

students rotated in small groups between six instructors each responsible for a different aspect of physical diagnosis.

In addition to Physical Diagnosis, students in their third year also attended "a course of recitations and lectures two hours each week" given by the department. This course extended into the fourth year when students studied "infectious and constitutional diseases, the blood, ductless glands, diabetes, and diseases affecting the kidneys, liver and the nervous system."[97]

The Department of Medicine was responsible for delivering the course in Clinical Medicine which was given each year from second to fourth year. A preliminary course was given to students in second year, while students in the third year received clinical instruction and clinical lectures at the various hospitals and outpatient clinics in Halifax. In the fourth year students were assigned to clinical rotations of ten weeks, where they spent two hours in the morning either on the wards or in the outpatient department of the area in which they were assigned. While in the hospitals the students were assigned cases to work up which included "history, physical examination and laboratory work."[98] However, none of the students' work was considered part of the legal hospital records - in later years this

would change. In addition, students attended clinical conferences and lectures at the Victoria General Hospital.

The Department of Medicine was responsible for the teaching of the fourth-year course in Therapeutics. The main teaching method was didactic lectures which were "supplemented by demonstrations on electro-therapy, hydro-therapy, massage and clinical dietetics."[99]

Dr. W. Alan Curry, Professor of Surgery and Head of the Department, was assisted by fourteen men, who held appointments from the rank of associate professor to clinical instructors. No personnel were paid at this time, although some may have been awarded honoraria for their work for the university. The course in clinical surgery began in second year and continued for the first term only whereby the students observed clinical demonstrations one session per week. In the third year clinical lectures on the general principles of Surgery were given three times per week. In addition, students attended clinical instruction sessions at the various teaching hospitals in Halifax and attended a course "demonstrating the application of bandages, splints and other surgical appliances, the treatment of emergencies and minor surgery is also given."[100]

During the course in clinical surgery students in the fourth year served in the various hospitals as clinical

clerks. In addition to the hospital work, they were also required to attend lectures, conferences, and a course in Anaesthesia which consisted of "a few lectures and practical instruction in groups."[101] Orthopaedics, also part of clinical surgery, was taught through the Children's Hospital and the Public Health Clinic.

Students in the fourth year of studies attended a lecture one hour per week on Regional Surgery, and weekly surgico-pathological conferences "at which the student has the privilege of hearing surgical cases discussed from the standpoint of diagnosis, operative procedure, and pathological findings."[102]

Dr. Wiswell was the Head of the Department of Pediatrics and was assisted by a demonstrator and an associate professor, neither of whom received a salary. Lectures in physical diagnosis as it pertained to children began in the second year and continued into the third year. Clinical lectures were held once per week in the third year and in the fourth year there was one lecture and one class clinic. Additionally, during the fourth year, students attended the Children's Hospital for two hours each morning for five weeks, where they "go on ward walks and examine cases" primarily as observers.[103] During this five-week period students also attended the pediatric outpatient

clinic at the Public Health Clinic in the afternoons.

As in many of the clinical departments, there were no paid personnel in the Department of Obstetrics and Gynaecology. The Head of the Department, Dr. H.B. Atlee, although a controversial character, was known fondly by most colleagues and students as 'Benge' (although never acknowledged as such by students). At this time, he was assisted in his role by three volunteer instructors. Atlee was admired for his "unwavering patient centered approach" to medical education, although students had a cautious awareness that they had better "do things his way" or suffer the consequences. His 'lieutenant' on the floor was the strong-minded regimental nurse known as 'Fergie' who kept a watchful eye on the students for Dr. Atlee. One poor resident who got on the wrong side of Fergie was known to have spent two months sorting files in the basement of the hospital! Students learned very quickly to whom and what they should pay attention when completing their obstetrics service. Nonetheless, many students admired Atlee for his skill and empathetic manner with patients, and reported that the Obstetric/Gynaecology service, although very busy, gave them an excellent grounding and prepared them well for practice.[104]

The course in Obstetrics began in third year when

students began to attend 'lectures' given by Dr. Atlee, who was known to deplore traditional lectures, believing that students could acquire this material by reading textbooks. Consequently, third year lectures, under Atlee's command, consisted of "lantern slides and moving picture demonstrations two hours per week."[105]

In the fourth year the duration of the course in Obstetrics was five weeks. The students attended ward walks at the Grace Maternity Hospital three times per week and the prenatal clinic two afternoons per week. This clinical experience was supplemented with lectures using manikin demonstrations. The students were required to be on call to observe deliveries but were not permitted to deliver patients themselves until the fifth year, when they were required to deliver at least fifteen patients.[106]

Gynaecology began in third year when students attended one lecture per week for the duration of the year. Prior to Christmas students attended a course at the Victoria General Hospital for "preliminary clinical instruction". After Christmas they attended general weekly clinics with Dr. Atlee. In the fourth year students were assigned to the Gynaecology wards at the Grace Maternity Hospital for two hours per week for four weeks. Part of this time was spent in Dr. Atlee's diagnostic clinics where students were

permitted to examine patients under his supervision. The remainder of the time on this service was spent observing operations or on ward walks.[107]

The large amount of grant money which the Rockefeller Foundation contributed to the teaching of Psychiatry may have been, in part, due to Psychiatry's influential and well-respected Head of Department, Dr. Robert Jones. Dr. Jones, widely known and highly respected by the medical community, influenced the teaching of Psychiatry at Dalhousie so that it became one of the most highly regarded and enjoyable experiences of a student's education. Psychiatry permeated nearly every corner of the curriculum, for Dr. Jones saw to it that Psychiatry was seen as important to every facet of medicine. He reportedly told students that if they pursued general practice a large majority of the problems they encountered would have some sort of psychological element.

The fact that Jones had been a student at Johns Hopkins University Medical School was reflected in his teaching methods. At that time, Johns Hopkins was considered a model medical school and was well-known for its approach to clinical teaching. He often recorded his interviews with patients and replayed them for students, who appreciated the experience of hearing 'real' people who suffered with

psychiatric disorders express their problems.[108]

The first-year course in Psychobiology comprised thirty-two lectures which involved students examining their own psychological profiles. Jones thought that all students brought with them into the patient environment their own personalities and problems which affected the manner in which they approached patients; he also felt that students were often not consciously aware of this. Therefore, it was the aim of the Psychobiology course to assist students to discover how their own problems affected their everyday life and how Psychobiology is important to all medical work.[109] Each student was expected to compose a personality study of him/herself which was ostensibly to contribute to the student's understanding of normal personality development.

The second- and third-year course consisted mainly of studying abnormal behaviour and clinical psychiatry. During the third year, Jones often demonstrated the process of interviewing patients to the whole class. The third year consisted of thirty-two lectures on clinical psychiatry as it related to general medical practice. The main goal of this course was to introduce the "early danger signs of psychosis, discuss treatment methods in general terms, to consider the psychoneuroses and psychosomatics."[110] Likewise, during the third year students were given the

opportunity to interview and take a history of a patient referred to the psychiatric outpatient department.

In the fourth year students attended the Dalhousie Public Health Clinic, where they received individual instruction and were allowed to examine and treat psychiatric patients. In addition, students visited the wards of the Camp Hill Hospital, where they had the opportunity to see patients with neuropsychiatric disorders. Demonstrations and visits to the Nova Scotia Hospital and the City Home in Halifax were also arranged so that students could benefit from seeing a wide variety of cases.

The aim of the course in Ear, Eye, Nose and Throat was to prepare the student for general practice. The Head of the Department was Dr. H. Schwartz, who was assisted by five voluntary instructors. Study of the ear, eye, nose, and throat began in third year, where "groups of four to six ...[are] taken twice a week for six weeks and instructed in the technique of examination of the ear, nose and throat and once a week for six weeks for the eye."[111] Third-year students and interns also attended the outpatient clinics where they gained experience in some of the conditions they would expect to encounter in practice. In fourth year students were required to attend fourteen lectures on the ear, nose and throat and eleven on the eye, which were held

once per week. Lectures were supplemented by lantern slides, specimens, case reports, and clinical experiences.

In addition to the major basic science and clinical courses, there were shorter courses which were also a requirement for third- and fourth-year students. Urology began in third year with a small number of lectures and continued into fourth year with fifteen lectures and demonstrations given to students. Fourth-year students also attended fifteen classes and demonstrations in Dermatology and Syphilology. The students were divided in small groups and attended classes at the Victoria General Hospital and Dalhousie Public Health Clinic. Lectures in Radiology were also compulsory for third- and fourth-year students. Lectures in X-Ray diagnosis and therapeutics were given in third year. In addition, both third- and fourth-year students were divided in "groups of two [and received] personal instruction in fluoroscopic demonstration, examination of films and the principles of radio-therapeutics."[112]

The course in Medical Jurisprudence and Toxicology was taught by Dr. Whillans, Professor of Pharmacology. Medical Jurisprudence began in the fourth year: students were introduced to medico-legal problems and attended autopsies on medico-legal cases. Lectures in Toxicology also began in

fourth year.[113]

An outline of the curriculum according to the Faculty of Medicine Calendar and the Zapffe and Anderson Report is contained in Appendix Five.

Summary

Towards the end of 1947 the Medical School was undergoing vast changes mainly due to the increase in student population, and the subsequent need for more staff and facilities. There were promotions being made in nearly every clinical department, and the Forrest Building was undergoing massive renovations to accommodate needed lab space and faculty offices, and to bring the building up to the fire code. The Biology Department was also moving in the fourth floor of the Forrest Building and added lab space would be partially taken up by that department. In the spring convocation there were twenty-eight graduates, (of whom one was a woman), who were given the degrees of Doctor of Medicine and Master of Surgery. Although there was an increase in enrolments for September the request by faculty to increase funding was rejected by the Board of Governors. The minutes of the Committee on Studies for January 3, 1947 states that the "funds were not forthcoming and the Board requested admission of 10 extra students at no extra cost to

the university. A total of 70 in medicine and dentistry were admitted (9 extra in medicine and one in dentistry) and no extra staff was appointed."[114]

The school during the era of post-war was flooded with veteran students and suffered from a shortage of space and faculty. The school's main thrust was towards trying to accommodate the large influx of students while trying to maintain a teaching program. This situation was complicated by the fact that Dalhousie did not receive enough money to keep up with the fast pace of students, nor to increase its space significantly. While the university did receive a grant from the Provincial government, it did not compare to the larger sums received by other schools such as Western in Ontario. It would not be until the early 1960's that Dalhousie would receive comparable grants.

1.P.B.Waite, *The Lives of Dalhousie: Volume II - 1925-1980.* Montreal and Kingston: McGill-Queen's University Press, 1998,142.

2.Dalhousie University Archives, Senate Book (hereafter DUASB), Kerr's convocation address May 1949 contained in the Senate Minutes of May 17 1949, 163.

3.M.L. Barr, *A Century of Medicine at Western.* London, Canada: The University of Western Ontario, 1977, 452-453.

4.Waite, *The Lives of Dalhousie,* 153.

5.Ibid., 160-161.

6.Dalhousie University Archives (hereafter DUA),Report of the President 1945-50, passim.

7.DUA, File #B878, President's Report, 1945-46, 2.

8.DUA, Dalhousie University Calendar (hereafter DUC), 1947-48, 116.

9.Waite, *The Lives of Dalhousie,* 93.

10.DUA, Dalhousie University Calendar (hereafter DUC)1947-48,117.

11.DUA, B878, Report Dalhousie Medical School 1932-52.

12.Barr, *A Century of Medicine,* 551.

13.DUA, Report of the President 1945-50,7.

14.DUA, DUC 1947-48,117.

15.Waite, *The Lives of Dalhousie,* 189.

16.Dr. C.B. Stewart, interview by author, Halifax, Nova Scotia October 1998.

17.Dalhousie University Archives President's Office Correspondence(hereafter DUAPO), File B856, H.G. Grant to A.E. Kerr, April 28, 1947.

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20.DUA, Department of Obstetrics and Gynecology Correspondence, B791, H.B. Atlee to Grant, December 13, 1948.

21.DUASB, Kerr's convocation address May 1947 contained in the Senate Minutes May 13 1947, 88.

22.Ibid.,93.

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24.DUAPO Correspondence, B856, N.Thompson to Kerr, June 13, 1947.

25.Dr. C.B. Stewart, interview by author, Halifax, Nova Scotia October 1998.

26.DUASB, Senate Minutes, May 11 1948, 120.

27.DUAPO Memo, B856, May 1947.

28.DUA,Zapffe and Anderson 1947 Accreditation Report, B420,1947,2.

29.DUA, President's Report 1945-50, 6.

30.DUA, Zapffe and Anderson 1947 Accreditation Report, B420,1947,4.

31.DUA, B37, American Medical Association Medical School Statistics 1947.

32.DUA, DUC 1947-48,119.

33.DUA, Minutes Committee on Studies (hereafter MCOS), Notes B487, January 3, 1947.

34.DUA, B391 Admissions, Notes on a meeting held in the President's Office between, the Deans of Medicine and Dentistry, a representative of alumni relations and the Registrar, December 4, 1947.

35.DUAPO, B859, Report of the Medical Faculty 1948-49,1.

36.Barr, *A Century of Medicine*, 465.

37.DUA, DUC 1947-48, 23.

38.DUASB, Senate Minutes, February 13, 1947,70.

39.DUASB, Correspondence from the Secretary Provincial Medical Board (PMB) included in the Senate Minutes, January 29, 1948, 95.

40.Barr, *A Century of Medicine,* 463.

41.DUAPO Correspondence, B856, Grant to Kerr, January 21, 1947.

42.DUA, DUC 1947-48, 127.

43.DUAPO Correspondence, B856, Grant to Kerr, January 9, 1946.

44.DUA, DUC 1947-48, 20.

45.Ibid., 1949-50, 131.

46.Waite, *The Lives of Dalhousie,* 147.

47.DUA American Medical Association, B37, Report to the American Medical Association, 1947, 1.

48.DUA, COS Correspondence, B46, Faculty of Medicine to Committee on Studies, February 28 1947.

49.DUA, DUC 1947-48, 128.

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52.DUAPO,B856, Correspondence Grant to Kerr, November 22, 1947.

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67.DUAPO, B856, Hand-written letter from Kerr to Grant, August 23, 1947.

68.DUA Department of Physiology Correspondence, B826, Weld to Grant, undated.

69.DUA Department of Anatomy Correspondence, B60, D. Mainland to W. Harper, December 19, 1947.

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71.DUA, Report of the President 1945-50

72.Zapffe and Anderson, 1947 Accreditation Report.

73.Minutes COS, February 11,1947, 488.

74.DUA Department of Medicine Correspondence, B708, Dr. Aitken to Grant, December 22,1949.

75.Barr, *A Century of Medicine*, 548.

76.Barzansky and Gevitz, *Beyond Flexner*, 27.

77.Zapffe and Anderson, 1947 Accreditation, 18.

78.Ibid., 19.

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80.DUA, DUC 1947-48, 129.

81.Zapffe and Anderson, 1947 Accreditation, 22.

82.Ibid., 23.

83.DUA, DUC 1947-48, 130.

84.Dr. D. Hawkins, interview by author, Ottawa, Ontario, October 31, 1998.

85.Zapffe and Anderson, 1947 Accreditation, 29.

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87.Ibid., 25.

88.DUA, DUC 1947-48, 132.

89.Zapffe and Anderson, 1947 Accreditation, 33.

90.Ibid., 38.

91.Dr. C.B. Stewart, interview by author, Halifax, Nova Scotia, October 1998.

92.Zapffe and Anderson,1947 Accreditation, 53.

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94.Ibid., 41.

95.DUA, DUC 1947-48, 133.

96.Zapffe and Anderson, 1947 Accreditation, 41.

97.DUA, DUC 1947-48, 134.

98.Zapffe and Anderson, 1947 Accreditation, 42.

99.DUA, DUC 1947-48, 134.

100.Ibid., 136.

101.Ibid.

102.Ibid.

103.Zapffe and Anderson, 1947 Accreditation, 46.

104.Dr. D. Hawkins, interview by author, Ottawa, Ontario, October 31,1998.

105.DUA, DUC 1947-48, 137.

106.Zapffe and Anderson, 1947 Accreditation, 47.

107.Ibid., 48.

108.Dr. D. Hawkins, interview by author, Ottawa, Ontario, October 31, 1998.

109.DUA, DUC 1947-48, 135.

110.Zapffe and Anderson, 1947 Accreditation, 50.

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114.Minutes COS, January 3, 1947, 486.

CHAPTER 3

THE EMERGENCE OF A 'NEW' CURRICULUM

During the early part of 1947, in response to the influx of veteran students and growing demands on the Medical school for facilities and staff, Dalhousie was proposing slight changes to the medical curriculum. However, it was the vision of a small number of faculty members that a more drastic change to the curriculum was needed if the school was to keep up with modern trends in medical education. The proposed change would encompass a new 'four year curriculum' with the degree being awarded after the fourth year, instead of after the fifth year internship. The minutes of the Curriculum Studies Committee revealed that plans for the new 'four year curriculum' were being contemplated as early as January 3, 1947:

> The Dean reported his discussions with other schools concerning length of course and arrangement of schedule. Dr. Atlee felt the first step in respect to the suggestion that the degree be granted at the end of the 4th year was to clear the matter with the Provincial Medical Board; the schedule details could be left til later. It was felt that the safeguarding of our interneships [*sic*] was of primary importance.[1]

By February of the same year, in reference to a curriculum change, the Dean reported that a "committee of faculty had been named to study the possibility of such a change; it had not yet made a report. It was pointed out that a radical curriculum change might be required."[2] However, the proposed curriculum change may not have come as easily as anticipated, as indicated in the minutes that "no great enthusiasm for the change was evident" within the faculty.[3] Although there were many incentives to change the curriculum from both within and outside the School, the proposed four-year model was not implemented. Nonetheless, the curriculum did undergo several changes, but the School maintained its fifth-year internship.

The Incentives for Change 1947-48

The incentive for changing the curriculum originated from dissatisfaction with the existing medical program both within and outside the faculty. Discontent with the medical school curriculum was not unusual, and other schools in North America were experiencing similar dilemmas at this time. At Western, a revised curriculum was implemented in 1945 as a result of faculty dissatisfaction with the curriculum, which was criticized for its "scant premedical education."[4] In the United States, although concerns were

raised about the over-reliance on memorizing facts and the lack of material requiring students to synthesize information, the curricula remained fairly stable between the 1940's and the mid-1950's.[5]

At Dalhousie, two of the predominant concerns were discussed at meetings of the Faculty of Medicine on January 6 and 13, 1947. In particular, the length of the term, which was significantly less than at other medical schools in Canada, and the awarding of the degree after the fifth year internship were the focus of debate among the faculty. In a meeting of faculty on January 13, 1947, "The Dean reported that our medical course in total weeks of instruction is considerably less than that of other Canadian medical schools, and that our schedules were congested."[6] In addition, it was also thought that the awarding of the degree after the fifth-year internship put Dalhousie's students at a significant disadvantage when applying for residency training programs in the United States and Britain. As a result of these discussions, a committee was formed to investigate both matters. The committee consisted of the clinical members of the Committee on Studies, members from the pre-clinical departments, the Dean, and the Secretary of the Faculty. The appointed committee would report to the Committee on Studies, which is now known as

Faculty Council.

In addition to the discussions which faculty held concerning curricular issues, problems were often discussed at meetings between the student representatives and the Committee on Studies, which were held once per year, in February, to enable students to have an input into curricular matters. Although intended as a 'voice for the students,' these discussions often placed the committee in embarrassing or compromising situations. It was an incident at one of these meetings in February 1948, when a faculty member sided with students and opposed other members of the committee, that led Dr. Donald Mainland, Department of Anatomy, to write a letter to the Committee on Studies outlining "some of the dangers and advantages of the meeting with the students."[7] He wrote:

> The general principle underlying such meetings is, I think, a good principle...It is, nevertheless, a potentially dangerous scheme. By asking the students to express their opinion on the content and method of teaching courses we are implying that they know best what is good for them. We may not imply this, but I know that students are starting to actually believe that this is actually the implication.[8]

It is not clear from the evidence why this input from the students appeared to be of concern to faculty. However, traditionally medical school departments cherished their autonomy and it might have been that any input from outside particular departments could have been considered

threatening. Medicine has very often been blamed for wanting to maintain the status quo. In addition, the *modus operandi* for teaching at that time was the 'top-down' method whereby the professors were the authority figures and the students were there to learn *from* them. Any move on the students' part to suggest to professors changes in their teaching would not have been responded to favorably by faculty. Nevertheless, Mainland's recommendations were adopted by the Committee, as follows:

> 1. That before each such meeting the students be given guidance as to what topics to present. Simple requests which can be readily handled by the Dean or by any one department should not take the time of the whole committee.
> 2. That the students' agenda be reviewed by the Dean before the Meeting.
> 3. That the students' society be asked to remind all classes that each Department is always willing to discuss difficulties.
> 4. That the members of the Faculty committee adopt a non-committal attitude until after the students have withdrawn.[9]

However, in spite of some of the 'dangers' of meeting with students, there were many suggestions made during these meetings which enabled the committee to gain insight into some of the school's curricular problems.

At a joint meeting between student representatives and the Committee on Studies in February of 1947, the students requested "more co-operation between clinical and pre-clinical departments."[10] In response to the students'

requests Dr. C.W. Holland(Medicine) concurred that he had experienced the "difficulties" in trying to get cooperation between departments, although he suggested that there "was general agreement that it was good policy to introduce clinical examples into the early years."[11] Apparently, this problem was not resolved expeditiously - in a meeting of the students and the Committee on February 3, 1948 the students expressed their desire that their education should be applicable to the practice of medicine and that at that time they felt in some areas it was not. As recorded in the minutes, the students felt that "elementary work..[should] be condensed and taught in first term of first year, throwing emphasis on medical matters and minimizing such items as chemistry of soap, wood, carrageenin,..."[12] In a summary of the students' report, it was stated that "on looking back over the medical course, it was agreed that next year's graduates were somewhat deficient in many respects, but consistently deficient in some particular subjects, notably physiology, biochemistry, neurology, materia medica and therapeutics."[13]

At the same meeting, an incident over the third-year anatomy examination also evoked much discussion from students and faculty. The topic was left until last because of the serious actions of the third-year students, who

rebelled against the heavy load in the second term of the third year by boycotting Dr. J.V. Graham's anatomy lecture. The students' main concern was over the "large number of examinations to be written, and in particular of the examination in Surgical Applied Anatomy..." in third year.[14] This examination, although of equal importance to other examinations, was considered to be a "minor subject, [and] prejudiced their chances of passing their year. They also felt the course was not necessary."[15] Similar problems were being experienced in other schools. Barzansky and Gevitz (1992) refer to the ability of students "to juggle enough details" to pass examinations. Furthermore, in the mid- to late-1940's, "leaders in medical education" acknowledged that it was impossible to teach students everything they needed to know and hence it was better to give them a core foundation in the appropriate subjects to "prevent further overcrowding" in the curriculum.[16]

The incident over students not attending Dr. Graham's lecture was considered serious enough by members of the committee that a meeting of the Committee on Studies was held without the students later that day to discuss the issue, and to decide whether any disciplinary action should be taken. The faculty's concern about student uprisings was again evident in this incident. It could be inferred that

the faculty might have been reluctant to comply with students' requests as a result of their rebellious actions towards professors. Consequently, faculty might not have wished to allow students this type of leverage, or to set a precedent that rebellious behaviour was a means to an end. The Faculty's dilemma might have been between doing the right thing for the students while not appearing to support the students who boycotted the course. Eventually, an agreement was reached whereby if the students apologized to Dr. Graham, no disciplinary action would be taken.

Nonetheless, the problem still existed that the third-year schedule was too heavy and that it was necessary for faculty to investigate solutions to alleviate the situation. One suggestion to ameliorate the problem came from Dr. H.B. Atlee, who volunteered to cancel or postpone his examination in Obstetrics and Gynaecology in order to reduce the number of examinations in third year. This arrangement was agreed to by faculty and passed at a meeting of faculty on March 22, 1948. Nevertheless, much to the students' disappointment, the examination in Applied Surgical Anatomy was left in the third-year schedule.[17]

The clinical departments were not spared from criticism, and correlation of courses in the clinical years was also the focus of much discussion. At one meeting of

the students and Committee on Studies, it was decided that correlation between departments and courses had to be improved in order to "reduce excessive overlapping and repetition, and also to ensure complete coverage of the clinical subjects."[18] There were a number of ideas presented to correct the problem. For example, it was suggested that it could be possible to keep a registry of the clinical topics taught so that topics were not taught twice, and to plan clinics in advance to avoid identical clinics being taught by more than one department. However, the committee could not decide on how these plans would be implemented and concluded that it was largely a departmental matter and no consensus was reached.

In addition to the problem of the redundancy of clinical topics, students reported that the surgery classes "were disorganized and that there had been no 'Introduction to Surgery'."[19] Evidently, the disorganization of classes was not the only problem existing in the Department of Surgery - the surgeons themselves were known not to show up for classes! In a meeting between students and the Committee on Studies on February 3, 1948, the students suggested that "either stricter attendance to ward-rounds by the surgeons be inaugurated, or that ward rounds be limited in time, so that not so much time is wasted by the student

waiting for a surgeon who may, or may not, show up."[20] When in 1951 the problem still existed Dr. Atlee, one of the most outspoken faculty members, responded with one of his proposals. Apparently, at the same time, it was a concern of some members of faculty that the students were spending too much time at the morning coffee breaks. Dr. Atlee wrote a letter to the Dean on September 19, 1951 offering his solution to both problems. He wrote regarding the problem of "students guzzling coffee" that "This morning break for coffee does not appear to be a local phenomenon...[;]it has become a custom all over the continent....[as] the North American equivalent of the English afternoon tea". He continued that the students "would have the argument that the time really isn't wasted because most clinicians arrive anywhere from ten to a hundred minutes late for their various student appointments," and "why shouldn't they spend it so pleasantly occupied."[21] Whether Atlee's logic was taken seriously, was not evident. However, the problem with clinical instructors not showing for sessions or showing considerably late, still existed in the early 1950's.

The Committee's suggestion that there should be evening discussion groups for interns was not well received by the students. Dr. Atlee, who detested anything that took students away from the bedside, sided with the students and

stated that "anything that took the internes from direct contact with patients was inadvisable", and that "it would be a mistake for us to organize such groups for them."[22]

The complaints about the Medical School's curriculum came from further afield than the school itself. On December 3, 1947 it was reported in the minutes of the Committee on Studies that Dr. H.L. Scammell, Registrar of the Provincial Medical Board (PMB), had written a letter to the Dean on behalf of the Board "complaining of the very poor performance of the students at the last examinations in prescription writing and their poor knowledge of drugs";[23] it was not the first time the complaint had been heard. At a meeting of the Committee on Studies and the Conjoint Examiners of the Provincial Medical Board on May 7, 1947, Dr. Holland "reported a woeful lack of knowledge of dosage of drugs and an almost complete inability to write prescriptions" by the majority of students. Likewise, at the same meeting, Dr. P.A. MacDonald commented on "the very poor spelling, writing and construction of the examination papers." The Committee agreed with these contentions and suggested that there should be "some instruction given to students on how to write papers," but it was agreed that there should not be any marks deducted for poorly written papers because it would not be "fair" to the students.[24]

Students were also given the opportunity to discuss changes or problems with the availability of facilities. In particular, they expressed their desire to have the library open until eleven o'clock at night. At first the faculty would not consider this request. After much discussion, the Committee finally consented to allow the library to remain open only if the fireman agreed to check on the students on an hourly basis; they believed that there might be a fire hazard if the students were allowed in the library unsupervised.[25]

The Internship Program

In 1947 the Victoria General Hospital and the Saint John General were the only two Maritime hospitals recognized as teaching hospitals by the American College of Surgeons. By contrast to this, however, these hospitals were not recognized by the Royal College of Physicians and Surgeons in Canada. Because the Medical School was still in need of funding, efforts to acquire additional monies were focused on trying to help the smaller hospitals become affiliates of the two larger teaching hospitals, with the hope that the provinces would contribute to the Medical School in return for intern service. This opportunity arose because the smaller hospitals were requesting interns in an effort to maintain the daily functioning of their institutions, most

likely because of the shortage of physicians after the war. In response to the request by the Moncton Hospital for interns, "President Kerr asked if this in some way could be used to persuade New Brunswick to contribute funds to the medical school."[26] A similar request for interns was received by Dean Grant from the President of the Medical Board of the Prince Edward Island Hospital. Dr. Grant's comment in his letter of January 15, 1947 was to suggest to President Kerr that this might be an opportunity to use "this request as a lever to stimulate the government of Prince Edward Island" into contributing to the Medical School.[27] By using this strategy with the hospitals, the President and the Dean felt that the Medical School might be able to facilitate the acceptance of the Moncton Hospital as an affiliate hospital. If this were arranged then the New Brunswick government might consider financial assistance to the school because of the increased intern allotments to the smaller hospitals.

The trend to draw hospitals under the auspices of the medical schools was experienced in other Canadian schools. Frost (1984), reports that struggles between Montreal hospitals and McGill University occurred in the early part of the twentieth century, but by the third quarter of the twentieth century these struggles were resolved and McGill

increased its "traditional commitment to clinical practice and patient care."[28] The struggle for medical schools to unite with hospitals was, in part, prompted by the Flexner Report (1910). It has been reported by Barzansky and Gevitz that Flexner's "most significant accomplishments were in helping to take away control of the hospitals....from the practicing medical profession and to bring [them] under the authority of the academic bureaucracy."[29]

During a meeting between the Committee on Studies and the students in February 1948, the fifth-year undergraduate internship was discussed and students' concerns were heard by the Committee. In general, students felt that "interns were overworked, primarily because there were too many patients per intern, and that we should aim at a proportion of not more than 15 to 20 patients per intern."[30] The students' report which accompanied the minutes for the Committee suggested that a technician or the junior students might be able to relieve some of the workload of the intern, whose time could then "be more evenly spread between his cases, his books, his recreation and his bed."[31]

At the same meeting the students presented correspondence from the intern class which indicated that students had rated the various clinical disciplines as to the quality of teaching which they received. Obstetrics and

Gynaecology was given an excellent teaching rating, as opposed to Medicine which was considered the "worst offender from a work standpoint." It was recommended that both Medicine and Genito-Urinary needed extra interns in order to make their services yield a better learning experience, and to reduce the workload for interns.[32]

Regardless of the problems facing the internship program, and before any expansion to the teaching program could be implemented, some faculty felt that there needed to be alterations to its administration. A number of problems surfaced during this time which focused on administration of the internship program and student discipline. The Committee on Studies discussed some of these problems at a meeting on May 5, 1948. In a letter from Dr. C.M. Bethune, Superintendent of the Victoria General Hospital, the committee was informed that the pre-internship program was plagued with non-attendance problems whereby only twelve of twenty-seven interns had shown up for the program and one had not shown up for the internship at all.[33] In response to the lack of attendance in the pre-internship program, by May 26, 1948, the Faculty of Medicine adopted the policy that the "three day pre-interne course given at the V.G.H." was "compulsory for all students."[34] Additionally, concern was expressed over the new interns, who had just finished

their fourth year, and had not completed patient histories - "Practically no surgical histories have been handed in by the fourth year this year. The Committee recommends that the students are to be warned that the writing of histories on all cases assigned is part of their course, and that unless they are satisfactorily completed, permission to write the examinations will be withheld."[35]

Other breaches of discipline occurred in the internship program. In one instance, a student falsified hospital records at the Victoria General Hospital, but was permitted to finish his internship at the Saint John General and received a good report. Another incident occurred when a student was given an "adverse report early in the year" but had improved over the course of the year. In both cases, "The Committee felt that as these students have already taken their examinations no action would be taken."[36]

Other infractions, not involving academic matters, also were not uncommon. One episode was reported in the Senate minutes involving a student who "had recently behaved himself in an unbecoming manner in the operating room of the Victoria General Hospital...apparently under the influence of alcohol."[37] Ostensibly, not getting what he wanted he became more abusive to a male nurse who reported that the student told him to watch himself "he was only a God Damn

male nurse and he was going to be an interne here next month."[38] In the minutes of the Faculty of Medicine on May 26, 1948, it was recorded that this student was required to pay a $100.00 fine, to "appear before Senate for a reprimand by the President,"[39] and to be placed on probation for the remainder of his medical program.[40] Although the disciplinary action was passed by Senate, the Faculty of Medicine did not always agree with the Senate's decisions. In this case, the minutes of the Committee on Studies revealed that the committee felt that "a fine was a penalty on the parents rather than the boy..."[41]

Episodes involving alcohol reflected, in part, the fact that alcohol was not readily available to students in Halifax at this time, and there were few places for students to go to socialize. One of the most common gathering places was the Lord Nelson Hotel and another, although not considered always to be on the right side of the law, was one of the fraternity houses, which normally managed to keep a fair amount of spirits on hand. In fact, it was known to students that the house operated an extensive liquor business and that the partying often went on until the early hours of the morning, scrutinized by the police cars which could be readily seen posted outside on Robie Street. In part, this activity might have been in response to the

hostility that students realized the teetotaling President had against liquor. Some students devised clever methods of consuming alcohol in a deliberate attempt to foil the efforts of the President. One student in his intern year managed to create a 'liquor dispenser' that could be hidden under his clothes. The enterprising student strapped a IV bottle to his leg under his pants. The tubing which ran from the bottle up through his shirt and conveniently to his mouth where he could consume his 'rum and coke' mixture by sucking on the tubing. Of course he was audacious enough to consume the mixture in front of faculty members, including the President, who apparently never 'uncovered' his secret.[42]

In response to the problems of maintaining appropriate behaviour of interns, on May 13, 1948, the Committee on Studies in conjunction with the hospitals approved a change in the academic calendar to read:

> Service for twelve months on rotating internships approved by the Faculty of Medicine. A certificate of satisfactory internship will be required from the hospital before the student is permitted to take his final examinations[43]

If the student did not receive a satisfactory certificate he or she could be asked to complete an additional probationary internship. However, the "final discretionary power must rest with the Senate."[44] As a result, the interns' reports,

submitted on a quarterly basis, were part of the evaluation process of all interns in the Medical School which provided an avenue for the hospitals to report on intern performance and behaviour. Furthermore, by 1949, the Medical School, as a result of poor behaviour on behalf of interns, brought into effect a policy in which the following resolution was passed in a meeting of the Committee on Studies on March 30, 1949:

> The Committee recommends that Faculty make known to the students that in future, moral character is to be considered in assessing suitability for promotion.[45]

The 'New' Four Year Curriculum

The Committee on Studies was the executive committee of the Faculty of Medicine which met once per month, and comprised the heads of four pre-clinical and four clinical departments and the Dean. By February 1949, Bethune, as Superintendent of the Victoria General Hospital was also appointed to this committee. In 1947, along with the everyday administration of the school, the Committee on Studies was further burdened with overseeing the development of a proposed 'new four year curriculum'. As Dean Grant revealed in a letter to President Kerr, "The Committee on Studies of the Faculty of Medicine is now working on a new curriculum for a four year course."[46]

Both the students and the Committee were in favour of a new four-year curriculum which would see the undergraduate internship program become a 'graduate internship' whereby students would receive their degrees after the fourth year of medicine and their license to practice after completion of the internship. Although both students and faculty agreed with the 'four year curriculum' plan, their rationale for doing so was quite different.

It was the faculty's belief that by having the degree awarded after the fourth year Dalhousie students would have "wider acceptance" among other colleges. Because most of the colleges in the United States, and some in Canada, had already implemented graduate internships, it was thought that Dalhousie's undergraduate internship might not be accepted as part of a program in specialty training.

Students had other reasons for wanting graduate internships. It was reported at the February 28, 1947 meeting of the Committee on Studies that students felt that their "standing and work in the hospitals would be improved if they had their degrees before their interneships."[47] The students' rationale was met with some trepidation by Dr. Atlee, Head of Obstetrics, who "deprecated the present antagonism which seemed to exist between some of the students and some nurses."[48] He felt that promoting this

reason for changing the internship would increase the antagonism already present among the medical staff.

On March 14, 1947 the committee appointed by the faculty to consider the graduation of medical students at the end of the fourth year met with the Committee on Studies to discuss the advantages or disadvantages of changing the curriculum. The committee felt that it was advantageous to change to a new four year curriculum because it would "convey certain advantages to the graduate during his interneships as regards to confidence, prestige and standing while working with other members of the hospital staff"[49] (sic). In addition, the graduate internship would bring Dalhousie in line with other colleges in North America, and was required by many of the hospital residency programs in Great Britain and the United States. The minutes of the meeting also revealed that the committee suggested that "the graduate interneships is considered in hospital promotions" and is an advantage "when applying for hospital appointments."[50](sic). However, on a positive note, it was pointed out that the Royal College of Physicians and Surgeons of Canada would accept Dalhousie's undergraduate internship.

The disadvantage of changing to a four-year curriculum, focused on the fear that the School might lose control of

the placement of students for their fifth-year internships. Furthermore, the committee suspected that if the clinical studies portion of the curriculum could not be expanded in the new four year program so that the students received the same clinical experience, then the Medical school's standing with the accreditation body would be jeopardized. If this were the case, and the clinical studies portion of the curriculum were condensed into a shorter time-span, it would require more time on behalf of the clinical teachers, or additional staff. It was also brought to the attention of the committee members that if the new four-year curriculum were implemented, the students ability to work during the summer months between first and second years would be significantly curtailed, resulting in a loss of income for students.

After much discussion it was decided that "unless it was possible to safeguard the placement of internes in the constituency of Dalhousie University it was thought unwise to consider granting the degree at the end of fourth year."[51] (sic). In order to decide whether the university had the right to control placements in a graduate internship, the committee decided to seek legal advice. The advice was not confirmed until May 26, 1948 at a meeting of the faculty where President Kerr reported that "he had

sought legal advice as to the possibility of the University retaining control of the internships, if the degrees were given at the end of fourth year."[52] The result of his inquiry was that the university could ask the student to sign a contract at admission; however, if the student did not wish to honor it the degree could not be withheld. The President reported that he had been advised that the only recourse would be to sue the student and monetary damages would have been difficult to determine.

Plans for the new curriculum continued throughout the Spring of 1947 and its progress was reviewed at a meeting of the Committee on Studies on June 12, 1947. In general, the hours devoted to the basic science topics such as Anatomy and Pathology would be reduced, allowing for the introduction of the clinical sciences earlier in the curriculum. There were also a number of new programs to be implemented, including Medical Practice in first year, and the Conferences on Clinical Medical Sciences in third year.

Although most of the committee agreed with the changes, there was much discussion of the 'load and length' of Pathology. The recorded conversation exposed the reluctance of some of the faculty to give up 'their time' in the curriculum. In this instance, it was recorded that Dr. Ralph Smith (Pathology) was asked if "it were possible to

shorten the course or in some way lighten the load. Dr. Smith felt that the complexity and importance of the subject was such that this could not be done."[53] Other areas of concern relayed by the faculty members included insufficient time devoted to Therapeutics, General Medicine, Pediatrics, and Dermatology. It appeared that Dalhousie, like so many other schools, was suffering as a result of the advances in technology and science after World War II, which led to the increase in content, and subsequent increase in specialization. Consequently, these advances led to schools trying to make available more time in the curriculum to cover the new subjects.

Despite the initial reluctance of some faculty members, by September 1947 the Faculty of Medicine drafted a plan for the "Suggested New Four Year Curriculum."[54] The object of the four year curriculum was to award the degree after fourth year and "increase the time allotted to clinical instruction, especially Medicine."[55] At that time the curriculum consisted of four years of instruction; three years comprised twenty-eight weeks and one year comprised thirty-four weeks, with a twelve-month intern year. The committee decided that it was impractical to increase the number of hours in the curriculum because the curriculum was already crowded, and lengthening the fourth year was

impossible because of the time of Dalhousie's convocation. Therefore, the committee proposed that the "first three years will be each 32 weeks long, with a final year as 28 weeks."[56] The additional weeks would increase the existing 3850 hour program, not including the internship, by 200 hours. In general, "The total course is lengthened by six weeks and brought over 4,000 hours of instruction."[57] The arrangement of these hours allowed for the pre-clinical subjects to be finished earlier in the program and the clinical disciplines to be started earlier in the student's career. As stated in the report:

> This arrangement allows Anatomy, Physiology, and Pharmacology to be finished earlier, which in turn allows Pathology and Physical Diagnosis to be started earlier. In the main, the extra hours for clinical instruction have been gained by clearing Pathology and Physical Diagnosis from the second term of the third year.[58]

The allotment of courses at Dalhousie paralleled those which were offered at other medical schools in North America. Generally, there were three or four major courses in first year, which included Anatomy, Physiology, and Biochemistry, and in some schools, Bacteriology. However, the duration of first year was generally shorter than those of American schools, where the average length of the first year was thirty-two to thirty-six weeks.[59] A complete outline of the new curriculum at Dalhousie is included in Appendix Six, and

the following are excerpts from that schedule.

The first term of first year was left unchanged except for the new course "Introduction to the Study of Medicine" which was taught one hour per week. In the second term of the first year the dissection periods for Anatomy were increased from three to four which enabled "Dr. Mainland to complete general dissection in the first year."[60] It was suggested that Histology and Embryology end four weeks before the end of term to free up more time for Anatomy. With the extra four weeks in first year, Biochemistry was lengthened and Physiology was given more time in first year but was to take up less time in the second year. The total number of hours devoted to this course, including Histology and Embryology, was proposed to be 585 hours. As a comparison, Barzansky and Gevitz reported that in the United States the range of hours devoted to Anatomy (including histology and embryology) was 770 to 408, with a median of 600 hours.[61] With respect to Biochemistry, which was taught in the first year, Dalhousie proposed maintaining similar hours as were in the existing curriculum. However, in comparison to the range of hours devoted to this topic in the United States, Dalhousie's course was slightly lower; 200 hours as compared to a median of 230 in the United States.[62]

Only three of the subjects taught at Dalhousie in second year were similar to those taught in American schools; Pharmacology, Pathology, and Physical Diagnosis. At Dalhousie, in the first term of the second year, Anatomy and Physiology examinations were both written at Christmas. Anatomy was condensed to one period instead of three and Physiology had only one scheduled lab period and three lectures, instead of two and two, respectively. It was planned that Applied Physiology would be taught in the third year, and that Physical Diagnosis and General Pathology, normally taught in the second term, was moved ahead to the first term.

In the second term of the second year there were no scheduled Physiology or Anatomy classes. Hygiene was to be taught twice per week in this term along with Pathology which consisted of four lectures and one lab per week. In addition, Pharmacology was condensed and doubled, which meant it would take up four lectures and one laboratory period per week. The course in Physical Diagnosis, previously taught in third year, would be taught in second year as three two-hour group clinics per week.

In the second term of the second year Pharmacology was taught, as it was in most of the American schools. However, far less time was devoted to Pharmacology at Dalhousie. In

American medical schools, the teaching of this subject ranged from 358 to eighty hours with a median of 165.[63] At Dalhousie 140 hours were devoted to Pharmacology. However, it cannot be discerned from the evidence whether the estimates from the American schools included time devoted to Therapeutics (which was sometimes included in the hours of Pharmacology). In Dalhousie's case, there was an extra thirty-two hours devoted to Therapeutics in third year.

The third-year curriculum at Dalhousie as significantly shorter than that in American schools. Additionally, the majority of American schools adhered to a third-year clinical clerkship.[64] In the first term of the third year at Dalhousie examinations in Pathology, Hygiene, and Physical Diagnosis would be held at Christmas. Pediatrics and Therapeutics would begin in the first term instead of the second and a two-hour per week time slot was reserved for Applied Anatomy or Clinical Physiological Conferences. In the second term, Medicine would be taught by way of three group clinics per week. The report states that "The primary purpose of the schedule change has been these clinics."[65] In order to increase the time allotted to Medicine there was a need for six groups of students three times per week which called for more teachers and facilities to be arranged. Also proposed for the third-year curriculum, was field work

in Hygiene, which was scheduled to take up "8 or 10 of the 18 periods...the others could be used for the new course in practical nutrition which the committee has recommended." The report further stated that "Surgery, Obstetrics and Gynaecology, Lab Diagnosis, Pediatrics, Therapeutics, Psychiatry, are unchanged, though the longer term will give each subject four more weeks."[66] There were also several hours left over in the schedule for the introduction of new courses.

In a meeting of the Committee on Studies on September 11, 1947 the minutes revealed that, in reference to the four-year curriculum, the Committee agreed that "the plan in general could be adopted but that it would be well to discuss it with Doctor Fred C. Zapffe and Doctor Donald G. Anderson (of the Association of American Medical Colleges and the American Medical Association) during their official visit of inspection next week."[67]

Zapffe and Anderson Report 1947

By the summer of 1947 Dean Grant and the Medical School were in the middle of one of the most significant changes to the curriculum since 1932. In addition, there were renovations being completed at the Forrest Building, and the new Victoria General was receiving new teaching facilities

through a donation from the Rockefeller Foundation. In an effort to gain some insight into the changes being proposed for the Medical School, and because the faculty were concerned with their accreditation status with respect to the changes in the curriculum, Grant invited Dr. Fred Zapffe, Secretary of the Association of American Medical Colleges (ACMC), to visit Dalhousie Medical School. Dr. Grant also extended the invitation to Dr. Donald Anderson, Secretary of the Council on Medical Education and Hospitals of the American Medical Association (AMA). In correspondence to Dr. Anderson, dated July 23, 1947 , Grant wrote:

> Some little time ago I invited Doctor Zapffe, the Secretary of the Association of American Medical Colleges to come down and look the school over. It was not a formal inspection, but we felt that there were so many things going on here that we should like him to come along, and if it is convenient to you we would like you to come along to.[68]

From September 15 to 18, 1947, Dr. Fred Zapffe and Dr. Donald Anderson were the guests of Dalhousie Medical School and conducted a thorough investigation of the physical facilities, staff allocations, and the curriculum. The intention of the survey was to assist Dalhousie Medical School "to determine what revisions of its present programme may be desirable in the light of current developments in medical education."[69] Although there were problems outlined

in the 1947 survey, in general, Dr. Zapffe was pleased with the advances at Dalhousie. In a letter to Kerr shortly after the survey, he compliments Kerr and Grant on bringing the medical school to the place where it was at that time. He wrote,

> It is really, a remarkable feat, when one considers the smallness of the population, the very limited number of physicians on whom you can call for service, and the lack of any great wealth. Medicine is an expensive education.[70]

Dalhousie had grown considerably since the last report in 1932. The Medical School budget had been doubled, the staff in the pre-clinical areas had been strengthened, and research had begun in several departments. In reference to this, Zapffe and Anderson reported that they were generally pleased with the school - "The school is to be commended for the number of improvements that have been effected in recent years."[71] However, there were also some areas in which Dalhousie had to change if it was to stay abreast of prevailing trends in medical education. In making their recommendations Zapffe and Anderson acknowledged "certain local conditions that must be reckoned with in any efforts to strengthen the school."[72] The two main barriers to the growth of Dalhousie were considered to be the small number of physicians in Halifax available to teach, and the "limitation of funds" which precluded "the importation on

any scale of established teachers in the clinical subjects."[73]

Among the most immediate concerns outlined in the Report was the lack of staff in both the pre-clinical and clinical departments. In a letter from Zapffe to Kerr, Zapffe explained the problems that existed with the shortage of staff. He wrote regarding the school - "What you have is good but it must be better. Your facilities are adequate, but personnel is lacking in numbers", and "Since it is hardly possible that the physician population of Halifax can be increased in numbers, the additional personnel needed by the medical school must come from outside, either from Canada, from the United States, or from Great Britain."[74]

In addition to the burden of teaching the medical students with a shortage of staff, the faculty were also responsible for teaching the twelve dental students and a small number of arts and science students. With respect to the majority of the pre-clinical departments, the Zapffe Report suggested that at least one instructor for every department was needed if the school was to "continue to be responsible for teaching the dental students, and if the increased size of the medical class is maintained." In addition, Zapffe and Anderson stated that the responsibility for teaching the dental students continued to be a "drain on

the resources, personnel, and physical facilities of the medical school."[75]

Although most of the Medical School was in need of staff some departments were in more urgent situations than others. In particular, when referring to the Department of Pathology and Bacteriology, the Report stated that "of all the preclinical departments this is the one which is in most desperate need of additional personnel and support."[76] It further contended that the department was in need of "at least five full-time instructors in addition to the head of the department" in order to maintain any quality of instruction and cover the courses.[77]

Research

Included in Flexner's model of an 'ideal medical school' was the recommendation that all medical schools, as part of an academic institution, should endeavour to conduct research. His reasoning, as he stated in his Report of 1910, was that without exception "research is required of the medical faculty because only research will keep the teachers in condition". Therefore, in order to be able to teach prepared with the latest knowledge in their field, it was necessary that medical educators conduct research. Deitrick and Berson reported that the "best teaching is done where a well-balanced research program is carried on."[78] In

addition to this, most schools believed that if they were to attract high-quality teachers and researchers, they must have active research programs and a sound reputation of receiving research grants from outside the university.

Although Flexner did not believe that all faculty members or students had to conduct research, he felt that it was necessary for students to acquire the skills of reasoning learned through using the scientific process in laboratory work. For Flexner, the mental skills learned in approaching a scientific problem were much the same as those used to solve a scientific problem. Accordingly, because of the fast-paced manner in which medicine evolves, future practitioners and researchers should learn to be "alert, systematic, thorough, and critically open-minded."[79] These characteristics could be only cultivated through students learning alongside intellectual teachers involved with productive research. Therefore, it was thought that students had to be active learners in the laboratory whether they were to become clinicians or researchers.[80]

At Dalhousie, although the school was understaffed, there were some gains in research in the years previous to the Zapffe Report. Most of the pre-clinical departments were conducting research and a small number of clinical faculty were attempting to continue a program of research.

Dr. Donald Mainland and his associates in the Anatomy department were conducting research on changes in adult bones and joints. It was reported that Mainland had received an outside research grant from the Markle Foundation for the sum of $6,600 "for the purchase of an X-ray machine and films,"[81] and from the National Research Council (NRC) for $500.00 for a planograph. In spite of the fact that Mainland conducted research through monies from outside agencies, he was concerned with its impact on the university as a whole, and the possible detrimental effects on the Arts departments. On one occasion, when the Anatomy Department was trying to get a new floor for the Anatomy laboratory, he revealed his concern over this matter. In a letter to Grant dated April 11, 1948, Mainland expressed his concern over "the serious risk of universities having to deprive the pure Arts departments in order to meet the requirements of governments and other organizations that finance research in science."[82] He concluded his letter by indicating that Anatomy would be willing to give up its money for the floor if it would help the Arts departments.

Dr. E. Gordon Young (Head) and Dr. R.W. Begg (Associate Professor)of the Biochemistry department were both maintaining active research programs. Dr. Young conducted research in the "study of proteins and nutrition and [had]

recently obtained the first electrophoresis apparatus in Canada."[83] Dr. Begg, who was very interested in research as a career, had received a "grant of $15,000 from the National Cancer Institute to study by histochemical methods the mechanism of tumor cell invasion of normal tissue."[84] The importance of outside funding to the expansion and development of the medical school is evident through the advantages afforded Dr. Begg through this grant. For instance, not only did he receive money for his research, but eventually he became a full-time research associate. In addition, his grant not only allowed for his salary, but also for "two graduate students, one full time technician, one part time technician and one part time secretary."[85](sic) Moreover, the university agreed to contribute $3000.00 for renovations to create a special unit in the Forrest Building, and the National Cancer Institute had advised Dr. Begg that it would supply him with an additional annual budget of $10,000.00, so that he might continue to conduct his research. Although the survey team thought that the department was following a "well-planned programme of fundamental research," it was "definitely understaffed" and the "laboratory facilities of the medical students and the graduate students were somewhat crammed."[86]

The members of the Physiology Department were not quite as active in research as their colleagues in Anatomy and Biochemistry. Dr. Beecher Weld claimed that he had an excessively heavy teaching load and that his responsibilities as secretary to the faculty were dominating his time. He had, however, received a grant of "$1,000 to study the factors influencing liplipaemia."[87] Nevertheless, by 1948 the research program had increased in this department since Dr. Melville Schachter and Dr. Weld had received money from the National Research Council and were employing "summer workers on research problems," which included a first-year medical student and a "Polish refugee well trained in internal medicine."[88] In addition, Dr. Weld's work on oil globules in the lung had reached a point where he expected to publish it, and Dr. Schachter was actively pursuing his work on the control of gastric secretion. The work in this department was funded by the National Research Council as well as the Dalhousie Fund.

The Department of Pharmacology had plenty of office and laboratory space and as a result accommodated the whole medical class in one session, and carried on an active research program. Dr. M.G. Whillans, Head of the Department, received a grant for $800.00 from the National Research Council (NRC) to study anti-thyroid substances in

rats. The Report states that Dr. John Aldous, assistant professor, "constructed a Warburg apparatus", and had received a $1500.00 grant from NRC to study the metabolism of yeast cells.[89] In a letter written by Dr. Aldous to Dr. Grant in June of 1948, the research program in the department had been maintained and equipment had been purchased through an NRC grant to in order to conduct research in cellular metabolism, and according to Aldous "three papers on last year's work are in the publisher's hands."[90]

The Department of Preventive Medicine was headed by the Dean, Dr. Grant, and one full-time Professor of Epidemiology and Nursing Education, Dr. C.B. Stewart. Dr. Stewart was conducting research on the use of BCG (tuberculosis vaccine) and also on problems in aviation medicine.[91]

Although many of the pre-clinical departments were maintaining a program of research,, according to Zapffe and Anderson, the clinical departments were conducting no research at this time.

The Curriculum

The curriculum of the Medical School at the time of the survey was outlined in the Report as a "General Plan of the Curriculum" which stated that "the course of the first, second and fourth years is twenty-eight weeks in duration,

the third year thirty-four weeks and the fifth year twelve months."[92] The outline of courses is contained in Appendix Seven. The curriculum of the Medical School was also a main focus of Zapffe and Anderson. In particular, they suggested that there should be a significant reduction in didactic teaching in Gross Anatomy, Physiology and Physical Diagnosis, in order to allow for more clinical teaching. In addition to the didactic lectures employed as the main teaching method in the school, there were far too many scheduled hours in the curriculum. Therefore, Zapffe and Anderson recommended that the number of hours be reduced to 3600 from the 3850 currently scheduled (See Appendix Eight for a comparison of these hours). In a letter to the Committee on Studies dated December 1947, Weld expressed his concern about this recommendation. Weld wrote: "They severely criticized our curriculum on the basis that it contains too many scheduled hours, of which far too many are lectures." He continued by stating that: "Their remarks were to the effect that your students have their time so cluttered up with scheduled hours that they have no time to think. No wonder they are not interested in medical investigation or research, they only have time to memorize things."[93] This indicated Weld's concern over the teaching methods employed by Dalhousie and the effect of these

methods on students' learning.

The course in Anatomy, according to Zapffe and Anderson, was "well planned and the quality of instruction appears to be quite satisfactory, ...in keeping with modern concepts." However, the Report stated that "considering demands on other subjects in the modern medical curriculum, it would appear that too much time is being devoted to anatomy."[94] Histology and Embryology, part of the Anatomy course, however, was reported as "stereotyped and no important innovations have been introduced in the last twelve years."[95] This situation, in part, was due to Dr. Bean's illness and a proper evaluation of the department was not possible at the time of the survey.

The course in Physiology received praise from the survey team - "the course in physiology has much to commend it"; it is "entirely in keeping with modern methods of teaching medical physiology." On the other hand, Zapffe and Anderson thought that the amount of lectures in this course could be reduced: "There is perhaps too much reliance on didactic teaching. At present there are 112 hours devoted to lectures."[96] Moreover, Physiology was taught over two semesters and lectures were the only teaching method employed.

Pathology, including Bacteriology and Parasitology was

managed and taught by Dr. Smith, who was exceedingly overextended in his role, and worked in physical facilities which were extremely inadequate. Zapffe and Anderson wrote "With only fifty-nine regular laboratory sets and fifty-six lockers available, it is obvious that the attempt to accommodate eighty-two students results in impossible overcrowding."[97]

The course in Laboratory Diagnosis was also criticized for not being well implemented. There was no one who assumed responsibility for this course and the "laboratory work done by the students during their clinical assignments apparently is not checked or supervised."[98] In addition, the lectures and clinical exercises should be correlated so that better connections could be drawn between the two.

At the time of the Report, the clinical subjects were also being taught mainly by didactic methods. In commenting on Internal Medicine the Report stated that "In common with the other clinical subjects, it would appear that there is more emphasis being placed on didactic teaching than is now the general practice."[99] It was also recommended that "true clinical clerkships be established in all major clinical departments" which would require the recruitment of "full time young instructors" in order to supervise the students with the assistance of the residents. In addition, "A full

time instructor" was "immediately essential" in Internal Medicine along with "full time men at the earliest possible date" in all other clinical departments.[100]

In consideration of lengthening the duration of the curriculum, Zapffe and Anderson agreed with the changes proposed in the new 'four year curriculum.' However, they impressed the point that some of this time should be devoted to free time for students. In reference to the change of the curriculum so as to award the degree after the fourth year, they strongly cautioned that

> it would appear essential that the schedule be so arranged and the time allotted to the preclinical courses be so reduced that it will be possible for the students to have in third and fourth years the same total amount of clinical experience as they now obtain in third, fourth and fifth years. The school would not be justified in awarding the degree of Doctor of Medicine at the end of the present first four years[101]

In addition to the problems surrounding the curriculum, the Medical School was isolated from other larger medical centers - although Zapffe and Anderson thought that it had "many of the potentialities of an outstanding medical centre."[102] Consequently, they suggested that graduates of Dalhousie should intern in other areas of Canada and the United States, and that graduates from other schools should seek to intern at Dalhousie. They declared that the "resulting cross-fertilization would be extremely healthful

and stimulating to the advancement of medicine in Halifax."[103]

Reaction to the Zapffe and Anderson Report

On September 22, 1947, shortly after Zapffe and Anderson completed their inspection of the Medical School, Dr. Weld, Secretary of the Faculty, wrote a short hand-written note to Dr. Grant -

> Dear Grant,
> I suppose we must call a meeting of the Committee on Studies very soon, in order to discuss Zapffe's suggestions. Do you think it would be a good idea to circulate a summary of our talk with Zapffe? I enclose a suggestion. If you agree with the idea, please modify my draught as you see fit. Miss Robertson could do some of the mimeographing if Miss Currie has not time.
> When shall we call the meeting
>
> CBW[104]

As a result of this letter, a meeting of the Committee on Studies was held on December 3, 1947 to address the recommendations of the Report. Each member of the committee was given a copy of the report and asked to comment on the sections pertaining to his department. In general, most representatives of the departments agreed with Zapffe and Anderson's recommendations. All members agreed that extra staff members were needed, hours should be cut, and that a clinical clerkship should be implemented. Ironically, at this time the School was in the precarious position that

even if the money could be raised to hire new staff, the space shortage was such that there would be nowhere to put them. The Committee was concerned that the pre-clinical space was filled to capacity and this seriously "encroached on space intended for research and other work." In addition, the Committee noted that, in relation to the need for staff, the "Dental students complicate this problem and make the need more pressing."[105](sic)

Other suggestions in the Report received a mixed response. Dr. Holland of the Department of Medicine declared that some of the criticisms in the report were not justified. In particular, contrary to what the Report stated, "the case histories written by the students were supervised and the residents were allowed to teach."[106]

One of the recommendations in the Report was that the school year be lengthened to make available more free time for students. This was not well received by Dr. Atlee who thought that it seriously infringed on the students' ability to earn money during the summer vacation. On the other hand, Dr. Atlee did agree that there should be no scheduled lectures in the fourth year and that more clinical experience should be substituted for lectures. Although the Report stated that the class clinics held in fourth year should be discontinued, most committee members disagreed and thought that the "class clinics were valuable and should be

continued."[107]

One issue that prompted a heated debate was the apportioning of the grants received from outside funds. Some members of the Committee asserted that the Dental School was receiving too much of the grant money allotted to the School and that the current deficit in the budget of the Medical School was largely due to its alliance with the Dental School. Dr. Atlee protested that "it was really due to the efforts of the medical faculty during a great many years, that the grants were obtained, and until recently these grants were primarily for Medicine. The present apportioning of grants seems to be on an unreasonable basis."[108] The grants were based on the number of students enrolled.

The deficit in the budget, supposedly caused by their alliance with the Dental School, created a problem for the Medical School in that it did not want to show a budget deficit to the American Medical Association when reporting its financial statement. President Kerr and Dean Grant agreed on solving the problem as related in their correspondence of December 16, 1947. Grant wrote to Kerr stating that "I rather hesitate to send them the new budget in which an item of $4,494.50, a deficit of the Dental School, is charged against the Medical Faculty. Is it

agreeable to you that this item be eliminated and the budget changed accordingly?" Kerr wrote his handwritten reply at the bottom of Grant's letter with his simple solution "I suggest that you reduce the amount receivable by you from the Government grants by that figure, as the grants are for Medicine and Dentistry jointly."[109]

Reaction of the Faculty

By the end of December the Committee on Studies had examined the Report thoroughly and was ready to present it to the faculty. A letter written by Dr. Weld on December 31, 1947 portrays the apprehension the Committee may have had in doing this. He wrote:

> Faculty may not agree with all these suggestions, and even if it does, probably not all could be carried out in full, immediately. They should however, be considered seriously as, according to Drs. Zapffe and Anderson, they represent the modern trends in medical teaching. The Committee had discussed a number of the proposals and, for the most part, agreed to them in principle. When it comes to detail, however, no one seems willing to give up the class clinics or even any of the lectures.[110]

Weld also declared that if the School did not make these changes the curriculum might not be acceptable to the American Medical Association, Association of American Medical Colleges, or to the School.

Nevertheless, on March 22, 1948, there was a special meeting of the Faculty of Medicine to discuss the Zapffe and

Anderson Report. Dr. Grant opened the meeting with an introduction to the Report and announced to the faculty that it had already been "considered by the Committee on Studies which had agreed to it in principle."[111] The faculty had received a copy of the Summary and Recommendations of the Report which were to be read and commented on separately.

There was much discussion over the dropping of class clinics in fourth year, which would allow more time for bedside teaching in small groups. As was the case with the clinical representatives of the Committee on Studies, most clinical faculty did not want the class clinics dropped, but wanted the extra instructors needed for the implementation of the clerkship method of teaching. In response to the issue of the clerkship, Dr. Holland informed the faculty that students were "now being assigned to patients and wrote histories,"[112] and that there "was not enough of the unusual clinical material available to allow the teaching to all to be done by the clerkship method."[113] Other faculty members were concerned that their courses would be eliminated altogether and that they would not have enough staff to teach students. Among those faculty who agreed with the implementation of the clerkship was Dr. Bethune, Superintendent of the Victoria General Hospital, who thought that "the clerkships would fit into the hospital routine

well and that students could be made responsible for all the histories."[114] However, Dr. Bethune's reaction might have been influenced by his role as superintendent of the hospital. The implementation of the clerkship method would provide the hospital with additional people to work on the wards.

Having passed a motion that the faculty agree to the principle of the clinical clerkship, there ensued a discussion about what the students should be expected to do and when they should be called upon to do it. Dr. Gosse remarked that the students "should be called any time, day or night, on admission of patients" and that they should be "responsible for the histories and lab work of the patients assigned to them."[115] Dr. Holland suggested that they should follow the lead of other schools and have the senior students responsible for the outpatient department and the junior students in the hospitals. Finally, after much discussion the faculty concluded that the departments of Medicine and Surgery should "consider this recommendation of the report and recommend a course of action, <u>within two weeks</u>."[116] Therefore, by May 26, 1948, at a meeting of the Faculty of Medicine, the departments of Medicine and Surgery reported their decisions regarding the implementation of the clinical clerkship in fourth year - both reported that

"they approved the principle and that they could institute it at once if extra staff were available, not otherwise."[117]

There were no arguments from the pre-clinical faculty regarding the needed increase in staff in their departments. All faculty unanimously agreed that they required at least the number of staff recommended in the report, although they acknowledged that the money would have to be found from outside sources in order to hire the necessary people. It was pointed out by Dr. J.W. Abbiss that the space situation in Pathology was acute, and that at best, even with the necessary funds, they could not accommodate any more than two more staff without expansion of the facilities.[118] Likewise, space problems were evident in other departments, particularly in the Medical Sciences Building. Dr. Young stated that "there was not enough space in the biochemistry labs for the present students and there was no office or lab to put a new man in." Dr. Weld observed that in the physiology labs there was "not enough room in the laboratory for both Meds and Dents, separate laboratory courses were given by the same personal (sic). This encroachment on time makes research extremely difficult."[119]

The New Curriculum of 1948-49

At the Faculty of Medicine meeting on May 26, 1948, the

'new curriculum' was outlined encompassing the recommendations of the Zapffe and Anderson Report of 1947. Dr. Weld, Secretary of the Faculty, described the new curriculum and announced that it had been approved by the Committee on Studies whether or not the new 'four year curriculum' was implemented. A letter from the Provincial Medical Board (PMB) approving the proposed course was read to faculty members, and "giving no decided opinion on the suggestion that the degree be given at the end of the fourth year."[120] Therefore, the Committee agreed that the curriculum changes as outlined by Zapffe and Anderson be implemented as much as the budget would allow and the issue over whether the degree should be granted after four years would be held in abeyance until further information could be gathered. The major curriculum changes were as follows:

> 1) the completion of Anatomy in the first year. 2) The starting of Medicine, Physical Diagnosis and Pathology at the beginning of the second year and the completion of Physiology at Christmas of this year.3) The clearing of Pathology from the second term of the third year and the introduction of bedside medicine clinics into this term. 4) a great reduction in the number of lectures in the clinical subjects. 5) the conversion of the fourth year into a year of clinical clerkship in which the students would be responsible for the official hospital histories and progress notes. 6) there would be 3, 32 weeks a year and 1 30 week year.[121]

This revision would see the first four years of the undergraduate curriculum increased from 118 to 126 weeks. In the clinical clerkship the students would be on the wards

from nine to twelve noon, and from two to five in the afternoons.

Although there was agreement, in general, that the new curriculum be implemented, there were some concerns, from both inside and outside the school, as to the plausibility of the clinical clerkship from an educational point of view. Some members of the Surgery Department were apprehensive that the students would not have the time needed to complete histories, attend instruction, and attend the outpatient clinics.[122] In addition, at a meeting of the Representatives of the Provincial Medical Board and the Committee on Studies, the new curriculum was approved, but not before the members of the Board expressed their concerns over the proposed changes. Among them was the possibility that with the "loss of clinical lectures, some of the poorer students will lose their sense of direction and become confused in the mass of detail on the ward," and "the need of stimulating the students to think."[123] In addition, they indicated that the "primary aim of the undergraduate teaching should be the training of a general practitioner and that care should be taken to avoid teaching specialties."[124] With the addition of more time devoted to clinical teaching and the implementation of the fourth-year clinical clerkship the Board stressed "the importance of

good history taking and the need for teaching and supervision" in the clinical disciplines.[125] In response to these concerns the Committee assured the Board that extra teachers would be provided to help students on the wards and that the specialties training would not begin until the residency years.

It was obvious to Zapffe and Anderson and to the Medical School that before any changes could be implemented, more money was needed. In fact, in a letter to President Kerr, Dr. Anderson indicated that the money needed to implement the new program to bring Dalhousie in line with other medical schools should be sought from the Maritime Provinces and "New Foundland [*sic*]."[126] In addition, Dr. Fred Zapffe wrote Kerr suggesting that "To secure the personnel you should have you need money, and since Dalhousie is very largely dependent on contributions from those who are in sympathy with its aim, the money needed must come from private sources to a very considerable degree."[127] At a meeting of the Faculty of Medicine on May 26, 1948 President Kerr "pointed out that the full implementation of the Zapffe Report would increase the medical budget by some $50,000. per year."[128] The Medical School could get some of this money from the provincial government, but the full amount was not yet available.

After much discussion, it was decided by the faculty that the new schedule would be started at once in first year, and the second year if staff could be found for Pathology. "The third year would have to be held over for one year, at least." It was decided that fourth year could be also started at once, "though the teaching change would not be complete at first both because the present fourth year students are not quite prepared for a full clinical clerkship and because staff may not be available."[129]

In order to implement the new schedule, by June 8, 1948, Dean Grant had written to President Kerr his additional requests for staff in "order to carry our as far as possible the suggestions of the Zapffe Report..."[130] Dr. Grant had requested at least one extra person either full-time or part-time in most pre-clinical departments and in Psychiatry, Medicine, Obstetrics and Gynaecology, and Surgery. Pediatrics needed extra funding to increase the pay of Dr. Adelaide Flemming to $750.00 as a part-time instructor.

By October 26, 1948, Grant wrote to Kerr stating that:

> the teachers at present are chiefly part-time clinical teachers. The total number of part-time teachers (clinical) is sixty-one and distributed as follows:
>
> Medicine -14
> Surgery -19
> Pediatrics -5
> Obstetrics and Gynaecology -5

E.E.N. & Throat	-6
Radiology	-2
Urology	-5
Psychiatry	-5

He continued by relating that "Most of our staff are well-qualified and all our recent appointments have had the Specialty Board Examinations of the Royal College of Physicians and Surgeons of Canada."[131] By 1949 the Medical School employed nineteen full-time staff, including two full-time clinical staff, which were Dr. Holland (Medicine), and R.O. Jones (Psychiatry), and seventy-one part-time staff.

The 1948-49 University Calendar outlined the course leading to the "degree of Doctor Medicine and Master of Surgery... which [extended] over five years," as follows.[132]

> **First Year.** Anatomy; Histology; Embryology; Physiology; Biochemistry; Hygiene; Psychobiology.
>
> **Second Year.** Anatomy; Structural Neurology; Physiology; Biochemistry; Pathology; Bacteriology; Pharmacology and Materia Medica; Physical Diagnosis; Psychiatry; Introduction to Clinical Medicine and Clinical Surgery.
>
> **Third Year.** Pathology; Laboratory Medicine; Pharmacology; Physical Diagnosis; Preventive Medicine; Medicine; Clinical Physiology; Psychiatry; Surgery; Applied Anatomy; Ophthalmology, Laryngology and Otology; Radiology; Obstetrics and Gynaecology; Clinico-Pathological Conferences; Paediatrics; Therapeutics.
>
> **Fourth Year.** Preventive Medicine; Medicine; Medical Jurisprudence and Toxicology; Autopsies; Psychiatry; Surgery; Anaesthesia; Urology and Dermatology; Ophthalmology, Laryngology and Otology; Radiology; Obstetrics and Gynaecology; Clinico-Pathological Conferences; Paediatrics; Therapeutics.

> **Fifth Year.** The fifth year, a period of twelve months, beginning immediately after the completion of the fourth year, is one of rotating interneship. All interneships are approved by the Canadian Medical Association.

The comparisons for the change in courses are portrayed in the 1947 and 1948 Calendars contained in Appendix 9.

In the 1948-49 Report on the Medical Faculty, Grant wrote that, "Certain changes in the course are under way. The first second and third years have been lengthened so as to allow us to get off the preclinical subjects earlier than with our previous curriculum and most important to allow the students to spend more time on the clinical subjects. The number of lectures have been decreased and in the fourth year the students are serving a full clinical clerkship."[133]

Other changes in the Medical School included the increase in research activity in the clinical departments and an increase in the number of "partly paid instructors in all clinical departments."[134] In the same year it was recorded that the new Victoria General Hospital was opened and that the public health clinics had been transferred there. As a result, Grant stated that the "facilities for instructing the medical students are excellent" and "In the wards....the supervision of students is better than in the past."[135]

In addition to the increased activity, personnel, and better facilities, the Medical School was experiencing a high number of applications for Medicine, many of which surpassed the expected qualifications for admission, which left the school with a difficult task of deciding which applicants to accept. For the academic year 1948-49, the Dean reported that "the number of applications for medicine was the greatest in the history of the school - 430."[136] Furthermore, for the first time, "before the choice was made all the applicants were interviewed" by "two members of the Committee on Admissions" who visited all outside universities except Memorial University College in Newfoundland. Of the fifty-eight that were admitted "28 were residents of Nova Scotia, 15 of New Brunswick, 9 of Prince Edward Island, 5 of Newfoundland, and 1 of the British West Indies."[137]

Summary

In the late 1940's, the changes occurring in the medical school curricula in the United States and Canada appeared to be an interplay between a multitude of forces during and after the war. The advances of technology and the increase in knowledge changed the emphasis of medicine to a science-based discipline, while still trying to

maintain an emphasis on the individual; this would soon change to emphasize a purely scientific approach to medicine in the ensuing years. The effect of technology and knowledge put further pressure on faculties to evaluate their curricula in an attempt to incorporate core courses instead of trying to include all aspects of medicine in the undergraduate years. In some cases, this resulted in an overloaded curriculum with a hodge-podge of courses. At Dalhousie, pressure was exerted by students and faculty to change its curriculum. In addition, outside agencies were also concerned that the medical curriculum was producing students who were deficient in some areas of medicine. The curriculum proposed by the faculty at Dalhousie in the mid-1940's, which recommended the degree be awarded at the end of fourth year, was not implemented. After the inspection of the School and subsequent report by Zapffe and Anderson in 1947, Dalhousie made some changes to its curriculum. The general trend was to reduce the amount of didactic teaching in the preclinical years to allow for more clinical teaching in the third year, and to implement a full clinical clerkship in fourth year. In addition, the Medical School had hired extra staff in the clinical areas to cope with the added responsibility of supervising students in the new fourth year clerkship. In spite of being able to hire new

staff, however, the Medical School was restricted in its ability to hire the staff needed by its lack of money and space.

1.Minutes Committee on Studies (COS), January 3, 1947, 491.

2.Ibid., February 28, 1947, 492.

3.Ibid.

4.M.L.Barr, *A Century of Medicine at Western*. London, Canada: The University of Western Ontario, 1977, 463.

5.B. Barzansky and N. Gevitz, eds., *Beyond Flexner: Medical Education in the 20th Century*. New York: Greenwood Press, 1992, 28-29.

6.Minutes Faculty of Medicine (hereafter FOM), January 13, 1947, 245.

7.Minutes COS, April 26, 1948, 526.

8.DUA Department of Anatomy Correspondence, B60, Mainland to Grant, February 19, 1948.

9.Minutes COS, April 26, 1948, 526-527.

10.Minutes COS, this was a joint meeting between student representatives and the committee, February 28, 1947, 493.

11.Ibid.

12.Minutes COS, February 3, 1948, 523.

13.Ibid.

14.Ibid., February 3, 1948, 522.

15.Ibid.

16.Barzansky and Gevitz, *Beyond Flexner*, 28.

17.Minutes FOM, March 22, 1948, 274.

18.Ibid., January 13, 1947, 246.

19.Minutes COS, February 28, 1947, 492.

20.Ibid., February 3, 1948, 523. Also recorded in the accompanying Student's Report p1.

21.DUA Department of Obstetrics and Gynecology Correspondence, B791, Atlee to Grant, September 19, 1951.

22.Minutes COS, February 28, 1947, 494.

23.Minutes COS, December 3, 1947, 513. It was reported in the minutes that Dr. H.L. Scammell, Registrar of the Provincial Medical Board (PMB), had written a letter to the Dean on behalf of the Board.

24.Minutes COS, May 7, 1947, 507. This meeting was a joint meeting between the COS and the Conjoint Examiners of the Provincial Medical Board.

25.Ibid., March 14, 1947, 496.

26.Ibid., January 3, 1947, 484.

27.Dalhousie University Archives President's Office Correspondence (DUAPO),B856, Grant to Kerr, January 15, 1947.

28.S.B. Frost, *McGill University, Volume II*. Montreal and Kingston: McGill-Queen's University Press, 1984, 373.

29.Barzansky and Gevitz, *Beyond Flexner*, 48.

30.Minutes COS, February 3,1948, 523.

31.Ibid. Also contained with the minutes Students' Report, p4.

32.ibid

33.DUA Victoria General Hospital (VGH) Correspondence, B519, C.M. Bethune to Grant, April 26, 1948.

34.Minutes FOM, May 26, 1948, 286.

35.Minutes COS, May 5, 1948, 529.

36.Ibid.

37.DUA Minutes of the Senate (hereafter DUASB), May 8,1948, 105.

38.DUA VGH Correspondence, B519, Bethune to Grant, April 26,1948.

39.Minutes FOM, May 26, 1948, 286.

40.DUASB, May 8, 1948, 105.

41.Minutes FOM, May 5, 1948, 530.

42.Dr. D. Hawkins, interview by author, Ottawa, Ontario, October 31, 1998.

43.Minutes COS May 13, 1948, 534. In response to the problem of maintaining appropriate behaviour of interns the COS in conjunction with the hospitals decided that an intern would have to receive a certificate of satisfactory internship.

44.Ibid.

45.Minutes COS, March 30, 1949, 555.

46.DUAPO Correspondence, B856, Grant to Kerr, April 8, 1947.

47.Minutes COS, February 28, 1947, 492.

48.Ibid.

49.Minutes COS, March 14, 1947, 499.

50.Ibid.

51.Ibid.

52.Minutes FOM, May 26, 1948, 289.

53.Minutes, COS, June 12, 1947, 509.

54.DUA Curriculum 1947, B355, Paper entitled "Suggested New Four Year Curriculum," September 1947.

55.Ibid.

56.Ibid.

57.Minutes COS, September 11 1947, 511.

58.Minutes COS, September 11, 1947, contained with the minutes of this meeting is the Curriculum Committee Report, p1.

59.J.E. Deitrick and R.C. Berson, *Medical Schools in the United States at Mid-Century*. New York: McGraw-Hill Company Inc.,1953, 234.

60.Minutes COS, September 11, 1947. Curriculum Committee Report contained with the minutes Committee on Studies, p1.

61.Barzansky and Gevitz, *Beyond Flexner*, 2.

62.Ibid.

63.Ibid.

64.Ibid., 35.

65.Minutes COS, September 11, 1947. Curriculum Committee Report contained with minutes, p3.

66.Ibid.

67.Minutes COS, September 11, 1947, 511.

68.DUA American Medical Association (AMA) Correspondence, B37, Grant to Dr. D.G. Anderson, July 23, 1947.

69.Zapffe and Anderson Report 1947, accreditation of the school, foreword.

70.DUA Association of American Medical Colleges (hereafter AAMC), Correspondence, B83, Zapffe to Kerr, undated but was written shortly after the survey in 1947.

71.Zapffe and Anderson, 1947 Accreditation, 60.

72.Ibid., foreword.

73.Ibid.

74.DUA AAMC Correspondence, B83, Zapffe to Kerr, undated but written shortly after the survey in 1947.

75.Zapffe and Anderson, 1947 Accreditation, 62.

76.Ibid., 38.

77.Ibid., 61.

78.Deitrick and Berson, *Medical Schools*, 31.

79.Ibid.

80.Barzansky and Gevitz, *Beyond Flexner*, 21.

81.Zapffe and Anderson, 1947 Accreditation, 20.

82.DUA Department of Anatomy Correspondence, Mainland to Grant, April 11, 1948.

83.Zapffe and Anderson, 1947 Accreditation, 27.

84.Ibid.

85.Ibid.

86.Ibid., 28.

87.Ibid., 31.

88.DUA Department of Physiology Correspondence, B826, Correspondence, Weld to Grant, June 16, 1948.

89.Zapffe and Anderson, 1947 Accreditation, 35.

90.DUA Department of Pharmacology Correspondence, B17, Dr. J. Aldous to Grant, June 11, 1948.

91.Zapffe and Anderson, 1947 Accreditation, 54.

92."General Plan of the Curriculum" outlined in the Zapffe and Anderson Report, 1947, 15.

93.DUA Curriculum Correspondence, B355, C.B. Weld to the COS, December 31,1947.

94.Zapffe and Anderson, 1947 Accreditation, 21.

95.Ibid., 23.

96.Ibid., 31.

97.Ibid., 40.

98.Ibid., 62.

99.Ibid., 43.

100.Ibid., 60.

101.Ibid., 62-63.

102.Ibid., 63.

103.Ibid.

104.DUA Curriclum Correspondence, B355, Weld to Grant, September 22, 1947.

105.Minutes COS, December 3, 1947, 515.

106.Ibid., 514.

107.Ibid., 516.

108.Ibid.

109.DUAPO Correspondence, B856, Grant to Kerr, December 16, 1947, Kerr replied to Grant's letter with a handwritten reply at the bottom of Grant's original letter dated December 16, 1947.

110.DUA Curriculum Correspondence, B355, Weld to COS, December 31, 1947, 2.

111.Minutes FOM, March 22, 1948, 269.

112.Ibid.

113.Ibid., 270.

114.Ibid.

115.Ibid., 271.

116.Ibid.

117.Minutes FOM, May 26, 1948, 286.

118.Minutes FOM, March 22, 1948, 272.

119.Ibid.

120.Minutes FOM, May 26, 1948. Correspondence from the Provincial Medical Board approving the proposed four year course was read to faculty members.

121.Ibid., 287.

122.Minutes Department of Surgery, June 15, 1948 included with the minutes of the FOM, May 26, 1948, 286.

123.Minutes COS, May 6, 1948, 532. This meeting included representatives from the Provincial Medical Board.

124.Ibid.

125.Ibid.

126.DUA AMA Correspondence, B37, Anderson to Kerr, October 16, 1947.

127.DUA AAMC, B83 Correspondence, Zapffe to Kerr, undated.

128.Minutes FOM, May 26, 1948, 288.

129.Ibid., 289.

130.DUAPO Correspondence, B857, Grant to Kerr, June 8, 1948.

131.Ibid., October 26, 1948.

132.DUA DUC 1948-49, 120.

133.DUAPO, B857, 1948-49 Report on the Medical Faculty, 1-2.

134.Ibid., 2.

135.Ibid.

136.Ibid.,1.

137.Ibid.

CHAPTER 4

THE TUMULTUOUS YEARS: 1950-54

By 1949 the Medical School had experienced many advances - the most significant was the completion of the new Victoria General Hospital. In correspondence from Dean Grant to Dr. Alan Gregg, Director of Medical Sciences, Rockefeller Foundation, he wrote:

> The greatest forward step has been the completion of the new Victoria Hospital. The Rockefeller grant to the University has resulted in excellent teaching rooms and facilities within the hospital.[1]

In October of 1950 the Committee on Studies had become a more permanent structure and had changed its title to the Faculty Executive and Advisory Committee. The new committee consisted of the

> Dean, the Superintendent of the V.G.H., the professors of Medicine, Surgery, Obstetrics and Gynaecology, and Paediatrics, two other members from the clinical departments to be elected annually, and four members from the pre-clinical departments, two to be elected annually[2]

Although the membership of this committee remained the same, its name changed again in February 1952. At a meeting of the faculty on February 19, 1952, the Dean advised the

faculty that he wished to change the name of the Committee in order to form a separate Advisory Committee to advise the Dean and the President on "matters of general interest."[3] Consequently, the Faculty Executive and Advisory Committee became known simply as the Faculty Executive Committee. It is rumored by some faculty members that the President eventually drew upon this Advisory Committee to bypass the Dean for advice on matters concerning the Medical School. Accordingly, this committee became a source of conflict between the Dean and the President and some faculty members.

By 1950 the Medical School had completed most of the changes to the curriculum as recommended by the Zapffe and Anderson Report of 1947. The faculty minutes of June 6, 1950 stated that "the change over of Pathology has been completed."[4] This was one of the last major changes to the curriculum which the faculty wished to attain in order to allow more time for clinical subjects in the early years. With this change accomplished there were plans developed to increase the number of clinical components in the third and fourth years. The faculty, however, could not have anticipated the fallout as a result of the increase in time devoted to clinical subjects in the curriculum. Within the next four years the Faculty of Medicine would experience dilemmas and obstacles which would lead to the near

breakdown of relations within and outside the school, and see its administrative roles revised almost in their entirety.

Issues Over the New Curriculum

The new curriculum was implemented with the support of most of the faculty members and plans were made to complete the changeover by 1950. Most of the pre-clinical departments were able to accomplish the changes with the addition of more staff. However, the changes in the clinical areas were not as straightforward and issues developed which made the implementation of the new curriculum difficult in these areas.

Clinical Disciplines

As early as 1948 the Department of Surgery held a meeting to discuss the implementation of the new curriculum and the subsequent changes to the schedule. According to the general plan for the changeover, the aim was to bring the clinical subjects into the curriculum earlier and reduce the number of lectures. Therefore, at the meeting of the Department of Surgery on June 15, 1948 it was announced that the number of scheduled lecture hours in Surgery in third year would be reduced from seventy-four to sixty-one. Nonetheless, there was some concern over the fact that of

all the "hours for clinics and lectures in third year (168) none were assigned to bedside work."[5] Furthermore, it appeared that there was an oversight with the allotment of clinical hours in that Medicine had been given all of the available hours. Dr. Weld "noted that in the new schedule six bedside clinics per week have been arranged"[6], but these had been given to Medicine. Surgery was to be given two of these clinics as soon as Dr. Holland had approved it.

Other controversies within departments also focused on the ability of the instructors to complete the subjects within the time allotted to them. At the same meeting, Dr. W. Alan Curry (Head of Surgery) criticized Dr. A.M. Marshall (Clinical Instructor, Surgery), who was complaining that he needed more time to complete the course on Practical Surgery which would be comprised of "demonstrations of Bandages and bandaging, instruments, etc." and would include nursing demonstrations of "bedmaking, enemata, hot fomentations, hypodermic administration, etc., and also instruction be given in the passing of the stomach tube, spinal puncture, etc." Dr. Curry stated that Dr. Marshall had "plenty of time in his course for these additions."[7]

In Surgery, as with many of the other departments, the shortage of staff severely curtailed the ability of the clinical departments to accomplish the implementation of the

clinical clerkship in fourth year. Dr. Curry felt that if the "Clinical Clerkship was to be given a chance of success, it would be necessary to employ two or three additional junior attending surgeons to the present staff. These should have both hospital and out-patient appointments and [be] attached to a service."[8]

By September 29, 1948 the situation over the clinical clerkship became so acute that the Committee on Studies held a special meeting to address the concerns of the "Fourth Year schedule and how to make it workable for the remainder of the year."[9] The conversation recorded in the minutes depicts the infighting present among the departments at that time. It appeared that the main problem was that, with the increasing specialization in Surgery (i.e. EENT, GU, Anaesthesia and Radiology), and other clinical areas, there was difficulty in having all students rotate through the various disciplines. This was a difficult task given the shortage of supervision and hours for students to have access to the wards.

With the current shortage of time and supervision, it was thought by some members that short rotations through the various specialties would be advantageous. Dr. S.R. Johnston, who was a lecturer in Radiology and in charge of the department, thought that a "student assigned for one

week in Radiology would find his time well employed and that it would be a good change", but other members felt that students would gain little of value by being assigned to the wards for a week in the mornings. Dr. C.C. Stoddard (Clinical Instructor, Surgery), on the other hand, thought that a week in Anesthesia would give a student a "good experience."[10] At this point all members of the Committee appeared to have various solutions to the problem. Dr. G. W. Bethune (Demonstrator, Surgery) made it known that because his students in general surgery were "required to observe the anaesthetic care of their own patients and to attend their own patients in the O.R.,...perhaps a special anaesthetic service was superfluous." It was a question interjected by Dr. Weld which appeared to bring this heated discussion to a halt. He wondered who added "how is it possible for surgery students to attend and follow the anaesthetics on those occasions when they were in Out Patient clinics?" Dr. Curry was quick with his reply in remarking that "this was the business of the Department of Surgery."[11] At the conclusion of the meeting, Dr. Grant undertook that he and Dr. Weld would "draw up a suitable schedule on the basis of the suggestions made."[12] This was agreed to by all members.

Regardless of how much time the faculty spent arguing

about the short clinical rotations, the students had their own opinions concerning their experiences in the clinical areas. At a meeting of the student representatives and the Committee on Studies on March 6, 1950, the students expressed their apprehension over the week they were to spend in Radiology. The week in Radiology was described as being "of little value" because they were unable to find anyone in the department who was interested in showing them anything."[13]

As of June, 1950, there were still outstanding issues with respect to the scheduling of third and fourth years. In particular, although the schedule in Pathology had been completely changed, the committee contended that "the third year schedule requires rearrangement."[14] Some members of Faculty requested more hours than had been previously been assigned to them. Dermatology asked to have "six (6) lectures in the 3rd year and 8-10 two hour clinics (Out Patient) for each student, preferably in the fourth year."[15] Some objections were raised by Dr. Holland, (Medicine), and Dermatology had to settle for third year only as the request for fourth year would not work within the current schedule.

By February 1951, with the increasing specialization in the clinical areas, there were a large number of teachers who taught specific topics for a short period.

Consequently, the lack of co-ordination between the different clinical teachers resulted in overlapping treatment of topics. In a meeting of the student representatives and the Faculty Executive and Advisory Committee on February 20, 1951 the situation was such that the students asked for "an outline of the topics to be covered in each course to be given to the students at the beginning of each term."[16] Additionally, the students proclaimed that the main reason for asking for these outlines was that in "the matter, where there were so many teachers, each taking up a variety of subjects, too often there was repetition and the same subject was repeated in various clinics and that there was a danger of some subjects not being covered at all." The response to the students' request was that the Department of Surgery advised that students should keep a record and keep "them appraised."[17]

On October 31, 1951, at the next student representative meeting with the Faculty Executive and Advisory Committee, the problem with topics overlapping had not been resolved. Consequently, the students asked for a list of topics to be distributed before the clinics and were again told by Dr. Curry that they could keep track of them themselves. The students protested against this measure because they could not know "until the clinics have actually begun what kind of

case is to be presented."[18] Dr. N.G. McLetchie (Head of Pathology) quickly came to the defence of the students and remarked that this was surely not "the student's job to keep track of the clinics presented by the department of surgery. He said that this work was really the responsibility of the teaching staff." At this point Dr. Curry instructed "the President of the Third and Fourth Year to discuss the matter with him." Dr. Grant then intervened and asked the students to report to Miss B. Blauvelt (his secretary) after each schedule change and she was to make the list of topics.[19]

In addition to the requests for a schedule of topics, the students sometimes asked for subjects to be added to the curriculum. In this case, the students wished to have more instruction, including bedside teaching, on how to discuss the patient's illness with the patient:

> It was asked that more attention be given to teaching the senior years on doctor-patient relationship. It being pointed out that very seldom were students present at a time when the doctor actually discussed the nature of a patients illness with him or gave him advice.[20] (sic)

An excerpt from the students' document, which accompanied the minutes, depicts the frustration with which students faced these dilemmas:

> It is felt by some of the student body that clinicians as a group fail to fully realize their opportunities to help the students learn the proper doctor-patient relationship at first hand by observing the doctor in his approach to the patient.[21]

In response to the students' concerns the faculty felt that, particularly in the early years, this could not be carried out because conversations with patients were deemed confidential and having fourth year students present during these conversations might "prejudice the situation."[22] Furthermore, it was also expressed that the "method by which one physician discusses his case with the patient is a personal matter and one which is almost impossible to teach except in generalities."[23] Nevertheless, the Committee consented that instruction of this type was needed, and agreed to investigate the matter.

The issue over clinical instructors not showing up for clinics was still a pervasive dilemma in October 1952. At a meeting of the students and the Faculty Executive Committee (formally the Faculty Executive and Advisory Committee), the students reported that in third year the "surgery profs were no better at showing up for classes; there were still 4 of 18 clinics that were missed."[24] Furthermore, because of the large number of teachers teaching a variety of subjects in the clinical areas, "many times the clinician was not known to the class."[25] Thus, the students were requesting that instructors could introduce themselves before starting the lecture. This suggestion was not well received by the Committee because it was thought that faculty would object

to this practice.

Pre-Clinical Disciplines

Although the pre-clinical departments were not as greatly affected with respect to the schedule as were some of the clinical departments, there were some problems over too much emphasis on Pathology in the curriculum. At a meeting of faculty on January 26, 1949 Dr. Colwell stated that it was "well known that the students, while taking Pathology in the third year, studied little else". Dr. Stewart of Preventive Medicine remarked that the "preoccupation with Pathology seriously affected the study of Preventive Medicine."[26] Finally, it was generally agreed by most members present that as soon as Pathology was moved back to the second year the problem would be alleviated.

Other pre-clinical departments requested to have additional time in the curriculum because the original plan to cut back on lectures proved to be insufficient to cover the necessary course material. Anatomy, originally cut from 500 to 320 hours, requested to have an additional two hours per week, which would devote 384 hours to this topic.

Although the scheduling in the pre-clinical departments did not appear to disturb the faculty, the students found the introduction of the new curriculum somewhat confusing. Due to the shortening of courses in the pre-clinical years,

the students were concerned that some professors could not space their work and tended to crowd the information into the last few weeks of class. At a meeting of the Committee on Studies and the students on March 6, 1950, it was apparent that the schedule for the academic year had not yet been posted. The students complained that they wished to be notified in the "latter part of January as to the exact date when classes will be concluded."[27]

By February 1951 it appeared that the students were still struggling to sort out the new schedule. At a meeting of the Faculty Executive and Advisory Committee (formally the Committee on Studies) and the student representatives, the students relayed their frustration with the confused atmosphere surrounding the changes to the curriculum. It was recorded in the minutes that the students were having some trouble finding out about their timetables and there was "some confusion as to where a student should go and what instructor should meet him."[28]

The students were equally confused over the examination timetable. As related in the minutes, the "students wished to be notified about which exams they were to write by Jan. and which ones were to be classified as final."[29] Evidently, after the new curriculum schedule was put into place it was discovered that the new examination timetable

left students writing four final examinations and two term examinations at Christmas. The students appeared to be sufficiently frustrated over the administration of the new curriculum that they asked that they should meet with the committee once per month instead of once per year. The President responded to this request by remarking that this had been tried in Arts and Sciences and was "useless."[30] However, the committee consented to meet with the students twice per year, in fall and spring as a compromise.

On October 31, 1951 at a meeting of the Executive and Advisory Committee and the students, it appeared that the pre-clinical schedule for the new curriculum was beginning to become more refined. It was reported by students that Anatomy was being run well, although some classes were a "bit rushed."[31] However, this refinement may have only been temporary because in January 1952 Grant was devising a new proposed schedule for first year. When the department heads were asked for their opinion the reply was probably not what the Dean expected. It was recorded in the minutes of the Faculty Executive and Advisory Committee on January 4, 1952 that some faculty members thought that the schedule was "too onerous and that it tended to make non-thinking technicians."[32] From this point an argument arose surrounding McLetchie's proposed six-year program which he

contended would alleviate the problem. In addition, McLetchie felt that no students could assimilate in one year all the anatomy, biochemistry, histology, and other basic sciences. These arguments had been alluded to much earlier in the Zapffe Report of 1947 and were, in part, the centre of curriculum revision at that time. Nevertheless, while some faculty members suggested that their courses required more time, others stated their course "had been strengthened and streamlined with an actual reduction of hours, by the adoption of a new combined text."[33]

Departmental Conflicts

In addition to the scheduling problems, the Medical School faced interdepartmental rifts with respect to the roles and responsibilities of each department. Dr. R. Saunders of Anatomy, who was educated in Britain, and described as a "quintessential Englishman,"[34] was often involved in these quarrels. Students reported that before each Anatomy class he would perform the ritual of cleaning the chalkboard. Before he entered the class, he would be preceded by his assistant who would carry a bowl of water and a cloth, which was used to clean the board so that no chalk dust was left. During this time neither he nor anyone would speak and he would not begin to lecture until the

board was dry, when he would proceed by dipping his chalk in the water before marking on the board. Reportedly, he performed this ritual because he had an intense allergy to chalk dust.[35]

Saunders spent a number of years fighting to acquire more time for Anatomy in the curriculum and argued incessantly both at meetings and through correspondence that the course on First Aid in first year interfered with the teaching of Anatomy. The minutes of a meeting of the Faculty Executive and Advisory Committee on May 28, 1951 records how he felt about First Aid - "the class was not important and it interfered with Anatomy". The Committee counteracted this assertion and made it known that "First Aid was valuable and necessary and should be continued."[36] Almost two years later to the day Dr. Saunders was again asking for more time to be allotted to Anatomy, "but asking only for the time allotted to First Aid..."[37] Saunders was so impassioned with trying to rid the curriculum of First Aid that he sent a handwritten note while on a trip to London, England. The note to Grant from Saunders, was written on the Norfolk Hotel stationery, and exhibited his obvious frustration not only with First Aid, but with the department in general. He declared in his note that First Aid was interfering with Anatomy and that they would "never

attract staff with the present conditions in the Anatomy department."[38]

By December 8, 1953, the secretary of the faculty, Dr Weld, had probably heard all he wanted about the Anatomy/First Aid feud. When the topic was again raised by Saunders at a meeting of the Faculty Executive Committee Weld responded that, "First Aid had been given this Monday afternoon period before Anatomy requested it and it was not that First Aid was interfering with Anatomy but rather than Anatomy was interfering with First Aid."[39] This appears to be the last recorded word over the bickering between First Aid and Anatomy! Notwithstanding, in the 1968-69 University Calendar, it was stated that Surgery was responsible for organizing a course in First Aid. It was not clear at what time in first year this course was taught; however, Surgery was allotted only fifteen hours in first year at that time.[40]

Reasons for the animosity towards the course in First Aid by the Anatomy Department are not clearly delineated. It may be assumed that any course which encroached on the time assigned to the Anatomy department, traditionally seen as the cornerstone upon which medicine was based, may have met with a similar response from its traditional head of department. Otherwise, many of the departments protected

their assigned time in the curriculum for fear once taken away it would not easily be regained.

In early 1951 the Department of Medicine was in the throes of its own crisis. The members of the department were not satisfied with the advances being made (or not made) in their department and sent a letter to the head of the department, Dr. C.W. Holland, advising him that the "teaching staff of the Department of Medicine have viewed for some time with growing alarm the slow progress" within the department and they wished action to be taken "to preserve the future of the Department of Medicine."[41] They surmised that despite the complications and added work with the development of the new curriculum, "We are forced to the inevitable conclusion that the fault lies primarily with the leadership in the Department of Medicine."[42] They concluded their letter by advising Dr. Holland that they were forwarding a copy of the letter to Dr. Grant.

At this time it appeared that the Head of the Department of Medicine was overworked and unable to keep up with the requirements of a leader and administrator of the department. This task was made more onerous by the fact that "The lack of an office and secretary has been a distinct handicap to the proper organization and supervision of the Department."[43] Apparently, Holland's efforts to

acquire these facilities and support had been unanswered.

In response to the concerns of the departmental members, the Head of Medicine, Dr. Holland, sent a memo to all doctors in his department:

April 3, 1951

Dear Doctor:

> A meeting of the Department of Medicine will be held at 8:30 p.m. on Friday, April 6th at Dalhousie Public Health Clinic.
>
> The purpose of this meeting is to discuss the present unsatisfactory situation in the Department, with a view to remedying it as soon as possible and to formulate a plan for future operation and development of the Department.[44]

Despite Holland's efforts to delegate many of his duties and concentrate on running the department, and after much deliberation over the future of the Department of Medicine, the Dean relayed his final decision with respect to the leadership of the department. On January 23, 1952 he wrote to Kerr regarding the head of the department expressing his concern that:

> sufficient time has now passed to make a final decision. It is my considered judgement that the Head of the Department of Medicine is an excellent clinician and that he has been most sincere in his efforts to run his department. He lacks however the qualities of leadership and he is not a good administrator, and I believe that for the good of that Department he should be replaced as head of Medicine.[45]

As a result of Grant's decision, by May 16th of the same year, Dr. Holland resigned as the Head of the Department of Medicine and was succeeded by two members of

that department, Dr. C.J.W. Beckwith (Assistant Professor) and Dr. M.M. Hoffman (Research Professor). By later 1952 this administrative structure was changed to a committee in charge, comprised of Dr. Lea Steeves (Assistant Professor), Dr. R.M. MacDonald (Assistant Professor), and Dr. Beckwith as Chairman.

Dr. Atlee, revered by some and scorned by others, was always ready to do battle, and was particularly apt to pick up the ironical twists of departmental nonsensical ideology which occurred at that time. The following letter is indicative of his humour, and his insight into the bureaucracy of the school.

28.4.52

Dear Dean Grant:

I received today the attached bill from the dept. of finantomy. It came about thisaway. When the famous museum for which we spent about ten thousand simoleons per annum over some years, went bust and homeless, my department rescued those specimens touching its own teaching and carried these at dead of night and secretly to a hidden chamber off West Five at the V.G. There, housed in a closet used by the scrubbing women to smoke the furtive cigarette, they stagnated for a week or two until Dr. Bethune, at our solicitation, kindly agreed to allow them to be displayed in the clinic room on the fifth floor and had constructed for that purpose a glass cabinet.[46]

Apparently, some of the specimen jars were damaged and others had the lids removed so that the specimens were dry. The problem for Dr. Atlee was that he needed to get them fixed. His first approach was to the department of

Pathology. However, he reported that "my slaves were told that the dept. of pathology had no facilities whatsoever to handle this work and that all the requisite material for said repairs was in the hands of Dr. Saunders in the dept. of anatomy." The object of Atlee's letter to the Dean was the bill, which he received from Saunders for fixing the jars.

As Atlee stated in his letter that the payment of the bill was "pure interdepartmental, and means taking it out of one dept.'s pocket and putting it into the other's," and therefore he felt that paying it was acceptable. However, his concluding remarks to Dean Grant were:

> By the way, you will be wanting the examination returns from the fourth year in Ob & Gyn. I am enclosing a bill for same and would like payment before sending in marks - CASH PLEASE! - I don't trust you city slickers,
>
> Yours truly,
>
> H.B. Atlee[47]

Staff and Facilities

In a Report on the Medical Faculty dated October 4, 1950, Dr. Grant stated that they hoped to graduate forty-five to fifty doctors annually. However ambitious this appeared, Dr. Grant declared "that the medical school was not meeting the need for the population of the Maritime Provinces." In addition, the School could not meet these needs because of the "lack of facilities, staff and hospital accommodations."[48] However, in spite of the lack of space,

the Medical School was expanding its departments and services. The Department of Bacteriology and Pathology was split into two separate departments; the Department of Psychiatry, and the Department of Histology and Embryology were enlarged; and, many departments were making an effort to provide graduate education to practicing physicians.

In 1949 the Medical School had expected to acquire space which would be made available when the Faculty of Law moved from the Forrest Building. However, by the time the early 1950's arrived some of the departments of the Medical School were still quite short of space and staff, and the Faculty of Law was still located in the Forrest Building. Grant explained to Frank Cargill, Editor of the Directory of the American Medical Association, that the Forrest Building "housed the Faculty of Law, Faculty of Dentistry, the Department of Biology, and the Departments of Anatomy, Histology and Embryology of the Medical Faculty."[49] Most of the pre-clinical departments at this time, "especially Bacteriology and Pathology in the Pathological Institute and Biochemistry, Pharmacology and Physiology in the Medical Sciences Building are cramped for space and laboratory facilities..."[50] Furthermore, it was stated, concerning the Department of Bacteriology, that "space is limited and seriously hampers the activities of the Department."[51] In

the same report the Department of Biochemistry had "no available office or laboratory space" to house any additional staff members.[52] It was not until October 1952 that there was some relief for the Medical School when the new Law Building opened on Studley Campus.

Not all departments appeared to be suffering. In spite of the complaints over the lack of space, the Department of Biochemistry submitted a report to Dr. Grant on June 30, 1952 stating that "in addition to the large amount of excellent equipment purchased....we have had our facilities further improved by the addition of a good cold room and a chemical storeroom."[53] However, not all departments fared as well for on October 9, 1952 Grant wrote to Kerr with respect to the conditions in the Medical Science Building that "Conditions are bad in the Medical Science Building. They need more offices, more laboratory space and they need more space for animals."[54] As late as 1953, at a meeting of the Faculty, Dr. J. Alex McCarter (Head of Biochemistry) asked for "consideration [to] be given to the moving of the Maritime School of Pharmacy out from the Medical Sciences Building.[55] At the same meeting, Kerr reported that the Board of Governors had decided to "build a Dental Building provided that money was forthcoming". Reacting to this announcement, some members of Faculty requested that the

Board be asked "to make research space available in the new building."[56] In most cases, the shortage of space in the pre-clinical departments seriously impeded the ability of the departments to develop programs of research, and curtailed the addition of new staff to carry out the work and teaching.

Staffing Concerns

One of the goals of the university at this time was to promote Dalhousie as a research center. In order to accomplish this goal, the Medical School needed support staff to help with the multitude of tasks which professors faced in an environment where their roles and job expectations were changing. However, the problem over the lack of space curtailed the ability of the Medical School to hire new faculty or staff at that time. Dr. C.B. Stewart wrote to Dr. McCarter stating that "In my opinion, it requires the expenditure of some funds by the University to add additional members to the staff if this University is to take its place as a research center."[57] The absence of this assistance contributed to a loss of faculty which greatly affected the ability of the Medical School to function efficiently and left the administration scrambling to replace those members lost to other institutions. In addition to the lack of space, the lack of available funding

to hire new and qualified staff also contributed to the inability of the faculty to be more productive. Correspondence from Grant to Kerr on July 12, 1952 showed disbursements of $336,961.06 and receipts of $327,218.81. Grant wrote that he could not "make any further reductions without seriously interfering with the conduct of the medical school."[58]

For faculty members and the Medical School to function efficiently there was a need to review the time needed by faculty members to fulfill their responsibilities as teachers, researchers, supervisors, and administrators. Without the necessary support staff, most of the faculty were overextended in these roles. In response to a request by the Dean, Dr. R.W. Reed (Professor, Bacteriology) submitted a report on December 5, 1950 after his first year in the Department of Bacteriology. Reed taught a total of 280 hours in his schedule at the time of the letter. However, he reported that these hours were to increase over the next two years to 390 hours which was contingent on a full-time assistant.

Dr. Reed stated in his letter that:

> I find the present teaching program -- requires at least three quarters of my time during the day and five or six evenings a week beside. There are 280 hours of actual teaching during the year, but most of the preparation of stock cultures for the laboratory classes falls to me, and will, until my technicians are

> suitably trained. Since half of my time should be devoted to the work of the Province, according to the terms of my appointment, the situation would seem to require some revision.[59]

Apparently, as a result of Dr. Reed's letter, the administration of the School asked if he could get help from other departments, instead of offering to acquire funds to support an assistant.

The lack of support staff permeated both clinical and pre-clinical departments. Dr. Holland complained that the "lack of an office and secretary has been a distinct handicap to the proper organization and supervision of the Department" and that all "attempts to acquire these facilities have, to date, been unavailing..."[60] It was not until November 10, 1952 that a secretary was appointed and began to work in the an office allotted to Medicine at the Dalhousie Public Health Clinic.[61] In spite of the new secretarial help, it was stated in the Report that "further appointments of qualified men to the Department of Medicine are urgently required."[62]

Other departments were also affected because of the lack of support staff. Dr. G.B. Wiswell, head of the Department of Pediatrics wrote to Grant as late as October 23, 1953 stating that "The Department of Pediatrics has now arrived at a time when the employment of a full time secretary is urgently needed if we are to maintain any kind

of standard in the education of our students."[63] From Obstetrics the message to Grant was similar, except that Atlee could deliver his message with his usual flair. On June 11, 1950 he wrote to the Dean asking for a secretary, stating that the person would be of tremendous help and that the appointment could improve the productivity of the department, "AND I AM SAYING NOTHING ABOUT THE BURDEN IT WOULD TAKE OFF THE POOR OLD MAN WHO HEADS THE DEPARTMENT."[64]. A secretary for Dr. Atlee and the Department of Obstetrics and Gynaecology was finally approved on February 2, 1952.[65]

The lack of space and the resulting inability to hire support staff had two major consequences in the Faculty of Medicine. The first was that there was a drastic reduction of faculty members - mainly due to resignations. In the Report of the Faculty of Medicine dated 1950-51 there were eleven resignations listed. Of these, four went to the United States, one to The University of Western Ontario and one to Great Britain. In addition, two faculty members were lost through death, two through retirement, and one female left the School to be married. In the September 1952 Report, two other faculty members had resigned - one left to go to the United States and one had retired. This resulted in the total loss of fifteen faculty members. In three

years, 1950-52, there were however only seven new full-time appointments. The result of the significant decrease in faculty was that the remaining faculty members were again overworked and at this point adequate support staff to assist with their duties were not available.[66] One faculty member, Dr. J.H. Fodden (Associate Professor, Pathology), who submitted his resignation as of August 19, 1952, was informed by the President that he had violated university policy by submitting his resignation too late in the year. Kerr wrote to him on September 3, 1952 wishing him well but indicating his disappointment that he had not submitted his resignation according to university policy, and remarked that "Your decision to leave us within a few weeks of the commencement of the new session might have caused us very serious embarrassment."[67]

Loss of staff and inadequate facilities meant that Dalhousie was not in a position apply for research grants which were available in Canada at that time. In March of 1951 a committee was formed to investigate the lack of funding received by Dalhousie in relation to the total available research funds in Canada. The Report referred to a letter from McLetchie (Pathology) which gave insight into the severe space problems and how they affected Dalhousie's ability to conduct research. He stated that, "I am in

agreement with the advisors to the NRC that with existing facilities we have no right to expect grants."[68] The Report of the Committee on Research in Faculty of Medicine stated that "approximately $2,290,000 was available from seven Canadian sources". These sources included: the National Research Council, Federal, $540,000; the National Cancer Institute, King George V Fund Federal and Provincial, $275,000; Defense Research Board, Federal, 230,000; Department of Veteran Affairs, Federal, 375,000; National Health, Federal, $400,000; Mental Health, Federal, $225,000; and, Cortisone and ACTH, Federal-$200,000, Private-$45,000.[69]

In comparison to other universities in Canada in 1951, Dalhousie received nine grants which placed it in eighth place of thirteen with respect to the number of grants awarded. Dalhousie received $16,110.00 which placed it in tenth place out of thirteen with respect to the total value of grants awarded and, in last place of thirteen with only $1,836.00 as the average value of grants awarded. However, it was also significant to note that Dalhousie, although on the low end of grants received throughout Canada, did receive ninety-seven per cent of the grants requested, as opposed to Queen's which received only 67% of the requested grants.[70]

In the summary of the Report on Research (1951), Dalhousie's inability to apply for more research funding was attributed to the lack of space and equipment, lack of staff, lack of graduate students, lack of interest and vision concerning medical research, and lack of time on the part of professional faculty members.[71] The situation with respect to acquiring new faculty was so acute that in November of 1952, the School sent Saunders (Anatomy) to England in an effort to try to secure staff for the pre-clinical departments.[72]

With respect to salaries paid to faculty and staff members, the university could share some of the cost with the provincial government. In December 1952, Dr. McLetchie was advertising for an Associate Professor for Pathology with the cost to be shared by the provincial government because the position would be shared between the government and the School. The advertisement reported that the beginning salary would be "$6000.00 plus cost of living bonus."[73] Apparently, McLetchie was instructed by the university administration that he would be permitted to hire a pathologist as long as the cost to the university did not exceed $2500.00, the rest should be paid by the Province or other outside funding.

In general the average salaries for faculty members in

1951 were: Basic Science and Clinical Instructors, $2300.00; Assistant Professors, $3800.00; Associate Professors, $4800.00; Professors, $5700.00. Salaries for Professors and Heads of Departments were determined by the Board of Governors.[74] There was some evidence that these salaries may have been comparable to other schools at the time, but in 1953 Dalhousie's salaries were far behind those of most other medical schools. At a Faculty of Medicine meeting in 1953, Dr. McCarter submitted his report on the first American Association of Medical Colleges Conference on Medical Teaching. McCarter reported on a discussion concerning procurement of teaching staff, whereby salary scales were reviewed. The minutes of the meeting revealed that:

> In comparing the Dalhousie scale with others it was shown that while in 1945 our scale was reasonably in line with others it is now far behind: ours stand at the very bottom of the range of the seventy-three schools taking part in the conference.[75]

Hospital/University/Government Relations

By far the most serious situations over problems with space existed at the Medical Museum which was located in the Pathological Institute owned by the provincial government. In the early 1950's, when the government was planning to rearrange the space in the Pathological Building, the museum became a source of aggravation between the Medical School,

the university, and the Provincial Government of Nova Scotia. The situation became so acute that the faculty held a special meeting on April 12, 1950 to address the issue. At this meeting the Representative of the Provincial Medical Board, Dr. H. Scammell, relayed his concerns over the issue indicating that "a museum such as this would be a great advantage to the medical profession and the practice of medicine as a whole in the province."[76] The crux of this problem arose when Grant was informed that the Medical School was told to remove the equipment from the Medical Museum. In a letter to President Kerr from Grant he wrote "Last week I was surprised and shocked to receive word from Dr. D.J. MacKenzie...that the Medical School should remove the equipment from the Pathological Museum just as soon as convenient."[77] In Grant's letter to Kerr he requested that the President should write to the provincial government and resolve the issue. In addition, Grant was concerned about the impact which this might have on the future accreditation of the Medical School by AAMC. He wrote: "There is no first class Medical School in North America without a first class Pathological Museum."[78] Despite protests by the faculty and the university, by May 1951 part of the museum space had been taken over by the province. Over the next year the province took over increasingly more space in the

Pathological Building, and by January 4, 1952 the minutes of the Faculty Executive and Advisory Committee relayed that the Province had "just taken over the space where the Museum was kept" and the "Museum was in the corridor."[79]

The reason given for the takeover of the museum space by the province was that the Provincial Director of the Pathological Building, Dr. D.J. McKenzie, had stated that "He had personally visited the Museum twice a day for three months and only rarely did he find anyone in it. He knows that the Museum is not used."[80] The choice he was therefore left with was to maintain the Diagnostic Service to the province or to keep the museum going. Accordingly, he concluded that "the Diagnostic Service was the more important of the two."[81]

In an attempt to reconcile the conflict over the museum space, a committee was formed in November 1952 between the Provincial Government and the Dean to resolve the "provision of facilities in the Pathological Building for use by Dalhousie University.[82] By 1953 the problem of how much space the province was required to give the school was reviewed by the law firm of Stewart, Smith, MacKeen, and Covert. Their report of January 10, 1953 suggested that it was uncertain as to what kind of provisions were supposed to be given to the school by the province in 1920 and its

subsequence appropriateness for 1953. In addition, it appeared that the space allotted to the university in the Pathological Building had been curtailed over the years previous to this report. Accordingly, the university was advised that they could ask for the space back or a replacement for the space lost. Although the faculty fought hard to re-claim the space for the museum, as of 1954 the Faculty of Medicine was entwined in other, more pressing matters, and this issue appeared to fade away in lieu of other problems. It should be noted that, the presence of a museum in a Medical School at that time was seen as of some importance. The document released by the American Medical Association (AMA) entitled Essentials Of An Acceptable Medical School, stated that, where collections were necessary for teaching "adequate provision should be made for developing, preserving, displaying and indexing these collections."[83] Therefore, it may be assumed that other medical schools would have had these types of departments or facilities, as recommended by the AMA, and to be without them would have been a disadvantage to Dalhousie.

The Internship Program

Dalhousie's system of rotating internships was under the auspices of the Medical School, by which interns rotated through various hospitals and disciplines to gain an

understanding of general medical practice. This system was not considered to be focused on specialist practice. The program had seen many changes since the 1930's, but in 1948 there was a major change in that the Canadian Medical Association...

> *APPROVED A SYSTEM OF ROTATING INTERNSHIPS WHICH WOULD INCLUDE SIX MONTHS IN A HOSPITAL RECOGNIZED BY THE C.M.A., TOGETHER WITH SIX MONTHS IN "SATTELITE [sic] HOSPITALS", WHICH IN THEMSELVES WERE NOT RECOGNIZED FOR COMPLETE INTERNE TRAINING BUT WHICH THE CENTRAL TEACHING HOSPITAL ACCEPTED FOR CERTAIN ASPECTS OF TRAINING.*[84]

As of 1950 there were three approved hospitals in the Maritimes, which included the Victoria General Hospital and the Halifax Infirmary in Nova Scotia, and the Saint John General Hospital in New Brunswick. There were a number of satellite hospitals including: the Children's Hospital, the Grace Maternity, the Halifax Tuberculosis Hospital, Camp Hill, and the Nova Scotia Sanatorium in Halifax; the Nova Scotia Hospital in Dartmouth; and, Victoria Public Hospital in Fredericton, New Brunswick. In Nova Scotia, St. Martha's in Antigonish, and Aberdeen in New Glasgow, were added in 1950 and 1951, and others included the Prince Edward Island Hospital and the Public Health Clinic (Halifax) periodically. Other hospitals were added and the list was changed somewhat from year to year.

The main point of contention between the hospitals and

the university was the allocation of interns to the various approved hospitals. Due to the growing demand on hospitals because of lack of physicians and increasing numbers of hospital beds, each year the hospitals requested an increase in their intern allocations. When hospitals began to receive requests for intern placements from Schools outside Atlantic Canada, the importance of hospitals being advised in advance about their intern allocations became more critical. This was because hospitals could not accept interns from other parts of Canada until they knew how many would be allotted to them by Dalhousie.

By the end of 1949 there were a number of hospitals discontented with their intern allocations, and the situation of trying to provide so many hospitals with interns became almost insurmountable. This situation prompted the Committee on Studies to take a stand on the issue on December 2, 1949. The Halifax Infirmary and Camp Hill Hospital (Halifax), in particular, argued that they should receive more interns. The Committee reported that the reason why the Infirmary was not given more interns was that "the hospital was almost entirely private", that the interns were not given the freedom to see a variety of patients as they were at the Victoria General, and that they needed to have more clinical responsibility for the rotation

to be more satisfying for the interns.[85] After much discussion the Committee on Studies devised a plan whereby there would be twelve interns allocated to the Saint John General, eight to the Halifax Infirmary, and thirty-six to the Victoria General Hospital. These larger hospitals would look after the smaller satellite hospitals so that the Saint John General would look after the New Brunswick hospitals and the Infirmary would look after Camp Hill, Kentville and Dartmouth, and the remainder in Halifax would be looked after by the Victoria General Hospital.[86]

The following year the hospitals were again getting requests from outside Dalhousie and urgently needed to know how many interns they would receive. At a meeting of the Committee on Studies on September 14, 1950, the committee ruled "that the Faculty continue to give priority to the V.G. in the allocation of internes, but that we see no objection to the V.G. taking outside internes in addition to ours, provided that the V.G. take all the internes we assign to it."[87] However, in trying to satisfy the Victoria General, the Medical School came under fire from other hospitals. Dr. Ralph H. Gale, Superintendent of the Saint John General was critical of the allocation process of the university and when the Committee on Studies suggested that they send one of their interns to Fredericton, he wrote

adamantly that "at the present time the service here should be increased rather than diminished, which would be the case if we followed the suggestions of your committee."[88] The following year after one of the hospital officials visited the Medical School and was informed that "Dalhousie did not expect that they would be able to send us as many internes this year as last,....because of the smaller number in this years class", Gale was again critical of Dalhousie's methods of intern allocation. In response, Gale wrote to Grant in January 1951 stating that "it has been clearly demonstrated in the past that we apparently cannot depend on Dalhousie University to provide us with our full complement" of interns.[89]

This plan for intern allocation devised by the Executive and Advisory Committee in 1949 only temporarily alleviated the problem with the Infirmary. In 1950 Sister Gerard of the Halifax Infirmary again protested ardently that the hospital was being discriminated against with respect to internships.[90] This allegation drew response from the President and the Dean who met with her to assure her that this was not the case. In addition, in a letter from Kerr to Sister Gerard on November 7, 1950, he relayed his concerns over the troubled internship program and declared that he hoped that "the cordial relations which

have existed between us in the past will continue and that, to an ever increasing degree, we shall be able to share in the common cause of training people to alleviate human suffering."[91] This move by Kerr may have alleviated the situation between the hospital and the university, but it did not solve some of the problems for the interns rotating through the Infirmary. At a meeting of the student body and the Faculty Executive and Advisory Committee on February 27, 1953, the nine students who were assigned to the Infirmary were given time during the meeting to voice their concerns over the rotation. Despite the students' complaints that the staff were not concerned with teaching students and there was a lack of some of the medical services, the Committee (in the absence of the students), concluded that "this rotation should continue and that every effort should be made to improve it."[92]

In 1953, due to an increase in beds in the hospitals, the shortage of interns was at a crucial point. At a meeting of the Faculty on February 11, 1953, a motion was carried that allowed the Children's Hospital to use fourth-year clerks as interns as long as they could attend the required classes.[93] Halifax was not the only area to suffer from a shortage of interns. In May 5, 1953, Dr. J.F. McInerney, the Minister of Health of New Brunswick wrote

Kerr stating that "they virtually had none in any hospitals except the Saint John General."[94]

As a result of the intern allocation problems, and because of the deteriorating relationships with some of the hospitals, on April 28, 1953 at a meeting of the Faculty of Medicine an ad hoc committee was appointed "to study the value, from an educational standpoint, of the internships offered in the Atlantic Provinces." This mandate was extended to include the "whole question of Internships as related to Dalhousie."[95] The committee consisted of Drs. L Steeves, B.K. Coady (Lecturer, Surgery), C.B. Stewart, R.M. Ritchie (Lecturer, Pediatrics), C.L. Gosse (Professor, Urology), and M. Corston (Demonstrator, Obstetrics and Gynaecology). The Committee recommended that: the university establish a "clear statement of policy regarding the fifth year internships"; the university "resume authority over the allocation of interns and the interne training program"; the university "be responsible for the evaluation of clinical services for teaching interns"; the Dean and a Committee of the Faculty of Medicine be responsible for implementing the recommendations of the report; there should be an investigation of a reduction of the fifth year fees; the university should notify the hospitals not later than December 1 of the number of interns

they would receive the following year. In addition, although the university had maintained control over the fifth year internship, "the Faculty and University Administration have not fulfilled the responsibility which was implicit in this decision."[96] Therefore, the Committee alleged that the situation was a "potent source of discord between the university on one hand and the hospital administrator, government authorities and the fifth year medical students, on the other."[97] These recommendations and the Report were tabled at a meeting of the Faculty on November 12, 1953. All of the motions were adopted by faculty as presented with the exception of the first recommendation as the Faculty felt that the policy should be developed in cooperation with the hospital. As stated in the minutes, Dr. Gosse asked "Can we wield the big stick now, public relations are bad now" and declared that "It was generally agreed that it would be well to work by cooperation rather than by declaration."[98]

Rising Tensions at the Medical School

The frustrations present in the Medical School between 1950 and 1954 were further exacerbated by the administrative structure which allowed complete control of the School's operations by the President of the university. Signs of

this structure creating problems for the Dean and the faculty were seen early in 1949 and continued until a "near rebellion" by the faculty in 1954 that changed the manner in which the affairs of the school were managed.[99]

There were many issues which came under the control of the President, but those which caused the most aggravation were the distribution of monies from outside agencies, the hiring and salary levels of staff, and to a lesser extent buying new equipment for the school. Dr. Grant drew the wrath of President Kerr as early as 1949 when he ordered chairs for the library, apparently without authorization from the President. Grant's letter to Kerr was apologetic:

> The order for the chairs has been cancelled. Professor Theakston tells me that under the circumstances it would have been necessary to have the tables manufactured. I wish to apologize for having done this without written authority from you and will you tell me how we shall proceed from here.
>
> Faithfully Yours,
> H.G. Grant,M.D., Dean[100]

It was apparent that even in the absence of the President, Grant was not afforded the authority to make decisions with respect to ordering equipment for the School. On one occasion when Ottawa refused to fund an X-Ray machine for Atlee, Grant wrote a "Night Letter" (i.e. a telegram) to Kerr who was at the "Canadian Club, The Waldorf Astoria Hotel, New York City, NY" asking permission to approve "an

initial expense of eight hundred dollars for wiring, plumbing and carpentry Stop."[101] However, it was not only the approval of large equipment which came under the control of Kerr, but also small office items, which is illustrated in the following memo:

> April 8, 1950
>
> Dear President Kerr:
> May I have your permission to purchase a filing cabinet for my office at a cost of eighty dollars ($80.00).
> Sincerely,
> H.G. Grant, M.D.
> Dean[102]

It was not until May 1954, when Stewart assumed the role of dean, that the Faculty of Medicine achieved autonomy over its administrative affairs and the right to make decisions regarding budgetary spending. This autonomy was only achieved after a long bitter dispute between the university administration and the Medical School, which saw their rights to make decisions about the school being hindered by the university bureaucracy. It appeared to the medical faculty that they were inhibited in their work because the decision-making was centred at the president's office, and it took unnecessary long lengths of time to get decisions with respect to grant applicants or equipment purchases under this arrangement. Additionally, they felt that it would be more efficient to have the decision-making power at the Medical School level.

Funding from Outside Agencies

As more money was becoming available in Canada through government sponsored and private company funds, there developed an increasing need to implement policies with respect to hiring technicians and applying for grants. The normal procedure was to seek approval through the Dean and then the President before any applications were sent to the funding organizations. This procedure assured that the President had the final approval as to which grants would be sent to the funding agencies. The faculty and the Dean were critical of this procedure for several reasons. The first was that they believed that the school should have an autonomous right to apply for funding, and refusal or approval of the applications should be left up to the organizations to which they were applying. Secondly, it was thought that this procedure severely decelerated the process of applying for grants. In part, there might have been some resentment present within the faculty that Kerr, not being from a scientific or medical background, was judging the merit of scientific research. Nevertheless, in spite of the resistance from faculty, Kerr was adamant that this procedure was to be followed. In one incident, Dr. R.O. Jones of Psychiatry applied for grants after which he sent Kerr a letter informing him of his actions, in hopes that they would meet with his approval. In correspondence to

Grant on April 2, 1951, Kerr reminded Grant that he did not "wish to have applications for grants made by anyone until they have.. been approved by you and myself."[103] The necessary procedure, Kerr thought, would save the university embarrassment as he reiterated in his letter that at one meeting of a Foundation it had "evoked critical enquiry at a meeting of the Executive of the Board as to how it was possible for a professor to initiate such a matter without the President's prior approval...." Needless to say Grant was reminded that he should remember that the only way that the university could avoid this type of situation was by insisting on "the right order of procedure."[104]

Although Kerr was fanatical when it came to procedure, by 1953 the number of applications had grown to such a high number that he sent a memo to all deans stating that the procedure had become so cumbersome he was requesting that the applications "be submitted to the president, through the Dean of the Faculty, who shall place all applications before the President in a group."[105] The Dean's job was to check all grants for conformity to the procedures of the funding agencies before they were presented to the President.

Administration of other funds, such as the Dalhousie Medical Research Fund and the New York Medical Alumni Fund, was also monitored and approved by the President. There was

much heated debate in November 1950 when an application by Dr. Atlee had been approved by a committee of the Medical School, but had been rejected by the President. The reason given for the rejection of the application was that the fund was supposed to be used for "small urgent expenditures that might be required to expedite a research," while this request had been to fund a technician which was to be a temporary appointment. Dr. Weld took issue with this explanation and informed the President that "17 of the previous 28 grants from the fund had been for salaries for technical assistance." Faced with this rebuttal, Kerr suggested that in his opinion the salary being offered was too much and was for a "temporary appointment only," and therefore should not be paid out of the grant. Furthermore, Kerr informed the members at the meeting "that action of Committee is merely a recommendation and that the grant is not made until he authorizes it." Dr. Weld asked the President if "he did not trust the judgement of the Committee that had considered the project."[106]

The issue over the amount to be paid to technicians when they were being paid from outside funding was a contentious issue until 1953. As more money was available and more research being conducted, the use of technicians in research became increasingly necessary. When faculty

applied and received money from outside sources they felt that they should be permitted to pay the technicians a salary which they deemed appropriate. This did not always coincide with the University regulations. It was not until May 13, 1953 that Kerr agreed that technicians being paid from outside grants could have a different salary scale from those being paid by university funds. However, these scales "should not deviate greatly and should be approved by the Dean."[107] Again, it was evident that Kerr wished to maintain control of the affairs of the Medical School. Kerr was by nature a cautious man, and wary of overspending which the university might later regret. For this reason he might have wished to maintain control over the university's management. Furthermore, he might have also realized that he was accountable to the Board of Governors of the university and did not want to lose sight of what was happening in the various university departments.

In 1952 the Faculty of Medicine received a monetary gift from the New York Medical Alumni. A committee was formed within the faculty to decide on the best use of the money - it was decided that it should go to a faculty member who wished to pursue further training. At a meeting of the faculty on January 8, 1952 the President informed the faculty that "it was not within the power of Faculty to

accept the gift, that it was a matter for the Board of Governors."[108] Consequently, the faculty moved that their recommendations would be submitted to the Board of Governors. The faculty also contended that they should have some input into the manner in which the money was awarded. Again, they were informed by the President that this would be a matter for the Board of Governors.

By May 1952 the Board of Governors had accepted the gift from the New York Alumni and agreed with the recommendation from faculty that it be used to send a faculty member away for further training. However, the faculty were concerned about how the fund would be administered and how the recipient would be chosen. The Board of Governors had suggested that the recipient would be chosen by the President in consultation with the Dean. The members of the faculty thought that this approach would put too much responsibility on the Dean, and therefore wished that the heads of departments could also make recommendations. The President reiterated the recommendation of the Board of Governors and the matter was dropped without a motion being submitted.

Staff Appointment and Salaries

The issue over the hiring of staff was undoubtedly intertwined with financial issues. One of the major

barriers to hiring new staff, other than the space to house them, was the funding of new positions. It was over these concerns that Dr. Grant and the Medical School took issue with President Kerr on numerous occasions. In June 1949, Grant wished to hire an assistant in Anatomy at a time when surplus funds were quite low. After informing the President that he had hired the assistant Kerr wrote to Grant remarking,

> As a matter of fact, Dr. Fraser's illness, which we did not foresee, will more than wipe out the small surplus. I shall be glad to know how you propose to meet the cost of this new development.[109]

The conflict of staff appointments not only involved monetary issues, there were also set university regulations concerning the number of holidays which could be given to staff. Furthermore, it was known that Dean Grant would try to give his staff the most beneficial agreements he could slip through the bureaucracy, which frustrated the President. On one such occasion Kerr wrote to Grant that he wished the number of "incessant requests for salary change" to cease.[110] In another episode concerning the hiring of a stenographer, Grant agreed to allow her one month of holiday in her first year. When this agreement came to the attention of Kerr, he wrote Grant a rather terse letter reminding Grant about the university regulations concerning staff holidays - "University regulation has been in

existence for some time and the Business Manager says that he sent copies of it out to all departments. It has applied to your staff, including your own secretary."[111] In the end the stenographer was allowed the month's holiday with pay for the first year of her employment only. Such condemnation would become impossible when the Medical School achieved the right, through the battle for its autonomy in 1954, for the Dean to hire and fire staff.

Although there was a great need for clerical work and stenographic assistance in many of the departments, the University would not approve salaries which would attract them or keep them with the Medical School. Dean Grant was an avid supporter of paying higher salaries for these support workers so that employees of the Medical School could acquire the assistance they so desperately needed. In January 1953, Grant was trying to acquire an assistant for Miss Allen, the medical librarian, and wrote Kerr with a request to hire an assistant.

He wrote:

> I have looked into this matter thoroughly and feel that Miss Allen needs a part-time worker in order to run her library properly. Last year we had such a worker at fifty dollars ($50.00) a month but she left us because paid more money elsewhere.[112]

At that time, Grant wanted to hire a new assistant at a salary of $75.00 per month and recommended, on behalf of

Miss Allen, that they would be unable to get an assistant unless they paid this amount. In response to the salary request, Kerr wrote back indicating that Miss Allen could have the assistant of her choice but "that the salary scale be that of an inexperienced clerical help, not more than $55-$60 per month for part time."[113]

The Medical School and Dr. Grant were not always the ones on the defensive; on more than one occasion the President found himself the object of the faculty's fury. When the Medical School wanted to hire an animal attendant in January 1953, it met with some surprising comments from the President which were not looked upon with favour by many in the faculty. The faculty wished to raise the salary of the animal attendant and in a memo dated January 13, 1953, Kerr approved the raise from $25.00 to $40.00 per month, but requested the "whole problem of animal attendance" be investigated.[114] At this time, the animals were housed in various locations in the school and the dispute concerned whether there should be one animal colony with one full-time attendant managing the facility or to maintain the current arrangement. However, in his memo the President inadvertently mentioned that he felt that the salary suggested by him was adequate given that "the work [was] of menial character."[115] The remark brought condemnation from

at least four faculty members. Between February 26 and March 3, 1953, Drs. Aldous, Weld, McCarter, and Saunders wrote letters to the Dean which all contained a similar theme. First, they disagreed with the notion of a central animal house, because it would seriously disrupt their research by having to go to and from the housing to acquire animals. Secondly, and the most serious criticism, was in response to the President referring to the position of animal attendant as a job of "menial character." The four faculty members unanimously agreed that this work required a responsible person with intelligence to care for the animals. Saunders was more direct in his criticism. He wrote:

> In progressive medical schools where emphasis is placed on positive and practical research output, and less on committee meetings and briefs, the animal house attendants are regarded as trusted individuals capable of getting the best out of the animals {breeding, etc}[116]

Saunders also felt that the school should approach this issue with a more "practical attitude" and that if the university thought that the person who was looking after the animals should be of "mere menial character," then the Medical School and all the departments concerned would suffer. This incident brought about a more general attack on the managing of the School. Saunders concluded his letter by stating that "Increasing voice is being given to

the difficulty of getting anything done in this medical centre."[117] In retrospect there appears to have been some inconsistencies among the opinions of the faculty members. On the one hand they wished to maintain the 'old' system of keeping their own animals in their individual space, while on the other they wished to increase the profile of the animal attendant to acquire a more qualified individual, which appears to be an evolving view over the issue of the quality and humanity of animal care.

During 1953 tensions between the Medical School and the university did not abate, and the relationship between Grant and Kerr over staff appointments and salaries became more stressed. In the light of the disagreements between the Dean and the President, by the spring of 1953 communications also began to fail. On May 22, 1953 Kerr wrote to Grant inquiring about three faculty appointments which were apparently made, in Kerr's opinion, without his consent. President Kerr claimed that he had received correspondence from three men concerning job offers which he had no recollection of offering. His letter requested that Grant send him the correspondence which had been sent to the three men, so he could be "in a position to state categorically, if necessary, that no commitment was made."[118]

The stressful relationship between the Dean and the

President had a significant effect on the relationship between the staff and Grant. As a result, Grant encountered the staff's anger on more than one occasion. In particular, restrictions on salaries were often blamed, in part, on the Dean, who at that time had no control over salary scales. In early June 1953 McLetchie requested an approval to grant his technician a higher salary. In response, Grant had written to McLetchie informing him that he had no authority to award the technician a higher salary. It is evident in Grant's letter to Kerr on June 5, 1953 that McLetchie had written back to the Dean and threatened to resign if the salary he had asked for was not granted to his technician. It appeared in Grant's letter to Kerr that Grant was very disgruntled about the incident. In his letter he remarked that he was "not very happy about receiving threats from members of my staff and would like your advice concerning what action should be taken."[119]

Conflict between faculty members and the Medical School was reflected in the school's ability to raise money from alumni. In an effort to access extra funds to support the school the university supported a campaign which drew on the generosity of previous faculty members. Normally an amount was pledged following which the money was sent to the university. Reminders were regularly sent by the registrar

to those people whose pledges were not received in a given time period. On one occasion a reminder was sent to Dr. Stoddard, who had resigned as Associate Professor of Medicine, to which he sent a contemptuous message stating - "I note your request re payment. What do you take me for - a sucker. I am not interested in the University as you call it. You made me your enemy and I plan to work, plan, talk and treat you as such." Kerr, startled by this reply, wrote Grant on April 27, 1953 to inquire if he knew of anything that would provoke this attitude.[120] It was not evident from the files why Stoddard felt such acrimony toward the university.

Dean Grant Resigns

Towards the end of 1953, communications between Grant and Kerr became more indifferent, and it was apparent through reading what correspondence there was that their relationship was strained. In many instances it appeared that Grant was trying to circumvent the President in order to carry out the duties for the school. In November of 1953, instead of writing to Kerr asking for a salary raise for the faculty, he merely enclosed a letter which he received from the faculty and sent it to the President. Furthermore, in December of 1953 the Department of Medicine

wished to purchase a Cambridge Tape Recorder at a price of $1270.00. On this occasion, Grant sent the letter directly to the business manager, Mr. D.H. McNeill, asking for the recorder; however, he relayed to the manager that the President "had not yet given his permission on this purchase so perhaps you had better show it to him for his approval."[121] Mr. McNeill sent back the request with a note to the Dean suggesting that the Dean make the request directly to the President.

In early 1954 it appeared that Grant was becoming increasingly frustrated with the conflicts embroiling the Medical School and the university. Even when the School nominated people for positions in the Medical School, the potential appointees would refuse the offers. On January 4, 1954 Kerr wrote to Grant to warn him of the complications with making nominations and having people refuse their appointments. He wrote "In future we should wish to be assured, before making nominations to the Board, that the appointments would be accepted by the persons concerned."[122] Apparently, Grant had made three nominations to the Board of Governors on behalf of Psychiatry, but when the Board had extended the offers the nominees had refused the appointments. Grant again appeared to draw the President's criticism over the appointment of a biophysicist. The Dean

was supposed to inform Dr. Bethune of the Victoria General by telephone of his appointment. However, after a call from Bethune, Kerr understood that the Dean's call had not been made to Bethune. Yet, when Dr. Kerr confronted the Dean, he claimed he had made the call. Kerr remarked in his correspondence - "Is it possible that Dr. Bethune's memory regarding the matter may be faulty?"[123]

On other occasions, when Grant claimed to have responded to administrative matters and correspondence, the President or his assistant indicated that they felt he had not. In a memo dated March 3, 1954 from Lola Henry, Secretary to the President, she wrote informing Grant that the deadline for registration for fourth and fifth year students had passed and he had neglected to send her the numbers. Consequently, it was possible that the university would not get compensation from the federal government for these students. Henry also indicated in the same memo that Grant had not responded to her concerning the money from the Rockefeller Foundation for teaching facilities. Miss Henry wrote, "I have telephoned Miss Blauvelt repeatedly to try to get the necessary information. What more can I do?"[124] Grant wrote back the next day stating that the issue had been taken care of last May 4, 1953 and the information regarding the Rockefeller grants had been sent to Mr. McNeill some

time ago.

As a result of the growing animosity, Grant grew increasingly indifferent to the wishes of the President over administrative matters of the School. When Grant sent Kerr his resignation, he stated that he was reaching the age of sixty-five and wished to retire. Yet, some staff members of the school believed that the situation with the university and Grant was contrived in order to force Grant out of the deanship.[125] Regardless of his reasons Grant submitted his resignation on April 7, 1954, the same day on which the Board of Governors notified the faculty that Dr. C.B. Stewart would be appointed Dean of the Faculty of Medicine. Dr. Grant wrote to the President:

> Dear President Kerr:
> As I shall be sixty-five (65) years of age in June, I am tendering my resignation as Dean of The Faculty of Medicine, to take effect the end of August...[126]

However, for some reason the announcement from the Board of Governors indicated that Dr. Stewart would be taking over the deanship on June 1, 1954. Consequently, Dr. Kerr wrote to Grant requesting that Stewart take over the deanship on June 1 not September 1. Grant wrote that it was "quite agreeable to me that Dr. C.B. Stewart takes over his duties as Dean" in June.[127]

Summary

The years encompassing the first part of the 1950's were years of conflict and adversity for Dean Grant and his faculty. These conflicts while being varied in nature, such as personality conflicts, financial issues, and constraints placed on the faculty because of the university's administrative structure, played a synergistic role in defining the curriculum at Dalhousie. For instance, the ability of the President to veto the application of monies for equipment had the capability to effect the faculty's power to change its teaching practices and research programs. Therefore, it is difficult to separate the various conflicts presented in this chapter since they all appeared to play a significant role in curriculum development. Additionally, the presence of such conflict within the faculty undoubtedly affected the implementation of new curriculum, and must have inhibited the faculty's endeavours to change the curriculum during this time.

The curriculum change of 1948 began to cause problems in that there was not enough staff to handle the increase in work due to the changes implemented in the curriculum. Therefore, by the mid-1950's there were motions by faculty to again evaluate the curriculum. In addition,

interdepartmental conflicts, staffing problems, concerns over the lack of space, and disagreements between the Medical School and the President, took its toll on Grant, who finally submitted his resignation in early 1954. These conflicts laid the groundwork for the faculty rebellion, which together with the appointment of the new dean, would see the Medical School assume independence from the university's central administration.

1.Dalhousie University Archives (hereafter DUA), Victoria General Hospital (hereafter VGH)Correspondence, B519, Grant to Dr. Gregg, Director of Medical Sciences, Rockefeller Foundation, February 3, 1949.

2.Minutes Committee on Studies (hereafter COS), September 14, 1950, 600.

3.Minutes Faculty of Medicine (hereafter FOM), February 19, 1952 373.

4.Ibid., June 6, 1950,330.

5.Minutes of a meeting of the Department of Surgery were included in the minute book for the Committee on Studies 536, June 15, 1948. This meeting appeared to be between members of the Department of Surgery and Grant and Weld.

6.Minutes COS, June 15, 1948, 535.

7.Ibid., 536.

8.Ibid., 537.

9.Ibid., September 29, 1948, 543.

10.Ibid.,543-44.

11.Ibid., 544.

12.Ibid., 545.

13.Minutes COS, March 6, 1950, 585. This meeting included student representatives and members of the COS.

14.Ibid., June 2, 1950, 593.

15.Ibid.

16.Minutes Faculty Executive and Advisory Committee (hereafter FEAC), February 20, 1951 , 614. This meeting included student representatives and the newly formed FEAC which replaced the COS.

17.Ibid.

18.Minutes FEAC, October 31, 1951, 631. Meeting of student representatives and FEAC.

19.Ibid.

20.Ibid., 634.

21.Ibid., 636. Included in the minutes was the Students Document p3.

22.Ibid., 634.

23.Ibid,

24.Minutes Faculty Executive Committee (hereafter FEC), October 23 1952, 659-660. The FEC replaced the FEAC.

25.Ibid., 661.

26.Minutes FOM, January 26, 1949, 301.

27.Minutes COS, March 6, 1950, 583.

28.Minutes FEAC, February 20, 1951, 612.

29.Ibid., 610.

30.Ibid., 613.

31.Minutes FEAC, October 31, 1951, 630. This meeting included the student representatives.

32.Minutes FEAC, January 4, 1952, 640.

33.Ibid., 641.

34.Dr. J. Murray, interview by author, Halifax, Nova Scotia, January 6, 1999.

35.Ibid.

36.Minutes FEAC, May 28, 1951, 623.

37.Minutes FEC, May 27, 1953, 684.

38.DUA Department of Anatomy Correspondence, B60, note to Grant from R. Saunders written on the Norfolk Hotel stationery while on a trip to London, England to recruit staff for the Anatomy department, undated.

39.Minutes FEC, December 8, 1953, 694.

40.DUA Faculty of Medicine Calendar (hereafter FOMC) 1968-69, 45.

41.DUA Department of Medicine Correspondence, B708. Faculty, Department of Medicine to Head of Medicine (C.W. Holland), March 7,1951.

42.Ibid.

43.DUA Department of Medicine Correspondence, B708, Holland to Members of the Department of Medicine, April 3 1951.

44.Ibid. Memo from Holland to the doctors of the Department of Medicine, April 3, 1951.

45.DUA President's Office Correspondence (hereafter DUAPO), B860, Grant to Kerr, January 23, 1952.

46.DUA Department of Obstetrics and Gynecology Correspondence, B791, Atlee to Grant, April 28, 1952.

47.Ibid.

48.DUAPO, B859, Report on the Medical Faculty, October 4, 1950.

49.DUA American Medical Association (hereafter AMA), B38, Grant to Frank Cargill, Editor of the Directory of the American Medical Association, April 9, 1951.

50.DUA Faculty of Medicine, B399, Report on Research Faculty of Medicine, 1951, 8.

51.Ibid., 3.

52.Ibid.

53.DUA Department of Biochemistry Correspondence, B878, J.A. McCarter to Grant, Report on the Department of Biochemistry, June 30, 1952.

54.DUAPO Correspondence, B860, Grant to Kerr, October 9, 1952.

55.Minutes FOM, October 1, 1953, 421.

56.Ibid.

57.DUA Department of Biochemistry, B227, Stewart to Dr. J.A. McCarter, March 27, 1951, 2.

58.DUAPO Correspondence, B860, Grant to Kerr, July 12, 1952.

59.Ibid., B859, Dr. Reed, a part-time teacher in the Department of Bacteriology submitted a report to Grant on December 5, 1950 after his first year in the department.

60.DUA Department of Medicine Correspondence, B708, Holland to Department of Medicine, April 3, 1951, 4.

61.Ibid., Memorandum Department of Medicine Teaching Year 1952-53

62.Ibid., 2.

63.DUA Department of Pediatrics, B795, Dr. G.B. Wiswell to Grant, October 23, 1953.

64.DUA Department of Obstetrics and Gynecology Correspondence, B791, Atlee to Grant, June 11, 1950.

65.DUAPO Correspondence, B860, Lola Henry, Secretary to the President, to Grant, February 2, 1952.

66.Ibid., B878, Annual Reports Faculty of Medicine 1950, 1951 and 1952.

67.DUAPO Correspondence, B860, Kerr to J.H. Fodden (Pathology), September 3, 1952.

68.DUA Faculty of Medicine Committee Reports, B399. In March of 1951 a committee was formed to investigate the lack of funding received by Dalhousie in relation to the total available research funds in Canada - Report of the Committee, Research in the Faculty of Medicine. The report referred to a letter from Dr. N.G. McLetchie of the Department of Pathology, p6.

69.Ibid., The Report of the Committee, Research in Faculty of Medicine, March 1951, 1.

70.Ibid., 10.

71.Ibid., 12.

72.DUAPO Correspondence, B860, Grant to Kerr, November 21, 1952.

73.DUA Department of Pathology Correspondence, B801. In December 1952, Dr. McLetchie was advertising for an Associate Professor for Pathology.

74.DUA Association of American Medical Colleges Correspondence, B85, Questionnaire, December 14, 1951.

75.Minutes FOM, November 9, 1953, 427.

76.Minutes FOM special meeting, April 12, 1950, 322.

77.DUAPO Correspondence, B859, Grant to Kerr, April 2, 1951.

78.Ibid.

79.Minutes FEAC, January 4, 1952, 639.

80.Minutes FOM, January 8, 1952, 366.

81.Ibid.

82.DUAPO Correspondence, B860, Grant to Kerr, November 27, 1952.

83.DUA AMA, B85, *Essentials Of An Acceptable Medical School*, 1951, p4. This is a document written by the American Medical Association and first published in 1913. The document underwent several revisions until the edition referred to here in 1951.

84.Minutes FOM, November 12, 1953, 445.

85.Minutes COS, December 2,1949, 576.

86.Ibid., 574.

87.Ibid., September 14, 1950, 598.

88.DUA Saint John Hospital Correspondence, B509, Dr. Gale, superintendent of the Saint John General, Saint John, New Brunswick, to Grant, February 1950.

89.Ibid., January 1951.

90.Minutes FEAC, November 21, 1950, 608.

91.DUAPO Correspondence, B859, Kerr to Sister Gerard, November 7, 1950.

92.Minutes, FEAC, February 27, 1953, 676. This meeting included student representatives.

93.Minutes FOM, February 11, 1953, 404.

94.DUAPO Correspondence , B861, Dr. McInerney, the Minister of Health of New Brunswick to Kerr, May 9, 1953.

95.Minutes FOM, April 28, 1953, 406.

96.Minutes FOM, November 12 1953, 443. Included in the minutes is the Report of Ad Hoc Committee on Fifth Year Internships November 12, 1953,p7.

97.Ibid.

98.Minutes FOM, November 12, 1953, 441.

99.Dr. S. Wainwright, interview by author, Halifax, Nova Scotia, January 29, 1999.

100.DUAPO Correspondence, B858, Grant to Kerr, February 5, 1949.

101.Ibid., telegram, Grant to Kerr, February 14, 1949.

102.Ibid., B859, Grant to Kerr , April 8, 1950.

103.Ibid. Kerr to Grant, April 2, 1951.

104.Ibid.

105.DUAPO Correspondence, B861, Kerr to Grant , January 31, 1953.

106.Minutes FEAC, November 9, 1950, 605.

107.DUAPO Correspondence, B861, Kerr to Grant, May 13, 1953.

108.Minutes FOM, January 8, 1952, 365.

109.DUAPO Correspondence,B858, Kerr to Grant, June 10, 1949.

110.Ibid., B859, Kerr to Grant, September 6, 1951.

111.Ibid., B861, Kerr to Grant, January 14, 1953.

112.DUAPO, B861, Grant to Kerr, January 15, 1953.

113.Ibid., Kerr to Grant, January 27, 1953.

114.Ibid., Kerr to Grant, January 13, 1953.

115.Ibid.

116.DUAPO, B861. Between February 26 and March 3, 1953, Drs. Aldous, Weld, McCarter, and Saunders wrote letters to the Dean which all contained a similar theme. This is an excerpt from Saunders letter which was filed in the President's correspondence.

117.Ibid.

118.Ibid., Kerr to Grant, May 22, 1953.

119.Ibid., Grant to Kerr, June 5, 1953.

120.Ibid., Kerr to Grant, April 27, 1953.

121.Ibid., Grant to McNeill, business manager of the university, December 22, 1953,

122.Ibid., B862, Kerr to Grant, January 4, 1954.

123.Ibid.,Kerr to Grant, January 28, 1954.

124.Ibid. Memo, Lola Henry, Secretary to the President, to Grant, March 3, 1954.

125.Anonymous, interview by author, January 29, 1999.

126.DUAPO Correspondence, B862, Grant to Kerr, April 7, 1954.

127.Ibid., Grant to Kerr, April 19, 1954.

CHAPTER 5

A NEW DEAN - A DIFFERENT VISION

The events leading to Dean Grant's retirement were plagued with adversities and controversies. Prior to his scheduled retirement Grant began a process whereby the faculty would achieve autonomy for the administration of the School, a new faculty council would be formed, and the problems plaguing the curriculum would be reviewed by an ad hoc curriculum committee. However, before all of these goals could be brought to their fruition, Dean Grant unexpectedly died of a heart attack on May 8, 1954. Some faculty members and staff contend that the strain of the preceding months of unrest at the school contributed to his early death. One staff member recollects that on the Friday preceding his death, after a stressful meeting, he left the school with a couple of close friends to go to the Cathedral Barracks, a place frequented by many faculty members for refreshments and socializing. Declaring that he did not feel well, Grant left for home, and subsequently passed away the following day at the hospital. Grant was, and still is,

remembered fondly by staff and faculty as a well-meaning, kind, and generous man, 'a real gentleman,' whose polite manner and gentleness earned him the admiration and respect of those who worked with him. Hence, Grant provided the foundation upon which Dr. C.B. Stewart embarked on his new role as dean. However, the numerous challenges which faced Stewart upon his appointment, when resolved, would change the administrative and academic environment of the Medical School.

Dean Chester B. Stewart

Stewart was a 'Maritimer,' who was born in Prince Edward Island, and graduated from Dalhousie with a medical degree in 1938. In 1954 when he accepted the deanship, he was also Professor and Head of the Department of Preventive Medicine. He was eminently qualified for the position of dean both as an academic and a humanist, and was skillful in dealing with faculty, students, and outside agencies with a quiet fortitude that ensured Dalhousie Medical School would prosper under his leadership.

Stewart served as a physician for the Royal Canadian Air Force in Toronto, and also attended Johns Hopkins Medical School in Baltimore where he received a Ph.D. in Public Health in 1952. Johns Hopkins was a pioneer in bedside teaching and was known to adopt a more student-

centered approach to medical education. The experience gained at Johns Hopkins would serve Stewart well in creating a different Dalhousie Medical School.

Stewart believed that medical education should be more than just technical training and that students should learn both from science and the humanities in order to become well-rounded physicians. He realized that since medicine required a close association with people, students needed to be proficient in speaking and writing. Therefore, in order to be competent in dealing with people, he felt that students needed a good 'mental training' and could acquire this through studying such subjects as Psychology, Sociology, or Anthropology along with the understanding of human behavior.[1]

Although Stewart maintained the importance of the art of medicine, having worked at the Banting Institute, he was familiar with the important role of research in the development of Dalhousie as a leading medical center. This combination would prove invaluable to the development of Dalhousie in the next decade.

The Medical School of 1954 was quite different from the one which Grant oversaw in the early years of his twenty-two years as dean. The Faculties of Medicine and Dentistry were still closely associated and the medical faculty still

taught both medical and dental students the basic sciences. This arrangement would not change until the new Dentistry Building was opened in 1958.[2] The Medical and Dental Schools were admitting seventy students annually, fifty-eight medical and twelve dental. Of all the available patient beds in the teaching hospitals, Dalhousie maintained sixty-four percent of those for teaching purposes. This figure was one of the highest teaching ratios for available hospital beds, second only to the University of Toronto. Therefore, the main curtailing factor that restricted Dalhousie increasing its student enrolment was the inadequacy of its laboratory space. As Stewart reported to the Dean's Committee on September 22, 1956, "The laboratory facilities have been the main limiting factor governing the size of classes."[3]

In 1932 when Grant began his tenure as dean there had been sixty-five staff members to manage the eight departments, with only one full-time faculty member in each of the basic science departments and none in the clinical departments. By 1954 there were more than 130 faculty members including full and part-time paid faculty in the sixteen clinical and basic science departments. In the years since Grant had taken over the deanship, medical education had grown more complex and much more expensive.

Faculty Autonomy

One of the issues which Grant and Stewart successfully resolved before Grant's death was the new administrative structure of the faculty allowing for greater autonomy for the dean and the Medical School. As a result of the discontent both within the School, and between the School and the university, in early 1954 the faculty reacted with what some people would define as a widespread rebellion within the Medical School protesting what was perceived to be the unnecessary control wielded by the President and university administration.[4] Although the animosity grew out of several contentious issues, such as adequate salary scales for faculty, technicians' pay, a loss of prestige due to rumoured unrest within the school, and the process by which grants were awarded, most of the criticisms were aimed directly at the President and his seemingly narrow perspectives on the management of the school. The Faculty Advisory Committee stated that no "non medical University Head, however wise, is qualified to deal effectively with the details of medical education, medical research and medical faculty needs."[5]

The Advisory Committee, formed in 1952 when the Faculty Executive and Advisory Committee was divided, was intended to be a consultant group to the President and the Board. In

the latter half of 1953 the Committee became increasingly disconcerted with the barriers created by the President and the administration which appeared to hinder them presenting their views to the President, and effectively carrying out their roles on behalf of the school. The climax of these disagreements between the President and the Advisory Committee stemmed over the hiring of Dr. O.H. Warwick, whom the President chose to fill the dual position of Dean and the Head of Medicine. The President, ignoring the wishes of the faculty and the Committee that one person could not fill both these demanding positions effectively, pursued Warwick against the advice of the Committee. Finally, when the President inquired whether Warwick would accept either one of the positions, Warwick declined - he wanted both. As a result of the President's unwillingness to respect the position of the Advisory Committee, the Committee presented a petition to Dean Grant, signed by forty-seven members of the faculty, requesting a special meeting of the faculty on January 26, 1954 "to discuss a matter of urgency to the Faculty."[6] The resolution filed with the minutes suggested that the Advisory Committee believed that the current situation of the Medical School, the deterioration of relationships with outside agencies, and the faculty's low morale were largely due to the "administration setup under

which we are operating."[7] As a result of this meeting, the faculty resolved that for the Medical School to operate effectively within the growing demands of medical education and research, there would have to be more faculty autonomy in decision-making with respect to the school. Furthermore, the Advisory Committee strongly believed that "no man worth appointing as Dean would accept the appointment under the system that has prevailed up to the present."[8]

It was at meetings between Alistair Fraser (member of the board and lieutenant-governor of Nova Scotia) Stewart, and Kerr that the autonomy of the deanship was finalized. At these meetings Stewart had made it very clear that he would resist the interference of the President who wanted "unfettered freedom" over the faculty.[9] This type of administration whereby the dean was given power to manage the affairs of the school was not common at this time. At another eastern Canadian university, the university head managed all facets of the university and its departments. McGill's principal, F. Cyril James, ran a very tight "one-man operation," which remained unchallenged for almost twenty years after he became principal in 1940.[10] Therefore, Kerr's reluctance to allocate the reins of power to the dean may have been caused by what he perceived to be the traditional role of the president. On the other hand,

Kerr was responsible, at that time, for balancing the budget for the university, and may have felt that he would lose control over spending by the faculties if they were given control over their own affairs. Nonetheless, on April 7, 1954 Kerr wrote to Weld, Secretary of the Faculty, advising him that the resolution for faculty autonomy for the Faculty of Medicine, in principle, had been passed by the Board and that the Board had also authorized him to announce the appointment of Stewart as dean.

Other universities in Canada and the United States offered medical school deans considerably more power. For instance, the dean at Western was given considerable freedom to administer the school. This, in part, may have been the result of the fact that the university president was a physician and the former dean of the medical school, who may have more fully understood the administrative issues pertaining to the medical school. In addition, when Dr. O.H. Warwick took over as dean in 1961, he informed the faculty at Western that all communications from the faculty were to be through the Dean's Office; if not he assured them that he would take "appropriate action when any member of staff chooses to by-pass the Dean's office."[11]

In the United States the role of the dean had changed significantly since World War II. Prior to this time, the

dean was a senior member of staff whose position was largely ceremonial. However, after the 1950's the dean's position changed due to the increasing complexity of the medical school, which was attributed to an increase in specialization, research, faculty, and administrative duties. As a result, by the 1960's the dean was primarily the chief executive officer of the school responsible for all facets of its management with the assistance of department heads and assistant deans.[12]

The agreement forged at Dalhousie between the Committee on Faculty Authority and Autonomy and the university gave the faculty a democratic system of government in its relation with the President and the Board.[13] Among the more important issues in the document proposed by the Committee on Faculty Authority and Autonomy was that the dean and Faculty Council in cooperation with the faculty were given the authority to initiate and formulate policies, projects and curricula. In addition, the dean and council were given the right to make all decisions pertaining to the Medical School and would not have to confer with the president prior to making decisions, except for those involving another faculty or the university as a whole. Furthermore, the dean and Faculty Council held the right to select new staff and to set salaries and increments according to University

policy. The dean and Faculty Council were also to have control over the expenditure of funds under an approved budget. It was under these conditions that Stewart commenced his term as dean at a special meeting of the faculty on May 10, 1954.

One event which may have spurred on the rebellion at Dalhousie Medical School was the release of the memorandum Essentials of an Acceptable Medical School by the American Medical Association (revised in 1951 AMA B38) which outlined the manner in which a Medical School should be structured and administered. One of its recommendations called for:

> careful and intelligent supervision of the entire school by the dean or other executive officer who, by training and experience, is fitted to provide leadership and to interpret the prevailing standards in medical education, and who possesses sufficient authority to carry them into effect[14]

By the time Stewart assumed the dean's position, it was clear that he was quite capable of exercising this type of administration. In fact, in the years which followed his appointment he was quite protective over the school and its staff, strengthening both with his patience and tenacity.

Faculty Council

One of the first issues Stewart dealt with was the implementation of the new Faculty Council as outlined by the Committee on the Establishment of an Executive presented on May 7 1954 and authorized by Dean Grant. This document

states that Dean Grant was authorized to name the following committee: "Dr. C.B. Stewart as Chairman, Doctors C.J.W. Beckwith, C.L. Gosse, J.A. McCarter, A.L. Murphy [Surgery] and R.W. Reed" to nominate the new Faculty Council.[15] The Faculty Council was elected at a meeting of the faculty and consisted of twelve faculty members elected by the faculty from a slate presented at the meeting. The nominees would be elected from a slate chosen by the following method: four nominated by the dean, four named by the nominating committee of the basic sciences, and four nominated by the nominating committee of the clinical disciplines. Others could be nominated by faculty at the election meeting. In addition, the dean, the secretary of the faculty, and the president also served as ex officio members. The appointments were for staggered four-year terms and a member could not be reelected within one year of completion of his term. This meant that three new members could be elected annually, one nominated by the dean and two by a nominating committee.[16]

This method of selecting a faculty council was not customary among medical schools at that time. Other schools in Canada devised different methods of forming their faculty councils. At Western, the heads of departments and all full professors were named to the council, as well as

representatives from the associate faculty.[17] This arrangement was in place at Western until the new dean, Dr. Warwick (the same person whom Kerr wished to have at Dalhousie), changed the council in 1961 so that it was "composed of all full-time faculty of the rank of lecturer and above, and all part-time faculty with the rank of assistant professor and above."[18] Western also had a small Executive Committee whose purpose was to "advise the dean on urgent matters."[19] In Dalhousie's case, the faculty thought that allowing sixteen members on a committee, which would be one member for each department, would be too unwieldy to allow the committee to function efficiently.

The Faculty Council held meetings usually not more than once per month during the academic year, but more often if needed. The duties of the Faculty Council were to oversee: the agenda for faculty meetings; examination results; awards; and, the review of disciplinary cases. In addition, the Council recommended the composition of other committees and their duties. The Council was also an advisory body to the dean and could make recommendations concerning policy, curricula, or projects concerning the faculty; however, the final authority on action resided with the dean. In addition, the dean had authority to name ad hoc committees, but standing committees were to be elected by the faculty.[20]

Curriculum

A review of the curriculum in 1955 was prompted by the release of the Report on Pre-Medical Requirements released in 1953 by an ad hoc Medical School committee. Other than recommending changes to admission requirements, it also incorporated the recommendation that a review be undertaken to investigate the availability of time in the curriculum for the humanities. An ad hoc committee was then appointed to review the curriculum. As a result of the curriculum committee's findings a complete curriculum change was implemented in September 1955.

Pre-Medical Requirements

The Committee on Pre-Medical Requirements delivered its review at a faculty meeting on November 9, 1953 recommending that a year be added to the pre-medical years and that a complete review of the curriculum be conducted in order to establish time to teach the humanities during the medical years. This Committee was formed as a result of a memorandum from the American Medical Association (AMA), first published in 1913, and revised several times up until 1951, entitled Essentials of an Acceptable Medical School. The memorandum stated that "Collegiate training in preparation for the study of medicine should provide the opportunity for a good general education, including the

attainment of competence in English."[21] It should be noted that, the broad education referred to in the report also included theoretical and laboratory courses in physics, biology and chemistry.

The section of the report which must have disturbed Dalhousie significantly contained a statement that "Rarely, a school would be justified in admitting a superior student under exceptional conditions after two years of college work."[22] Therefore, in 1951 Dalhousie was admitting students who were considered by the AMA to be below the acceptable standard to enter medicine. In fact, Dalhousie was one of the few schools in Canada accepting students after two years of university work. The only two other schools which may have been comparable to Dalhousie were Manitoba and Queens; all other schools in Canada required three years of university preparation after Grade twelve. Furthermore, the 1953 report from the Committee on Pre-Medical Requirements the committee reported that Dalhousie had the "lowest admission requirements of any reputable medical school in either Canada or the United States."[23]

The report of the Committee on Pre-Medical Requirements in 1953 and the report by the American Medical Association, may have been the cement which sealed the change in the pre-medical requirements requested by the

school. Early in 1951 there were laments from various faculty members that students were ill-equipped to handle the practice of medicine. One of the most vociferous members was Dr. Atlee. On many occasions, Atlee criticized the students' ability to use the English language properly and maintained that they lacked any "real knowledge about the philosophy on which our culture and beliefs are based."[24] Furthermore, he criticized the pre-medical requirements which he felt were "definitely aimed at specializing minds that must later in medical school undergo tremendous further specialization" in science.[25] The crux of Atlee's argument was that the Medical School should require more humane or liberal subjects in the pre-medical and medical years enabling students to acquire a broader education. Atlee suggested that to accomplish this the School should initiate a reversal in the "premedical specialization trend, and require students to take 7 liberal subjects and 3 scientific in pre-medicine and in this way they would enter medicine knowing a little better about what society was all about."[26] Atlee, in his special way with the written word, concluded his letter declaring that the Medical School may be sending out "highly specialized ignoramuses". He also proclaimed his dismay over conversations he held with students over the years

which he declared had to be "kept to medical subjects, since if I broach anything touching the wider issues of life, they get the dazed look of recently caught mackerel."[27]

Atlee also entered into debate on this subject with the President during meetings of the Executive Council. On one occasion he and Kerr engaged in an argument over the basic core of the curriculum. Atlee thought that the students needed a healthy dose of English, Literature and the Bible. Kerr countered this remark by saying that "if I want a doctor in the middle of the night I would not want someone to spout Shakespeare."[28]

Apparently, the inclination toward a broader pre-medical education for students was not restricted to Dalhousie. The Report on Pre-Medical Requirements stated that "Dr. William Rappleye, Dean of Columbia University has this to say: The college preparation for medical ... and public health fields should not be professional in character, but should be devoted to the objective of providing as broad a cultural education as the particular institution can give. It should be a preparation not for medicine...but for life."[29] In Great Britain, feelings were similar to those in North America. At the opening of the First World Conference on Medical Education on August 29,

1953, Sir Lionel Whitby proclaimed that there was "evidence that there is now some poverty of mind in the finished medical and science graduates because of the lack of general education in the Humanities, Literature, Language, History, Philosophy, and the Arts."[30]

In 1953, after two years of debating the issue, the faculty voted to increase the duration of the pre-medical years from two to three years. The extra year was to allow students to study the humanities in greater depth before entering medicine. By April of 1954 the Office of the Dean released a memorandum concerning the change in regulations regarding the acceptance of students into first-year medicine. Consequently, as of September 1956 Dalhousie Medical School required entering students to have completed three years of university or fifteen credits. The added five credits, or one year, were to be aimed chiefly at the study of the humanities. The required subjects included "Chemistry 1,2 and 4, Biology 1, Zoology 2, Physics 1, Mathematics 1, English 1 and 2 and History."[31] Of the remaining five classes, four were to be from the "departments of English, Classics, History, Modern Languages, Philosophy, Psychology, Economics, Political Science and Mathematics" and the last could be from either science or the humanities.[32]

Students were further advised that students who were intending to enter medicine were to complete all fifteen courses at a recognized college or university.[33] The faculty found it necessary to introduce this rule because after only one year of the requirements being in place students were cramming the arts courses into grade twelve and then only completing two years of university instead of the three which were required.

In addition to increasing the number of years required to enter medicine, the Medical School followed the standards set by the Faculty of Arts and Science which, in 1956, had raised its admission standards so that the average mark for admission to the faculty was sixty percent and the individual mark remained at fifty percent. This meant that students could hold a sixty percent overall average, but could not score less than fifty percent on any individual course mark. The Faculty of Medicine decided that because it "would be invidious for the faculty of medicine to have lower standards of admission than the Arts and Science faculties" the Faculty of Medicine would also implement the new pass mark.[34]

In addition to changing the admission standards for entry into Medicine, the Medical School also changed the required pass mark for medical students during the medical

course. The policy was changed to require a student to obtain a mark of fifty-five percent in any individual subject and an overall average of sixty percent. The School's intention was to increase the standards in order to identify "problem students in the first year without creating any hardship for others."[35] In addition, Dalhousie wanted to keep abreast of other schools in North America which would enable their students to compete with other North American students for hospital placements and post-graduate training.

Raising the pass mark from fifty to fifty-five percent did not appear to indicate that students were required to score higher on a given examination, especially in the conjoint examinations. For example, it appeared that if a student in fourth or fifth year previously achieved fifty percent in an individual examination, the examiners were to keep in mind that after the increased pass mark was in effect this mark would become fifty-five percent. That is, the examiners would give a fifty-five percent to a paper which would have previously scored fifty percent. As Stewart revealed in his letter to Scammell, "This is merely a change in mechanics."[36] Therefore, changing the pass mark was solely for the purpose of keeping Dalhousie's marks more in line with that of other schools in North America.

Stewart related that, "The effect of the increase in the mark is definitely to raise the standards but it will hardly affect anyone in the fourth or fifth years when the conjoint examinations are held."[37]

Curriculum Change

The second recommendation, brought to the faculty on November 9, 1953 by the Committee on Pre-Medical Requirements, was that a committee was to be formed to examine the possibility of finding more time in the undergraduate medical curriculum for the Humanities. Accordingly, an ad hoc curriculum committee was established in 1953, headed by Dr. Clyde Marshall, to study this matter. However, by the time the committee convened, the mandate of the committee was extended to include an investigation of the organization and content of the entire curriculum.

The curriculum committee adhered to a three-step procedure in order to recommend changes and to arrive at a suitable schedule for a new curriculum. First, it examined current trends in medical education curriculum at other schools in North America. Second, it approached department heads of the school and asked their input concerning current curriculum arrangements and improvements they thought necessary. Third, the committee discussed the

information they had gathered between the committee and worked out a schedule for a new curriculum.[38]

This approach to curriculum review, to conduct a study of other schools, was taken by Western in 1959 as a result of a visit by the Liaison Committee on Medical Education. At that time Western was given approval by the accreditation team, but was also informed that it should conduct a "study of innovations in recent years in a number of medical schools in the United States" and adopt those that seemed appropriate for Western. As a result of this recommendation Western undertook a study of all Canadian medical schools and a number of those in the United States, before it made a significant change in its curriculum in 1963.[39] At McGill, a similar curriculum review was begun in 1955; however, their review took much longer and significant changes to McGill's curriculum did not occur until 1967.[40]

Also involved in this decision-making process at Dalhousie was a subcommittee of the Faculty Council, the Student Relations Committee. This committee was formed in November of 1954, and consisted of selected members of Faculty Council and student representatives. The students requested that they be permitted to discuss the plan with a small group of their peers and to present certain

suggestions to the curriculum committee. The formation of this committee was the beginning of a trend for more student-faculty interaction and more student input into matters affecting the management of the school. Barr reports that in 1958 the medical school at Western, formed a Faculty-Student Liaison Committee, which he thought was "evidence of the increasing involvement of students" in the curriculum and other affairs of the school.[41]

The new curriculum, as outlined in the 1955 Curriculum Report by the Curriculum Committee was based, in part, on curriculum models of three American medical schools - an integrated model, and an outpatient and home-care model. The first model was the integrated curriculum of [Case] Western Reserve Medical School in Cleveland where the basic and clinical sciences were taught in an integrated manner, in that no one department was responsible for a course, but the course was taught by a number of faculty members from several departments. In the early 1950's this model was introduced to alleviate several problems with the curriculum at [Case] Western Reserve, which included: "competition among departments for teaching time, a lack of correlation of content among the departments, and a lack of agreement about what a graduate of the school should know and be able to do."[42] In addition, Western Reserve included

in its list of objectives which served "as the basic policy guide for the educational program" that medicine should be taught as a "coherent, meaningful whole rather than a series of unrelated disciplines."[43] Therefore, the curriculum at [Case] Western Reserve was designed to integrate basic science and clinical medicine and increase the student's understanding of the relevance of basic science to clinical medicine. During the 1960's the Case Western Reserve curriculum plan served as a model for other medical schools in planning new curricula.

The second model, a home care model, was based on curriculum innovations from Boston University and the University of Pennsylvania, and was intended to bring students into contact with the community. Boston Medical School had implemented a program whereby senior students provided medical care in a patient's home. On the other hand, Pennsylvania appointed junior students to act as family health advisors under the supervision of senior physicians and health care providers.[44]

With these curriculum models in perspective, and considering the input by students and department heads, the committee proposed a new curriculum which was based on a trimester system, instead of two terms as was currently in place. In the late 1950's the Johns Hopkins curriculum

consisted of four ten-week quarters. Dalhousie would have rejected this model because they believed that students needed the summer to work. As a result, Dalhousie may have implemented the trimester systems as a modified form of the Johns Hopkins format.[45] Nevertheless, the following curriculum plan was composed from sections of the June 10, 1954 report from the Curriculum Committee as presented to the faculty, and excerpts from the Survey Report of 1957.[46]

The Curriculum Committee proposed that the first three years comprise three eleven-week terms allowing for one week after each term for examinations. The terms were designed as follows: The first trimester would begin on September 6 and end on November 9; examinations would be written in the week of November 21-26. The second trimester would begin on November 28 and end on February 18, and allow a Christmas vacation from December 23 to January 2. Examinations would be held from February 20 to February 25. The third trimester would begin on February 27 and continue until May 12 - examinations were to be written May 14 - 19.

Final examinations would be held at the end of a trimester when the course terminated, not at the end of the year. Tests were permitted once during the term; however, the tests were to be on material for that term's work only,

and were to be held in the same week during the term for each course. This examination system avoided a large number of final examinations at the end of the year and also avoided students studying for one subject at the expense of another. This examination model allowed students to absorb material more readily in that they did not have to study for a number of finals each of which would have contained a large amount of information in itself. Learning information in the trimester system promoted comprehension, rather than rote learning whereby information is easily forgotten within a short period after it has been acquired.

The method of examination at Dalhousie at this time was largely based on practical work during the term, and written examinations. In some cases, when the standing of the student was in question, departments could hold oral examinations.[47]

At the end of the fourth and fifth year, the examinations were joint examinations between the Provincial Medical Board of Nova Scotia (PMB) and the Medical Council of Canada (MCC). The examinations were prepared by the MCC and administered and marked by joint examiners of the university and the PMB. The average marks between the university and the PMB examiners were tabulated and then

sent to the MCC where the papers were again marked and the results returned to the schools for posting. The MCC Constitution, Rules and Regulations states that there were a number of subjects for which candidates had to be registered.[48] These included: Medicine including Therapeutics; Surgery; Obstetrics and Gynaecology; Pathology and Bacteriology; Public Health and Preventive Medicine.[49] The candidates were examined by a written examination in each subject. In addition, there were clinical and oral examinations in Medicine and Surgery, and oral examinations in the other subjects. Candidates were required to score sixty percent in each subject, but had to score fifty percent in each part of the subject area, and could take supplemental examinations for only two subjects. If candidates failed more than two subjects they were required to be re-examined on all subjects. Additionally, the MCC required that two examiners conjointly tested the students in each subject.

Curriculum by Year[50]

In the first year there were over 1000 hours in the curriculum of which almost 400 were devoted to lectures. The remainder of the time was devoted to laboratory work, class clinics, and unscheduled time. In the first year there was a concentration in the first trimester on

Biochemistry, and to a lesser extent on Gross and Microscopic Anatomy, and Physiology. In the second and third trimesters, there was growing emphasis on Gross and Microscopic Anatomy and less emphasis on Biochemistry. The change in emphasis from Anatomy to Biochemistry in the first year was because the Curriculum Committee felt that it was "a good thing" to emphasize the "chemical approach to medicine" in the first year.[51] This time allotment for first year medicine in the United States was similar to that at Dalhousie. Barzansky and Gevitz report that "the first year contained an average of 1000 to 1,200 hours."[52] However, the concentration in American schools in the first year was on Anatomy instead of Biochemistry. Although this was the general trend, the block system curriculum at Johns Hopkins saw Biochemistry taught in the first ten-week quarter in their second year, equivalent to Dalhousie's first year.[53]

In the first trimester of the second year Neuroanatomy and Gross Anatomy were the major subjects, while other subjects included Physiology, Pathology and Bacteriology. By the second trimester of the second year the course in Anatomy was completed. Subsequently, students began to concentrate on Bacteriology, Pathology and Pharmacology. In all there were 933 scheduled hours of which more than

half were lectures. Similarly, at Johns Hopkins, students took Pathology and Microbiology (perhaps Bacteriology) in Year III. However, in the second fifteen weeks in Year III they also engaged in introductory clinical courses.[54]

In the third year there were more than 1000 schedule hours with more than 400 scheduled as lectures. This time was divided between Pathology, Pharmacology, Medicine, Surgery, Obstetrics, Pediatrics, Psychiatry, Preventive Medicine, Ophthalmology, Otolaryngology, Anaesthesiology, Urology and Neurosurgery. Appendix Ten contains a complete first, second, and third-year class schedule.

The fourth year was a clinical clerkship and comprised four eight-week terms, instead of three periods as was in place up to 1954. The four rotations were:(1) Medicine;(2) Surgery; (3) Obstetrics, Gynaecology and Pediatrics; and, (4) the Specialties (including Urology, Neurosurgery, Anaesthesia, Radiology and Psychiatry). These rotations were similar to those at Johns Hopkins, with the exception of a ten-week elective in the fourth quarter at Johns Hopkins.[55]

At Dalhousie, there were eight weeks assigned to Medicine of which four were spent in the Victoria General and four in the Camp Hill Hospital. Surgery was also allotted eight weeks with six weeks devoted to General

Surgery and two weeks to Neurosurgery. Students spent four weeks each on Obstetrics and Gynaecology, and on Pediatrics. Another eight-week period was divided among the sub-specialties with four weeks being divided between Radiology and Psychiatry. Most of the lectures were moved ahead to the third year which left the fourth year as a clinical clerkship with very few lectures. In total there were "more than 1200 hours scheduled in the fourth year and less than 200 of these hours are utilized for lectures."[56] This was a significant step towards developing a full clinical clerkship at the Medical School. Most schools in the United States offered a modified third-year clerkship, but Dalhousie refused to implement this and instead consented to designate the fourth year as a clerkship year.

At this time Dalhousie still controlled the fifth-year rotating internship which had been reorganized in 1954. Students were awarded a medical license and the degree after they completed this year satisfactorily. It was the belief of the Dalhousie Medical School that this general rotating internship could not "be divorced from university supervision."[57] Although the hospital staff at this time took the major role in teaching in the fifth year, the university's role was to ensure that the proper standard of instruction was maintained. As of 1950, there were only

four other schools which, like Dalhousie, withheld the medical degree until after the internship. These included Laval, Queen's, Ottawa, and Manitoba. All other Canadian medical schools awarded the degree after the academic part of undergraduate medical education was completed.[58]

In 1957 the internship year at Dalhousie comprised "2 months in general medicine, 2 months in general surgery, 2 months in obstetrics and gynaecology, 2 months in pediatrics, 2 months in the specialties of medicine, and 2 months in the specialities of surgery."[59] Nine groups rotated through general surgery and general medicine - five groups at Victoria General, three groups at the St. John General, New Brunswick; and, one group at St. John's Newfoundland. In Obstetrics and Gynaecology two groups each were assigned to the Grace Maternity Hospital, the Halifax Infirmary, and Saint John General in New Brunswick, and one group each to the Aberdeen Hospital, the Sydney Hospital, and the Prince Edward Island Hospital.

The Curriculum by Category

The courses in the undergraduate curriculum were arranged in three separate categories: Departmental Courses; Interdepartmental Courses; and, Unscheduled Time.

A. Departmental Courses

Finding unscheduled time in the curriculum for the

humanities was achieved by re-arranging the curriculum as opposed to significantly cutting hours of different departments. In fact, very little reduction of hours was necessary in any department, and Pathology was given an increase in its time allotment.

1.Anatomy. The department managed courses in Gross Anatomy, Microscopic Anatomy (Histology and Embryology), and Neuroanatomy which totalled 671 hours, considerably below the Canadian average of 1951 of 761 hours. Anatomy was given a reduction of hours in the first year to allow time for Biochemistry. In each trimester anatomy concentrated on a particular aspect of the human body. For instance, in the first trimester the emphasis was placed on the lower limb, and in the second, on the upper limb.

2. Physiology. The time devoted to Physiology was left unchanged and constituted 242 hours, slightly below the Canadian average. There was less time available for student laboratory sessions, but an increase in the number of scheduled demonstrations.

3. Biochemistry. The average number of hours allotted in the Canadian medical schools for Biochemistry was 226, Dalhousie proposed that 231 hours be assigned this department.

4. Pathology. The Pathology Department was given an

increase of forty-five hours to its allotted time, for a total of 352 hours. However, this was still below the Canadian average of 396 hours.

5. Bacteriology. The Bacteriology Department taught a broad range of topics, which included Virology, Mycology, Parasitology, and Immunology and also contributed to discussions on antibiotics. There were 154 hours allocated to this department which was well below the Canadian average of 207. However, the range for teaching hours in Canada was quite broad - the lowest was seventy-two and the highest was 300. This variance in the range was credited to the variability in the topics covered in the different courses.

6. Pharmacology and Materia Medica. There were 143 hours devoted to Pharmacology and six hours assigned to Materia Medica; which was slightly above the Canadian average of 139. Prescription Writing, previously given with Materia Medica, was moved to Therapeutics at the end of the third year.

7. Preventive Medicine. The time allotted to this department was increased slightly to 149 hours, similar to the time devoted in other Canadian schools. The increase in hours occurred only in the third year where extra time was given to conduct one and one-half hour discussion

groups which were previously only one hour. The duration of the course was in the first three years, but in the first year the course was thirty-three hours long and was devoted to Bio-Statistics.

8. Medicine. The Department of Medicine managed some of the major courses in the curriculum and required 849 hours of teaching time, of which 562 were Medicine and the rest of the time was dedicated to interdepartmental courses. It was difficult to compare Dalhousie's scheduled time with that of other Canadian schools because the various schools included different topics under the heading of Medicine. However, according to the tabulation given in the report these hours were substantially higher than the national average of 698 hours. It may be that the interdepartmental teaching added considerably to the hours devoted to Medicine at this time and that other schools had not included any interdepartmental teaching in their tabulations. The time schedule for Medicine was distributed as follows:

2nd year, 3rd trimester - 22 hours of lectures

3rd year, 2nd trimester - 11 hours devoted to Dermatology

3rd year, all trimesters - 201 hours, 'Day in Medicine'

The Day in Medicine was scheduled for each Friday when the

students were divided into groups of nine and assigned to the various hospitals from nine o'clock until noon each morning. A class clinic was scheduled for twelve noon until one p.m., after which there were lectures and assigned readings. In the fourth year the students attended the class clinic from twelve to one in the afternoon and a seminar from four-thirty to six. The clinical clerkship component consisted of eight weeks of hospital at thirty-one hours per week.

9. Medical Jurisprudence and Toxicology. These two courses were taught under various departments. However, it was proposed that they be taught together and constitute twenty-two hours of time in the first trimester of the third year.

10. Psychiatry. Dalhousie proposed to increase the time dedicated to this department from 134 to 150 hours, which was equal to the national average. The Psychiatry department taught in all four years of the curriculum, but in the first year the students studied Psychobiology. The majority of the hours were devoted to the clerkship in fourth year which comprised sixty-two hours of the total allotment.

11. and 12. Surgery and Clinical Surgery. There were a total of 568 hours devoted to Surgery of which 438 were

assigned to General Surgery, fifty to Orthopaedics and eighty to Neuro-Surgery. The average hours for Canadian schools was 598. However, comparing this to Dalhousie hours may be misleading because the various schools included different sub-specialties under Surgery. At Dalhousie only Neurosurgery and Orthopaedics were included and other specialties were given departmental status.

The schedule for General Surgery is outlined below:

1st year, 3rd term - 22 hours, First Aid and Bandaging

2nd year, 2nd & 3rd terms - 22 hours Introduction to Clinical Surgery

3rd year, all terms - 176 hours, lecture, clinics, group teaching

4th year, all terms - 32 hours, 1 class clinic weekly
186 hours, clerkship - 6 weeks

In the third year students studied regional and systematic General Surgery which consisted of five hours per week on Monday, Tuesday, and Wednesday. Some of these clinics were dedicated as 'Preplanned', whereby the topics to be studied were of more common problems and the patient material could be readily available. It was deemed that these sessions could be planned for the entire year in advance.

The Department of Surgery also taught Orthopaedics and Neurosurgery. Orthopaedics began in the third year, first term, and constituted eleven hours. In the fourth year there were eight hours of class clinics and one week in a clerkship of thirty-one hours. Neurosurgery began in the third-year third term for eleven hours, one hour per week. In the fourth year there were seven hours of class clinics and sixty-two hours of a clerkship, which was a two week rotation.

13. Urology. In the third-year third term, Urology was assigned, as was all sub-specialties, one hour per week for a total of eleven hours. In the fourth year there were eight hours of class clinics and sixty-two hours (two weeks) of clerkship. Previous to this proposal, Urology was taught under General Medicine but in the new curriculum proposal it was given departmental status.

14. Ophthalmology and Otolaryngology. This department taught in the third-year, second term for one hour per week for a total of eleven hours. In the fourth year there were seven hours of class clinics and thirty-one hours or one week of a clerkship for a total of forty-nine hours. After 1957, these sub-specialties were given eleven hours each of lecture time in the third year.

15. Radiology. The Radiology department was given the same

number of hours as all other sub-specialties. In the third-year, third term they were allotted eleven hours of lecture time (i.e. one hour per week) and in the fourth year the students spent one thirty-one-hour week in the Radiology Department.

16. Obstetrics and Gynaecology. - This department had its hours significantly reduced in the proposed curriculum because it was claimed that the department did not use its allotted hours. The average number of hours allotted in most Canadian medical schools was 298, whereas Dalhousie proposed 189 hours. In the third year there was one hour per week scheduled for lectures during all three trimester for a total of thirty-three hours. In the fourth year, clinical clerkship, the students attended thirty-two hours of class clinics and participated in a four-week hospital rotation.

17. Pediatrics. The total hours assigned to Pediatrics were similar to what they had been previously at 230, which exceeded the Canadian average of 183. The students attended two hours of lectures per week in the second and third term of the third year and there was a group teaching session called a "Day in Medicine" which was thirty hours over the three terms of third year. In the fourth year students attended a one-hour class clinic weekly, and

participated in a four-week clinical clerkship which was assigned 124 hours.

18.Anaesthesia. - This department, although considered a sub-specialty, was awarded only eight hours in the third year third term for lectures, as opposed to the eleven hours which other sub-specialties were given. It was felt by the committee that Anaesthesia was integrated into other areas of the curriculum and taught by other departments. However, Anaesthesia was given a full week rotation in the fourth year, for a total of thirty-eight scheduled hours in third and fourth years.

The Fourth-Year Clinical Clerkship. The clinical clerkship was designated as the fourth year of medical studies and provided the students an opportunity to work in the hospital environment to gain clinical experience under the supervision of senior physicians. The clerkship was divided into four periods and comprised rotations in: Medicine; Surgery; Obstetrics and Gynaecology, and Pediatrics; and, the Specialties. Each rotation was of eight weeks duration with thirteen or fourteen students in each group. During the Medicine rotation students could spend four weeks at the Camp Hill Hospital and four weeks at the Victoria General Hospital in Halifax. During the Surgery rotation students spent six weeks in General

Surgery, and two weeks in Ear, Eyes, Nose and Throat and Orthopaedics. Obstetrics and Gynaecology, and Pediatrics were similarly divided and students spent four weeks in Obstetrics and Gynaecology and four weeks in Pediatrics. The last rotation was comprised of several of the Specialties. Students rotated through two weeks of Urology, two weeks of Neurosurgery, and four weeks of Anaesthesia, Radiology and Psychiatry.

The time schedule in the fourth year was as follows: 9:00 a.m. to 12:00 noon - Monday to Saturday, students attended their prescribed rotations in the clinical clerkship. At noon students attended class clinics until 1:00 p.m where the various clinical disciplines presented topics for the students. From 2:00 to 4:00, Monday and Wednesday and until 5:00 p.m. on Tuesday, Thursday and Friday students resumed the clinical clerkship activities. On Monday students attended the Medical Seminar and on Wednesday the Clinical Pathological Conferences from 4:30 to 6:00 p.m. On Fridays they were expected to attend the Victoria General Staff Conferences from 5:00 to 6:00 p.m.

B. Interdepartmental Courses

The courses which came under this heading represented a new approach by Dalhousie to begin to integrate courses in basic sciences and clinical medicine. This approach was

modelled after the [Case] Western Reserve Medical School, where a full-time appointment was established to examine extensive questions about the medical curriculum, including questions concerning "interdepartmental correlation, teaching techniques, and objectives of the educational program."[60] The idea at Western Reserve was that medicine should be taught as an integrated whole which viewed the "patient as a person and as a member of society."[61]

At Dalhousie, the integrated courses were developed in response to the concerns that students were not integrating information between pre-clinical and clinical years. That is, it was generally thought by the faculty that by the time students got to the fourth year they had forgotten the sciences as basic information for applied clinical studies. Conversely, in the basic science years they did not comprehend how the information applied to clinical medicine. Although the concept of interdepartmental courses was new to the school, some of the content was the same as it was previously. Therefore, in part, this model may not represent a change in the information given to the students, but in the method in which it was presented.

Originally the responsibility of these courses lay in the hands of a committee. However, in 1957 Stewart wrote that "Committees serve a very useful function in the

preliminary planning , but not in the administration,..."[62] Accordingly, the administration of these courses changed so that they were managed by one committee whose chairman acted as a liaison person to organize the courses between the departments.

There were six courses which came under the interdepartmental heading: (1) Clinical Medical Science; (2) Methods of Examination; (3) Therapeutics; (4) Medical and Surgical Films; (5) Family Care Program; and,(6) Co-operative Clinical Courses.

1. Clinical Medical Science. The aim of the course was to integrate the basic medical sciences and clinical sciences, both in the early and late years of the curriculum. This course was composed of three sections, two of which had been taught previously: Clinical Medical Science (new); Applied Anatomy (old); and, the Clinical Pathological Conferences (old). The total number of hours assigned to the course was 207 hours. The first section entitled Clinical Medical Science, entailed 126 hours. It began in the first year, third term with one lecture per week and ended in the third year, third term increasing in duration over the two years.

The section on Applied Anatomy was assigned thirty-three hours and was distributed evenly in the second and

third terms of the third year. The last section, Clinical Pathological Conferences were to be held in fourth year on Wednesdays and was assigned forty-eight hours. All sections of this course eventually came under the auspices of two committees. The committee for the first two years was made up of department heads from basic and clinical medical sciences, and the third and fourth years from the heads of the clinical departments.[63]

2. Methods of Examination. This course was to replace the previous courses on Physical Diagnosis and Laboratory Diagnosis but with the introduction of new material. The course was comprised of three sub-sections and included 154 hours of curriculum time. It was realized after its implementation that assigning a specific number of hours to each of Medicine, Surgery and Pediatrics was preferred, rather than having this course conducted on an interdepartmental basis. It appeared that there was a lack of communication between the departments involved resulting in a duplication of topics and misunderstandings about what each department was responsible to teach. Therefore, assigning each a specific number of hours clarified what was to be taught and when.

(a) Methods of Examination 1 (Physical Diagnosis) - This section was introduced in the second year and spanned the

second and third terms and covered eighty-eight hours of the curriculum. It was scheduled four hours per week in each trimester with the intention that the student was to view the "patient as a whole," instead of looking at the patient from the individual specialist's point of view.[64] Therefore, the students were assigned to only two specialists, (i.e. for one term they would be assigned to a surgeon and the other to a physician).

(b) Methods of Examination 2 (Diagnostic Aids) - This course was assigned one hour per week in the second year, third term. The students were given books which listed the procedures to be seen or to be carried out. The course consisted largely of lecture demonstrations, but in the new curriculum it was intended that students should perform some of the procedures. It was also the intention of the curriculum planning committee that the Clinical Medical Science course and the Methods of Examination should run back-to-back so that the members of the pre-clinical group could also participate.

(c) Methods of Examination 3(Laboratory Diagnosis) - This course commenced in the third year and continued throughout the second and third terms for a total of fifty-five hours. It was felt by the curriculum committee that there was, up to that point, inadequate supervision of students in the

hospitals and that more supervision was needed if the students were to perform the procedures to the recommended standards.

3. Therapeutics. This course had already been implemented prior to 1955. However, the committee recommended that instead of basic science teachers and clinical teachers of the Department of Medicine being involved, there should also be integration across clinical disciplines, and that it was to be administered by a committee chaired by a faculty member from Medicine. The Committee also suggested that Prescription Writing was to be made part of the course, and it was to be given at the end of third year. The Report states that there was to be a fourth term at the end of third year of six hours which would be devoted to prescription writing. In addition, Therapeutics continued throughout third and fourth year and constituted twenty-seven hours in each year.

4. Medical and Surgical Films. There was a total of twenty-seven hours allotted for the showing of films in the second and third years. The responsibility of this course was assigned to a committee of two from the Departments of Surgery and Medicine.

5. Family Care Program. This was a new program recommended by the curriculum committee to be implemented into the

third year, and modelled after Boston University and the University of Pennsylvania. It was recommended that students observe the birth of a child and follow its development for the first couple of years, or provide family care which would enable the student to have a "better insight into the life and medical problems of a family other than his own."[65]

6. Co-operative Clinical Courses. These courses were not outlined in detail in the report. However, it was recommended that in addition to the integration of courses between basic science and clinical science there should be a concerted effort on behalf of all clinical departments to teach co-operatively, and that these courses should be managed by an interdepartmental committee.

C. Unscheduled Time

One of the chief aims of the curriculum committee was to examine the curriculum to establish whether any free time could be found to implement courses in the Humanities. The Committee reorganized the schedule and found that 693 hours over four years could be set aside, other than Saturday afternoon and Sunday for unscheduled time. In the first year students were given one morning and afternoon off per week in all terms for a total of 231 hours of unscheduled time. In the second and third years, 253 and

209 hours respectively, remained unscheduled. The committee recommended that a half day per week be left unscheduled in the first three years and made available for such subjects as the Humanities, History of Medicine, Medical Ethics, Business Administration, and Medical Economics. Elsewhere in Canada there were various forms of these courses. In particular, at Western, the Department of Medical History was formed in 1948, although it went through various changes until 1965.

It was the philosophy of Johns Hopkins that its extensive elective program was implemented to "stimulate individual student initiative" by making the curriculum flexible enough to allow students time to develop individual interests.[66] For example, students in their first year at Johns Hopkins had all their afternoons free and students in their third and fourth years were allocated ten weeks for elective time.

There were various options with respect to the implementation of the Humanities in the curriculum at Dalhousie, but it was felt by the committee that additional courses given by the Faculty of Arts and Sciences would place an undue heavy burden on medical students. Therefore, it was recommended that the Humanities course, already implemented in the medical curriculum by Dean

Grant, be enlarged and improved. This course would be in the form of a lecture series for both faculty and students and would be organized by a small committee. In addition, the Committee recommended that there should be a formal course in the History of Medicine which would be given in third year.

The proposed curriculum as a whole is depicted in Appendix Eleven and shows that there was 4305 hours of scheduled time and 693 hours of unscheduled time for a total of 4998 hours over the four years.

On June 10, 1955 at a meeting of faculty the proposed new curriculum was approved with few changes to the Curriculum Committee's proposal.[67] The issue of the hours allotted to some of the surgical specialties which received eleven hours of lecture time was referred back to the curriculum committee for further review. The interdepartmental courses were agreed upon in principle and it was agreed that the appropriate committees were to be set up to formulate the new courses. The issue over unscheduled time received the most attention.[68] It was stated in the minutes that one of the primary duties of the Curriculum Committee was to find unscheduled time in the curriculum so that courses in the humanities could be implemented.[69] However, at this time, the Committee were

unable to reach any resolution as to how this time was to be filled with new courses, except to suggest that courses in economics, medical history or administration might be appropriate. The Committee had held meetings with members of the Arts and Sciences faculty and it appeared that it was impracticable that students could fit into their timetable courses given by their faculty. Furthermore, it was found that the Arts and Science Faculty could not arrange special courses designed for medical students because of scheduling conflicts. Therefore, it was decided that the faculty would submit ideas and options to the Curriculum Committee which would be presented and discussed at a later meeting of the Faculty.

At the September 16, 1955 meeting of the faculty the discussion continued on the possibility of implementing the Humanities into the curriculum. Again, there appeared to be no resolution on what to teach, who would teach, and where the extra funds would come from to implement the plan. Thus, although time had been found in the curriculum for the Humanities - one of the original mandates of the Curriculum Committee - there was no resolution as to how these topics could be implemented into the new curriculum or whether they could be scheduled to accommodate the medical students. After much discussion the faculty agreed

to form a committee to study the matter.

By December of that same year, after discussion with staff, Dean Stewart decided that with the changes in the curriculum and the added load on the teaching staff there was "no special hurry in the filling of these hours."[70] Therefore, the committee working on the problem was to extend and continue the Humanities course that had been started by Grant.

At a Faculty meeting on December 6, 1955, Stewart announced that he had been notified by the American Association of Medical Colleges that Dalhousie Medical School was scheduled to be surveyed by a three-member joint team from the American Medical Association, the Canadian Association of Medical Colleges, and the American Medical Association in the academic year 1956-57. In preparation for this visit Dean Stewart revised the report by the Curriculum Committee of 1955 and added his comments in August 1957. In his revised report, he remarked that the "trimester system has been in effect for two years and has worked very satisfactorily."[71] Furthermore, the structure of the examination schedule had made it possible to evaluate students more effectively and the students preferred the opportunity to test their knowledge three times during the year, instead of two as was previously the

case.

Two years after the implementation of the new curriculum all of the Interdepartmental Courses were in operation except for the Family Care Program, which was in the planning stages and would be further developed and operating in the 1957-58 session. However, it appeared that these courses were not running as smoothly as the school might have liked. Stewart reported that "it is probably fair to say that enthusiasm is waning somewhat."[72] The main problem which threatened the viability of the interdepartmental courses was that they were being administered by a committee, which made it difficult to maintain any continuity from year to year. Furthermore, the teaching load of these courses was much greater, which placed an extra burden on an already overworked staff. In the Clinical Medical Sciences section Stewart suggested that a committee be formed with a chairman who would act as a liaison between departments and who would be responsible for the implementation and management of the course.

As of 1957 the Departmental Courses had required very few changes. Most of the modifications consisted of rearranging hours to ensure that the topics could be covered. The main source of concern was that because fourth year had been freed of most lectures, it had

overburdened the third-year schedule. Stewart suggested a slight reversal of this original idea and recommended that some of the shorter courses, such as Medical Jurisprudence and Medical Ethics, be moved to the fourth year. In the clinical areas such as Ophthalmology and Otolaryngology the hours were increased while in others there was a shift in hours from one trimester to another. Surgery and Medicine were subject to the most significant change in time allotment. Schedules are contained in Appendix Twelve.

Although there had been a substantial amount of unscheduled time planned in the new curriculum by Stewart's Report of 1957, little of this time had been utilized. He wrote that "because of the re-organisation of the Departments of Medicine and Surgery, only slow progress has been made in the use of unscheduled time."[73] In addition, he reported that he felt it most important to organize the "standard courses" of the Medical School before any progress could be made in the "special courses."[74] Nevertheless, the unscheduled time was utilized in part, in that visiting speakers were invited to give lectures under the general heading of the Humanities. It is evident from Stewart's statement that even though the aim of the Curriculum Committee was to free time in the curriculum for the Humanities, this could not be implemented until all

other standard courses were established. It was hoped that the completion of the Surgery and Medicine course organization problems would enable the school to organize more topics for the unscheduled time. This hierarchy of courses may be one of the factors which contributed to the long-standing problem of implementing the Humanities or other social science courses in the undergraduate curriculum. In addition, the struggles felt at Dalhousie to integrate the Humanities into the curriculum was also present in American schools. The reason given for the difficulties in implementing the humanities was that since World War II the balance in medical education had "shifted toward excellence in science" which parallelled the increase in medical care applications from research. As a result, the balance had also shifted away from "the competent use of English and a knowledge of the historical continuum in which medicine operates."[75]

Overall, after two years of operation the number of hours scheduled in the new curriculum was increased and the number of hours devoted to unscheduled time was decreased, which seemed antithetical to the original aim of the curriculum review in 1955. There was a total number of 5322 hours in the curriculum as compared to 4998 as was proposed in the 1955 Curriculum Committee Report. A

comparison of these hours is depicted in Appendices Eleven and Thirteen.

Survey of 1957

Briefly, the accreditation process was implemented by the Association of American Medical Colleges (AAMC) to ensure that the medical schools which were members of their organization met certain criteria that was deemed essential for the proper education of students, and to ensure the highest level of research programs. The accreditation teams usually comprised representatives of the Council on Medical Education and Hospitals, the American Medical Association (AMA), and the Association of American Medical Colleges (AAMC), and was called the Liaison Committee on Medical Education (LCME). However, the survey team which visited Dalhousie at this time also included a representative from the Association of Canadian Medical Colleges (ACMC). Today, a representative of the ACMC is always a member of the Liaison Committee on Medical Education. Prior to the teams arrival at a school, the school was notified and pre-survey materials were sent to the school to be completed and returned before the teams arrival. This ensures that the team has the appropriate background knowledge to understand the physical structure,

the curriculum, and organization of the school. The survey team normally spends a number of days at the school during which time various members of faculty are interviewed and the physical layout, curriculum program and materials, and research programs are reviewed. The accreditation team is responsible for compiling a report which is sent to the school and for providing the school with a grade which signifies the school's standing with respect to the essential requirements as outlined by ACMC. Without a Grade A rating, a school could be placed on a probationary list to allow time for the school to bring its programs up to the required level. In a worst case scenario a school not meeting the requirements of the ACMC could be closed until it met the required standard.

Between September 23 and 26, 1957, Walter Wiggins and Lennox G. Bell from the Council on Medical Education and Hospitals, and from the American Medical Association (AMA), Victor Johnson from the Association of Canadian Medical Colleges (ACMC), and John Cooper from the Association of American Medical Colleges (AAMC), visited Dalhousie for the purposes of accrediting the School. Their report, which was released on December 11, 1957, commended Dalhousie on the significant achievements which it had made since the last survey in 1947. Furthermore, in reference to the four

Atlantic Provinces they wrote that Dalhousie Faculty of Medicine was a "resource of inestimable value to the present and future health and welfare of these provinces."[76] However, they also suggested that Dalhousie would need increasing funds from both the provinces and the citizens if it were to expand its services to them.

The areas which the survey team identified as needing financial resources in the future were: (1) higher salary scales for faculty in order to attract and keep highly qualified people at Dalhousie. They argued that the inability of the school to recruit highly competent people could be attributed to the inadequate salary scales. (2) Dalhousie had repeatedly received development funding from the Kellogg Foundation, but after the funding was expended Dalhousie would need to support the newly developed programs with its own funding, and this would be reflected in the general Medical School budget. (3) Dalhousie had plans to modify and build additions to the current physical structures, but had no means of funding such construction. Therefore, although this construction was urgently needed, Dalhousie would have to provide the funds to complete the plan. (4) Dalhousie also intended to increase the size of the medical class. Accordingly, the survey team acknowledged that in order to fulfill this desire there

would have to be enough funds to hire extra faculty to maintain the current student-teacher ratio and the current educational standards. The student-teacher ratio at Dalhousie was one to twenty-five which was the minimum set by the American Medical Association for teaching in the basic science courses at that time.[77] However, if Dalhousie wanted to increase its small group teaching and keep lectures from the fourth year this ratio would be inadequate. (5) Dalhousie provided $3750.00 for faculty travel in the 1957 budget; however, the survey team felt that these funds were inadequate. They wrote that, "Geographical factors make it particularly important that faculty members have funds at their disposal to regularly attend scientific meetings," but also that they were "not certain" if these funds were adequate.[78]

The survey team was complimentary towards the new curriculum revision, which they believed to be innovative and "soundly conceived."[79] However, the trouble with the organization of the interdepartmental courses was an issue on which they commented. They expressed the opinion that these programs were not at fault because of the methods employed. Rather it was a case that the implementation had failed to adequately support the concept. That is, the faculty did not adhere to the implementation process as

outlined in the proposed curriculum revision. It appears that, at this time, the Medical School did not have sufficient staff to implement the changes to the interdepartmental program as prescribed in the curriculum revision process. In addition, the survey team advised that because of the innovation and expansion of the curriculum at Dalhousie, it would be advisable to reactivate the curriculum committee and make it a standing committee of the faculty in order to facilitate the expedient resolution of further curriculum concerns.

Financial Issues with the Provinces

One of the immense challenges facing Stewart upon his acceptance of the dean's position was to convince the provincial governments of the Atlantic Provinces to increase their annual grants provided to the school. These grants had not been increased since 1949, while the expenses for operating the School had risen by 92.3% by 1955. This translated into an operating deficit of $120,000.00 for the combined medical and dental schools.[80]

The budget of the school as noted in the 1957 Survey Report was $510,888.90 (1956-57), of which $166,500.00 was contributed from the provinces, $143,780.00 from tuition, and income from endowments assigned to the Medical School

was $136,500.00. The balance of income was derived from gifts and other hospital contributions.[81] These figures were nearly double the expenditures of 1948, which were reported as $243,416.67. In 1948 the provinces contributed $95,000.00 to the university, but the proportion the Medical School received from the university was 5/6 of this - 79,166.67. Of this grant, $62,000.00 came from Nova Scotia, $20,000.00 from New Brunswick, $3,000.00 from Prince Edward Island and $10,000.00 from Newfoundland.[82] Although much of the increased expenses was accredited to the increase in the cost of equipment and facilities, the majority of the extra money was required for salaries both for current faculty and to acquire the needed extra faculty. The cost of faculty salaries increased by $58,058.00 between the 1954 and 1955 budgets.[83]

Under the new democratic system of administration, Stewart oversaw all departmental budgets submitted by the department heads and administered the main Medical School budget according to the amount determined by the university in response to his submitted financial needs. Each year financial requests were developed based on forecasted needs of the Medical School and sent to each of the provincial governments in the early part of the year. Stewart was primarily responsible for these proposals, although Dean

J.D. McLean of Dentistry also assisted in compiling the estimates for Dental School. Stewart also enlisted assistance from the President and other politically influential men on the Board when the need arose.

In 1955-56 the cost of educating a medical student was estimated at $2246.48. The Medical School received $1823.71 from tuition, provincial grants, endowments, and prizes. Therefore, the university showed a deficit for each student of $422.77. In addition to the need to hire staff, and to maintain facilities and equipment, the cost to the school to educate students was the crux of the argument which Stewart used to request funds from the provincial governments.[84] That is, Stewart's main argument was that the Medical School was the only such institution located in the Atlantic Provinces and its primary function was to educate physicians for the entire region. Furthermore, the Atlantic Provinces' hospitals were receiving interns from the Medical School, which supplemented their health-care personnel. Because of the services provided by the school, Stewart contended that the provincial governments should contribute to its cost.

Prior to 1955, the provinces had provided a set amount to the university, but after Stewart became dean, and because of the rising costs of operating the school,

Stewart and Kerr began to pressure the governments to change the method by which the grants were awarded. This change would see the provinces contribute to the expenses incurred by the Medical School on a per-student basis, which was thought to be a more stable means of determining the shared costs.

In response to Stewart's requests that the grants be increased, most of the provinces provided the funds as requested. Nova Scotia and Newfoundland provided these funds without much resistance, although New Brunswick and Prince Edward Island declined to meet the full amounts requested by the university. Stewart and Kerr employed various tactics to try to bring the provinces in line with what they determined should be the provinces' annual contributions. Most frequently, they endeavoured to manoeuver the provinces into raising the grants by first approaching Nova Scotia or Newfoundland - those provinces that were less likely to dispute the increases. After funding was secured from these provinces, Stewart or Kerr would then confront the other more resistant provinces using the tactic that other provinces had agreed to pay their fair share of the Medical School expenses.

In 1956, after a year of wrestling with New Brunswick, which resisted any increase in its grant, Kerr finally

wrote to Senator F.A. McGrand of Ottawa explaining the difficult situation in which New Brunswick had placed the Medical School. Apparently, Kerr had sent Premier Hugh J. Flemming, Premier of New Brunswick, a telegram in February 1956 stating that "Am pleased advise you Nova Scotia has increased grant to Medicine and Dentistry in Dalhousie to $150,000" and asking to be notified about the New Brunswick grant as soon as possible. On February 13, Flemming replied to this telegram stating that New Brunswick was unable to give any assurance that an additional grant would be made available to Dalhousie. After receiving this news, Kerr wrote to Flemming expressing his regret that New Brunswick did not see the situation with the grants in "the same light as Nova Scotia and Newfoundland."[85] After a lengthy letter Kerr inquired if Senator McGrand could put forward a good word for Dalhousie to the province of New Brunswick.

It appears that pressure put on New Brunswick, even from Ottawa, did not convince that province to pay Dalhousie increased monies toward the operation of the Medical School. New Brunswick claimed that it had financial pressures from its own universities and could not justify increasing financial assistance to Dalhousie while its own universities were in need. By 1961 New Brunswick

had still not increased its grant significantly and Nova Scotia and Newfoundland were still paying the majority of the costs borne by the provincial governments. Appendix Thirteen contains a complete overview of the requested grants and the funding received from the provinces between 1957 and 1960.[86] These tables indicate that New Brunswick had not increased its grant from the $30,000.00 it contributed in 1955 while both Newfoundland and Nova Scotia had doubled their funding to the Medical and Dental schools.

Realizing that this situation would not be tolerated much longer by the other provincial governments, Kerr, Stewart, and McLean (Dean of Dentistry) set out to try to sway New Brunswick into taking responsibility for its share of the grants. By 1964 no significant progress had been made on this issue, and New Brunswick, due to the apparent resistance of recently elected Premier L.J. Robichaud, was still only contributing $60,000.00 to Dalhousie towards expenses for New Brunswick students, which Dalhousie projected were costing the university nearly $250,000.[87] The new President of Dalhousie, Henry Hicks, frustrated by this situation, wrote to Premier Robichaud of New Brunswick proclaiming, "I realize that there is little point in my continuing the discussions about these grants."[88] However,

Hicks requested that Robichaud reconsider his stand over the grant and stated that "if New Brunswick does not contribute its share in proportion to Nova Scotia, Newfoundland, and Prince Edward Island, I fear we shall have complaints from these other provinces."[89] It was evident that the time was near that the University would have to take stricter actions with New Brunswick.

The predicament with New Brunswick over the grants was still outstanding in 1964. While the smaller province of Prince Edward Island had increased its grant tenfold - from $5,000.00 to $50,000.00 between 1954 and 1964 - New Brunswick had only increased its contribution from $20,000.00 to $60,000.00 during the same time (Appendix Fourteen). In 1965 New Brunswick increased its grant to $100,000.00, but this figure was not enough to cover the costs Dalhousie had incurred over the years for educating New Brunswick students. The situation reached an apex in 1965 when Stewart wrote Hicks advising him of his forthcoming actions against New Brunswick, and then proceeded to write Dr. Frederick Whitehead of the New Brunswick Medical Society to explain the School's decision to restrict the number of New Brunswick students gaining admission to Dalhousie (however Dalhousie was not reducing the size of the class). Stewart's rationale was explicit.

He explained to Whitehead in no uncertain terms that the action taken by Dalhousie with respect to New Brunswick students was on the basis that the School "must take the majority of the students from the provinces which have indicated an active financial interest in the operation of the School."[90]

The response to Dalhousie's action was brisk. Hicks received phone calls from various sectors of New Brunswick. Dr. Laurie Cragg, President of Mount Allison, criticized Dalhousie by stating that Dalhousie was "penalizing deserving students and using them as pawns" in the fray with the New Brunswick government. One physician was particularly disturbed that his son had been denied admission, as was the son of the former Provincial Treasurer.[91] After a telephone conversation with Premier Robichaud in which old issues were re-kindled, Hicks reported in his memorandum that the Premier indicated "that he would try to do something more for us and would let me know around April 1."[92] Eventually, New Brunswick increased its grant to Dalhousie Medical School after the 1962 Report of the Royal Commission on Higher Education in New Brunswick (Deutsch Report).

Summary

By 1960 the morale of the Medical School was described by Stewart as "an atmosphere of unusually close and friendly co-operation."[93] In his first five years as dean, Stewart had fulfilled most of the aims which Grant had begun prior to his untimely death. The university had convinced the provinces, except for New Brunswick, to increase their contributions to the school based on the number of students admitted from each province. The increased money allowed the school to increase its staff and pay for renovations and equipment for laboratories. Consequently, the addition of staff and equipment allowed the school to make changes to its curriculum and research programs.

Prior to 1954 there were only sixteen full-time teachers in basic science; as of 1959 there were twenty-eight. A number of clinical staff members were also appointed on 'geographic full-time basis,' which meant that the majority of their time was devoted to teaching, but these members could manage a consulting practice two half-days per week at the hospital. Prior to 1954, Dr. R. Jones of Psychiatry was the only staff member to hold this type of position, but by 1959 this number was increased to eleven. Two of these appointments were major clinical

full-time heads of departments. Dr. Robert Dickson, Head of Medicine, and Dr. Ian McKenzie, Head of Surgery, had joined the faculty and the positive effects in these departments were being realized with their increased efficiency and research activity. In addition, a $96,000.00 grant from the Kellogg Foundation enabled the school to hire new heads of departments for Obstetrics and Gynaecology, and for Pediatrics. Furthermore, complying with the recommendations of the 1957 Survey Report, a new assistant dean, Dr. L. B. MacPherson was appointed, and a Standing Curriculum Committee had been elected.

The additions to, and strengthening of, the faculty and staff, together with the more cohesive working environment, permitted the extensive changes to the curriculum, which resulted in a favourable accreditation report in 1957. These changes embraced some fundamental changes to the curriculum, which included a change from a semester to a trimester system with examinations held at the end of each trimester. Overall, the Curriculum Committee rearranged the hours of the curriculum to allow for more free time, part of which was to be devoted to the Humanities. There was also time rearranged in the curriculum to allow for integration of subjects which would enable students to relate the concepts of basic sciences to

medical practice. In the fourth year time devoted to lectures was reduced in favour of students acquiring more clinical experience.

Over the five year period since Stewart had become dean, there had grown a harmonious affiliation between the university and the School, which was built on a more trusting relationship that enabled the school to grow and prosper under Stewart's leadership. Because of Stewart's broad professional and social network, and keen sense of what needed to be accomplished to bring Dalhousie into the national environment in medical education, the faculty were beginning to look outside Nova Scotia for experience and guidance in educational matters. As a result, many of the faculty members of the school became more research-oriented, progressive, and open-minded with respect to the growth of the school.

1.Dalhousie University Archives (DUA) Admissions, B4, Stewart to Kenneth Hood, March 8, 1965.

2.P.B. Waite, *The Lives of Dalhousie, Volume II.* Montreal, Kingston: McGill-Queen's University Press, 1998, 206.

3.DUA Dean's Meetings, B361, report to the Dean's Committee on September 22, 1956, 1.

4.Dr. J.A. McCarter, interview by author, Victoria, British Columbia, May 25, 1999.

5.Minutes Faculty of Medicine (FOM),January 26, 1954, 465. Correspondence to the Faculty of Medicine January 26, 1954, p3 which was included with the minutes.

6.Minutes FOM, January 26, 1954, 458.

7.Ibid., 459.

8.DUA President's Office Correspondence (DUAPO), B878, Advisory Committee to the Faculty, January 26, 1954, p5.

9.Waite, 1998, 195.

10.S.B. Frost, *McGill University, Vol II.* Montreal: McGill-Queen's University Press, 1984, 214.

11.Murray L.Barr, *A Century of Medicine at Western.* London, Canada: The University of Western Ontario, 1977, 500.

12.J.R. Schofield, *New and Expanded Medical School, Mid-Century to the 1980's.* San Francisco: Jossey-Bass Publishers, 1984,69-70.

13.Minutes FOM, March 8, 1954, 469.

14.DUA American Medical Association (AMA), B38, Document *Essentials of an Acceptable Medical School,* revised 1951, p1.

15. Minutes FOM, May 7, 1954, 471.

16.DUA Survey Report 1957, B416, p9-10. This was an accreditation report by the Association of American Medical Colleges and the American Medical Association which formed the Liaison Committee on Medical Education.

17.Barr, *A Century of Medicine*, 500.

18.Ibid., 501.

19.Ibid., 458.

20.Minutes FOM, May 7, 1954, 471.

21.DUA AMA, B38, *Essentials of an Acceptable Medical School, 1951*, p5.

22.Ibid.

23.DUA Committee on Pre-Medical Requirements, B400, Report from the Committee on Pre-Medical Requirements, 1953, 2.

24.DUA Department of Obstetrics and Gynaecology Correspondence, B791, Atlee to Grant, February 28, 1951.

25.Ibid.

26.Ibid.

27.Ibid.

28.Dr. J.A. McCarter, interview by author, Victoria, British Columbia, May 25, 1999.

29.Minutes FOM, November 9, 1953, 428. Included in the minutes is the Report of the Committee on Pre-Medical Requirements, p5.

30.DUA Committee on Pre-Medical Requirements, B400, Report of the Committee on Pre-Medical Requirements, November 3, 1953, p6.

31.DUA Association of Canadian medical Colleges (hereafter ACMC),B87, Memorandum, Office of the Dean, April 19, 1954, 2.

32.Ibid.

33.Minutes FOM, January 30, 1957, 591.

34.Minutes Faculty Council, April 10, 1956, 803.

35.DUA Pass Mark, B799, Correspondence Stewart to H.L. Scammell, April 22, 1957.

36.Ibid., 2.

37.Ibid.

38.DUA Curriculum Committee Correspondence (hereafter DUACC), B1112, Report of the Curriculum Committee 1955.

39.Barr, *A Century of Medicine*, 547-48.

40.Frost, *McGill University*, 374-5.

41.Barr, *A Century of Medicine*, 514.

42.B. Barzansky and N. Gevitz, eds., *Beyond Flexner: Medical Education in the Twentieth Century*. New York: Greenwood Press, 1992, 30.

43.P.V. Lee, "Reorganization of the Medical Curriculum" in *Medical Education and Medical Care*, C.G. Ships, G.A. Wolfe, and C. Jacobsen (ed.). Evanston, Ill.: Association of American Medical Colleges, 1961, 103.

44.DUACC Correspondence, B1112, Report of the Curriculum Committee, 1955, 2-3.

45.P.V. Lee, "Reorganization of the Medical Curriculum" in *Medical Education and Medical Care*, C.G. Ships, G.A. Wolfe, and C. Jacobsen (ed.). Evanston, Ill.: Association of American Medical Colleges, 1961, 54.

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47.Ibid.

48. DUA Medical Council of Canada (MCC), B1057, Constitution, Rules and Regulations, 1953.

49.Ibid., 26-27.

50.DUA, B416, Wiggins et al., Survey Report, 1957, 41.

51.DUACC, B1112, Curriculum Report, 1955.

52.Barzansky and Gevitz, *Beyond Flexner*, 29.

53.P.V. Lee, "Reorganization of the Medical Curriculum" in *Medical Education and Medical Care,* C.G. Ships, G.A. Wolfe, and C. Jacobsen (ed.). Evanston, Ill.: Association of American Medical Colleges, 1961, 56.

54.Ibid.

55.Ibid., 57.

56.DUA, B416, Wiggins et al., Survey Report, 1957, 42.

57.Ibid., 37.

58.DUAPO, B859. Memo President's Office, 1950.

59.DUA, B416, Wiggins et al.,Survey Report, 1957, 38.

60.P.V. Lee, "Reorganization of the Medical Curriculum" in *Medical Education and Medical Care,* C.G. Ships, G.A. Wolfe, and C. Jacobsen (ed.). Evanston, Ill.: Association of American Medical Colleges, 1961, 103.

61.Ibid.

62.DUA Curriculum, B356, Revised Curriculum Report, 1957.

63.Ibid., 41.

64.DUACC, B1112, Report of the Curriculum Committee, 1955, 20.

65.Ibid., 22.

66.P.V. Lee, "Reorganization of the Medical Curriculum" in *Medical Education and Medical Care,* C.G. Ships, G.A. Wolfe, and C. Jacobsen (ed.). Evanston, Ill.: Association of American Medical Colleges, 1961, 54.

67.Minutes FOM, June 10, 1955, 529.

68.Ibid., 533-34.

69.Ibid., 533.

70.Ibid., December 6, 1955, 546.

71.DUA Curriculum, B356, Revised Curriculum Committee Report, 1957, 5.

72.Ibid., 6.

73.Ibid., 39.

74.Ibid.

75.Barzansky and Gevitz, *Beyond Flexner*, 42.

76.DUA, B416, Wiggins et al., Survey Report 1957, 69.

77.Ibid.,16.

77.Ibid., 72-73.

79.Ibid., 75.

80.DUA Finances PEI Correspondence, B443, Kerr to the Honourable A. Matheson, Premier of PEI, April 6, 1955, 2.

81.DUA, B416, Wiggins et al., Survey Report 1957, 19.

82.DUA Finances Correspondence, B435, McNeil to Grant, June 3, 1948.

83.Ibid., Stewart to Kerr February 2, 1955.

84.DUA Finances, B434, Memo entitled "Cost of Educating a Medical Student at Dalhousie University."

85.DUA Finances New Brunswick Correspondence, B440, Kerr to McGrand May 29, 1956.

86.Ibid., Stewart to Kerr, February 1, 1961, 2.

87.Ibid., Memorandum President Hicks March 23 1965.

88.Ibid., Hicks to Robichaud, July 6, 1964.

89.Ibid., 2.

90.Ibid., Stewart to Whitehead, March 17, 1965, 3.

91.Ibid., Memorandum H. Hicks, re: telephone calls March 23, 1965.

92.Ibid., 2.

93.DUA President's Reports, B879, Report of the Dean 1954-59.

CHAPTER 6

YEARS OF EXPANSION - NEW VOICES

The 1960's was a decade of new beginnings and rapid growth at Dalhousie Medical School. At a faculty meeting on March 17, 1964, the Dean reported that he had "18 departments and 2 divisions reporting to him directly, as well as the other Faculties and the hospitals to be cooperated with."[1] Throughout North America and Europe medical knowledge was growing at an exponential rate due to scientific and technological advances. This rapid growth resulted in increased specialization, and prompted the medical education community to change its views on how medical students should be educated.

With the resignation of President Kerr as of August 31, 1963, Dalhousie welcomed its new president, Dr. Henry D. Hicks. Hicks graduated from Mount Allison University in New Brunswick with a science degree, and thereafter arrived at Dalhousie to study more about the social sciences. Subsequently, he became a Rhodes Scholar and attended Oxford to study law. Hicks also contributed to the political scene

in Nova Scotia. He served as Minister of Education in 1949 and as Premier from 1954 to 1956. Unlike his predecessor, he enjoyed wines and had "flair, elegance and self-confidence" which blended well with his Nova Scotia "earthy-humour."[2] However, not being a patient man he sometimes rushed his decisions showing careful judgement little courtesy. Hicks would remain President of Dalhousie until August 31, 1980.

Due in part to the retirement of many older faculty members, and because of the expansion of departments and responsibilities, Dalhousie Medical School began recruiting new members to its faculty. The committee that had managed the Department of Medicine for several years since Dr. Holland stepped down as head, was replaced by Dr. R. C. Dickson. In addition, the Department of Surgery greeted Dr. Ian McKenzie as Head of Surgery, a post he held until his death in October 1966. Both these physicians were widely known and well respected in their fields, and advocated the role of clinical scientists in Medicine. Additionally, the Head of Obstetrics and Gynaecology, Dr. Benge Atlee, retired and was replaced by Dr. Carl Tupper. As the job of dean grew intensely demanding, in March 1962 the Dean stepped down from his position as Head of Preventive Medicine and was replaced in that position by Dr. G.H. Hatcher.[3]

New faculty, improved communications, faster and more versatile travel, contributed significantly to the cross-fertilization of information pertaining to medical education. Hence, medical education became a global concern that emphasized the integration of basic science and clinical material rather than specific departmental courses, which had pervaded the curriculum of many medical schools in North America since Flexner.[4] This change in emphasis resulted in one of the most extensive changes in Dalhousie's curriculum and the emergence of a new philosophy about what medical education was supposed to accomplish.

The Special Committee on Medical Education responsible for reviewing the curriculum in 1964 delivered its report in 1966. As a result of the accreditation in 1966 a standing committee in medical education was formed and took on the responsibility of changing the curriculum. Although this committee was formed in 1966, Dalhousie Medical School implemented no major changes to its curriculum until September 1968. The delayed implementation of the curriculum was blamed on construction delays with the new Tupper Building because of labour unrest in the summer of 1967.

At long last in July 1967, the Dalhousie Medical School opened its new building. The Sir Charles Tupper Building

was dedicated as a memorial to Dr. Charles Tupper, the only Maritime physician to become premier of Nova Scotia, a Father of Confederation, and the first President of the Canadian Medical Association. The building was the personal project of Dean Stewart who had led the crusade for funding for its construction with infinite tenacity.

The 1960's also brought with it a more educated and demanding society that realized that advances in medical research would bring longer and healthier lives. The federal government, responding to both societal pressure and pressure from universities and professional bodies, formed the Medical Research Council of Canada in 1961 and gave it an increased budget of $3.3 million.[5] This figure grew to $4.3 million by 1962.[6]

The 1960's also brought changes for women wishing to pursue a career in Medicine at Dalhousie. On May 9, 1964 the Faculty Council, for the first time, approved the awarding of the gold medal in medicine to a woman.[7] Vivian Boniuk was awarded the gold medal in medicine at the June 1964 convocation. It was also the first year that the list of graduates were presented in alphabetical order and no distinction was made by gender in the list. Previously, women had been named first and separately from their male counterparts. In addition, by 1967 Dalhousie Medical School

changed their policy with respect to discriminating against women in the selection of candidates for the Medical School.

Royal Commission Report 1961-64

In the early 1960's Dalhousie University Medical School was starving for money, and stifled by the lack of space and faculty, which stymied any expansion needed to keep up with the advances in medicine. The curriculum at that time was considered by some faculty members to be backward in comparison to other schools in North America, and many improvements on the educational front were required.[8] In an effort to make its situation known and to make recommendations to the Commission, Dalhousie prepared a brief to the Royal Commission on Health Services (the Hall Commission) in October of 1961. The Brief was presented by Kerr, Stewart, McLean (Dean of Dentistry), and Hicks (as representative of the newly formed School of Health Professionals). Other advisors were sought from Medicine, Dentistry, and the Health Professions.

The major part of the Brief dealt with the financial support needed to provide medical, dental, and health professional education to the four Atlantic Provinces. As justification for this support, Dalhousie pointed out that they were the only institution at that time able to provide

these services for the region. However, the only recommendation with respect to undergraduate medical education was that if the Commission made any recommendations relating to medical education they would "take into account the fact that Dalhousie and two other Canadian Universities have a five-year medical course, including internship, while others have a four-year course excluding internship."[9] That is, any recommendations made by the Commission regarding changes in curriculum should carefully consider the difference in curricula throughout Canada and protect those schools which wished to maintain control over the internship year. The Brief stated that at other times when there was a suggestion for restructuring of regulations, these regulations did not consider the five year programs, and consequently, it had caused problems for the school and for the graduates: the undergraduate intern year had not been credited as a year towards residency training in other parts of North America and Great Britain.

The issue of universal health care and its impact on clinical medical education was also a concern raised in the Brief. The Medical School wished to be reassured that under the newly proposed universal health insurance the school would retain at least the number of beds it had for teaching purposes and that the "teaching units" would be preserved

for its clinical teaching. Unless this system of "teaching units" was maintained it was stated that "medical education will rapidly deteriorate."[10]

The Royal Commission on Health Services special investigation on Medical Education in Canada was conducted in 1961 and published in 1965 as part of the Royal Commission Report. Dalhousie's prestigious Head of Medicine, Dr. Bob Dickson, was appointed to the committee on medical education, which was headed by J.A. McFarlane. McFarlane, born in 1893, was a Rhodes Scholar and received his MB degree from Toronto in 1922. He completed graduate work in Surgery at Edinburgh and Oxford, and returned to Canada to become Director of Surgery at Sunnybrook Hospital, Toronto. He eventually became Dean of Medicine at the University of Toronto, and upon retiring became advisor to the Department of Veterans' Affairs, Ottawa.

In brief, the Hall Commission recommended that pre-medical students be encouraged to take social science courses that were pertinent to medicine. Furthermore, it recommended a continual form of curriculum evaluation and revision to ensure that all schools could develop a degree of flexibility that kept the curriculum in line with modern trends. In addition, it stated that licensing bodies and the Medical Council of Canada would not interfere in these

revisions or restrict flexibility in the curriculum. This last recommendation may have been a direct result of the advocacy of Dickson, who continually criticized the licensing Examinations as driving the content of the curriculum.

With respect to curriculum revision, the Royal Commission Report recommended the "block system", "particularly in third and fourth years" under an eleven-month year, and would "welcome changes in the teaching of the pre-clinical sciences with some grouping of related subjects" in the undergraduate medical curriculum.[11] The block system was a curriculum model which saw courses being taught in blocks of time rather than on a semester basis (i.e. students attended classes in Cell Biology for two weeks and then would proceed to Biochemistry for another time period). The Committee also made note of the interest of medical schools in reducing the number of lectures; however, they concluded that further reduction could be achieved and the time replaced by "theatre clinics, joint conferences and tutorials, where student participation is made the main feature of the meeting."[12] This recommendation clearly revealed a movement to change medical education to a more student-centred curriculum.

The Commission contended that any re-organization of

the curriculum should also take into consideration a period of prolonged study of twenty-two months in the third and fourth years which would necessitate funding medical students at a rate of $2000.00 per year for the last two years of study. Further emphasis was needed on community medicine, and recommendations centred on providing a community medical service in the teaching hospitals. The service would be implemented with the support of the College of General Practitioners, and a Department of General Practice would be located in the teaching hospitals.

Finally, the Commission was interested in the manner in which students were being examined and suggested that a review be held into the examination system with the idea that alternate methods of examining students should be explored besides the year-end formal examinations. A complete summary of conclusions with respect to the medical course is contained in Appendix Fifteen.

Curriculum

Until the formation of the Special Committee on Medical Education at Dalhousie Medical School in 1964, the Curriculum Committee managed the curricular affairs of the School. During the frenzy of preparing briefs for two Royal Commissions, and the formation and work of the Building

Committee for the construction of the new Tupper Building, it was impossible for the Dean or others to find time to effect any changes to the "curriculum, Internship and the Clinical Clerkship re-organizations that required attention; it was hoped that these matters would be looked into soon."[13] However, the revisions which were made to the curriculum by the Curriculum Committee were primarily incremental changes, involving changing hours of courses, or the emphasis placed on particular topics for a given year. This enabled the day-to-day activities of the School to run smoothly. However, not all these changes proved to be positive. In 1960 and 1961 the faculty changed the first and second-year curriculum to allow the whole of Physiology and Anatomy to be taught in first year. As a result of this move, serious problems were experienced by students because they did not have adequate prerequisite knowledge to write their examinations in Physiology or Pharmacology in first year. The departments concerned decided, with the approval of Council, to trade hours so that some of the pertinent material could be taught in the first year. This decision caused problems with examinations, so much so that in a Faculty Council meeting in 1961 it was reported that five students had left first year (and one had to be talked out of leaving) because of "examination fright."[14] This event

led faculty to consider the process by which students were being taught. Council reported that they should "give some serious thought to some reorganization of our teaching methods in order to avoid what appears to be frightening the whole class out of their wits at the very beginning of the course."[15] By 1963, the Council was concerned over the role examinations played in the educational process and had acknowledged that examinations should be more than just a "memory test". Dr. McCarter suggested that implementation of the tutorial method would reduce the need for examinations.[16]

One of the more significant changes to the curriculum in the early 1960's included trying to provide an integrated course in fourth year. A course to include Applied Anatomy, Biochemistry, and Physiology, was to be integrated and presented in fourth year by a committee drawn from the departments of Medicine, Surgery, Obstetrics, Anatomy, Biochemistry, and Physiology. The course would be given on Saturday from 11 a.m. to 1 p.m. by both clinicians and basic scientists.[17] This effort towards integration in the curriculum was thwarted by Dalhousie's lack of faculty members who were trained in both the clinical and basic sciences.[18]

In response to the recognition that Dalhousie lacked

properly trained faculty in clinical sciences, there emerged a growing interest in the clinical departments towards research, and a subsequent effort on behalf of the clinicians and the Medical School to acquire laboratory space in hospitals for clinical research purposes.[19] In addition, there was a need to expand the basic science teaching to include and encourage students interested in medical research to incorporate research activities in their undergraduate or graduate courses in medical school. It was for these reasons that the University of Toronto introduced a Doctor of Medical Science program in 1964.[20] It was thought that this type of program would eventually lead to a supply of highly qualified personnel who could bridge the gap between clinical and basic sciences. Consequently, in 1966 Dalhousie approved and implemented a M.D./Ph.D. program with the intention of training more physician/scientists.[21]

A second notable curriculum change was the implementation of a one-week general practice preceptorship in fourth year. The origin of this program stemmed from pressure from the Canadian Association of Medical Student Interns (CAMSI), and requests from Dalhousie students. The students requested to spend a one or two-week block in their intern year with a general practice mentor, who would be a member of the College of General Practice. The view of

faculty at that time was that this was "not an effective education or experience" and it was questioned what benefit "a mere one or two weeks association with a doctor in his general practice" could hold.[22] However, by August 29, 1962 faculty had approved a one-week general practice preceptorship in fourth year. The one week would be taken equally from all rotations in the clerkship year to provide time for students to work in the community with a general practitioner. The motion was approved by faculty, with some members expressing the idea that "a one week's preceptorship was a waste of time", on the condition that the course was reviewed by the curriculum committee each year.[23]

By May 1963 there were changes envisioned to the preceptorship. Many departments complained that because this rotation was scattered throughout all rotations it was disruptive and contained no continuity for the students. Therefore the faculty agreed with the suggestion of the department heads that the general practice preceptorship would be given in blocks of time rather than scattered throughout the year. This block of time would be taken from the first week of the Surgery rotation. As a result, Radiotherapy and Radiology would lose its individual rotations, but would be incorporated into the Surgery block, and Ear, Eye, Nose and Throat would share the Psychiatry

and Ear, Eye, Nose and Throat would share the Psychiatry rotation.[24]

The issue over the Humanities in the medical curriculum, and also as a requirement for admission was still in contention in the early 1960's. Beginning in 1960 there appeared to be a reluctance by faculty to restrict the admission of good students to the school on the basis that they had not completed the required Humanities courses. At a November 18, 1960 meeting of the faculty, the Curriculum Committee recommended that students who applied for Medicine with a bachelor's degree, no matter what the concentration, would be accepted given that they met the required academic level. This decision, in part, was due to the fact that the Faculty of Arts and Science at the University of New Brunswick were two separate departments. Accordingly, students had to specialize in either the Arts or the Sciences but not usually both, and the School felt that they should not restrict admission of science students who lacked Humanities courses.[25]

Dr. C.L. Gosse (Head of Urology), was decidedly against this move by faculty because he felt that it would slant students towards the sciences and that this would be a mistake. On the other hand, Dr. S. Hirsch (Psychiatry) commented that the "premedical course does not improve the

callibre [*sic*] of the student it merely gives him a certain amount of training." Finally, the faculty approved that the Admissions Committee be given the right to accept any candidate with exceptional abilities with the approval of the Deans of Medicine, and Arts and Science.[26]

The implementation of the History of Medicine course was still undecided in the early 1960's, despite the fact that one of the incentives to change the curriculum in 1955 was to find time for more Humanities in the curriculum. At a faculty meeting in 1960, Dr. Murphy pressed the Faculty in an effort to convince them of the "importance of the history of medicine in any course," and in doing so made a "plea that time be put aside for it in our curriculum."[27] The matter was again referred back to the Curriculum Committee.

In spite of Dr. Murphy's persistence, the future of the course was still undecided in March of 1963 when he again asked for a time slot of twenty hours in the curriculum to implement the course. The faculty responded as stated in the minutes that "This type of course and its place in the whole curriculum is still to be decided."[28] Nonetheless, after a discussion of the topic, it was reported that Dr. Murphy would develop the course and get back to Faculty Council. The History of Medicine made little progress in 1963, except that it was decided that attendance at the

course was to be on a "voluntary basis."[29] By August there was still no move on behalf of the faculty to appoint a full-time staff member devoted to this course and there was no examination on the subject. Instead, it was decided that prizes would be awarded for voluntary essays. This idea appeared to be evolving into a lecture series rather than a course. It was reported that outside lecturers would be invited and that students and faculty, and other medical colleagues would also be invited to attend.[30]

The lack of enthusiasm for courses in the Humanities may be viewed in several ways. As early as 1960, the faculty reported that the students had a lack of interest in these courses and this proved to be a driving force in the postponement of decisions to implement them into the curriculum. Some faculty members perceived that students were interested only in courses that they ascertained as pertaining directly to Medicine and enhancing their abilities to become better physicians.[31] It was understood by faculty members that students believed that they could accomplish this by undertaking intense study in these perceived pertinent courses which were generally taught under the auspices of Medicine or Surgery. These two departments have traditionally been the cornerstones and powerhouses of the medical community. Dalhousie Medical

School was no different from other schools in this regard. Medicine and Surgery tended to wield their power over other departments such as Psychiatry, which was perceived as a soft discipline. In June 1963 there was "strong objection expressed by the Professor of Surgery to the loss of time in the Surgery clerkship as a result of placing the preceptorship week entirely in this rotation."[32] Consequently, a week was taken from the Psychiatry rotation to accommodate the teaching of Ears, Eyes, Nose, and Throat, which was previously taught in Surgery.

Some faculty members believed that the appointment of the Royal Commission on Medical Education had not affected the events in the School significantly. However, by 1962 (during the time of the Royal Commission), Faculty Council proposed that a new curriculum study should be started because the last curriculum review had been in 1955.[33] By February 4, 1964 the Faculty had approved a study to be undertaken to review the "organization and teaching arrangements of the curriculum.[34] At this time a new method of curriculum review was being implemented at other medical schools in Canada. The Dean referred to this as a "Retreat," whereby faculty members would go to a place away from the university so that they could apply themselves to the assigned task without the daily interruptions associated

with the school.[35] He suggested that the committee might entertain this method to begin the process of curriculum review.

Special Committee on Medical Education

The Special Committee on Medical Education was appointed in February of 1964 under the chairmanship of Dr. W. Josenhans (Physiology) and was charged with "covering all the facets of the medical curriculum and should include premedical requirements."[36] Furthermore, the Council suggested that "this new committee should do more than merely make adjustments in the present curriculum, but that it should have a much wider frame of reference and consider the matter of medical education in general.[37]

The Special Committee was an appointed committee, its members chosen by the Dean and Josenhans in consultation with the Council. It included Drs. A. McCarter, W.A.Cochrane (Paediatrics), G.R. Langley (Medicine), S.C. Robinson (Obstetrics and Gynaecology), S. Hirsch, D.A. Gillis (Surgery), and A.D. Dickson (Anatomy).[38] The composition of this committee reflected the new members of the faculty in that there was only one person (McCarter) who was present for the last curriculum change in 1955, all other members were relatively new faculty members. The composition of the committee may have affected the manner in

which the committee approached the task of curriculum review. In addition, it might have been a contributing factor to the change in philosophy about how the process of medical education should be accomplished at Dalhousie.

The first meeting of the Special Committee on Medical Education was held on March 30, 1964. At this meeting the Committee began to set the parameters for the methods by which they would compile information as a basis for their curriculum review. For instance, it was determined that members would require funds to travel to other medical schools - those which had recently undergone significant modifications to their curricula and/or had established separate medical education facilities within their schools would be considered. Furthermore, the committee intended to enlist the assistance of the Medical School librarian, Mr. Rees, to help with a literature survey and to establish a special section in the library where information pertaining to medical education could be housed. Stewart wrote to Josenhans on April 6, 1964 to request that the committee spend "considerable time in the preliminary phase in discussing together the philosophy of medical education," and offered the literature he had assembled and kept in his office.[39] However, the Committee had already considered this aspect of its role, in that at the first meeting it

affirmed its intention to spend time in developing the aims of the school and a list of priorities to encompass the aims. Furthermore, the Committee initiated the task of beginning to define the meaning of teaching methods, seminars, tutorials, lectures, and laboratory periods. The notion of evaluation was also raised by Dr. Cochrane, who "stressed the importance of assessing our teaching effectiveness so that the Faculty knowing its aims, can continuously assess its programs to see if it is achieving its goals."[40]

The Committee also considered the importance of training faculty members in educational theory. The Committee believed that in order to accomplish this goal, it was necessary to send interested faculty members away to medical education conferences and seminars, and to sponsor speakers from other parts of North America to come to Dalhousie to speak on topics concerning medical education. The University of Illinois had made significant advances in the area of medical education research and had developed an office of research exclusively for investigating these types of issues. Dr. George Miller, a physician and educational enthusiast, had made great strides in uniting education and medicine at Illinois and led the movement to develop training seminars for medical teachers in North America.

One of Illinois's first workshops was attended by Dr. Ross Langley, a haematologist, who had been a full-time member of the Department of Medicine at Dalhousie since 1961. Langley recalls that Miller, who visited Dalhousie in March 1966, had a great impact on Dalhousie's review of the curriculum at this time.[41] Reportedly Miller's "bible" was the Aims of Education by Alfred North Whitehead (1929) which he used to guide his endeavours in medical education.[42]

The ideas which Dalhousie fostered concerning evaluation of curriculum, philosophies, aims and most importantly the teaching process were directly the result of Miller's influence on Dalhousie. Miller's influence specifically impacted on the change in the teaching philosophy from a teacher-centred to a student-centred method of teaching. Miller called this the change from:

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to indicate the shift in concentration from teacher to student in the process of education.[43] In correspondence to Stewart, Josenhans recalled a successful meeting between himself, Langley, and Miller, but mentioned an unusual incident which caused Miller's visit to be anything but uneventful.[44] Apparently, on the night Miller stayed at the Lord Nelson Hotel there was a fire which resulted in Miller having to flee the seventh floor in an emergency evacuation.

Consequently, Josenhans asked that Stewart consider offering Miller a larger honorarium than was originally offered. Stewart wrote Miller with a cheque for $150.00 enclosed stating that "We like to give our guests in Halifax a warm reception, but never before have we gone to the lengths of having hotel catch fire! I was horrified when I heard of your narrow escape."[45] Fortunately, the incident did not deter Miller's association with the school, and both parties continued their collegial relationship.

Other individuals who had begun similar movements in Canada included Dr. J.A. Gilbert from the University of Alberta. Gilbert, who was described as interested in educational theory and its application to medical education, also visited Dalhousie. Other speakers included Dr. Samuel Bloom, Associate Professor of Sociology, Mount Sinai School of Medicine, New York, who visited Dalhousie in December 1963. It was thought that Bloom had "great knowledge and interest in medical education."[46] Dr. John R. Evans, from McMaster University Medical School, who was interested in innovative curricula, visited Dalhousie on March 1, 1966 and gave a talk on the plans for McMaster's new curriculum.[47] McMaster began the first problem-based curriculum in Canada in 1969.

Preliminary Report:

Special Committee on Medical Education

Stewart, knowing his faculty well, predicted that these reports could cause unrest within the school. Shortly after a faculty meeting of July 7, 1964, Josenhans despaired that the faculty had seemed indifferent to the problems facing Dalhousie in medical education at that time. Stewart reassured him that the faculty was only hesitant to give their views because they did not have the information which was necessary and did not want to give their views without being fully informed. Stewart advised Josenhans to welcome this leeriness because there was a "danger in getting the Faculty divided on some of the more difficult matters and having people make up their minds very firmly long before all the information is in..."[48]

By July of 1965, the Special Committee on Medical Education brought a preliminary report to the faculty. The Survey Report of 1966 mentioned that "There is no doubt that the proposals threatened the security of individuals and even departments."[49] Among the most contentious issues raised by the report was the necessity to define goals for the school. This issue divided the members of faculty into two camps: one thought that defining goals was necessary if they were to plan a curriculum properly, and others thought

that this exercise would end in broad useless generalities. Furthermore, the report indicated that the education of a medical student contained three areas - skills, attitudes and facts - and that departments should formulate their goals with these three areas in mind. Other points contained in the preliminary report were:

> the great importance of good teachers; the importance of coordination of the courses taught so that both duplication and omission of topics could be avoided; the need for flexibility in education and the need to emphasize the importance of continuing self education by the students.[50]

These ideas reflected the evolution of new beliefs that surrounded medical education at that time. For instance, the majority of medical educators had come to realize that because medical knowledge had grown at such a rapid rate, they could not teach students everything they needed to know during the undergraduate years. Consequently, it was necessary for the medical schools to impress upon graduates the need for continuing reflective education. Furthermore, because of the increased knowledge-base, there was an expansion in the number of specialties in medicine. This was reflected in the idea that the curriculum had to be flexible in order to accommodate all the various areas, any one of which students might eventually choose as their career. These areas included the medical specialties, but

there was also the recognition that other areas such as clinical research and teaching would have to be considered.

Although the Report offered no definition for the term "good teachers," it can be presumed that this statement was made in connection with the school's aim to train its faculty in pedagogy so that they would become more familiar with the methods and philosophy of teaching. At that time, Dalhousie Medical School and others believed that training its faculty in educational theory and methods would make physicians and basic scientists better teachers. In a bulletin for a workshop on medical teachers-training from the University of Illinois, it was stated that "with increasing frequency the call is heard for some systematic instruction of medical teachers in educational theory and practice" and that the six-week course was to introduce "medical faculty members to what is known as pedagogy as it applies to the problems and opportunities of the education in medicine."[51]

Prior to being presented to the faculty, the Preliminary Report was presented to Faculty Council on February 22, 1966 and was severely criticized by Faculty Council on many of the issues contained in it. At this meeting, the Dean proclaimed that there was a "ground-swell of opposition to the report" blaming a quotation from

Machiavelli, which headlined the Report, for this expression of dissatisfaction. The quotation which insinuated that Dalhousie was resistant to change infuriated the Dean who felt that the faculty was more open for revisions than had been implied in the Report.[52] The quotation was as follows:

> It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things, for the reformer has enemies in all of those who profit by the old order, and only lukewarm defenders in all those who would profit by the new.
> -Machiavelli

Council members also identified sections of the report with which they were dissatisfied. First, the Report claimed that there was a lack of co-ordination between departments. However, the Council disagreed and believed that the departments of the school were well co-ordinated and that most faculty were acquainted with the work of their colleagues in other departments. Furthermore, with respect to the Report's criticism that there was too much variation in teaching methods, Council felt that this was a positive aspect of the School, and that although the timetable appeared inflexible, there was a great deal of flexibility in the content of the curriculum.

The evaluation methods used by the School were also criticized in the Report, and Faculty Council responded to

this statement by claiming that "students were evaluated by examinations leading to the granting of the M.D. degree, and the school is evaluated by the accreditation programme. Is it suggesting that these methods are invalid?"[53] Prior to this time, the Faculty proposed that there should be a set procedure in calculating examination results and class standings. A complete outline of this procedure is found in Appendix Sixteen.

One of the more contentious issues was the subject of teacher-centred versus student-centred learning. Opposing the notion of implementing a more student-centred curriculum, the Faculty Council realized that the curriculum was concerned with "what the teacher has to give to the student;" however, in its view, this could "hardly be labelled as inadequacy."[54]

The Committee also discussed the admission requirements. Students at this time were required to have completed Grade XII senior matriculation, plus a minimum of ten courses from a Faculty of Arts and Sciences. These included five required classes: English 100, Physics 100, Chemistry 100, Chemistry 240, and Biology 100. The five remaining courses were considered electives, but two of these were to be taken in one subject. In addition to the course requirements, in 1967 it was strongly recommended

that students take the Medical College Admission Test (MCAT). This requirement became compulsory for all students entering Medicine in 1968.[55]

For a number of years prior to this time Dalhousie had been contemplating its policy with respect to the admission of women to Medicine. Dalhousie, usually known for its open policies towards various minority groups, had discriminatory admission policies regarding the admission of women to the Medical School. In March of 1964, at the first faculty meeting attended by President Hicks, the faculty posed several questions. One of these included the limiting of the number of female students that were permitted to enter Medicine in a given year.[56] While some members of the faculty believed that there should be no restrictions to women in Medicine, Dr. Hicks was concerned that the government may become "concerned if the figure rose greatly."[57] Until this time, Dalhousie had admitted two to eight women each year. During a discussion on admission requirements in 1965, the Dean stated that at this time there was no discrimination against New Brunswick students. However, "in accordance with Faculty policy preference was given to men and so only 5 women had been accepted" that year.[58] The faculty conceded that maybe the admission policy should be reviewed. Nonetheless, the policy

regarding admission to women in medicine was not lifted until June 1967, which resulted in thirteen women being admitted to Medicine in September 1967.[59]

Other areas of controversy included the awarding of the degree after fourth year, the basic science curriculum, and the use of subject committees to advise departments on course content. Of these areas, the use of subject committees received the most criticism. It was feared that if these committees were formed as outlined in the report that too much weight would be given to the opinions of the committee on the content in the basic science courses, and that the opinions of the basic scientists would be over-ruled by the clinicians, "who were not as well versed in the modern concepts of the basic sciences."[60] Also, it was predicted by Council that the composition of the committees would be mostly clinicians, which would allow basic science faculty minimal input. This apparent 'turf-war' between clinical and basic sciences was extended into the issue of who was best suited to teach a particular subject. On page fifteen of the Report by the Committee on Medical Education dated February 1966, and tabled at the March 10, 1966 meeting of the Council, there was some discussion about the statement:

The teaching of a subject must be done by the most

> suitable man, not necessarily from the department, usually associated with this subject matter.[61]

This may have been an early move, whether conscious or otherwise, to challenge the role of the expert teacher. It appears that the Medical Education Committee, according to Dr. Robinson and supported by Dr. McKenzie felt that:

> The most suitable man for a particular part of the teaching may not be the expert in the field but the generalist who would more likely be able to appreciate the significance of the subject in relation to medical education as a whole.[62]

At this time, these ideas represented a radical departure from the dominant beliefs of most medical teachers. Most basic scientists, at that time, would have been expert teachers in a particular field, and probably would have believed that they were the ones best suited to teach their specific subjects. A move of this nature, by Dalhousie, indicates a change in the perception of the role and place of the expert teacher in medical education. Up until this report the medical teacher was envisioned as the expert over a certain body of knowledge, which could be transferred to the student only by the expert.

The issue concerning students' early introduction to patients in the curriculum was also discussed. However, in this case, the Council agreed that where appropriate patients could be introduced to students in the early years

but that "the most important consideration in the teaching of the basic sciences was logic and coherence rather than what might at times be artificial stimulation by patient contact."[63] This notion regarding logic and coherence may be attributed to the scientific method of thought pervading many natural sciences which incorporated the notion that science should be rational, objective, and logical in order to find out the truth. Medicine had assumed the role of being a science-based discipline at the latter part of the nineteenth century, and this thought still pervaded medicine in an effort to promote basic and clinical sciences as a means to better the health of society. Basic scientists, at this time, would have been schooled in this paradigm.

Stewart must have been perceptive about the process about to engulf his Medical School and recognized the difficulties which would inevitably arise from trying to change philosophies about medical education. Although, it may never be known if he fully appreciated what his own response would be to the Draft Report which was submitted to the faculty on February 23, 1966. It must have been for these reasons that when the report was tabled Stewart declared that "The only rule I am applying is that you sink your teeth into the report and not into the Committee."[64]

The report received a similar response from many

faculty members as it had from Faculty Council. As did Council, most faculty members felt that the departments were not uncooperative, as the Report had indicated, but felt that there was already a variety of teaching methods being employed. Again the Dean deplored the use of the quotation from Machiavelli and the suggestion that Dalhousie resisted change.[65] In response to the suggestion that the School should move to a more student-centred curriculum, Dr. Weld pointed out that "the curriculum should be concerned with what the teacher has to give to the student and that the examinations test what the student has learned."[66] This comment by Weld, a member of the faculty since 1936, may have signified the differing philosophies of long-time faculty members, and those of new younger faculty members. These two groups represented two diverse philosophies about how medical education should be carried out. On the one hand, the new faculty members wished to clearly establish a student-centred curriculum, while the more traditional views encompassed the more authoritative teacher-centred methods.

Final Report:

Special Committee on Medical Education

The final report of the Special Committee on Medical Education was amended, approved and accepted by Faculty on November 10, 1966. The Committee studied the current

curriculum of the School and the current trends in medical education through various methods. First, each department submitted the courses that they were responsible for in written or oral format and outlined objectives for each department/course offering suggestions for improvements (see example in Appendix Seventeen). Interviews were conducted with high school principals, members of the Faculty of Arts and Sciences, and the Division of Postgraduate Medicine. Secondly, the Committee visited the (Case) Western Reserve School of Medicine to examine their curriculum. The Committee then split and some members visited the University of Kentucky Medical School in Lexington, and the Virginia Medical College in Richmond, Virginia because of their "experimentation in medical education."[67] The Committee also undertook an extensive literature review concerning the latest innovations and experimentations in medical education.

The deficiencies in the curriculum, as recounted by the Committee, were outlined in the Report from three stances: the product (meaning the medical graduate); the method (meaning the process of learning); and, the means (the facilities available to the school). The overall recommendation was that the School could strive to make its graduates better than those who had preceded them.

Previously, the practice patterns of Dalhousie graduates had been criticized by the College of General Practice, and Dalhousie's Postgraduate Division. The Committee Report was critical of the method in which medical students at Dalhousie were being taught. The Report stated that "the present curriculum is concerned with information the teacher has to give to the student. There is little emphasis on and little recognition of what the student learns or how he learns."[68] Improvements in communication between departments, more flexibility in the curriculum to allow for individual student differences, unnecessary repetition and irrelevant content, and the lack of evaluation methods were other findings related by the Committee. The Report also aimed its criticisms at the fragmented facilities whereby students and staff were separated, inadequate lecture theatres, and the deficiency of teaching tools such as X-ray boxes and projection equipment.[69]

Among the recommendations in the Final Report of the Special Committee was that there should be a Standing Committee on Medical Education comprised of six members and a chairman appointed by the Faculty Council, and a full-time executive secretary who would be a trained educator. The responsibilities of the Committee would be: "(1)selection and definition of objectives of medical education; (2)

evaluation; (3) development and recommendation of changes in medical education; (4) nomination of subcommittees; and,(5) carrying out research in medical education."[70] The standing committee was to act as an advisory committee making recommendations to departments and Faculty Council with respect to the School's program in medical education, which would be made to faculty via Faculty Council. In addition, as an advisory committee, it was to entertain the views of the students concerning medical education issues. This suggestion represented a new perspective concerning the role of the student in the management of the Medical School. It was only ten years before, that faculty believed that students really did not know what was good for them, although students had been campaigning for more input in the School's affairs at that time.

More specifically, it was recommended that the Standing Committee find the means of providing elective opportunities in the curriculum, and also to find methods to restrict scheduled time so that students could pursue electives and take advantage of free time. Increased specialization in medicine had ensured that the School could not provide all the learning opportunities available. Therefore, it was necessary to provide time, through elective opportunities, for students to explore individual preferences.

To support the notion that learning should be diverse and take advantage of the new methods in education, the Report recommended that a facility should be established to "provide and encourage the use of learning aids."[71] Furthermore, these new educational methods reflected a significant change in the philosophy of how medical education was to be provided to the students. The Report stated that:

> There should be a strong emphasis in the educational process on problem solving, data analysis, critical thinking exercises, and independent study.[72]

These ideas represented the shift in medical education at Dalhousie from teacher-centred to student-centred learning in which the student was responsible for his/her own learning, both during medical school and throughout their professional lives. Additionally, because information was changing at such a rapid pace, medical schools realized that they could not possibly teach students all they needed to know about medicine. Consequently, it would become the responsibility of students and later physicians to be able to evaluate information from a critical viewpoint in order to keep up-to-date in their fields. Likewise, as physicians, it was assumed that they would have to problem-solve as part of their daily life in the practice of medicine, and that they would have to learn skills which

would enable them to find answers to clinical problems when diagnosing and treating patients. Consequently, this educational process would model and promote the skills students would need later as physicians. These ideas were reinforced in the statement on the School's philosophy of education as outlined in Part II of the Report:

> The continuing and ever accelerating growth of knowledge applied to medicine has long made it impossible for any student or teacher to know everything. In addition, there is insufficient time during the undergraduate programme for the student to study all types of medical problems he is likely to meet in his practice. However, if emphasis is placed on the utilization of acquired knowledge and if the student accepts the responsibility for his own lifetime of learning, he need not be exposed to every type of medical problem in his undergraduate programme.[73]

While the Committee recognized that changes were to be made to the curriculum, it also recommended that in order for these changes to be beneficial, objectives had to be set as guidelines for students and faculty members. In addition, a procedure to evaluate these changes had to be implemented as a method to measure the success of the curriculum to achieve its objectives. Evaluation would therefore function as a self-adjustment and ongoing improvement mechanism to ensure that objectives were being met. This notion was a result of the school's connection with Dr. George Miller who thought that "education can be

best thought of as a continuous process whereby objectives are defined, a curriculum (learning in experience) instituted, and proper evaluation in terms of objectives carried out."[74] Although the general objectives were agreed upon by faculty, the method of achieving these objectives caused some serious disagreements among faculty members. A number of faculty members felt that their subjects were most important to the education of a future physician; however, it was acknowledged by the Report that each subject was equally important only as it related to the overall goals of the faculty.

It was also deemed essential that faculty members be encouraged to become better educators through training in pedagogy, and to conduct research in medical education "under the direction of a person trained in conducting educational research," and that this person should be an "ex officio" member of the Standing Committee.[75] This recommendation was not brought to fruition. It was not explicit from the evidence why an educator was not hired by Dalhousie at this time. This idea may not have been implemented for financial reasons, or the faculty may have thought that it was better to involve its own faculty and train them in educational matters. Regardless of the reason, the faculty invested money and effort in training

its own members to become more knowledgeable about educational processes and theory. In response to this suggestion, in 1968 the faculty implemented a discussion session entitled "Noontime Conversations in Medical Education", where various topics of interest in medical education could be presented and discussed by faculty members.[76] In addition to training their own faculty members, Dalhousie invited various influential medical educators to Dalhousie to conduct seminars and deliver lectures to the faculty on educational and curricular issues.

The Report also recommended that the Faculty should endeavour to remove barriers, both financial and social which would prevent some high calibre students from entering medicine. This was a directly related to the results of the study conducted by Dr. L.B. MacPherson (Assistant Dean) in 1962, which concluded that students who entered Dalhousie Medical School were mainly students from urban areas "from parents who are relatively well-off and have relatively good education."[77] The School did not give details for the concern over this finding, but one assumption could be that they realized that in order to supply the rural areas with physicians it would be beneficial if the school accepted more students from rural areas of the province in the hope

that they would return to their hometown to practice.

Accreditation Visit of 1966

In 1966, Dalhousie Medical School was visited by an accreditation team for the fourth time since the beginning of the twentieth century. It had been nine years since the last visit in 1957. This survey team was different from previous ones in that the team was partially made up of Canadians. Entitled the Liaison Committee on Medical Education, it comprised six representatives of the American Medical Association, the Association of Canadian Medical Colleges, and the Association of American Medical Colleges. It visited Dalhousie from October 12-15, 1966 under the chairmanship of Dr. Harlan English. The Canadians included Dr. T.W. Fyles, Assistant Dean from the University of Manitoba, and Dr. R.W. Begg, Dean from the University of Saskatchewan (formerly a student and faculty member of Dalhousie), and Dr. J. Wendall McLeod, Executive-Secretary of the Association of Canadian Medical Colleges.[78]

In a meeting of the faculty on October 27, 1966 the Dean reported that the visit appeared to be satisfactory and he predicted that they would have "some constructive suggestions" in the report "when it was received in six weeks or so."[79] However, time would prove that Stewart was

over-optimistic on the arrival of the report. In August 1967, Stewart commented to the faculty that the survey report was ten months delayed, which was "unfortunate because the survey team had involved Canadians."[80]

At a faculty meeting on March 14, 1968, seventeen months after the survey visit, the faculty considered the recommendations of the Survey Report. In general, the team was pleased with the progress made at Dalhousie since its last survey in 1957. Specifically, the team remarked on increases in financial support, number and strength of faculty, an increase in interest and activity in research, and the construction of the Sir Charles Tupper Building. Other changes which met with the approval of the team were the "unique relationship with the community", by way of the continuing education program for practitioners and the relationship with official organizations.[81]

With respect to curriculum, the team reported that the:

> medical course at Dalhousie University is in transition from the Scottish and French pattern characterized by a full-time-table of lectures, clinical demonstrations and formal discussions at the bedside[82]

The reference on the "transition" of the medical course was an acknowledgement of the ongoing work by the Special Committee on Medical Education to review and revise the curriculum. The report made reference to the work of the

Special Committee and congratulated it on its production of the Final Report, which was under consideration by the faculty at that time. The team applauded the committee's e emphasis on defining the goals and philosophy by which the school should create a new curriculum. However, the Survey Report (1966) acknowledged some concern over the continued accentuation on the "teaching of facts and on the examination of students on their 'knowledge' rather than on their ability to solve problems and to learn on their own."[83] Further to this, it was suggested that not enough emphasis had been placed on student problem-solving through evaluation of the medical literature, journals, and other information using library resources. The timetable for the year 1966-67 revealed that the number of hours for "lectures, demonstrations and scheduled class or group exercises" were as follows:

First year.....1129	Third year....1157
Second year....972	Fourth year... 173[84]

More specifically, there had been a substantial reduction in the teaching of Anatomy, although it still occupied a significant portion of the curriculum. For example, of the 642 hours allotted to Anatomy in first and fourth years, 188 were devoted to lectures. The most significant reduction in lecture time was reportedly in the third year, which had

been replaced by "seminar discussions, clinical ward work, small group clinics and increased time spent in the clinical care of patients."[85]

The liaison survey team also encouraged the Dean and the faculty to implement the recommendations of the Special Committee on Medical Education, which would necessarily include evaluating these changes on a continual basis. In addition, it was suggested that the Dean's office could be utilized as a central office to house information related to course material and that communication between departments should enable each to be aware of the objectives of other departments in the School, thereby reducing the redundancy in courses.[86]

The Report made reference to other positive changes that had taken place since the last survey report. These included changes to the first two years to include more clinical experiences, in particular through the Departments of Physiology and Medicine in the first year. The course originally entitled "Methods of Examination," given in first year, had been changed to "Introduction to Clinical Medicine." In fourth year, the Report mentioned the introduction of the general practice preceptorship as a positive experience for students.[87]

The team was also complimentary towards the faculty's

"growing interest in the study of medical education," Dalhousie teachers' endeavours to "look deeply into their objectives and methods," and their interest in learning the "art of implementing new concepts."[88]

With respect to the submitted report by the Special Committee, the team sensed that "if adopted by faculty later in the fall it will set the stage for resolving many of the difficulties" encountered in the curriculum.[89] These difficulties were identified as minor ones, but nevertheless needed resolution. Some of the difficulties mentioned included: the laboratories were in need of modification to enable students of varying interests to pursue individual projects, although the team realized that this problem might be solved with the move into the Tupper Building; the overload of reading material took away any benefits of the small-group teaching in the clinical years; and, there needed to be more emphasis on self-education in the clinical clerkship.

The Survey Report (1966) was approved, without any reservations, by faculty at a meeting held on March 14, 1968. Additionally, faculty agreed to request another Liaison Survey team visit after an interval of five years. The section of the Survey Report (1966) dealing with the general recommendations is contained in Appendix Eighteen.

Standing Committee on Medical Education

The Standing Committee on Medical Education was appointed by Faculty on January 26, 1967 and took as its terms of reference the Report of the Special Committee on Medical Education approved by faculty in November 1966. The committee, under the chairmanship of Dr. S.C. Robinson (Obstetrics and Gynaecology) was comprised of, Drs. G. W. Bethune (Surgery), S. Hirsch (Psychiatry), N. Kerenyi (Pathology), G.R. Langley (Medicine), S.J. Patrick (Biochemistry), D. Waugh (Pathology). The majority of the committee had joined the faculty since 1964, and therefore the committee was almost entirely composed of new members of the faculty. The first task of the Committee was to review the curriculum and to appoint nineteen sub-committees with the approval of the faculty. These sub-committees were responsible to give advice on formulation, implementation, and evaluation of particular subject areas of the curriculum. These areas included: Cell Biology; Cell Pathology; Genetics, Embryology, and Reproduction; Medicine and the Community; Blood; Infection, and others as designated by the Standing Committee (complete list in Appendix 19). The tasks of the sub-committees were to outline the ideal learning experience for the sub-committee's particular field, to determine if the present

curriculum was meeting the faculty's objectives, and to propose any changes to the curriculum particularly aimed at the first year.

Student class representatives and those of the medical student society were also invited to offer their views and to meet with the Committee on Medical Education. The movement to allow students, and for students to request, a more vital role in the university affairs appeared to be more far-reaching than at Dalhousie. In a meeting of Faculty Council on June 27, 1966 it was reported that "Several Council members mentioned the widespread feeling by students everywhere that they should play a more active part in University government and planning."[90] However, in one incident, Stewart felt that the students had to be curtailed in their involvement with the administration of the School. In January 1967 Stewart sent a letter to Robinson of the Committee on Medical Education about students compiling a questionnaire for evaluation of a course. Stewart reported that:

> I think this area of evaluation needs early consideration. The students are anxious to assist but they are also prepared to take the bit in their teeth. One self-appointed expert from Montreal has apparently led students to believe that they should have a running commentary on every lecture or teaching exercise and put on a campaign to rid themselves of any professor who does not conform to their wishes. As Dean of the Medical School I have no intention of letting this

> matter get out of hand to such extent. Cooperation will be encouraged, but action directly by the students with the Department Heads and Professors will not be encouraged. Staffing problems are difficult enough as they are[91]

This trend of students campaigning for more input might have been an indication of the social rebellion in the late 1960's. In the United States much of this attitude was sparked by the widespread anti-war demonstrations and society's objection to America's involvement in the war. Therefore, a general feeling of social activism pervaded this era and was carried into other social issues.

By June 20, 1967 the Standing Committee had produced its first report which was presented to faculty on July 10, 1967. Preliminary reports by ten of the nineteen sub-committees were also available. The Committee at that time proposed that they should continue with the curriculum change proposed for the first-year course in 1967. In addition, the Committee recommended that these revisions should be made in light of the changes to be made in the upper years, so that the curriculum may evolve in a "step-wise manner."[92]

Among the general recommendations brought down by the Committee, the majority were on evaluation procedures. These consisted of suggestions to implement a knowledge-

based test (a comprehensive examination given on a yearly basis to students, entitled the Minitest), to acquire a machine marker to mark multi-choice examinations, to eliminate classes the week prior to examination week, that written examinations should be submitted to the Committee three weeks prior to the scheduled examination date, and that there should be at least two testing methods (oral and multiple-choice) used in the major courses and for subjective evaluations (clinical skills, attitudes).[93] Included in the report was a request from students who perceived a need for a short course in Therapeutics to be given in fourth year. This course was implemented in 1968 and the students reported it was an "outstanding success."[94]

Curriculum Change of 1968

The curriculum change planned for the fall of 1967, was not implemented because of problems moving into the new Tupper Building. It was at a Faculty Council meeting that Stewart announced that the changes would not be implemented due to the problems with finishing the Tupper Building which had been delayed due to labour problems in the summer of 1967.[95] In fact, some faculty members were not able to move into the building until the second trimester, and as a result some had to unpack lab equipment and remain in their

old offices until the building was completed.

In 1968 the proposed curriculum revision was implemented for first-year medicine, although particulars for the new curriculum were not available for the 1968-69 Faculty of Medicine Calendar, which stated that "A new curriculum will be in effect for the Session 1968/69. The details will be available at registration."[96] The curriculum revision was to be implemented in a step-wise manner with the first-year program being implemented in 1968, the first and second years in 1969-70, and by 1970-71 the new program would be in effect for all years.[97]

The first-year curriculum as proposed by the Committee on Medical Education was approved at the May 13, 1968 meeting of the faculty.[98] Keeping in mind the objectives of the faculty and the suggestions made by the sub-committees, the Committee on Medical Education proposed a new first year curriculum comprised of a block system which aimed at integrating, where proven efficient for student learning, the basic science and clinical medicine which the Committee called "medical science." The main thrust of the new curriculum was to reduce the amount of scheduled time, to allow students to learn at their own pace, and to provide elective time which would allow students to develop special interests. In addition, the committee envisioned that with

these changes in the learning process, students may become "discouraged and frustrated when they are required to proceed on their own initiatives." In order to alleviate students' anxieties over the new learning process, it was thought that faculty should assist students to use the available facilities, such as the library, laboratories or out-patient clinics to facilitate their learning. The implementation of these suggestions fulfilled one of the main recommendations from the Survey Report of 1966.

In addition to the new integrated curricular format, the Committee also recommended that the educational process should be an ongoing process whereby "the definition of objectives, the implementation of recommended changes in the instructional process, and the evaluation of these, will continually lead to improvement."[¤¤] This circular process was similar to the style prophesied by George Miller of the University of Illinois, and that suggested by the Royal Commission Report of 1965, and the Liaison Committee on Medical Education in 1966.

On April 12, 1967, the Committee on Medical Education developed a document that outlined the evaluation procedures for the school. There were three items for evaluation listed - the students, the school and staff, and the product. It was proposed that the students would be

evaluated by two types of evaluation procedures. First, "concurrent evaluation" was used to assist the student to assess his/her own progress, and to assist faculty to make adjustments to the educational process. Second, "advancement evaluation" was utilized to determine when a student was ready to proceed to the next level of the learning process. The list of advancement examinations were outlined in the 1968-69 Calendar, with the exception of the first year (these were to be announced early in the session) and are included in Appendix Twenty.

In addition, it was outlined in the document that evaluation of the learning process should include knowledge, skills, and attitudes. It was proposed that knowledge would be assessed by short multiple-choice tests, orals, or clinical tests. Skills were to be assessed by "procedure cards", which could be used for "subjective" assessment at the bedside (see example Appendix Twenty-One). It was suggested that attitudes could be assessed by a checklist type form using several instructors, and the results pooled to ensure a more reliable and valid assessment of students (see example Appendix Twenty-Two).

It was intended that the sum of the concurrent assessment should form a substantial portion of the advancement mark and the balance should be from testing at

the end of the year or unit. It was recommended by the Committee that there should be at least two evaluation procedures used.

In addition to the knowledge a student needed to acquire during the medical school program, students were expected to learn to use the resources of the community available to them as physicians, and to work as a member of a team which provided health care to patients. In the statement of objectives contained in the 1969-70 Calendar, the faculty recognized that students were also to acquire attitudes "essential to his function of a physician."[100] These attitudes included "compassion and perceptiveness in the care of patients, understanding of the fundamental rights of the patient, intellectual honesty, and the willing acceptance of responsibility" for the ongoing care of the patient.[101] Although the development of proper attitudes was considered important in the education of medical students, and in spite of the fact that there were guidelines as to the conduct of proper evaluation of attitudes, it was stated in the Committee on Medical Education Report of February 29, 1968 that the Subcommittees had "very few suggestions as to how best" this could be achieved.[102] It could be assumed that the faculty were investigating other, more valid options, for the assessment of attitudes. These fundamental

principles developed by the faculty concerning the objectives of the curriculum, represented the new ideas that medical students were to be responsible for knowledge, skills, and the appropriate attitudes towards their roles as physicians. Furthermore, these ideas were illustrative of the growing awareness of the changes in the educational process surrounding medical education.

In a supplementary report to faculty dated March 28, 1968, the committee addressed the apparent confusion of faculty over some of the terms used in the main report of February 29, 1968. These terms were 'scheduled curriculum', 'electives', and 'free time'. Scheduled curriculum referred to the:

> specified number of hours each day, each week, each trimester, during which the core knowledge and skills identified by the Committee on Medical Education, in consultation with the Departments, are presented to medical students.[103]

The student's responsibility for this knowledge should be made clear to the student and the material should be presented to enable students to learn it in an efficient manner. The scheduled time consisted of system teaching and departmental instruction programs. The system teaching was made up of blocks of time that were coordinated by planning groups and divided by the major body systems. The students

participated in coordinated learning activities which considered a major body system as a whole rather than a medical specialty (i.e students were to learn about the cardiovascular system rather than learn about cardiology from a cardiologist). The teaching for each system was shared by different departments depending on the system and required material. System block teaching was organized by planning groups which determined the allotted time for each department, the sequence in which the material would be presented, and the evaluation procedures used. The planning groups were comprised of "a member of the Committee on Medical Education as chairman, and representatives appointed by those department heads designated by the Committee on Medical Education as concerned with the system block."[104] Time allotments for system block teaching and departmental core teaching are contained in Appendix Twenty-Three.

The term 'Electives' referred to that knowledge which the student pursues in a field of his/her own choice, which should be in addition to the core knowledge outlined in the curriculum. For instance, a student might wish to pursue additional studies in a basic science such as physiology, or might wish to spend an extra clinical rotation in Pediatrics, if these were of particular interest to a student. The opportunity for this type of learning was to

be available to students, but was not intended to occupy students for more than one half-day per week. Although this type of learning was intended to go beyond the core knowledge, elective time was also implemented to assist weaker students to cover material that was in the core program. The Committee on Medical Education was divided on whether elective study should be compulsory for students. The majority of members felt that these studies should be compulsory, although a minority envisioned that elective studies be non-compulsory. There appeared to be no conclusive answer to this issue.[105]

The term 'free time' constituted a portion of time in the curriculum of one half-day per week plus Saturday mornings that students would be free for independent study - that is, to work at their own pace or on projects, depending on the wishes and abilities of each student.[106]

In the first year, departmental instruction was integrated with system blocks that were correlated with particular departments. The responsibility for the correlation of these areas lay in the hands of the Physiology Department. There were 864 scheduled hours, over three trimesters of eleven weeks each, in the first year, which ensured that students had enough time to learn to utilize the resource facilities. The first year began with

a two-week course in Cell Biology (see Appendix Twenty-Four), which provided an overall view of the subject in relation to health and disease and its relevance to other biological sciences.

The four major body systems included in the first year were the Respiratory System, Cardiovascular System, Gastrointestinal System, and the Renal-Metabolic System. The departments responsible for the teaching of these blocks were Anatomy, Physiology, Medicine, and Surgery, and others to a lesser extent as necessary. Biochemistry was also presented in first year as a separate subject, but was integrated with the system blocks throughout the year. Other subjects introduced in first year were: Cellular (General) Pathology, Human Behaviour, Growth and Development, and Introductory Microbiology with Immunology. Other system blocks included short courses in Blood, the Endocrine System, and Traumatic Surgery. Students attended classes in the Tupper Building, and on the wards for an introduction to clinical training. Students did not begin the Elective Program until the second and third semesters of first year.[107] An overall view of the new curriculum from first through fourth year is contained in graphic sheets in Appendix Twenty-Five.

The differences between the old and new approaches to

the learning process were found mainly in the system block methods of integrated teaching which prevailed in the new curriculum from first through third years. Another new component was the clinical experience incorporated into each system block. However, in third year the time devoted to system blocks was diminished as students spent increasingly more time in direct patient contact. The designated system blocks and departmental instruction depended on the subject matter for each year, the sequence of which was decided by the Committee on Medical Education with advice from the sub-committees and planning groups. Previously, under the old curriculum students studied topics according to specialties and much of the teaching was not correlated with whole body systems.

In the fourth and fifth years students were immersed in the clinical environment. In 1970 the clinical clerkship (fourth year) was revised to include a twelve-month clerkship with one-month vacation. Students were allowed a two-month elective that would allow them to spend two months to pursue a clinical experience of their choice. Previous to this fourth year was eight months in duration with no opportunity for elective experiences.

The fifth year remained unchanged in that it was still a twelve-month rotating internship, which remained under

control of the Medical School. The majority of the intern appointments were at the Victoria General Hospital in Halifax, or at the Saint John General Hospital. Each intern rotation comprised of four months in Medicine, four months in Surgery, two months on Pediatrics and two months in Obstetrics. In its calendar, the Medical School assured applicants that the year of internship at Dalhousie was accepted towards post-graduate training in Great Britain and Canada and was accepted by the Canadian Medical Association.[108] A comparison of the new and old curriculum is also contained in Appendix Twenty-Six.

Summary

The years between 1960 and 1967 saw a great transformation in medical education, not only at Dalhousie, but also in other parts of North America. The philosophy by which medical educators developed and implemented curriculum revision was influenced by the increase in medical knowledge, technology, increased communication between institutions, and the subsequent increase in specialization, which prevailed and seized the medical education movement. The curriculum was revamped from the two plus two system of basic sciences preceding clinical sciences to an integrated block system with the emphasis on student-centred not

teacher-centred learning. These changes represented the most dramatic curriculum revision Dalhousie Medical School had experienced since the Flexner Report of 1910.

1.Minutes Faculty of Medicine (hereafter FOM), March 17, 849.

2.P.B. Waite, *The Lives of Dalhousie, Volume II*. Montreal-Kingston: McGill-Queen's University Press, 1998, 246.

3.Dalhousie University Archives (hereafter DUA) Notes on Faculty Minutes, B419, March 28, 1962, 2.

4.B. Barzansky and N. Gevitz (ed.), *Beyond Flexner: Medical Education in the Twentieth Century*. New York: Greenwood Press, 1992, 31.

5.DUA Notes on Faculty Minutes, B418, May 5, 1961, 3-4.

6.Royal Commission on Health Services: Medical Education in Canada. Ottawa: Queen's Printer, 1965, 476. Sometimes referred to as the Hall Report by Emmett M. Hall. The inquiry into medical education was conducted by a committee chaired by J.A. McFarlane.

7.Minutes Faculty Council, May 9, 1964, 1236.)

8.Dr. John Szerb, interview by author, Halifax, Nova Scotia, December 16, 1999.

9.Brief to the Royal Commission on Health Services from Dalhousie University, Halifax, Nova Scotia, October 1961, 10. Presented to the Commission by Drs. A. Kerr, C. Stewart, J. McLean, and H. Hicks.

10.Ibid.

11.Ibid., 91.

12.Ibid.

13.Minutes FOM, August 30, 1961, 781.

14.Minutes Faculty Council, November 27, 1961, 1123.

15.Ibid.

16.Minutes Faculty Council, March 15, 1963, 1177.

17.Minutes FOM, May 5, 1961, 772.

18.Dr. John Szerb, interview by author, Halifax, Nova Scotia, December 16, 1999.

19.DUA Faculty of Medicine, B418, Memorandum to Faculty, February 16, 1959.

20.Minutes Faculty Council, February 18, 1964, 1224.

21.Minutes FOM, May 9, 1966, 964.

22.DUA Notes on Faculty Minutes, B418, March 20, 1959, 8.

23.Minutes FOM, August 29, 1962, 801.

24.Ibid., May 13, 1963, 832.

25.Ibid., November 18, 1960, 742.

26.Ibid.

27.DUA Notes Faculty Minutes, B418, February 11, 1960, 6.

28.Minutes Faculty of Medicine, March 19, 1963, 810.

29.Minutes Faculty Council, June 6, 1963 1196.

30.Ibid., August 27, 1963, 1196.

31.Dr. J. Szerb, interview by author, Halifax, Nova Scotia, December 16, 1999.

32.Minutes Faculty Council, June 6, 1963, 1196.

33.Ibid., December 13, 1962, 1174.

34.Ibid., February 4, 1964, 1215.

35.Ibid., December 9, 1963, 1214.

36.Ibid., February 18, 1964, 1221.

37.Minutes Faculty of Medicine, march 17, 1964, 839.

38.Minutes Faculty Council, March 16, 1964, 1225.

39.DUA Committee on Medical Education Correspondence, B326, Stewart to Josenhans, April 6, 1964.

40.Minutes Special Committee on Medical Education, March 30, 1964.

41.DUA Committee on Medical Education Correspondence, B328, Josenhans to Miller January 12, 1966.

42.Dr. G.R. Langley, interview by author, Halifax, Nova Scotia, December 10, 1999.

43.Ibid.

44.DUA Committee on Medical Education Correspondence, B328, Josenhans to Stewart, March 17, 1966.

45.Ibid., Stewart to Miller March 21, 1966.

46.Minutes FOM, December 10, 1963, 837.

47.Minutes FOM, March 1, 1966, 933.

48.DUA Committee on Medical Education Correspondence, B326, Stewart to Josenhans December 22, 1964.

49.DUA Accreditation 1966, B210, The Survey Report of 1966, 22. This survey was conducted by Drs. H. English (chairman), T.W. Fyles, R.W. Begg, J.W. McLeod.

50.Minutes Faculty of Medicine, July 22, 1965, 916.

51.DUA Special Committee on Medical Education, B326, Notes on the Minutes Special Committee on Medical Education, July 7, 1964.

52.Minutes Faculty Council, February 22, 1966, 1307.

53.Ibid.

54.Ibid.

55.DUA Calendar, Faculty of Medicine 1967-68, 279.)

56.Minutes FOM, March 17, 1964, 840.

57.Ibid., 848.

58.Ibid., September 2, 1965, 921.

59.Minutes FOM, June 27, 1967, 1014.

60.Minutes Faculty Council, March 3, 1966, 1312.

61.This Report was contained in Minutes FOM, February 23, 1966.

62.Minutes Faculty Council, March 10, 1966, 1315.

63.Ibid., 1313.

64.Minutes FOM, February 23, 1966, 929.

65.Ibid.

66.Ibid.

67.Final Report of the Special Committee on Medical Education 1966, p6. This report was first submitted to the Faculty in June 1966 and approved by the Faculty at a meeting on November 10, 1966, 6. See Faculty Minutes, November 10, 1966, 977.

68.Ibid., 7.

69.Ibid., 8.

70.Final Report of the Special Committee on Medical Education 1966, p22. Approved by faculty on November 10, 1966, see Minutes 977.

71.Ibid., 1.

72.Ibid.

73.Ibid., 11.

74.Ibid., 18.

75.Minutes FOM, November 10, 1966, 977.

76.DUA, B333, Brochure Committee on Medical Education.

77.Minutes FOM, March 19, 1963, 811.

78.DUA Accreditation Survey Report 1966, B210.

79.Minutes FOM, October 27, 1966, 965.

80.Ibid., August 30, 1966, 1023.

81.At a faculty meeting on March 14, 1968, seventeen months after the survey visit, the faculty considered the recommendations of the accreditation team. Excerpt from the Survey Report 1966, p3. contained in the minutes.

82.DUA Survey Report, B210, 21.

83.Ibid., 4.

84.Ibid., 21.

85.Ibid.

86.Ibid., 5.

87.Ibid.

88.Ibid., 22.

89.Ibid.

90.Minutes Faculty Council, June 27, 1966, 1437.

91.DUA Committee on Medical Education Correspondence, B330, Stewart to Robinson, Chairman of the Committee on Medical Education, January 31, 1967.

92.Report of the Committee on Medical Education, June 20, 1967, p2. included in the Minutes Faculty of Medicine, August 30, 1967, 1020.

93.Ibid., 4-5.

94.Report of the Committee on Medical Education, February 29, 1968, contained in the Minutes of the Faculty of Medicine, May 13, 1968, 1050.

95.Minutes Faculty Council, August 29, 1967, 1445.

96.DUA Faculty of Medicine Calendar 1968-69, 25.

97.Ibid., 1969-70, 17.

98.Minutes FOM, May 13, 1968, 1053-54. The first year curriculum as proposed by the Committee on Medical Education was approved.

99.Ibid., March 14, 1968, 1050. Committee on Medical Education Report to the Faculty, February 29, 1968.

100.DUA Faculty of Medicine Calendar 1969-70, 17.

101.Ibid.

102.DUA Committee on Medical Education, B333, Committee on Medical Education Report of February 29, 1968, 4.

103.DUA Committee on Medical Education, B333.

104.Ibid., Committee on Medical Education Supplementary Report March 28, 1968.

105.Ibid., 2.

106.Ibid.

107.DUA Faculty of Medicine Calendar 1969-70, 18-19.

108.Ibid.,19.

CHAPTER 7

THE FINALE

The Tupper Building was completed in 1967 as a tribute to Sir Charles Tupper, a Father of Confederation, the first President of the Canadian Medical Association, and one of the founders of Dalhousie University in 1863.[1] The building was the major contribution which Stewart made to the Medical School. He tirelessly campaigned for funds to build the structure since he first developed his idea in 1962 to seek funds from the $100 million Centennial Fund which Prime Minister Diefenbaker had announced would be provided for the provinces to celebrate Canada's centennial year. After some delays in the summer of 1967 the official opening of the building took place on July 14, 1967 and included such distinguished guests as the Queen Mother, Prime Minister Lester B. Pearson, and Premier Robert Stanfield of Nova Scotia.

The building was sixteen stories high, the highest in Halifax at that time, and housed six basic science departments. The 'link' was a two story structure which

connected the Tupper Building to the Clinical Research Centre (formerly the Public Health Clinic). The link contained seminar rooms, lecture theatres, study rooms and an audiovisual centre. The new Kellogg Health Science Library was incorporated into the ground floor of the Tupper Building. Appendix Twenty-Seven contains a map of the medical campus, Carleton Campus, in 1966 and depicts the site of the proposed Tupper Building.

Funds for the construction of the new Tupper building came from the Government of Canada and were matched by the Province of Nova Scotia, for a total of five million dollars. The W.K. Kellogg Foundation donated $420,000.00 for the construction of the new library which was built on the same location as the old medical library. The Dalhousie Medical Alumni contributed $250,000.00. One of the largest portions of funding was acquired through the Health Resources Fund (federal funding), and totalled $8,705,000.00, part through the Atlantic Provinces grant, and part from the per capita share of grants from the Atlantic Provinces.[2] The original estimate of the cost of the building in 1962 was five million dollars, although by 1964 that had risen to $7.5 million. By the time the structure was finished it had cost thirteen million dollars. The furniture and equipment cost an additional five million.

The total donations for the building were $15,250,000.00, which left Dalhousie with a substantial bill of $2.75 million to cover the remaining costs of the building.[3]

The old Medical Science Building became the home of the School of Pharmacy and was named after its first dean in 1925, George Arnold Burbidge. Today, the original home of the Medical School, the Forrest Building, houses various schools of the Faculty of Health Professions including nursing, and physio- and occupational therapy. The School of Dentistry had moved into its own quarters in 1958 - a project which left the university supporting sixty-two percent of the total cost of the building of approximately one million dollars.[4]

Finances

The Forrest Building, constructed in 1886, was built for a student enrolment of fifty medical students and ten dental students. With the new Tupper Building the Medical School could enrol ninety-six students in Medicine, while the School of Dentistry eventually enrolled sixty-four. This meant that with the opening of the Tupper Building the expectation was that the four Atlantic Provinces would have to increase their financial support accordingly. This financial support was based on the percentage distribution

of enrolment of students from the four Atlantic Provinces. At that time 49.6% came from Nova Scotia, 22.6% from New Brunswick, 20.5% from Newfoundland, and seven percent from Prince Edward Island. The grants to the Medical School in 1966-67 amounted to $1,468,000.00, although this was $122,000.00 less than was requested at that time. In 1967-68 the Medical School requested an increase of $624,700.00 which brought the new grant to a sum of $2,102,700.00.[5] The budget for the Medical School was expected to be $2,781,000.00 by 1968-69 and would rise to $3,356,700.00 by the year 1970.

There were a number of events which occurred in the years 1965-66 which affected the expectations and plans the Medical School would incorporate into its budget requirements. The first, was the announcement by the Canadian Government to institute a universal Medicare Plan. In a submission to the Premiers of the Atlantic Provinces from Dalhousie University on November 22, 1965, it was reported that when the Medicare Plan came into effect in the near future it made "it absolutely essential that medical schools be enlarged and provided with adequate operating budgets."[6] The implication was that with universal health care and not a pay-for-service system, more people would be seeking the services of physicians which meant that more

physicians would have to graduate to keep up with the inevitable demand for services. Consequently, with the increase in enrolment, there was a need for an increase in staff and faculty members. Hence, the Medical School would need increased grants from the provinces to keep up with the demand for new staff. Another spinoff from the introduction of Medicare was the change in the method in which clinicians were paid for their patient-care services. It was decided that the money derived from patient care and paid by Medicare would be pooled by the individual departments. That is, each department would act as a group practice. From those funds, seventy-five percent was to be paid to the practising physicians of the department, while the other twenty-five would be pooled and used for the department to provide for additional staff, and to develop teaching and research programs.[7] The pooled money could also be used for travelling to meetings, clinical research equipment or assistants, and other staff as needed. Considering this, the introduction of universal medical care changed the environment in which medicine was practised and opened avenues for the clinical departments to expand in both clinical care and research. Until the advent of Medicare, other sources of funds which were available for teaching, residency salaries, and research were from the university

budget, research grants, the Hospital Insurance Plan, private practice, and other miscellaneous funding agreements.[8]

The second event during this time was the submission of the Bladen Report (1965) to the Federal Government which made recommendations for financing higher education in Canada. The appointment of the Bladen Commission in 1964 was implemented by the Canadian Universities Foundation "to make an estimate of the financial needs of the Canadian universities and to recommend means of applying them."[9] The Report not only examined university finances, but also the finances and needs of all post-secondary institutions, and those of enrolled and potential students. Specific recommendations included raising the per-capita grant given to the provinces by the federal government to five dollars for 1965-66 which was to be increased by one dollar each year after until revisions were agreed upon by the federal and provincial governments. These grants were to be distributed by way of a 'weighting system' and applied by the universities within each province. In addition to this funding, the Commission recommended that a Capital Grants Fund be established into which five dollars per head of the Canadian population would be deposited. These grants would be made to the provinces for the universities for eligible

capital expenditures.

Monies allowed under federal research programs would also be increased. The grants afforded to the National Research Council were to be increased to forty million dollars in 1966-67 and were to be further increased by twenty percent each year after. The Medical Research Council was to receive twenty million dollars in grant money and this amount would be increased twenty percent per year each year after.[10]

In addition to making its own recommendations, the Commission endorsed the recommendations of the Hall Commission of 1965. The Hall Commission on Health Services suggested a capital fund for "expansion of existing facilities and the development of new facilities for medicine, dentistry, and nursing."[11] In addition, the Hall Commission recommended that a fund be established to finance the construction of teaching hospitals which would included facilities for clinical research.

Bladen's recommendations to the provinces included the establishment of a method of determining university operating and capital grants which would give the universities the opportunity for "rational forward planning."[12] Furthermore, the Commission thought that the universities should set up a "Grants Commission," with a

high level of academic representation which would advise the government on the appropriate amounts needed for the universities.[13] When determining the grants, the Grants Commission would use a weighting formula based on the category of student. For instance, first and second-year students would count as one; second, third, and fourth-year students would count as two; graduate students would count as five. The Medical School, in part, objected to this type of formula because it operated an undergraduate program, which faculty believed should be ranked higher than indicated by the Commission because of the higher costs of medical education. In consideration of this, the Medical School in its report to the provinces requested that the "Premiers approve in principle the establishment of a formula which will assign weighting to students whose education is more costly."[14] The submission by the university suggested a weighting of five for medical and dental students, in accordance with that given to doctoral students.

It may never be known whether it was the Report of the Royal Commission on Higher Education in New Brunswick (Deustch Report) or pressure exerted by Hicks, McLean, and Stewart which resulted in New Brunswick increasing its grant from $30,000.00 in 1955 to the recommended $60,000.00 in

1962-63.[15] Hicks reported to Stewart on January 3, 1964, that he had received a cheque from New Brunswick for $90,000.00 - $30,000.00 for 1962 and $60,000.00 for 1963 which brought "their contribution up to $60,000 per year" as recommended by the Deustch Commission.[16] However, the Deustch Report of 1962 also strongly recommended that the New Brunswick government continue to support the Medical School at Dalhousie "with the degree of support to be evolved in consultation with the other participating provincial governments and in appropriate relation to New Brunswick's use" of the School.[17] This in itself was good news for the Medical School which had been pressuring New Brunswick for nearly a decade to increase its grants so that they were more in accordance with those of the three other Atlantic Provinces. Consequently, by 1966-67 New Brunswick was contributing $150,000.00 to the Medical School. Appendix Twenty-Eight lists the grants for 1966-67 for the four Atlantic Provinces.

The third event was the establishment of the Health Resources Fund, set up by the federal government to provide funds for the development of facilities for medicine, dentistry, and nursing. Prime Minister Lester Pearson set up this fund of $500 million for the "construction of Medical Schools, teaching hospitals, and other educational

and research buildings.[18] Dalhousie applied for funding and was successful in receiving over eight million dollars for the construction of the Sir Charles Tupper Building.

Faculty and Students

The Medical School in the late 1960's had grown exponentially since Dr. Grant had been appointed dean in 1932. The buildings in 1923 housed accommodations for fifty medical and ten dental students. This number rose after World War II to fifty-eight in 1947. Eventually, the School admitted seventy-two students when the Forrest Building was vacated by Law and Dentistry. The Annual Report of 1967-68 stated that the School had accepted eighty-five students from the Atlantic Provinces and nine non-resident students plus one who required to be re-admitted after supplemental exams - a total of 96 students for the academic year 1968-69.[19] The School could accommodate this increase in student enrolment because of the new Tupper Building. Nevertheless, in order to accommodate successfully the increased number of students in the program, the Medical School had to receive increased grants from the provinces in order to hire the extra staff needed to teach with the increased class size. The Calendar of 1968 required entering students to complete fifteen courses after Junior Matriculation of which nine

were compulsory. These included two in English, three in Chemistry, including quantitative or organic; two in Biology including Comparative Anatomy; one class each in Physics and Mathematics. The remaining six could be taken from either a Science or Arts specialization. The students were expected to "acquire a broad background in the humanities and social sciences and especially to develop the greatest possible proficiency in self-expression, both written and oral."[20] If a student entered Medicine with a Bachelor's degree (these students comprised sixty to seventy percent of incoming students at that time), they were to at least have taken the nine compulsory subjects regardless of the specialization.[21] In the late 1950's the Medical School experienced a decrease in the number of students applying for Medicine. In 1957 only forty-one students applied. However, by June 1968, 158 students had applied for that academic year of which ninety-six were accepted.[22]

The increase in staff was also apparent from the Pre-Survey material provided by Stewart in 1966. Since he had assumed the role of dean in 1954, there had been two Assistant Deans appointed, Dr. L. B. Macpherson (Biochemistry), and Dr. L. C. Steeves (Medicine). In addition there were two administrative assistants, one dealing with the business affairs of the faculty, Mr. George

J. Moore, and one with faculty and student affairs, Miss Barbara Blauvelt. The number of staff positions had also increased from thirty-one full-time faculty in 1957, to seventy-six in 1967, of which eleven vacancies were to be filled.[23] The pre-clinical departments increased their staff from seventeen to forty-four between 1957 and 1966. Just prior to the opening of the Tupper Building there were nine vacancies in these departments which were to be filled before the increase in students in 1967. The clinical departments increased their staff by twelve and in 1967 had a total of thirty-two full-time faculty in these areas.[24] In 1968 the Medical School comprised seventeen departments and two divisions - the Postgraduate Division and the Division of General Practice Preceptorship.

Thematic Summary

The analysis of this thesis is guided by four major philosophical concepts: the role of the teacher; subject compartmentalization versus integration; skills training versus education; and, the notion of which knowledge is deemed to be valuable. Although these themes have been dealt with individually, over the course of writing this thesis it became clear that they were not mutually exclusive, but intertwined in a symbiotic relationship - one

depending on the other in relation to change. For instance, it may be impossible to consider the notion of 'compartmentalization versus integration' without considering the effect that this has on the 'role of the teacher'. Other concepts which may be discussed such as critical thinking, technology, and research have been woven into the thematic analysis where appropriate.

Role of the Teacher

The role of the teacher has been defined previously as being either teacher-centred or student-centred. In the teacher-centred curriculum the teachers are the experts who transmit their knowledge to passive students. Accordingly, the students accept little responsibility for directing his or her education. In the student-centred curriculum the student plays a central role in determining his/her learning needs and seeking the knowledge to answer set problems or questions. The teacher's role is more of a facilitator in the learning process rather than an expert. These definitions may be viewed as being at either end of a continuum, and the role of the teacher/student may reside somewhere between the two extremes.

At Dalhousie in 1948 there were very few full-time teachers. All heads of departments and assistant professors in the basic science departments were full-time. However,

in the clinical departments, only Medicine and Psychiatry had salaried heads of departments. These teachers were, for the most part, expert teachers in that they believed that they possessed knowledge in a particular field and that their role was to transmit this knowledge to students. The didactic method of teaching which prevailed at Dalhousie at that time supported this notion. On the other hand, students were expected to learn a considerable amount of material in a short time-span. For example, in the Histology course, they were expected to examine, draw, and remember between 100 and 150 slides per year. In Pathology the method of student learning was similar, and students were expected to memorize up to 200 slides in the lab and observe 150 autopsies. This is an indication of the extent to which students were considered passive observers rather than active participants in their learning and the degree to which memorization of facts played a pivotal role in student learning.

Although the teacher-directed curriculum dominated the curriculum at Dalhousie, there were teachers who believed that students should learn by other methods than purely memorization of facts. Dr. Mainland aspired to "help students acquire a method of study rather than to accumulate facts" and to conduct practical examinations on themselves

as innovative teaching methods.[25]

Innovative teaching techniques and non-traditional roles assumed by teachers were also the result of faculty experiencing alternate teaching methods at other institutions. Dr. Stewart, after finishing his degree in public health at Johns Hopkins in 1952, incorporated case-based learning in his classes. Stewart claimed that he constructed 'deceptively simple cases' for students to discuss in small group seminars. This case-based method served as an alternate teaching method and was used in addition to the 'normal' lecture format. Under these circumstances, Mainland and Stewart assumed the roles of facilitator or demonstrator rather than expert teacher - not a role normally expected of or assumed by teachers at Dalhousie in 1948.

Shortly after World War II, Medicine was caught up in an exponential growth of research, technology, and knowledge. These factors changed the role of the teacher in both basic science and clinical medicine. Teachers in the clinical areas were experiencing the effects of the benefits of advancing technology and research in patient care, and were expected to become proficient in these new technologies and in conducting research. What emerged was a full-time research clinician teacher, replacing the community-based

practising physicians, who had served the schools on a volunteer basis up to that point. The 'job description' of clinical teachers may have changed, the role of the student as a passive learner had not. The students were still passive observers who accompanied the clinicians on 'ward walks' in third year and, in general, were not permitted to examine each other or patients. In 1947, although fourth-year students were assigned to clinical rotations, and were permitted to perform physical examinations, they were still responsible for attending lectures - this practice would be considerably decreased when Dalhousie introduced the full clinical clerkship in the late 1960's.

As research funding increasingly became available, the role of the teacher also changed to that of administrator of grants and supervisor of projects. Funds received from outside agencies permitted faculty to expand research and hire students to assist him/her or to pursue individual interests during the summer breaks. Dr. Weld received such a grant in 1948 from the National Research Council which permitted him to hire a first year medical student and other summer workers to work on research problems.

In the late 1940's, Dalhousie, as well as most other schools in North America had arrived at the conclusion that the growth of knowledge in medicine had made it impossible

to teach students everything they needed to know about Medicine. The accreditation visit by Zapffe and Anderson in 1947 and their subsequent report cemented this notion at Dalhousie. The Report recommended that didactic teaching be reduced significantly in the curriculum. In particular, class clinics were to be replaced in fourth year by small group bedside teaching. This recommendation changed the method by which clinical teachers were accustomed to teaching and saw their role change from lecturers to demonstrators and mentors. However, although this recommendation was accepted by the faculty in March 1948, clinical teachers refused to implement small group teaching until adequate staff were hired.

In the early 1960's the notion that teachers and students could no longer know all the available medical knowledge forced schools to evaluate how students were taught as opposed to what was taught. This implied changing the method in which students were taught from a teacher-centred expert knowledge model to a student-centred self-directed model. Consequently, medical teachers examined their own roles in relation to the new model. In addressing the issues of changing teacher roles, Dalhousie endeavoured to educate their faculty in pedagogical theory and methods. In addition, other universities in the United States offered

pedagogical courses for medical teachers. A brochure from the University of Illinois stated that "with increasing frequency the call is heard for some systematic instruction of medical teachers in educational theory and practice."[26]

At Dalhousie the change from a teacher-centred to student-centred curriculum was met with some resistance. The Final Report of the Special Committee on medical Education (1966) suggested that the curriculum should be more student-focussed. The Report indicated that the curriculum at Dalhousie at that time was too concerned with what the teacher has to give the student and not what the student actually learned as a result of the learning process. In response to this some faculty members rebutted this idea and maintained that "the curriculum should be concerned with what the teacher has to give the student."[27] Evidently, not all medical teachers at Dalhousie were convinced that students could direct their own learning. Notwithstanding, from 1947 to 1967 students increasingly gained more responsibility for their own learning. By 1968 it was the belief of most faculty that the student's responsibility for his/her learning should be made clear and the material should be presented to enable students to learn it in an efficient manner.

The view of the role of the teacher as an expert also

changed in the 1960's. Due to integration of subjects and interdepartmental teaching, it was thought that the teaching of certain subjects should be done by the most suitable person, who might not be the expert in the field. In part, this represented the new idea that the emphasis in teaching medical students should be on the process of problem-solving, data analysis, and critical thinking exercises. Hence, this process did not necessitate an expert teacher, rather it required a person who had some knowledge of a particular area, but who could assist students through various medical problems of a diverse nature. This in itself proved to be a threatening concept which challenged the autonomy and authority of the expert teacher.

As medical knowledge became more complex so did the structure of the Medical School. Those department heads who were responsible for a small number of faculty members, saw their role change to become mentors, teachers, administrators, and researchers with a increasingly large number of assistants, faculty, and students assigned to their departments. For instance, Stewart's role as dean became much more complex which resulted in him resigning from his position as Head of Preventive Medicine in 1962. Other heads of departments declared that if they were not allowed to hire assistants, their teaching would be severely

jeopardized.

The changing role of the teacher from 1947 to 1967 at Dalhousie Medical School was influenced by several intertwining factors. The role teachers played in the education of medical students was influenced by the model of curriculum followed, the degree to which faculty were involved in research and their reliance on outside funding, the number of teachers available to teach, and more significantly by the growth of knowledge and technology which occurred in medicine after World War II.

Subject Compartmentalization versus Integration

In Medicine, this notion represents the idea that subjects can be taught individually by specific departments as opposed to being integrated between clinical medicine and basic science under the auspices of several departments, which are responsible for a given topic. The traditional curriculum separated courses by departments, such as Anatomy, Pathology or Biochemistry, while the more innovative curriculum models adhered to the notion that students were better taught by linking together basic science and clinical medicine in an integrated format. That is, the basic sciences should be taught in relation to the clinical applications for which they could be later utilized in clinical medicine.

Early endeavours to assimilate clinical medicine and basic science were attempted by Dean Grant in 1947, when he awarded appointments to basic science teachers in Anatomy, Biochemistry, and Pharmacology as consultants to the Victoria General Hospital. At that time Grant believed that this would improve the relationship between the Medical School and the Hospital, and improve pre-clinical teaching. Whether this led to an improvement in the relationships between the School and the Hospital, or to improvements in teaching is unclear. However, the basic science curriculum at Dalhousie at that time was considered traditional and for the most part discipline-based. That is, each department was responsible for its own teaching (i.e Anatomy was taught by the Anatomy department), and students took several basic science courses simultaneously throughout the academic year.

Although disciplined-based teaching was generally utilized throughout the curriculum, there were some exceptions. Dr. Whillans of Pharmacology made an effort to make his lecture and laboratory work relevant to clinical practice by allowing students to conduct experiments on themselves. To this end, Whillans implemented his laboratory work to enable students to experience as many drugs as possible under careful supervision.

Other courses at this time that attempted to integrate

clinical and basic science included Dr. Jones' course in Psychiatry. Jones, who believed that Psychiatry permeated every facet of Medicine, was known to conduct patient interviews in the large lecture theatres or record his interviews with patients so that students could witness the interview. Additionally, in third year Psychiatry students were given the opportunity to interview patients.

Other faculty members willing to introduce clinical material in the early years were met with resistance from colleagues. Dr. Holland of Medicine reported difficulties in trying to get cooperation between departments, but believed that there was a general consensus among faculty that it was a good idea to introduce students to clinical medicine in the first years of the program. In addition, the lack of cooperation between departments and the minimal integration of topics also had a significant effect on the overlapping of topics and did not ensure complete coverage of certain topics.

It is clear from the evidence that individual faculty members attempted to integrate some facets of basic science with clinical medicine, however, these attempts may have been isolated. In 1948, the students requested more cooperation between clinical and pre-clinical departments and more emphasis in the first year placed on medical

matters while minimizing those lectures not directly related to medicine.

The curriculum change of 1948 which was implemented after the Zapffe Report (1947) took into consideration the integration of courses and the early introduction of clinical medicine in first and second years. In the second year the faculty introduced Physical Diagnosis and Introduction to Clinical Medicine and Clinical Surgery. Other reports claim that a course entitled Medical Practice was implemented in first year, but this course was not evident in the 1948 Calendar.

Although in the late 1940's Dalhousie attempted to introduce integrated courses to its program, it was not until the curriculum change of 1955 that Dalhousie made substantial changes to its curriculum which involved integration of courses. These courses were entitled Interdepartmental Courses and were modelled after the [Case] Western Reserve integrated curriculum which had been implemented in 1952. At Dalhousie, courses were integrated to allow students to be introduced to clinical medicine early in the medical program in order to make basic science more relevant to clinical medicine. Although, some of the content of these courses was contained in the curriculum previously, the administration of the courses changed. The

responsibility of these courses lay with an inter-departmental committee, chaired by a faculty member who acted as a liaison between the various departments involved. Included in these courses was Clinical Medical Science which was introduced to students in first year and continued until the end of third year. Other courses included Therapeutics, Methods of Examination, Family Care Program, and Co-operative Clinical Courses.

In 1957, Stewart reviewed the curriculum report of 1955 and made additions based on the outcome of some of the changes. With reference to the Interdepartmental Courses, he reported that almost all had been implemented, except for the Family Care Program. However, these courses had not run smoothly and their viability was threatened because of the increased workload caused by their administration and management. Therefore, it is evident that although the willingness might have been present at Dalhousie at this time to implement integrated courses, there were problems with their management due to insufficient numbers of faculty members to cope with the added workload.

By the early 1960's the model of the integrated curriculum had been well-established in many Medical Schools in the United States. Dalhousie's attempt to implement the Interdepartmental Courses in 1955 was an indication of its

support for this type of curriculum model. In an effort to keep these courses in the curriculum, Dalhousie made incremental changes to its fourth-year curriculum in the early 1960's. At this time the efforts to implement the course successfully was thwarted by the lack of faculty members trained in both basic and clinical sciences.

By 1968, Dalhousie's teaching method for the integrated courses had changed to encompass the notion of system block teaching. Although the 'block' system had been used in the basic science curricula in the United States in 1940, Dalhousie used this model of curricula and supplemented it with an integrated systems method - meaning a particular body system was taught in a block format. The responsibility of these courses was shared by a planning committee made up of various departments depending on the body system and the material required. Members from each of the departments shared in the teaching load. This type of teaching was in addition to the clinical experiences aimed at introducing the patient early in the students education. As the students advanced through the medical program the system block teaching was diminished and the amount of time spent in the clinical areas in direct patient contact was increased.

It appears that over the time of this study, Dalhousie

attempted on several occasions to implement some type of integration into the curriculum. However, in the 1950's, due to lack of faculty to manage and teach the program these efforts became increasingly difficult. Nonetheless, by the late 1960's when the School moved into the Tupper Building, Dalhousie had acquired enough staff that it could better implement an integrated curriculum.

Skills Training versus Education

The differences between skills training and education have been documented by Calman and Downie[28] and Peters.[29] Briefly, the literature contends that one can be trained to perform a certain skill, however, a person may lack an overall vision about what he/she is doing within the broader conception of life. Furthermore, training is linked to certain skills which may be narrowly based, while education develops a certain attitude of mind in which a change in views has been acquired because of what one has learned. In recent years, the public has been critical of Medicine for producing physicians who are highly trained technicians, but who lack an overall vision of their role in society. This can be viewed as severe criticism towards a profession whose fundamental ideal is the preservation of life.

The biomedical revolution of the late nineteenth century shifted the emphasis in Medicine to a scientific

paradigm. Increased funding for research and technology necessitated the advent of clinician scientists who were increasingly becoming technologists and researchers to keep up with the fast pace of medical scientific/technical knowledge. Prior to this, physicians were educated men who studied the Humanities and Classics, and learned their skills by apprenticing with other respected senior physicians. At Dalhousie, the Humanities were a part of the curriculum in the Preventive Medicine prior to 1947 when Dr. Grant conducted a course in the History of Medicine. When Dr. Stewart assumed some of the teaching in this department, he included thirty-three lectures in the History and Philosophy of Medicine in the first year Preventive Medicine course.

In 1953, at the First World Conference on Medical Education there were laments that there was some "poverty of mind in the finished medical graduate" and this was blamed on the lack of general education in the Humanities, Literature, Language, History and other social science subjects.[30] Similar complaints were evident at Dalhousie when the Provincial Medical Board complained that students could not write properly. One of the most outspoken critics of the narrow scientific education of students was Dr. Atlee, who spent his entire career trying to educate

students in the wider aspects of life, and arguing incessantly for the Humanities to be included in the curriculum.

One of the main thrusts for the curriculum change in 1955 was to find time in the curriculum to introduce the Humanities in the curriculum. However, it was evident that after two reviews of the curriculum and two accreditation reports this had not been accomplished. In fact, it appeared from the evidence that the course introduced by Dr. Grant was being revised and improved, and was to be offered as a lecture series not a compulsory course. After Atlee's retirement, Dr. Murphy persisted in trying to convince the faculty of the importance of these courses at Dalhousie. However, in March of 1963 the future of these courses at the School was still undecided.

In addition to trying to implement Humanities courses in the curriculum, it was also proposed that an extra year be added to the pre-medical requirements. This extra year was to comprise courses in the Humanities. A document from the American Medical Association first published in 1913 indicated that medical students should have a good general education which included courses in science and the Humanities. Atlee on many occasions criticized the pre-medical requirements as aimed at specializing minds that

received further specialization once they entered Medical School

Traditionally, the meaning of being an 'educated person' was the idea that one had received a broad education which necessarily included the Humanities and the Classics. Although the premedical requirements were expanded to include additional courses in the Humanities, from 1947 Dalhousie struggled to include them in its curriculum. Furthermore, as of the mid-1960's the faculty was still contemplating how and when this was to be achieved. The fact that these courses were added to the pre-medical requirements might have been an indication of the influence the American Medical Association and the Association of American Medical Colleges had on Canadian medical education, since the same requirements were not made explicit in the accreditation of the School.

The scientific paradigm which had gripped Medicine in the early part of the century had become a new cornerstone which was cemented firmly in place. The reasons for this could be varied. Research, which had become popular because of advancing technology, increased funding, and public demand had made science a necessary part of the Medical School domain. Secondly, there appeared to be few faculty who were able (or willing) to incorporate the Humanities in

their courses, and outside teaching from other faculties could not fit into an already congested curriculum.

Which Knowledge Was Deemed 'Valuable'?

The curriculum may be thought of as a collection of knowledge which is to be transmitted to individuals by teachers, and can be guided by political, educational, cultural, and public opinion at a given time. Consequently, the knowledge which is claimed to be important is the accumulation of the opinions of these forces and is portrayed through what is included in the content of the curriculum. The above discussion concerning the Humanities in the curriculum can serve as one example of what determines knowledge to be valuable and included in the curriculum.

In 1957, when the Humanities had not yet been implemented in the curriculum at Dalhousie, Stewart decided that there was no hurry to fill the hours because of the extra load on the faculty with the change in curriculum. It is reasonable to infer that the same statement would not have been made concerning Medicine or Surgery. Likewise, Stewart announced that in relation to the unscheduled time, he felt it was more important to organize the "standard courses" (such as Medicine, Surgery, or Anatomy), before any progress could be made on the "special courses" (such as the

Humanities). It appeared that the important courses were the ones which were perceived to be directly related to Medicine. This ideal was also held by students who claimed on various occasions which courses they felt were superior to others. As reported by some faculty members students wished to take courses that they felt directly applied to Medicine and that the Humanities were not included in these courses. This may have also been a deciding factor why these courses were not organized in the curriculum more expediently.

It may be useful to examine the number of hours devoted to each subject as an indication of their relative importance in the curriculum. In 1947, in the first year, the majority of hours were allotted to Anatomy, Biochemistry, and Physiology. Using this criterion, the most important courses appear to be Pathology and Pharmacology, although Physiology and Biochemistry are also included. In the third year the most important courses appear to be Pathology with the introduction of Medicine, Surgery, and Psychiatry. With the curriculum change in 1948, clinical subjects were being introduced earlier in the curriculum and therefore it is assumed that these courses were growing in their importance. It was also evident that the accreditation team felt that clinical teaching should be

introduced earlier in the curriculum to replace some of the didactic lectures in Anatomy and Physiology. This appears to be an indication that clinical medicine was gaining in importance and challenging the Flexner ideal set in 1910 of the need for students to learn the scientific basis of medicine before being introduced to clinical medicine.

Also at this time the accreditation team suggested that class clinics be replaced by bedside teaching, a model begun at [Case] Western Reserve and at Johns Hopkins. Therefore, clinical teaching was increased. Of the areas which appeared most important was Surgery, followed by Medicine, Pediatrics and Gynaecology. The least time was spent in child care (immunization, well-baby clinics, and other sub-specialties such as urology, ophthalmology, and otolaryngology).

As the 1950's dawned it was realized that students were spending more time memorizing facts than learning about patient care. Consequently, there was an increasing awareness that students should be introduced to clinical aspects of medicine in the early years. This fact was not lost on the students at Dalhousie who asked for more attention to be given to the doctor-patient relationship. Although this request was not honoured when the curriculum was revised in 1955, the faculty did introduce a family care

program, an increase in time devoted to methods of examination, an increase in time allotted to clinical medicine in third year, and a full clinical clerkship with students spending the majority of time in the patient care setting. The clerkship was divided into four sections which included Medicine, Surgery, Obstetrics/Gynaecology and Pediatrics, and the Sub-specialties. Again the most time was spent in Medicine and Surgery.

By the early 1960's the realization had solidified that knowledge was growing at an exponential rate and that the medical curriculum could no longer cope with the growing demand to increase the content. Consequently, the philosophy of medical education switched its focus to encompass the ideal that it was not so much the content that mattered but how it was taught. Although this ideal permeated medical education, the major players in the curriculum were still Medicine and Surgery. It must be noted however, that most often these courses included all the major body systems (i.e. one could perform surgery on every part of the body and many of the chronic diseases involved more than one body system), and therefore more time was required to cover the material.

Between 1947 and 1967 the core subjects offered in the curriculum were maintained, but the focus of where and how

these were presented was changed to include more of a clinical emphasis earlier in the curriculum. In addition, even though it was acknowledged that students were placing too much emphasis on science and technology rather than the social aspects of medicine and the Humanities, this did not influence widespread changes in the curriculum towards the Humanities.

The reasons why certain knowledge was included in the curriculum were varied. First, students did not believe that certain types of knowledge, especially relating to Social Sciences and the Humanities were pertinent to their education as physicians. Instead, they believed that more patient contact, increased exposure to physicians treating patients, and practical experience on the wards, would better prepare them for medical practice - this was reinforced by the accrediting agencies. Secondly, before 1967 the faculty did not consist of members who could bridge the gap between clinical and basic sciences in a comprehensive manner. Third, the Medical Council of Canada examinations which students were required to pass consisted of Medicine, Surgery, Obstetrics and Gynaecology, Pathology and Bacteriology, Public Health and Preventive Medicine - Pediatrics and Psychiatry were introduced in the late 1960's and early 1970's. Moreover, it was not until the late

1960's that Dalhousie introduced a comprehensive examination, and knowledge, skills and attitude as part of the evaluation of medical students, which undoubtedly affected the knowledge base of the curriculum. In addition to these variables, biomedical advances in basic and clinical science affected the topics introduced in the curriculum. Medical discoveries which were seen as directly relating to better patient care, leading to increased health and a longer lifespan, had an effect on the pressure applied by the public to include certain knowledge in the education of physicians.

Conclusions

One of the aims of this thesis was to examine the stability and/or transformation of the curriculum at Dalhousie Medical School from 1947 to 1967. In doing so, two different types of changes were defined. The first term, incremental changes, refers to minor changes in the curriculum that are deemed to improve the present structure without transforming the underlying organizational features of the curriculum. On the other hand, a fundamental change transforms the underlying mission, objectives, and organization of the curriculum because of dissatisfaction with the present structure. In addition, the second goal

was to explore the reasons for the stability or changes, and to propose an explanation as to the barriers or facilitators within medical education of these transformations.

The curriculum at Dalhousie underwent two fundamental changes and several incremental changes in the time frame explored in this thesis. The change in the curriculum in 1948 was an incremental change. The basic tenet was to increase the number of hours devoted to clinical medicine. The semester structure was maintained while adding the amount of time devoted to the Introduction to Clinical Medicine and Clinical Surgery in first year, and doubling the time devoted to Therapeutics. This move did not change the overall structure of the curriculum nor was there a significant shift in underlying philosophy on the approach to teaching medical students. The number of lectures was reduced slightly to allow for more time to be spent on clinical subjects. However, in the curriculum change of 1955, there was a fundamental change in the structure of the curriculum whereby the organization of the curriculum underwent significant changes. For instance, the trimester system was introduced which permitted a very different examination schedule, in which students were tested on their knowledge after each trimester only on the courses that finished for that particular trimester. This significantly

reduced the amount of material students were required to learn for examinations. This shift was related to the underlying realization that students could not memorize all the material available to teach in the curriculum.

The second fundamental change occurred in 1968 when the structure of the curriculum was again changed. At this time, the methods by which students were being taught was challenged and the curriculum was changed to a more integrated curriculum using a system block method fashioned after Johns Hopkins and [Case] Western Reserve in the United States.

The incentives for stability and transformation are integral and involve both forces inside and outside the Medical School. The incentive for change in 1947 was a mixture of faculty dissatisfaction with the current curriculum, the length of term, and the awarding of the internship after fifth year. The accreditation report which followed provided guidance to Dalhousie concerning their choice of a new curriculum. Although the faculty initially felt that a drastic change was needed, the result was a juggling of hours to accommodate the introduction of clinical medicine. The barriers to significant change rested in the reluctance of many faculty members to give up their hours of teaching time, and the impossibility of

making certain changes because of the lack of staff and facilities. It was evident to the faculty that the lack of funding to Dalhousie at that time was a significant barrier to implementing many of the proposed changes. This financial barrier impeded the school's ability to hire staff and make renovations to the existing buildings to accommodate them.

In 1955 the incentive for the curriculum change came as a result of the recognition that Dalhousie Medical School had one of the lowest admission standards in North America. Accordingly, a committee was formed to study the premedical requirements. However, by the time the committee met this initial idea had expanded to include a study of the entire curriculum. The increase in communications, travel, and knowledge from research, together with new faculty members with different experiences and viewpoints produced a new ambience at Dalhousie. As a result a fundamental change occurred in the curriculum. However, due to increasing pressures to become more involved in research and pressures of implementing the new curriculum, some of the integrated courses were not fully implemented. Again, the contributing factors appeared to be the lack of facilities, lack of organization of the courses, and the lack of staff who had time or were willing to take on the burden of the

Interdepartmental Courses. Nonetheless, the impediment to hiring new staff was not only funding, but the lack of space to house them if they could have been hired.

By the time the 1960's arrived Dalhousie had bargained for more funding from the Atlantic Provinces, although the Medical School claimed that this was not enough to accommodate its growing expenditures. Upon receiving federal funding for the Tupper Building, and increased funding from the provinces, Dalhousie was able to hire new staff and move into larger facilities. Shortly thereafter, the School implemented a fundamental change to its teaching program, which included significantly more clinical teaching, and an integrated block system model of curriculum. In addition to this, the school was able to admit an increase in students in 1967 when the Tupper Building was completed.

The curriculum at Dalhousie in the period under study underwent many changes. During this time there were two decidedly fundamental changes, in addition to the many incremental changes. From the evidence, it is reasonable to assume that the curriculum was not often stable, but always undergoing some change to maintain a equilibrium which the school strived to maintain based on the wishes of faculty accreditation agencies, the public, and the students. These

changes were almost cyclical in nature. A fundamental change was followed by numerous incremental changes in order to adjust the curriculum to 'make it work' to the satisfaction of faculty and students. Fundamental changes for the time period always took place before or after an accreditation visit. Many faculty members believed that the accrediting agencies wielded a 'big stick' and the School complied to designated wishes. Others felt that the Medical Council of Canada examinations guided the curriculum of the School because the students would have to eventually pass these examinations in order to gain a license to practise medicine.

After exploring the evidence and compiling this story, there is still one central ruminative question that comes to mind. "What forces are responsible for the transformation of a curriculum within an institution?" To this question there is undoubtedly no simple answer. Nevertheless, there are a various options which have emerged during the writing of this thesis. These include physical resources of the school, funding, scientific advances, and adequate numbers of faculty to teach. However, in my opinion, Dale Dauphinee from McGill has summed up the answer to this question better than I, when he spoke of recent successes in medical education in Canada. He credited these successes to:

> individuals with ideas and vision, and equally important, a spirit of cooperation and purpose among national bodies and universities that has allowed the ideas and visions to develop[31]

The aim of this thesis was to document the story of the changes in curriculum of Dalhousie Medical School between 1947 and 1967, and the barriers and facilitators of these changes. The story told through this thesis is considered to be but one chapter in the long history of this institution. It should also be realized that history is complex, and the telling of this story was from a particular standpoint, at a particular time, and from a particular cultural point of view - it may be by no means absolutely complete, as most history by its nature may never be. However, while this work may only be a "snapshot in time", the importance of telling the story should not be underestimated. Hence, it is the hope of the author that the social, political and cultural milieu of the era has also been elucidated and more fully understood. In addition, it is hoped that this historical account will add to the multitude of stories already told and those that have yet to be discovered.

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3.Waite, *Lives of Dalhousie*, 273.

4.Ibid., 204.

5.DUA Finances Province of Nova Scotia, B442.

6.DUA Finances Province of Newfoundland, B439.

7.DUA Faculty of Medicine, B445, Finances Teaching Units,1967,10.

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9.V. W. Bladen, Louis-Paul Dugal, The Hon. M. W. McCutcheon, and H.W. Ross, *Financing Higher Education in Canada*, Toronto: University of Toronto Press, 1965, p9. This report was published for the Association of Universities and Colleges of Canada and is also known as the Bladen Commission Report, 1965.

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14.DUA Finances Faculty of Medicine - Newfoundland, B439, Submission by Dalhousie University to the Premiers of the Atlantic Provinces on November 22, 1965, 2.

15.J.J. Deustch, *Report of the Royal Commission on Higher Education in New Brunswick*. Fredericton, New Brunswick, 1962, 109. This report was presented to the Lieutenant-Governor in Council of New Brunswick on June 21, 1962 and is also known as the Deustch Report.

16.DUA Finances Faculty of Medicine Correspondence, B436, Hicks to Stewart, January 3, 1964.

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18.DUA Finances Faculty of Medicine, 1966, B438, The Distribution of Federal and Provincial Grants to Atlantic Province Universities, with Special Reference to Medical Education, 3.

19.Minutes Faculty of Medicine (hereafter FOM), June 26, 1968, 1067.

20.DUA Faculty of Medicine Calendar 1968-69, 18.

21.DUA Pre-Survey Materials 1966, B209, 5.

22.Minutes FOM, June 26, 1968, 1067.

23.DUA Pre-Survey Materials 1966, B209, 4.

24.Ibid., 4-5.

25.DUA, Zapffe and Anderson 1947 Accreditation Report, B420, Accreditation Report 1947, 19.

26.DUA Notes on the Minutes Special Committee on Medical Education, B326, Brochure from the University of Illinois about a teaching seminar dated July 7, 1964.

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29.R.S. Peters, "Education as Initiation," in *Philosophical Analysis and Education,* ed. R.D. Archambault. New York: Humanities Press, 1972.

30.DUA Faculty of Medicine Committee Reports B400, excerpt from the Report of the Committee on Pre-Medical Requirements, November 3, 1953, 6.

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Appendix One

Curriculum - 1947

Synopsis of Curriculum

(Required hours)

	Lectures	Laboratory	Clinical	Total
FIRST YEAR				
Anatomy	60	270		330
Histology				150
Embryology	30	60		90
Physiology	60	60		120
Physical Training	30	90		120
SECOND YEAR				
Anatomy	90	165		255
Clinical Neurology				15
Physiology	60	45		105
Biochemistry	30	90		120
[illegible]	[illegible]	[illegible]		[illegible]
Pharmacology	15	30		45
Physiology	30			30
Principles of Medicine			30	30
[illegible]	30			30
[illegible]		60		60
Physical Diagnosis				[illegible]
THIRD YEAR				
Pathology	120	120		240
Pharmacology [illegible]	60	45		105
Laboratory Medicine		60		60
Hygiene	30			30
Clinical Surgery			90	90
Practice of Medicine	25		30	55
Pract. Surgery			30	30
Obstet. and Gynaecol.	105		15	120
Surgery	60			60
Medicine	60			60
FOURTH YEAR				
Medical Subjects	240		129	369
Surgical Subjects	230	15	116	361
Obst. and Gynaecology	72		64	136
[illegible]	20			20

In addition to the above, time is required to prepare clinical histories of at least ten medical and ten surgical cases.

FIFTH YEAR

This is an interne year of twelve months, the greater part of which is spent in hospital attended by members of the Faculty.

FOURTH YEAR	Lectures	Laboratory	Clinical	Total
Medicine	60			60
Clinical Medicine	120		86	206
Pediatrics	30		31	61
Clinical Dermatology	15		6	21
Psychiatry	15		6	21
Therapeutics	20			20
Surgery	60			60
Clinical Surgery	120		56	176
Clinical Ophthalmol., etc.	30		24	54
Clinical Urology	15		12	27
Clinical Orthopaedics			15	15
Anesthetics	5		9	14
Surgical Anatomy, etc.		15		15
Obstetrics	12		48	60
Clinical Gynaecology	60		16	76
Med. Jurisprudence	20			20

In addition to the above, time is required to prepare clinical histories of at least ten medical and ten surgical cases.

(This is submitted as an alternative to the condensed statement of fourth year work contained in the synopsis of curriculum.)

FOURTH YEAR	Lectures	Laboratory	Clinical	Total
Medicine	60			60
Clinical Medicine	120		86	206
Paediatrics	30		31	61
Clinical Dermatology	15		6	21
Psychiatry	15		6	21
Therapeutics	20			20
Surgery	60			60
Clinical Surgery	120		56	176
Clin. Ophthalmol., etc.	30		24	54
Clinical Urology	15		12	27
Clinical Orthopaedics			15	15
Anaesthetics	5		9	14
Surgical Anatomy, etc.		15		15
Obstetrics	12		48	60
Clinical Gynaecology	60		16	76
Med. Jurisprudence	20			20

In addition to the above, time is required to prepare clinical histories of at least ten medical and ten surgical cases.

(This is submitted as an alternative to the condensed statement of fourth year work contained in the synopsis of curriculum.)

Appendix Two

Pharmacology Schedule - 1947

Pharma.

Schedule of

Schedule 1947 Pharmacology

Approx. Date	Lect. No.	Lecture	Lab. No.	Laboratory Period
Jan. 6		Introductory lecture		
Jan. 8		Materia Medica Mr. Kinley		Preliminary instructions. Division of class. Photos.
Jan. 13		Materia Medica		
Jan. 15		Materia Medica	1	Class divided into halves A & B A to College of Pharmacy. B. studies C.N.S. depressants on Frog.
Jan. 20		Materia Medica		
Jan. 22		Materia Medica	2	A to College of Pharmacy. B studies C.N.S. depressants and analeptics on Frog.
Jan. 27		Materia Medica		
	1	Modes of Drug Action. C.N.S. Depressants.	3	B to College of Pharmacy. A studies C.N.S. depressants on Frog.
	2	C.N.S. Depressants Gen. Anaesthesia. I		
	3	C.N.S. Depressants Gen. Anaesthesia II	4	B to College of Pharmacy. A studies C.N.S. depressants and analeptics on Frog.
	4	C.N.S. Depressants Gen. Anaesthesia III Basal Anaesthetics		
	5	C.N.S. Depressants Alcohols Chloral Hydrate	5	General Anaesthesia. Ether: Barbiturates (Rabbit)

Lecture		Lab.No.	Laboratory Period
20	Drugs Acting Locally		
21	Drugs Acting on Reproductive Organs	13	Local Anaesthesia (Human) II
22	Therapeutic Gases and Vapours		
23	Gastric Antacids and Digestants	14	Peripherally acting Drugs (Rabbit).
	FALL TERM		
24	Emetics: Expectorants		
25	Antiseptics I	15	Ciliary Action (Frog). Vasoconstrictors on nasal mucous membrane (Human)
26	Antiseptics II (incl. parasiticides)		
27	Antisyphilitics I	16	Adrenaline Pilocarpine (Human)
28	Antisyphilitics II		
29	Drugs used in Treating Skin Diseases (incl. BAL)	17	Histamine, adrenaline, antihistamine agents. anaphylactic Shock (Demonstration)
30	Sulphonamides I		
31	Sulphonamides II	18	Miotics and Mydriatics (rabbit)
32	Cathartics I		
33	Cathartics II	19	Digitalis (Turtle Heart)
34	Drugs of Endocrine origin I		
35	Drugs of Endocrine origin II	20	Biological assay of Digitalis (Frog)
36	Antimalarial Drugs		
37	Anthelmintics Antiamebics	21	Nitrites (Human)

Appendix Three

Prescription Writing and Therapeutics

1947 - 3rd Year Medicine

Prescription Writing and Therapeutics
1947. 3rd Year Medicine

The course is designed primarily to give the student practice in writing orders and prescriptions for patients having some of the commoner diseases. It will not include physio- or occupational therapy, or dietotherapy.

A brief case history typical of the diseases noted is first presented. The modern treatment is then reviewed with the class, with questions and discussion invited. The last part of each period is given over to the writing of prescriptions or, in the case of patients in hospital, of complete orders for the drugs required. The prescription forms written by each student are handed in for correction and discussion.

1. Review Equivalents; Metric, apothecaries', imperial, domestic measures and weights.
   Writing prescriptions for solid drugs.
   Percentage prescriptions
   Ointments.

2. Prescription Writing; Fluid prescriptions.
   Test on Equivalents.

3. Incompatibilities.
   Test on Equivalents; Writing simple prescriptions.

4. Drugs used in C.V. Disease I
   Chronic Rheumatic Myocarditis and Endocarditis with Failure; Auricular Fibrillation.
   Orders and prescriptions to be written by each student and handed in.

5. Drugs used in C.V. Disease II
   Arteriosclerotic Heart Disease.
   Angina Pectoris; Coronary Thrombosis
   Orders and Prescriptions.

6. Drugs used in Pulmonary Disease.
   Case history. a) Acute lobar pneumonia:
   b) Bronchiectasis.
   Review modern treatment
   Write orders and prescriptions

7. Drugs used in Treatment of Burns
   Drugs used in Treatment of Shock
   Case history
   Review treatment
   Write orders and prescriptions.

8. Drugs used in Gastro Intestinal Diseases.
   Case history - Duodenal ulcer. Not hemorrhaging, stomach emptying time normal).
   Review modern treatment.
   Write orders and prescriptions

9. Drugs used in "Nervous and Mental Disorders"
   Case history a) Psychoneurosis with insomnia.
   b) Petit mal epilepsy
   c) Manic Depressive Psychosis; Manic phase.
   Orders and prescriptions.

10. Drugs used in Urinary Disease.
   Case history. a) Pyelonephritis (ascending type)
   i acid urine
   ii alkaline urine
   b) ureteral colic
   Write orders and prescriptions.

11. Drugs used in Obstetrics and Gynaecology
   Case history a) pre-eclampsia and eclampsia
   b) trichomonas vaginitis
   c) senile vaginitis
   Review treatment.
   Write orders and prescriptions.

12. Drugs used in Allergic Disorders
   Case history a) "asthma"
   b) angioneurotic edema.
   Review treatment.
   Write orders and prescriptions.

13. Drugs used in Blood Disorders
   Case history a) pernicious anemia
   b) secondary anemia
   Review treatment
   Write prescriptions.

14. Drugs used in metabolic Disorders
   Case history a) Diabetes in young children
   b) Hypothyroidism
   c) Hyperthyroidism
   Point out problems.
   Write instructions to parents re treatment.
   (leave out diet).
   Write prescriptions for each.

15. Miscellaneous; Skin: Arthritis: Tropical Diseases
   Write prescriptions.

Appendix Four

Fourth Year Seminars on Communicable Diseases

Preliminary Outline

Curriculum Preventive Medicine
B-884 1947-51

Fourth Year

Seminars on Communicable Diseases

Preliminary Outline

The purpose of these seminars is to discuss together some of the problems of every-day practice in the diagnosis, treatment, prevention and control of some of the more common communicable diseases, assistance that the physician may obtain when needed from other organizations, and some of the socio-economic aspects of practice. To assure a common basis of discussion, let us assume that any problem of city practice relates to the city of Halifax, the medical, hospital, and public health facilities of which are known to you. More often we will be considering problems of small town or rural practice. In that case you are asked to assume that you are practicing general medicine in a town of 2000 in Cape Breton Island. The town is a trading center with a few small industries. There is a total population of 30,000 in the county, but scattered over a wide area with few towns over 1000. There are three doctors in the town (including yourself) and one dentist. The nearest center with other doctors is 20 miles. The total population served by the three doctors is 4000, and the area 15 miles in radius. 25% of the adult population has an income of less than 1000 dollars, 35% from 1000 to 2000, 35% from 2000 to 3000, 5% over 3000. There is a small hospital of 20 beds built and maintained by public subscription. It is open to use of all physicians. There is no special provision for sick children. No interne. Indigent cases are accepted on the recommendation of the Medical Health Officer, who is one of the three practicing physicians employed part-time by the town at a fee of $150 per annum. The municipality pays for indigent cases at the rate of $2.00 per day. The hospital will not admit mumps, pertussis, scarlet fever, or other exanthemata, pulmonary tuberculosis, ~~xxxxxxx~~, but will accept septic sore throat, typhoid fever, diarrhoea, pneumonia, acute upper respiratory disease, meningitis or poliomyelitis. (This is not logical, but fairly typical of such institutions) The nearest medical center with adequate diagnostic and specialist services is 80 miles away. Transportation is good. The District Health Officer is located at this medical center. His staff consists of two medical officers, a sanitary engineer, sanitarians, and public health nurses. All are well trained and experienced. The Department is organized to institute control measures in the following general classes. Some have been extensively developed, others are being organized:

1. Acute communicable disease control.
2. V.D. Control
3. Tuberculosis Control
4. School Hygiene
5. Community sanitation.
6. Milk sanitation
7. Restaurant sanitation
8. Maternal, infant and pre-school child hygiene.

Preventive Medicine-- Fourth Year.

Seminar Outline I.

Diphtheria

Preliminary to the discussion of the questions in this outline and any others which you may care to introduce, a brief review should be made of the disease. Familiarize yourself with clinical and laboratory diagnosis, etiology, sources of infection, mode of transmission, infectivity, pathogenicity, immunity, incubation perion, period of communicability, prevalence and methods of control. A brief summary of this information is to be found in " The Control of Communicable Diseases " published by the American Public Health Association.

The Problem.

You are practicing in the Cape Breton town described. You are called at 7.00 p.m. to see a five year old girl who has been ill since morning. She has a sore throat, but the pain is not very severe and thereis little difficulty in swallowing. However, the parents have become concerned because she is becoming very weak and listless.

Her temperature ,rectally, is 103.4' . One tonsil has a membrane which suggests diphtheria.

The family is made up as follows:

Father--- aged 35. Apparently well. Occupation, manager of the meat counter in the largest food store in town.
Mother--- aged 32. Apparently well. Occupation, housewife.
Mother's sister--- ~~Xxxxxxx~~ aged 26. Apparently well. Occupation stenographer in a law office.
Children--- Aged 9, male, Attends school. Has had "shiffles and a running nose" for a week. Not clinically ill. No history of diphtheria toxoid.
Aged 5, female--Patient. No history of toxoid.
Aged 3, male. Apparently well. No history of diphtheria toxoid.
Aged 18 months, female, Apparently well. Diphtheria toxoid at 7 months.

The family income is $40.00 a week. The house is on the outskirts of the town, with the town water supply, but a private septic tank. There are four bed-rooms in the house and a bathroom.

Suggested Questions for Discussion.

1. What confirmation of the diagnosis would you like to have ?
2. How would you go about getting this confirmation, and what practical problems would you probably encounter ? Is your diagnosis certain when you get this ?
3. Will you delay treatment until confirmation is forthcoming ? Why?
4. Will you delay reporting to the Health Department until diagnosis is confirmed ? Why?
5. Is it of any importance to a community that a case of diphtheria be diagnosed quickly and accurately ?
6. To what extent should the community aid the physician in arriving at the correct diagnosis ? How adequate is your community's support ?
7. How do you report the case and when ?
8. Would you give diphtheria antitoxin to this patient ? If so, when and how much ?
9. Where would you obtain the anti-toxin ? Who would pay for it ?

Appendix Five

Outline of 1947 Curriculum

First Year. First Term: Gross Anatomy; Histology; Embryology; Physiology (lectures only); Biochemistry; Psychobiology; and the Introduction to the Study of Medicine

Second Term: Gross Anatomy; Histology; Embryology; Physiology (lectures and laboratory); and the Introduction to the Study of Medicine

Second Year. First Term: additional Gross Anatomy; Bacteriology; Structural Neurology; Physiology (lectures and laboratory); Biochemistry; and the Introduction to Clinical Surgery

Second Term: Pathology; Pharmacology and Materia Medica; Gross Anatomy; Physiology (lectures only); Psychiatry; Physical Diagnosis (lectures only); and the Introduction to Clinical Medicine and Clinical Surgery

Third Year. First Term: The Zapffe Report states that this term consisted of: Pharmacology; Physical Diagnosis; Gynaecology; Pathology; Public Health and Preventive Medicine; Toxicology; Internal Medicine; Surgery; Obstetrics; and Psychiatry

Second Term: Pharmacology (lectures only); Physical Diagnosis; Pathology; Laboratory Medicine/Diagnosis; Internal Medicine; Public Health and Preventive Medicine; Surgery and Clinical Surgery; and Pediatrics. The Calendar for 1947-48 also lists

Clinical Physiology; Applied Anatomy; Ophthalmology and Otolaryngology; Radiology; and Clinical Obstetrics and Gynaecology. These course listings may be more specific in that Ophthalmology and Otolaryngology may be included in Zapffe's Report under Internal Medicine.

Four Year. The Calendar listings of 1947-48 included: Preventive Medicine; Medicine, Clinical Medicine and Therapeutics; Medical Jurisprudence and Toxicology; Autopsies; Clinical Psychiatry; Surgery and Clinical Surgery; Anaesthesia; Urology and Dermatology; Ophthalmology, Otolaryngology and Otology; Radiology; Obstetrics and Clinical Obstetrics; Clinical Gynaecology; Clinico-Pathological Conferences; Paediatrics and Ethics. In the Zapffe Report there were fewer courses listed. Although these topics were covered there were only 10 different clinical areas in which the students worked. Zapffe (1947) listed these as: Pediatrics; Surgery; Medicine; Urology; Gynaecology; Obstetrics; Otolaryngology; Ophthalmology; Anaesthesia; and Medical Jurisprudence.

Fifth Year. The fifth year was of twelve month duration and began immediately after the completion of the fourth year. Students rotated throughout various clinical disciplines in hospitals approved by the Faculty of Medicine. The clinical assignments were made by the dean. Students could spend the entire twelve months in one hospital or divided the time in various teaching hospitals.

Appendix Six

Dalhousie University

Faculty of Medicine

The Suggested New Four Year Course

curr- Four year courses 1947

Dalhousie University

Faculty of Medicine

The Suggested New Four Year Course

It has been the feeling of the Committee that if the degree be granted at the end of the fourth year, there should be an increase in the time allotted to clinical instruction, especially Medicine. Our students in their present four years are given about 3850 hours of instruction while 4000 hours is commonly considered as the minimum requirement. Our figure was adequate when the interne year was part of the course but is hardly enough for a 4 year course. It is also felt that the preclinical subjects are less in need of extra hours than the clinical subjects, which are affected by the loss of the interne year. All figures given are exclusive of examination time.

The present course consists of 4 years of organized medical instruction, 3 of 28 weeks and 1 of 34 weeks, together with the 12 month interne year. It is impossible to appreciably increase clinical hours with the present schedule because there are few spare hours. It is impractical to lengthen the fourth year because of the fixed date of Dalhousie convocation, and the third year has already been extended 6 weeks. It is proposed that the first three years will be each 32 weeks long, with a final year of 28 weeks as at present. This will lengthen the course by six weeks or 200 hours. The term would run from the beginning of September to the middle of May; examinations should be over by the end of May. It will be noted that the preclinical years are being lengthened by about a month while the third year is shortened by two weeks and the fourth year is unchanged.

This arrangement allows Anatomy, Physiology, and Pharmacology to be finished earlier, which in turn allows Pathology and Physical Diagnosis to be started earlier. In the main, the extra hours for clinical instruction have been gained by clearing Pathology and Physical Diagnosis from the second term of the third year. The details are given in the enclosed schedules which the following comments may help to explain.

First Year. First Term

The schedule is unchanged except for the introduction of a new course, 1 hour/week, by Drs. Grant and Stewart, an introduction to the study of medicine.

Second Term

Anatomy. There are four dissection periods instead of the previous three. This extra period and the four weeks longer year will enable Dr. Mainland to complete general dissection in the first year.

There are no other schedule changes, but Histology and Embryology, will end four weeks before the end of the year. Some of the hours so freed would be available to Anatomy if required.

Biochemistry will use the extra periods to enlarge the course.

Physiology will also carry through the year but will use less time in the second year.

Second Year. First Term.

Anatomy. Two of the previous three periods have been dropped, leaving only one. In Dr. Mainland's new condensed course this will suffice for the nervous system and review. Final examination at Christmas.

Physiology. One laboratory period instead of two, three lectures instead of two, final examination at Christmas. This will necessitate condensation of the course but it is planned to extend "Applied Physiology" into the third year.

Biochemistry, Structural Neurology, and Bacteriology are unchanged.

Pathology and Physical Diagnosis. The hours freed by Anatomy and Physiology have made it possible to give the classes in general Pathology and the introductory lectures in Physical Diagnosis in this term. They previously began in the second term.

Second Term

Anatomy is out. Physiology is out, though a new course of 1 hour/week in clinical pathological physiology is being considered. Bacteriology, Psychiatry and Medicine are unchanged.

Hygiene, 2/week, previously began in third year.

Pathology, 4 lectures and 1 lab/week

Pharmacology has been doubled with 4 lectures and 2 lab periods/week, in order to complete the course and free the third year.

Physical Diagnosis. Group clinics, three 2 hour periods/week, moved from third year.

Third Year. First Term

Pathology, 4 lectures and 2 lab periods/week, final examination at Christmas.

Hygiene. 2/week. Final at Christmas.

Physical Diagnosis. Two, 2 hour periods/week instead of 6 scattered hours. Final at Christmas.

Medicine and Surgery and Psychiatry unchanged. Pharmacology is out, having been moved to the second year.

Pediatrics and Therapeutics, both previously given in the second term, have been extended to this term with 1 hour/week each.

A two hour period/week is assigned to either Applied Anatomy or to Clinical Physiological Conferences.

Second Term

Pathology, Physical Diagnosis and Hygiene lectures are out.

Medicine. Three group clinics weekly of 2 hours each have been added. The primary purpose of the schedule change has been these clinics. They will mean six or more groups, three times a week, and to institute them the appointment of more teachers and the arrangement for more facilities with our present hospitals or Camp Hill or the City Home or some other institution. One lecture has been transferred from the fourth year to the third.

Hygiene Field Work. Nutrition. One afternoon per week has been assigned to the field work and home visits in Hygiene. These will take 8 or 10 of the 18 periods. The others could be used for the new course in practical nutrition which the committee has recommended.

Surgery, Obstetrics and Gynaecology, Lab Diagnosis, Pediatrics, Therapeutics, Psychiatry, are unchanged, though the longer term will give each subject four more weeks.

Several hours are still available for new courses, such as Dermatology, if desired.

Fourth Year

There is no change in this schedule.

Sept 5/47

C Bucke
Secretary

DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
Session
FIRST YEAR FIRST TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	Int. to Preventive Medicine	Histology	Physiology Lecture	Psychobiology	Biochemistry Lecture	Anatomy Lecture
10:00 a.m.	Biochemistry	"	Histology	Embryology Lecture	Embryology	Anatomy
11:00 a.m.	"	"	"	Physiology Lecture	"	"
12:00 noon	"	Psychobiology	"		"	"
2:30 or 3:00 p.m.	Histology	Histology	Anatomy	Embryology	Anatomy	
4:00 p.m.	"	"	"	"	"	
5:00 p.m.	"	"	"	"	"	

DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
Session

FIRST YEAR SECOND TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	**Embryology Lecture**	**Physiology Lecture**	**Physiology Lecture**	**Int. to Preventive Medicine**	**Biochemistry Lecture**	**Anatomy Lecture**
10:00 a.m.	**Biochemistry**	**Histology A Physiology B**	**Physiology A Histology B**	**Histology B Physiology A**	**Embryology Histology A**	**Anatomy**
11:00 a.m.	"	"	"	"	"	"
12:00 noon	"	"	"	"	"	"
2:30 or 3:00 p.m.	**Physiology B Histology A**	**Embryology Histology B**	**Anatomy**	**Anatomy**	**Anatomy**	
4:00 p.m.	"	"	"	"	"	
5:00 p.m.			"	"	"	

D A L H O U S I E U N I V E R S I T Y
FACULTY OF MEDICINE
Session

SECOND YEAR FIRST TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	Bacteriology Lecture	Biochemistry	Biochemistry	Physical Diagnosis	Bacteriology	Physical Diagnosis
10:00 a.m.	Structural Neurology	Pathology	Physiology Lab	Bacteriology Lab	Bacteriology Lab	Physiology
11:00 a.m.	Physiology	Physical Diagnosis	"	"	"	Int. Clinical Surgery
12:00 noon			"		Physiology	
2:30 or 3:00 p.m.		Anatomy	Biochemistry Lab	Pathology	Biochemistry Lab	
4:00 p.m.		"	"	Pathology Lab	"	
5:00 p.m.		"	"	"	"	

D A L H O U S I E U N I V E R S I T Y

FACULTY OF MEDICINE

Session

SECOND YEAR SECOND TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	Clinical Physiology	Psychiatry	Pharmacology	Pathology	Bacteriology	Pharmacology
10:00 a.m.	Bacteriology	Pathology		Pharmacology	Bacteriology Lab	Hygiene
11:00 a.m.			Physical Diagnosis	Physical Diagnosis	"	Physical Diagnosis
12:00 noon		Int. to Clinical Medicine	"	"	Pharmacology	"
2:30 or 3:00 p.m.	Pathology		Pharmacology Lab	Pharmacology Lab	Hygiene	
4:00 p.m.	Pathology Lab		"	"	Pathology	
5:00 p.m.	"		"	"		

DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
Session

THIRD YEAR - FIRST TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	Psychiatry	Hygiene	Pathology	Pathology	Obs. & Clin. Gyn.	Paediatrics
10:00 a.m.			pathology Lab.	prescription & Therapeutics	Clinical Surgery	Hygiene
11:00 a.m.	Obs. & Clin. Gyn.		Pathology Lab.	Obstetrics	Physical Diagnosis	Physical Diagnosis
12:00 noon	Surgery	Clinical Surgery	Clinical Surgery	Obstetrics	Physical Diagnosis	Physical Diagnosis
2:30 or 3:00 p.m.	Pathology			surgery (2/3)	Pathology	
4:00 p.m.	pathology Lab.	Medicine 1		Applied Anat. & Cl.Sc.Conf.	Medicine 1	
5:00 p.m.	pathlogy Lab.	Surgery (2/3)		Applied Anat. & Cl.Sc.Cpnf.	Surgery (2/3)	

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DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
Session

THIRD YEAR - SECOND TERM

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	Psychiatry			Psychiatry Clinic	Clin.Gyn.	Paediatrics
10:00 a.m.	Medicine Group Clinic	Obstetrics	Medicine Group Clinic	Laboratory Diagnosis	Clinical Surgery	Medicine Group Clinic
11:00 a.m.	Medicine Group Clinic	Laboratory Diagnosis	Medicine Group Clinic	Laboratory Diagnosis		Medicine Group Clinic
12:00 noon	Prescription & Therapeutics	Laboratory Diagnosis	Clinical Surgery		Obstetrics	
2:30 or 3:00 p.m.	Nutrition or Hygiene Field work all afternoon	Medicine				
4:00 p.m.		AppliedAnat. & Cl.Sc.Conf.	Medicine	Medicine		
5:00 p.m.		Applied Anat. & Cl.Sc.Conf.	Surgery	Surgery	Practical Surgery	

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DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
Session

FOURTH YEAR

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 a.m.	CLASS CLINICS IN MEDICINE:		SURGERY: GYNAECOLOGY AND GENITO-URINARY			
10:00 a.m.	HOSPITAL WARD WORK IN MEDICINE: SURGERY: OBSTETRICS & GYNAECOLOGY FROM 10.00 to 12.00					
11:00 a.m.						
12:00 noon	CLASS CLINICS IN SURGERY: MEDICINE: OBSTETRICS & GYNAECOLOGY: PAEDIATRICS					
2:30 or 3:00 p.m.	OUTPATIENTS CLINICS IN TUBERCULOSIS: CHEST: IMMUNIZATION: PRENATAL: GYNAECOLOGY: PAEDIATRICS: GENITO-URINARY: EYE, EAR, NOSE & THROAT: ETC.					
4:00 p.m.						
5:00 p.m.	LECTURES IN SURGERY: PAEDIATRICS: MEDICINE: PATHOLOGY: ETC.					

Appendix Seven

General Plan of the Curriculum

GENERAL PLAN OF THE CURRICULUM

The course leading to the degree of Doctor of Medicine covers five years. The course of the first, second and fourth years is twenty-eight weeks in duration, the third year thirty-four weeks and the fifth year twelve months. The subjects taken up in each year are as follows:

FIRST YEAR

First term.	Gross Anatomy Histology Biochemistry Physiology (lectures only) Embryology Psychobiology Introduction to the Study of Medicine
Second term.	Gross Anatomy Histology Embryology Physiology (lectures and laboratory) Introduction to the Study of Medicine

SECOND YEAR

First term.	Bacteriology Gross Anatomy Structural Neurology Physiology (lectures and laboratory) Biochemistry Introduction to Clinical Surgery
Second term.	Pharmacology Gross Anatomy Pathology Physiology (lectures only) Psychiatry Physical Diagnosis (lectures only) Introduction to Clinical Medicine

THIRD YEAR

First term.

Pharmacology
Physical Diagnosis
Gynaecology
Pathology
Public Health and
Preventive Medicine
Toxicology
Internal Medicine
Surgery
Obstetrics
Psychiatry

Second term.

Pharmacology (lectures only)
Physical Diagnosis
Pathology
Laboratory Diagnosis
Internal Medicine
Public Health and
Preventive Medicine
Surgery
Paediatrics

Except for six hours a week devoted to physical diagnosis, students do not work with patients in this year. The teaching of the clinical subjects is carried out by lectures and class clinics at which patients are demonstrated.

FOURTH YEAR

Paediatrics
Surgery
Medicine
Urology
Gynaecology
Obstetrics
Otolaryngology
Ophthalmology
Anaesthesia
Medical Jurisprudence

Each student is assigned for two hours a morning for five weeks to the medical wards, the paediatric wards, the gynaecology wards and the medical outpatient department, and for ten weeks to the surgical wards. In the afternoons they are assigned for

periods of an hour to an hour and a half to various outpatient departments including urology, otolaryngology, ophthalmology, orthopaedics, paediatrics, well baby clinic, prenatal clinic, gynaecology, chest clinic, immunization clinic and the neuropsychiatric clinic. During the fourth year the students attend approximately seventeen lectures or class clinics a week.

Fifth year. This is an interneship year. Interneship assignments are made by the dean and may provide for the entire twelve months being spent at one hospital or for the students being rotated through several hospitals for periods varying from one to three months. The hospitals used for these internships are the Victoria General Hospital, the Halifax Infirmary, Grace Maternity Hospital, Children's Hospital, City Tuberculosis Hospital, Camp Hill Hospital (Department of Veterans Administration) at Halifax, and Saint John General Hospital at Saint John, New Brunswick.

Appendix Eight

Dalhousie University

Faculty of Medicine - 1947

The Medical Curriculum

Dalhousie University

Faculty of Medicine, 1947

The Medical Curriculum

The hours shown represent the hours of instruction received by each student, not the teaching hours of the department which may be much greater.

	Present Schedule			Proposed Schedule				A.M.A. Proposed
	Lect.	Pract.	Total	Lect.	Pract.	Total		
Anatomy	56	484	540	32	384	416		360
Histology & Embryology	28	252	230		same			225
Biochemistry	56	163	214	60	180	240		200
Physiology	112	168	220	106	168	274	(95-130)	275
Pharmacology	56	84	140	54	108	162		140
Bacteriology	56	32	133		same			
Pathology	155	142	297	164	128	292	(65-195)	260
	519	1380	1391	500	1302	1302		1598
Prev. Medicine	71	24	35	96	24	120		
Structural Neurology	13	-	13	13	-	13		
Therapeutics	15	-	15	32	-	32		
Toxicology	3	-	3	8	-	8		
Applied Anatomy	23	-	23	32	-	32		
Clinical Physiol Conf	-	-	-	32	-	32		
ab. Diagnosis	-	60	60	-	60	60		
Anaesthesia Medicine Jurisprudence, 1st Aid, etc.	40	-	40	40	-	40		
Nutrition	-	-	-	-	13	13		
Clinical Pathological Conference	23	-	23	23	-	23		
	205	84	237	281	102	383		

	Whole Class Lect.	Class Clin.	Group Clin.	Total	Whole Class Lect.	Class Clin.	Group Clin.	Total	
Medicine									
General	124	145	196	480	124	139	270	519	
Pediatrics	43	56	68	167	60	64	68	192	
Phys. Diagnosis	45	-	178	223	42	-	164	206	
Psychiatry	69	-	-	69	73	13	-	96	
	281	201	442	939	304	221	502	1013	
Surgery.									
General	129	214	136	479	124	208	112	444	
G.U.	-	34	12	46	-	23	12	40	
E.E.N.T.	28	-	12	40	28	-	12	40	
	157	248	160	565	152	236	136	524	
Obs. & Gyn.	56	75	105	236	64	74	84	222	
	Class		Group	Total	Class		Group	Total	
Clinical Total	1013		707	1740	1051		722	1759	
Grand Total	1740		2171	3918	1332		2126	3944	3600

Appendix Nine

Dalhousie University Calendar 1947/1948

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Entrance Requirements

Full details of the requirements for Entrance will be found on pp. 23-26.

Curriculum*

The course for the degree of Doctor of Medicine and Master of Surgery extends over five years. Detailed information regarding the classes included in it will be found under "Classes of Instruction," p. 128 *et seq*.

The following division of the curriculum into years, and the corresponding examinations, will be followed as closely as possible, but some modifications may be found necessary.

First Year. Anatomy 1; Histology; Embryology; Physiology 1; Biochemistry 1; Psychobiology.

Second Year. Anatomy 2; Structural Neurology; Physiology 2; Biochemistry 2; Pathology 1; Bacteriology; Pharmacology and Materia Medica; Physical Diagnosis; Psychiatry; Introduction to Clinical Medicine and Clinical Surgery.

Third Year. Pathology 2; Laboratory Medicine; Pharmacology; Physical Diagnosis; Preventive Medicine; Medicine and Clinical Medicine; Clinical Physiology; Psychiatry; Surgery and Clinical Surgery; Applied Anatomy; Ophthalmology and Otolaryngology; Radiology; Obstetrics and Gynaecology; Clinical Obstetrics and Gynaecology; Paediatrics.

Fourth Year. Preventive Medicine; Medicine, Clinical Medicine and Therapeutics; Medical Jurisprudence and Toxicology; Autopsies; Clinical Psychiatry; Surgery and Clinical Surgery; Anaesthesia; Urology and Dermatology; Ophthalmology, Laryngology and Otology; Radiology; Obstetrics and Clinical Obstetrics; Clinical Gynaecology; Clinico-Pathological Conferences; Paediatics, Medical Ethics.

Fifth Year. The fifth year, a period of twelve months, beginning immediately after the completion of the fourth year, is one of rotating interneship, in hospitals approved by the Faculty of Medicine.

*It is to be distinctly understood that the regulations regarding courses of study, examinations, fees, etc., contained in this calendar are intended for the current year only. Nor does the University hold itself bound to adhere absolutely to the curriculum and conditions laid down.

Regulations for Degrees

In addition to the Matriculation and premedical examinations, candidates for degrees are required to pass five Professional Examinations. The requirements in each subject are covered by the work of the class or classes in that subject specified under "Classes of Instruction" (p. 128 *et seq*). In all examinations the marks obtained at sessional tests or at Christmas examinations will be considered in computing the marks allowed in each subject at the regular professional examinations. The examinations in the various subjects will be held within the dates set in the University Almanac, and as posted on the Notice Boards, and are arranged as follows:

First Professional Examination

One paper in each of the following subjects: Anatomy, Histology, Embryology, (oral and practical examinations during the session in these subjects); one paper and an oral examination in each of Physiology and Biochemistry, (practical examinations during the session in these subjects).

Second Professional Examination

One paper in each of Anatomy, Structural Neurology, Physiology, Biochemistry, Pathology, Bacteriology and Psychobiology. Oral examinations are given in Anatomy, Physiology, Pathology, and Bacteriology. Practical examinations in all subjects are given during the session.

Third Professional Examination

A paper and oral in each of the following: Pathology and Pharmacology, including Materia Medica; orals during the term in Obstetrics and Gynaecology; practical examinations during the term in Pathology and Laboratory Medicine. There are also written examinations in Laboratory Medicine, Surgery, Medicine, Obstetrics and Gynaecology.

Fourth Professional Examination

One paper in each of the following subjects: Medicine in all its departments including Therapeutics; Medical Jurisprudence and Toxicology; Psychiatry; Surgery in all its departments; Obstetrics and Gynaecology; Paediatrics; a paper and an oral examination in Preventive Medicine. The examinations in Med-

examination, must repeat attendance on all the courses of the year before again coming up for examination, unless a different course is prescribed by the Faculty. Such students will be on probation until Christmas, and may be required to withdraw if their showing at that time is not satisfactory.

Subject to the University regulations for the admission of students, a Special student may be admitted to classes in this Faculty, but his attendance is not recognized as qualifying for a degree.

No person under sixteen years of age is admitted to any class.

Entrance Requirements

Full details of the requirements for Entrance will be found on pp. 24-27.

Curriculum*

The course for the degree of Doctor of Medicine and Master of Surgery extends over five years. Detailed information regarding the classes included in it will be found under "Classes of Instruction," p. 129 *et seq.*

The following arrangement of the curriculum into years will be followed as closely as possible, but some modifications may be found necessary.

First Year. Anatomy; Histology; Embryology; Physiology; Biochemistry; Hygiene; Psychobiology.

Second Year. Anatomy; Structural Neurology; Physiology; Biochemistry; Pathology; Bacteriology; Pharmacology and Materia Medica; Physical Diagnosis; Psychiatry; Introduction to Clinical Medicine and Clinical Surgery.

Third Year. Pathology; Laboratory Medicine; Pharmacology; Physical Diagnosis; Preventive Medicine; Medicine; Clinical Physiology; Psychiatry; Surgery; Applied Anatomy; Ophthalmology and Otolaryngology; Radiology; Obstetrics and Gynaecology; Paediatrics; Therapeutics.

Fourth Year. Preventive Medicine; Medicine; Medical Jurisprudence and Toxicology; Autopsies; Psychiatry; Surgery; Anaesthesia; Urology and Dermatology; Ophthalmology, Laryngology and Otology; Radiology; Obstetrics and Gynaecology; Clinico-Pathological Conferences; Paediatrics, Medical Ethics.

*It is to be distinctly understood that the regulations regarding courses of study, examinations, fees, etc., contained in this calendar are intended for the current year only. Nor does the University hold itself bound to adhere absolutely to the curriculum and conditions laid down.

Fifth Year. The fifth year, a period of twelve months, beginning immediately after the completion of the fourth year, is one of rotating interneship. All interneships are approved by the Canadian Medical Association.

Regulations for Degrees

In addition to the Matriculation and premedical examinations, candidates for degrees are required to pass five Professional Examinations. The requirements in each subject are covered by the work of the class or classes in that subject specified under "Classes of Instruction" (p. 129 *et seq*). In all examinations the marks obtained at sessional tests or at Christmas examinations will be considered in computing the marks allowed in each subject at the regular professional examinations. The examinations in the various subjects will be held within the dates set in the University Almanac, and as posted on the Notice Boards, and are arranged as follows:

First Professional Examination

One paper in each of the following subjects: Anatomy, Histology, Embryology, (oral and practical examinations during the session in these subjects); one paper and an oral examination in each of Physiology and Biochemistry, (practical examinations during the session in these subjects).

Second Professional Examination

One paper in each of Anatomy, Structural Neurology, Physiology, Biochemistry, Pathology, Bacteriology and Psychobiology. Oral examinations are given in Anatomy, Physiology, Biochemistry, Pathology, and Bacteriology. Practical examinations in all subjects are given during the session.

Third Professional Examination

A paper in each of Surgery, Medicine, Obstetrics and Gynaecology. A paper and oral in Pathology and Pharmacology including Materia Medica. A paper or oral in Applied Anatomy. Practical examinations during the term in Pathology and Laboratory Medicine. Orals during the term in Obstetrics and Gynaecology.

Fourth Professional Examination

One paper in each of the following subjects: Medicine including Therapeutics; Medical Jurisprudence and Toxicology; Psychiatry; Surgery; Obstetrics and Gynaecology; Paediatrics;

Appendix Ten

Curriculum Schedule 1955

		Mon	Tues	Wed	Thurs	Fri	Sat
	9:00	Bioch	Prev Md	Phys	PrevMd	Bioch	
First Year	10:00	Bioch	Phys	Anat	Anat	Bioch	UNSCHED
First term	11:00	Bioch	Phys	Anat	Anat	Bioch	
	12:00	Bioch	Phys	Anat	Anat	Bioch	
	2:00	Bioch	Anat	UNSCHED	Anat	Bioch	
	3:00	Bioch	Anat		Anat	Bioch	
	4:00	Bioch	Anat		Anat	Bioch	
	9:00	Bioch	PrevMd	Phys	Psycho biol	Phys	UNSCHED
First Year	10:00	Bioch	Anat	Anat	Anat	Phys	
Second term	11:00	Bioch	Anat	Anat	Anat	Phys	
	12:00	Bioch	Anat	Anat	Anat	Phys	
	2:00	Bioch	Anat	UNSCHED	Anat	Anat	
	3:00	Bioch	Anat		Anat	Anat	
	4:00	Bioch	Anat		Anat	Anat	
	9:00	Anat	Psycho biol	Phys	Psycho biol	Phys	UNSCHED
First Year	10:00	Anat	Anat	Phys	Anat	Phys	
Third term	11:00	Anat	Anat	Phys	Anat	Phys	
	12:00	Anat	Anat	Phys	Anat	Phys	
	2:00	Anat	Anat	UNSCHED	Anat	Cl. Med. Sc.	
	3:00	Anat	Anat		Anat	First aid & Bandaging	
	4:00	Anat	Anat		Anat		

		Mon	Tues	Wed	Thurs	Fri	Sat
Second Year First term	9:00	Anat	Path	Path	Phys	Path	Anat
	10:00	Anat	Path	Path	Phys	Path	Anat
	11:00	Anat	Cl. Med Sc.	Psych	Phys	Bact	Anat
	12:00	Anat	Cl. Med Sc.	Phys	Phys	Anat	Anat
	2:00	Bact	U	U	Bact	Anat	
	3:00	Bact	S C H E D	S C H E D	Bact	Anat	
	4:00	Bact			Bact	Anat	
Second Year Second term	9:00	Surg	Meth. Ex. I	Pharm	Meth. Ex. I	Pharm	Path
	10:00	PrevMd	Meth. Ex. I	Pharm	Meth. Ex. I	Psych	Path
	11:00	Path	Bact	Pharm	Cl. Med Sc	Path	Path
	12:00	Path	Pharm	Pharm	Cl. Med Sc	Path	
	2:00	Bact	Path	U	Bact	U	
	3:00	Bact	Path	S C H E D	Bact	S C H E D	
	4:00	Bact	Path		Bact		
Second Year Third term	9:00	Surg	Meth Ex I	Pharm	Meth Ex I	Pharm	Path
	10:00	PrevMd	Meth Ex I	Pharm	Meth Ex I	PrevMd	Path
	11:00	Path		Pharm	PrevMd	Path	Path
	12:00	Path	Pharm	Pharm	Films	Path	
	2:00	Med	Path	U	U	Med	
	3:00	Meth Ex II	Path	S C H E	S C H E		
		Cl Med					

A

		Mon	Tues	Wed	Thurs	Fri	Sat
Third Year First term	9:00	Path	Psych	MedJuris Toxicol JCB	Path	Med	Path
	10:00	Path	Pharm	"	Path	Med	Path
	11:00	ObsGyn	Surg	Surg	Surg Orthop	Med	PrevMd
	12:00	Surg	Surg	Surg	Surg (Int)	Med	Therap
	2:00	PrevMd & MatMd to 3:30 PrevMd & MatMd	U N S C H E D	U N S C H E D	PrevMd & MatMd to 3:30 Cl. Md Sc	Med	
	3:00					Med	
	4:00					Med	
Third Year Second term	9:00	Psych	Med Dermatol	Cl Med Sc	PrevMd	Med	
	10:00	EENT	Paed	Cl Med Sc	Meth Ex III	Med	Films
	11:00	Obs	Surg	Surg	Meth Ex III	Med	Paed
	12:00	Surg	Surg	Surg	Meth Ex III	Med	Therap
	2:00	PrevMd	U N S	U N S	PrevMd to	Med	
	3:00	PrevMd 3:30	C H E	C H E	3:30 App Anat	Med	
	4:00	PrevMd	D	D		Med	
Third Year Third term	9:00	Psych	Surg (Neuro)	Cl Med Sc	PrevMd	Med	
	10:00	Surg Urology	Paed	Cl Med Sc	Meth Ex III	Med	Anesthe Films
	11:00	Obs	Surg	Surg	Meth Ex III	Med	Paed
	12:00	Surg	Surg	Surg	Radiol	Med	Therap
	2:00	PrevMd	U N S	U N S	PrevMd to	Med	
	3:00	PrevMd 3:30	C H E	C H E	3:30 App Anat	Med	
		PrevMd	D	D			

Appendix Eleven

The Curriculum as a Whole

(B)

THE CURRICULUM AS A WHOLE

It might be instructive at this point to look at the curriculum as a whole and see how the allotments have worked out and what sort of balance, if any, has been achieved.

Here are the actual scheduled hours:-

Preclinical Sciences

[redacted]	271	
Physiology	242	
Biochemistry	231	
Pharmacology	149	
Pathology	352	
Bacteriology	134	
Total		1779

Surgical Subjects

General Surgery, incl. Ortho & Neuro	568	
Urology	81	
Obstetrics & Gynaecology	189	
Ophth & Otolaryngyology	49	
Anaesthesia	37	
Total		924

Medical subjects

Preventive Medicine	149	
Medicine	362	
Psychiatry	150	
Paediatrics	230	
Radiology	42	
Med. Jur. & Tox.	22	
Total		1155

Interdepartmental Courses

Clinical Medical Science	207	
Methods of Examination	154	
Therapuetics	60	
Films	27	
Total		447

Unscheduled Time 693

Total Hours - Course work 4305
"Unscheduled" 693
4998

A comparison of hours, however, can be very misleading if an attempt is made to determine the load on a department from this alone. For -

Laboratory hours make quite different demands from lecture hours.

Group teaching methods require many times the staff needed for lectures and class clinics.

Because of hospital organization, with more wards for surgical than medical specialties, the surgical subjects build up a disproportionately large amount of time with clinical clerkships.

The Department of Medicine will in all probability have responsibility for the greater part of the Interdepartmental Courses.

All of these points and some others should be borne in mind in assessing department needs.

Appendix Twelve

Excerpt from Revised

1955 Curriculum Report

with 1957 Comments by the Dean

C

1957 Comment

Several major changes have been made in the above proposals following [redacted] and the new system described below has been in operation for one year. [redacted] is the responsibility of the Department of Medicine and this course in therapeutics is also the responsibility of the Department of Medicine, although other departments participate on the invitation of the Department of Medicine. It is therefore preferable to assign the total time for these items to the Department of Medicine.

The Day in Medicine has also been re-arranged so that an equivalent time is available during different periods throughout the week. The clinical clerkship occupies the time of eight weeks -- 33 hours. The following shows the time allocation in 1957.

Year	Term	Medicine	Physical Diagnosis	Therap-eutics	Total
Second	First	11	-	-	11
"	Second	11	44	-	55
"	Third	44	44	-	88
Third	First	73	33	11	117
"	Second	101	22	11	134
"	Third	101	-	11	122
Fourth	All	32	-	32	64
"	Clinical Clerkship	264	-	-	264
		637	143	65	855

Neuro-Surgery

Third year third term		11	hours
Fourth year	Class clinics	7	"
	Clerkship	62	"
		80	"

1957 Comment

[redacted]

Year	Term	First Aid	Physical Diagnosis	Surgery	Clinical Surgery	Total
First	Third	22	-	-	-	22
Second	First	-	-	-	-	-
Second	Second	-	11	11	-	22
Second	Third	-	11	11	-	22
Third	First	-	-	22	44	66
Third	Second	-	-	22	44	66
Third	Third	-	-	22	44	66
Fourth	All	-	-	-	32	32
Fourth	Clinical Clerkship	-	-	-	270	270
		22	22	88	434	566

The programme in general surgery has been changed appreciably since the above report was presented, with a total of 566 hours for surgery, including orthopaedics and neuro-surgery. The course in first year, third term, First Aid, is still being given and is considered valuable. This is the standard St. John's Ambulance Course. The second year, second term, 11 hours, is devoted to physical diagnosis and 11 hours to general surgery lectures. The third term has the same programme. The third year has 22 hours each of the three terms for general surgery lectures, and 44 hours for clinical surgery, [redacted] group clinics. The fourth year has 32 hours for general class sessions in

Appendix Thirteen

Grants Requested - 1957

Three Year Period

Table 2.

Grants Requested in 1957 for Three-Year Period.

Province	Avg. No. & % Of Students 1953 to 1957	Annual Grant 1955 to '57	Grant requested for 1958 (Increase $150,000)	Grant requested for 1959 (Incr. $75,000)	Grant requested for 1960 (Incr. $75,000)
N.B.	63 (22.8)	30,000	64,239.00	81,359.00	98,479.00
Nfld.	47 (17.0)	26,000	51,543.00	64,315.00	77,087.00
N.S.	133 (43.2)	150,000	222,283.00	258,425.00	294,567.00
P.E.I.	33 (12.0)	12,000	29,935.00	38,903.00	47,871.00
Total	276 (100%)	218,000	368,000.00	443,002.00	518,004.00

Table 3.

Increases in Grants Approved by Provinces, 1958, 1959, 1960.

	1958	1959	1960	Total Increase in Grants	Increase Requested
N.B.	Nil	Nil	Nil	Nil	$ 68,478.00
Nfld.	$25,543.	$12,772.	$12,771.	$ 51,086.	51,086.00
N.S.	72,283.	36,142.	36,141.	144,566.	144,566.00
P.E.I.	Nil	6,000.	7,000.	13,000.	35,870.00
				$208,652.	$300,000.00

The Medical and Dental Schools were able to continue in operation without these increases from New Brunswick and Prince Edward Island because:

(a) Several essential staff appointments were delayed.

Appendix Fourteen

Provincial Grants 1954 -1964

Dalhousie University

Medical and Dental Faculties

It is recognised that these increases are very large ones, but it must also be pointed out that New Brunswick's grants have been much less than those of the other provinces, as shown in the table below. The last increase in 1962 was only an interim arrangement recommended by the Royal Commission on Higher Education in New Brunswick.

PROVINCIAL GRANTS TO DALHOUSIE MEDICAL & DENTAL FACULTIES

Nova Scotia

1954	$60,000
1955	150,000
1958	222,260
1959	294,570
1963	429,000
1964	531,000

Newfoundland

1954	$10,000
1955	26,000
1958	51,543
1959	77,078
1963	77,078
1964	116,000

New Brunswick

1954	$20,000
1955	30,000
1958	30,000
1959	30,000
1963	60,000
1964	60,000

Prince Edward Island

1954	$5,000
1955	12,000
1958	18,000
1959	40,000
1962	50,000
1964	under consideration

Government has also indicated that the third increase will be made in 1960, if Nova Scotia also increases its grant, as it has now been asked to do. The Government of Prince Edward Island provided a fifty per cent increase, but did not meet the full request. New Brunswick has not increased the size of its grant since 1955.

Because the revenue was not available, the Faculties of Medicine and Dentistry have been unable to undertake all the programmes which were indicated as necessary to fulfil the accreditation requirements. The Faculty of Dentistry will be visited by the Accrediting Committee again this year. Costs have increased somewhat more than was foreseen in 1957. Despite this increase, however, the Governments have not been asked and are not now being asked to take care of any additional expenditure beyond that requested in 1957.

The average cost per student per year was $2,975.00 in 1956-57, and as anticipated it will be $3,142.00 in 1960-61. This figure of $3,142.00 is still in the lower range of per student costs in Medical and Dental Schools elsewhere. The following table shows what part of this cost per student is borne by the governmental grants:

Province	Grant per Student from each Province 1957	Grant per Student from each Prov. 1959	Total Grant in 1959
New Brunswick	$ 476.00	$ 476.00	$ 30,000.00
Newfoundland	552.00	1,368.00	64,315.00
Nova Scotia	1,129.00	1,943.00	258,425.00
Prince Edward Island	364.00	545.00	18,000.00

Nova Scotia and Newfoundland are obviously paying the major share of the costs borne by Governments. It should, however, be noted that in spite of these Government grants the University in 1960-61 will still have to provide an average of more than $2,000 per student. Of this only $500 is obtained from the student in tuition.

The University is faced with the problem of finding additional funds to operate the two Faculties so that they may continue to serve the needs of the entire Atlantic area. It seems unreasonable to ask the Governments of Nova Scotia and Newfoundland to bear a larger proportion of the costs at the present time in order to serve the students from other provinces. If the Governments of New Brunswick and Prince Edward Island do not increase their

Appendix Fifteen

Excerpt from the

Royal Commission on Health Services

nity. We would welcome an experiment whereby, through an active out-patient department of a teaching hospital, arrangements could be made for the total care of a segment of the community limited in numbers to the requirements of teaching and research. This would imply active co-operation with the local branch of the College of General Practice as well as with the whole organized profession. Such a plan would require special financial arrangements and close relation to the Department of Social and Community Medicine of the school.

8. As an alternative to the conclusion in 7. above, we would favour the establishment in teaching hospitals of Departments of General Practice, the staff members of such departments to be specially selected, well-qualified family practitioners in the immediate community. Such departments might include in-patient services in medicine, psychiatry, obstetrics and paediatrics. Staff positions would be held on the same joint basis as in other departments, but the university rank might be established in the Department of Social and Community Medicine.

9. That present practices in the examination system of the Canadian medical schools be reviewed, with the possibility of providing means of assessing progress and fitness for promotion, other than by year-end formal examina

Appendix Sixteen

The Recording of Examination Results and Calculation of Class Standing

FMIN
May 10/65
P 900

THE RECORDING OF EXAMINATION RESULTS AND CALCULATION OF CLASS STANDING

Over several years there have been discussions in Faculty Council concerning the relative value of various examinations. Faculty has rules concerning the number of supplemental examinations in each year. Some of the courses in which examinations are held have very few timetable hours of teaching. Others with a heavy teaching load may have no examination . It has been suggested that the minor subject should not be given the same weight as the major subjects/considering the number of supplementals that a student might be allowed to take. In addition, the class standing in each year is at present based on the average of all subjects,giving equal weight to each. At a recent meeting of Faculty Council this matter was again reconsidered and the following proposals were recommended to Faculty:

FIRST YEAR

It is recommended that four subjects of equal value be used to compute the average and the class standing for the year. An average of 60 per cent in these four subjects is required and two supplemental examinations are allowed if this average is made.

Subjects: (i) Gross Anatomy, (ii) Microanatomy (to include neuroanatomy question(s) or a percentage of the total)
(iii) Biochemistry
(iv) Physiology

If examinations are set in Biostatistics or Psychiatry, a pass of 55 per cent is required, but these subjects will not count in determining the year's average or the class standing. One supplemental would be allowed in these two subjects in addition to the two noted above, if the student has an average of 60, making him eligible for supplementals.

SECOND YEAR

Six subjects of equal value are to be used in computing the average and the class standing. An average of 60 per cent is required and three supplemental examinations will be allowed if this average is met.

Subjects: Bacteriology, Biochemistry, Medicine (including Haematology), Pathology, Pharmacology, Psychiatry

If an examination is set in Preventive Medicine, a pass of 55 per cent is required but the subject will not count in determining the average for the year. A supplemental may be allowed in this in addition to the three above if the student is eligible for supplementals.

THIRD YEAR

Five subjects of equal value are to be used in computing the average and class standing. A 60 per cent average is required and two supplementals will be allowed if the average is met.

Subjects: Medicine (including Haematology if not in the second year examination, Obstetrics and Gynaecology, Paediatrics, Preventive Medicine and Surgery.

If an examination is set in Laboratory Medicine, a pass of 55 per cent will be required but the subject will not count in determining the year's average. A supplemental will be allowed in addition to those listed above if the student is eligible for supplementals.

FOURTH YEAR

Five subjects of equal value will be used to compute the average. A 60 per cent average will be required and two supplementals allowed if the average is made.

Subjects: Medicine, Obstetrics and Gynaecology, Paediatrics, Psychiatry, and Surgery.

If an examination in Applied Anatomy is set, a pass of 55 will be required but the subject will not count in determining the year's average. A supplemental examination will be allowed in this in addition to the two above if the student is otherwise eligible for supplementals.

A Department may, if it so desires, carry forward a part of the mark from a minor examination in an earlier year and include it in the major examination of a later year. For example, Preventive Medicine might use part of the marks of first and second year in computing the final mark in Preventive Medicine which would be recorded in third year. Applied Anatomy might also be included in Surgery in fourth year.

Office of the Dean
Faculty of Medicine
March, 1965

Appendix Seventeen

Endocrinology-Reproduction

Subcommittee

Committees on Studies
B328

Subcommittee for.

Endocrinology-Reproduction Subcommittee

1st Year

Time & Staff

Introduction to Endocrinology

Objective - to illustrate principles of hormone regulation of body functions.
trophic hormones and feedback
growth, adolescence, reproductive life, senescence,
the "Pituitary clock"

Method - using patients and/or photographs (close circuit TV?)
present without comment,

1 End

pre-adolescent)
adolescent) male & female
mature)
old)

focus on apparent differences,
allow students to observe and note,
have students comment on observations and conclusions,
discussion of Pituitary Growth and gonadottrophic hormones
(principles only.

Method - case presentation - Pituitary Dwarf,
1 Ped student may examine & question patient and comment to class,
discussion of findings.

Method - case presentation - menstrual cycle,
1 Obs bar graphs of hormone fluctuations,
thermal shift, schematic presentation of endometrial changes,
discussion of trophic hormones - feedback.

Pituitary-Hypothalamus - (pineal)

Objective - to demonstrate the location and principles of action of this system.

3 An Emb Rad Method - show in specimens the gross anatomy in normals - show tumors,
show embryology with specimens,
present as a problem a case (or film) with visual field defect
and radiological abnormality to illustrate anatomical features.

2 An Bioch Method - demonstrate microanatomy, chemistry and histochemistry of above -
especially growth hormone, vaspressin, oxytocin.

Case for diagnosis.

1 End

Evaluation

1

By providing a skeleton of information find out if student can describe the nature of the "[illegible]" in lactation, how it can be enhanced, how blocked.

Adrenal

Objective - to demonstrate how the adrenal cortex-medulla are related to and regulate body structure and function.

2 An — Method - demonstrate with gross dissections, the relations of the adrenals, show in stained sections the structure, embryological development, and illustrate hyperplasia, tumors.

1 End Clin Chem — Method - show cases of adreno-genital hyperplasia and adrenal tumors, demonstrate physiology and endocrine factors and suitable tests.

1 End Clin Chem — Method - show case of Pit. Cushing's Syndrome, demonstrate pituitary-adrenal relation and suitable tests.

1 2 Biochem End — Method - demonstrate biosynthesis and chemistry of adrenal cortical hormones, indicate relationship to other steroids (testicular ovarian)

Case of Stein-Leventhal or adreno-genital syndrome.

3 Physiol Biochem End Neurol — Method - demonstrate CNS effect on adrenal medulla, relationship with autonomic system, demonstrate above with subjects and/or animals, nature of adrenalin and noradrenalin, catecholamines, clinical uses and measurements, defense mechanism.

Thyroid

Objective - to demonstrate the function of the thyroid, its relations and control.

1 End — Method - present a case of toxic diffuse hyperplasia, allow a few students to examine patient, make clinical measurements, take history, present to the class. (This may require a documented and filmed presentation to use in conjunction with a treated case).

3 An Physiol — Method - demonstrate the gross anatomy, embryology and physiology (chemistry and control) of the normal, hyperthyroid and hypothyroid state).

1 Biochem — Method - chemistry of hormones - biosynthesis, role of diet.

2 Clin Chem Radtherap. Physiol — Method - measurements of thyroid function, (use P.B.I., Ral, B.M.R. in selected student teams before and after suppression and report to class). (TV may be useful here).

Islet Cells

Objective - to demonstrate the function of the islet cells in the regulation of carbohydrate metabolism, and their relationships to other glands.

2 Ped End — Method - students present a case (previously examined and studied by a student team) of a juvenile diabetic - who gives himself insulin, etc, give an illustrated lecture on the history of Diabetes and especially the work of Banting & Best.

1 An — Method - demonstrate microanatomy and embryology.

4 Biochem Physiol — Method - demonstrate regulation of blood sugar and fat metabolism and method of testing. Pituitary and adrenal relations, lectures and labs.

1 End Clin Chem — Method - case presentation, diabetic acidosis, student team present case and discuss pathol. chemistry and management.

2 Evaluation - adrenal, thyroid islet cells.

e.g. Would you prescribe thyroid extract for voluntary control of obesity? Insulin passes readily through the placenta. Discuss how diabetes may affect pregnancy and the newborn.

Multiple choice test.

36 hours total time first year.

Appendix Eighteen

Excerpt from the Report

on the Survey Visit 1966

TJM Report of the Survey Visit
DALHOUSIE UNIVERSITY
FACULTY OF MEDICINE
OCT. 12-15, 1966

SUMMARY OF MAJOR OBSERVATIONS AND RECOMMENDATIONS

1. The survey team has been pleased to note the substantial overall progress made since 1957. It would comment in particular on the following:

   a) The increase in financial support of the teaching program;

   b) The increase in the number and strength of the faculty;

   c) The greater engagement in research on the part of the major departments, with increasing ability to take advantage of available extramural funds;

   d) The improved supply of students, in number and apparently also in quality;

   e) The construction of the Sir Charles Tupper Building.

2. The survey team reports with satisfaction also:

   a) The admirable, even [redacted] - especially the outstanding program of continuing education for practitioners, and the close link with the practicing profession and its official organizations;

   b) The obvious fact that the President, the Board, the Faculty, and the student body have great faith in the Dean of Medicine and are proud of the leadership he has given.

3. At the same time there are, of course, certain areas in which the members of the survey team believe there is need for improvement. They would urge close attention to the following:

   a) The President and the Dean have no direct contact with the policy making bodies of the teaching hospitals.

   There is need for more general appreciation of the manner in which the wards, the outpatient departments and the facilities for diagnosis and treatment in the major teaching hospitals serve as an essential educational instrument for the clinical departments of the university. They are analogous to the teaching and research laboratories of the physical and biological science departments.

   The survey team would recommend that arrangements be sought whereby the Dean or a senior executive officer of the university would sit on the Board of Trustees of each of the major teaching hospitals. Also, the Dean or his designate should be a member of the Medical Executive Committee of each major teaching hospital.

   b) The survey team is concerned over evidence of insufficient coordination

3. b) continued

of the planning of the total university medical centre in the past and for the immediate future. At present there are serious inadequacies of teaching space and facilities on the wards of the Victoria General Hospital and of the Children's Hospital; of clinical research facilities, of office space for geographic full-time teachers; and of teaching facilities in the outpatient departments, (except Grace Maternity Hospital).

In the plans for construction there appears to be no intention to connect the new wing of the Victoria General Hospital with the new Children's Hospital by means of a tunnel or bridge, although these buildings will be adjacent to one another. These and the Pathology Institute will have no connection with the medical school. Major facilities for clinical research will be situated at some distance from the wards, outpatient services and headquarters of the clinical departments, although in admirable relationship with the new basic health sciences building. The new research facilities planned for the Victoria General Hospital are not likely to be adequate for the future.

There is need of a clear policy to determine how the clinical departments are to be coordinated; whether they are to be hospital based or university based; and whether ambulatory patient services would be in departmental clinics or in an integrated university clinic clearly under university auspices.

> The survey group would urge the dean and the top executive officers to engage in the planning of a true university medical centre for the clinical side of Dalhousie University's medical program. In this connection, the services of a medical centre planning consultant would be helpful.

c) There is evidence of some lack of common viewpoint on the part of university, hospitals and government with respect to the relative roles of teaching, research and community service in the hospitals of the Halifax area; and consequently, some lack of coordination of planning.

> The survey team expresses the hope that a hospital planning council for the Halifax area may be established; with a senior representative of the university as an official member of it.

d) The survey team congratulates the Special Committee on Medical Education on the production of the Final Report which in October was under consideration by the Faculty. In an admirable way it has called for a sharper definition of the philosophy and goals of the medical school; and, in conformity with a fresh interpretation of educational principles, for modification of the curriculum to meet new conceptions of the task of the medical school.

To encourage this laudable movement the surveyors would express frankly their finding of a good deal of emphasis still on the teaching of facts and on the examination of students on their "knowledge" rather than on their ability to solve problems and to learn on their own. This is

3. d) continued

reflected in the imbalance of attention paid respectively to lectures, lecture notes and assigned reading, and on the other hand, to the critical consultation of journals and monographs for material to being to small group teaching of truly seminar type.

The survey team would urge the Dean and Faculty to implement the recommendations of the Special Committee. Each department would continue its scrutiny of objectives and methods to help the student to gain the desired knowledge, skills and attitudes and to foster his growth as a professional person. Plans should be made to evaluate the impact of changes in the curriculum. It would be helpful to centralize information in the Dean's office on all courses of instructions and to provide a mechanism whereby each department would be fully aware of the objectives and programs of instruction in other parts of the medical school. The team recommends in particular that steps be taken at once to stimulate students to consult medical literature as part of their daily work; not only on educational grounds, but also to promote the most suitable utilization of the new library when it opens.

e) Despite the commendable growth of travel funds for the medical faculty these resources are still insufficient for the optimum development of the younger teachers in the department. To be in personal touch with leaders in educational experimentation, as well as to keep up with rapidly advancing science, it is extremely rewarding for teachers to visit other universities and hospitals and to participate in specialized conferences.

In the opinion of the survey team a substantial increase in travel funds for the above purposes, of the order of $35,000, would be a rewarding investment.

4. A major expansion of buildings and programs always throws a heavy burden on the leaders of the faculty. The survey team recognizes that it is seldom feasible for a university to grant sabbatical leave to those whose duties are preponderantly administrative. It is confident, however, that the President and Board will do all in their power to give such administrative support to the Dean of Medicine and his professional assistants as will enable them to offer the best possible leadership as the work of the medical school grows.

5. There is clear need of an effective means to coordinate developments in education for the health professions in the Atlantic Provinces. For Dalhousie University to have to negotiate annually for a grant from each of the four provincial governments to support what are in fact regional schools of medicine and dentistry is a cumbersome and unreliable arrangement. It makes long range planning extremely difficult if not impossible. The situations will become even more critical as the planning for a second medical school at Memorial University in Newfoundland gets under way.

The survey team would urge Dalhousie University to press for the establishment in the Atlantic Provinces of an effective mechanism

5. Continued

to coordinate the expansion of facilities for education in the health professions; and to develop methods of cooperative financial support so that institutions serving regional functions may operate and plan in a secure manner.

6. Recommendations

In view of

a) the substantial progress of the past nine years in which both faculty and university administration have made excellent use of their increased resources.

b) the generally wholesome quality of the teaching program and of the atmosphere in which it is conducted and

c) the confidence that planning for the future will be directed toward sound objectives, with reasonable prospect of success, the members of the survey team recommend to the Liaison Committee on Medical Education that through its respective Councils Dalhousie University's Faculty of Medicine be granted continuation of its approval by the Council on Medical Education of the American Medical Association, the Executive Council of the Association of American Medical Colleges and of its affiliate membership in the Association of American Medical Colleges.

At the same time, in recognition of certain problems and special circumstances that have been mentioned the survey group would suggest that the Liaison Committee indicate its willingness to respond to a request by Dalhousie University for a re-visit after an interval of five years.

Appendix Nineteen

List of Subcommittees

Committee on Medical Education

B332
Comm Med Ed Revised

LIST OF SUBCOMMITTEES

Committee on Medical Education

1. CELL BIOLOGY - D. T. Janigan, D. M. Chapman, S. J. Patrick, C. Helleiner, G. R. Langley.

2. CELL PATHOLOGY - J. H. Cooper, Briar Chandler, J. F. Filbee, A. Myrden.

3. GENETICS, EMBRYOLOGY AND REPRODUCTION - G. H. Flight, K. Hameed, D. M. Chapman, S. D. Wainwright.

4. GASTRO-INTESTINAL SYSTEM - J. J. Sidorov, F. J. Barton, J. C. Szerb, J. S. Manchester.

5. MUSCULOSKELETAL SYSTEM - P. A. MacGregor, F. W. Fyfe, D. M. Quastel, M. Erdogan, D. M. Nicholson, G. Colwell.

6. CARDIOVASCULAR, RESPIRATORY SYSTEM - R. N. Anderson, T. Gillespie, W. Josenhans, A. A. Drysdale, C. E. Kinley, A. D. MacKeen, Albert Shaw.

7. PSYCHIATRY AND BEHAVIOURAL SCIENCES - B. Doane, S. Hirsch, I. MacGregor, and a Sociologist.

8. EPIDEMIOLOGY, BIOSTATISTICS - K. E. Scott, J. M. Wanklin, A. J. Myrden.

9. FORENSIC MEDICINE - H. K. Hall, H. C. Still, I. D. Maxwell, D. B. Nielsen, J. G. Aldous.

10. MEDICINE AND THE COMMUNITY, including:
    (a) Clinical Preventive Medicine
    (b) Family Practice
    (c) Community Health Service

    J. F. Nicholson, P. C. Gordon, F. M. Fraser.

11. ONCOLOGY - S. T. Norvell, J. A. Aquino, R. L. Aikens, G. M. Fraser.

12. DRUGS AND POISONS - Briar M. Chandler, J. H. Feindel, Adrian MacKenzie, D. J. Tonning, J. G. Aldous

13. METABOLISM AND NUTRITION - S. E. York, L. Stewart, Miss E. Campbell, A. Gillis.

14. URINARY SYSTEM - F. G. Mack, A. J. MacLeod, A. H. Shears.

15. ENDOCRINOLOGY - S. C. MacLeod, W. C. Nicholas, A. J. Lucis, N. Kerenyi.

16. BLOOD - H. C. Read, Vincent Ing, K. Hameed.

17. IMMUNOLOGY - J. F. L. Woodbury, D. T. Janigan, R. Ayenger, Margaret DeWolfe, J. Embil, Alan MacLeod, D.R.S. Howell.

18. INFECTION - P. L. Landrigan, R. Ozere, C. E. van Rooyen, B. J. Steele.

19. NEUROLOGY AND E.E.N.T. - A. J. Lewis, R. L. Saunders, J. C. Szerb, W. S. Heustis, C. Keays, A. G. Shane, H. N. A. MacDonald.

Appendix Twenty

Endocrinology-Reproduction

3rd and 4th Year

Evaluation Card and Checklist

B 328
Committee on Med. Ed.

Endocrinology-Reproduction Committee

3rd Year Student Evaluation Card

Instructor's name _____

Number of 1/2 days with students _____

Student's name	Facts	Problem solving	Clinical skill	Attitude	Total
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

Score each item out of 10

Comm. on Med Ed.
Subcommittee for Endocrinology - Reproduction
the following was from Report of the subcommittee
in charge to present. the topic to students -

Endocrinology-Reproduction Committee

4th Year Student Evaluation Card

Instructor's name _____

Number of 1/2 days with student _____

Student's name	Application of knowledge	Skills	Attitude	Case Presentations	Initiative	Total
1.						
2.						
3.						
4.						
5.						
6.						

Score each item out of 10

Endocrinology-Reproduction Committee

3rd Year Student's Check List

Gyn history

Gyn examination

Cytology technique

Catheterization

I/V techniques

Abdominal exam (pregnancy)

Manage a delivery

Immediate newborn case

Resuscitation

Examination of newborn

Endocrinology-Reproduction Committee

4th Year Student's Check List

Gynecology

Pelvic exam
Endomitrial Biopsy
Interpret hanging drop
Evaluate abortion

Obstetrics

Diagnose fetal position
Rectal exam for station and dilatations
Vag. exam in labor
Rupture membrane
Episcotomy and repairs
Low forceps
Inspect cervix and vagina
Manual removal of placenta
Perdendal block
Resuscitate newborn - mask and tube
Start and manage a medical induction (I.V. drip)
Post natal examination
Understand and evaluate contraceptive procedures.

Newborn

Appendix Twenty-One

Department of Medicine

Evaluation - 3rd Year

DEPARTMENT OF MEDICINE EVALUATION FORM
THIRD YEAR MEDICAL STUDENT

STUDENT

Instructor | Date | Covering Period

Note to Instructors:

In an effort to identify medical student performance, the following form has been devised. We would ask your help in completing it as accurately as possible by putting a check mark in the appropriate block above or between descriptions. Where you feel you have insufficient information to fill out a section, please leave blank.

1. Attitude to Patients:

1	2	3	4	5	6	7	8	9	10
Easily irritated by patients, brusque, and often intolerant		Superficial relationship with patients, is often forcing himself to get along with patients but unable to conceal irritation		Variable attitude depending on personal interest in patients or patient's problem restless with chronic care patients		Gets along well with patients under usual circumstances but becomes upset if patient questions or ignores his suggestions and advice.		Obviously at ease with patients. Enjoys patient contact but maintains respect for patient at all times.	

Attitude to Work

2. Handling of Work Load:

1	2	3	4	5	6	7	8	9	10
Most of his work is unfinished. cannot adapt rate of work to demands		Usually finishes what he starts though takes longer than most class-mates.		Average speed finishes with most of classmates.		Works rapidly work up to date but only assigned work done, i.e. no extra contribution		Works rapidly uses extra time to do valuable but not standard tasks.	

Prolonged Effort:

1	2	3	4	5	6	7	8	9	10
Shows an increasing lag if prolonged effort is required.	Prefers a variety of short problems, inclined to show signs of fatigue if persistent effort is requested.	Variation in persistence to task according to degree of personal interest in problem.	Works conscientiously on almost all long term problems.	Seems tireless; interest never seems to lag if job continues.					

4. Completeness of Work:

1	2	3	4	5	6	7	8	9	10
Obtains little or no background information about patient, e.g. unaware of previous hospital admissions	Has incomplete background information, e.g. knows about previous admissions.	Has complete background information from patient Superficial survey of old charts.	Background information complete including thorough review of old charts.	Has complete profile of patient's illness and social-psychiatric situation. Thoroughly reviews old					

5. Teamwork:

1	2	3	4	5	6	7	8	9	10
Is a lone wolf who prefers not to work in a team.	Goes through the motions of working in a team but does not contribute anything to the team effort.	Gets along well with other students but is inconspicuous in a team.	Participates actively in team discussions and team projects.	Emerges clearly as a strong member of a team.					

Attitudes to Self:

6. Confidence:

1	2	3	4	5	6	7	8	9	10
Afraid to speak up even if encouraged.		Rarely speaks spontaneously but will do fairly well if given the necessary encouragement.		Talks readily in a personal interview but is reluctant to talk in front of others.		Talks freely when an auspicious occasion arises.		Presents his views or knowledge freely on almost any occasion.	

7. Responsibility for Self Education:

1	2	3	4	5	6	7	8	9	10
Does minimal amount of study and work necessary to pass.		Does assigned tasks and reading only		Occasionally does extra reading or seeks out instructors for questioning that interest him.		Often does extra study or seeks out extra information without shirking usual responsibilities.		Usually seems to find an opportunity to do extra study and thinking about problems. Enjoys and looks for chances to increase his store of knowledge.	

Attitude to Health Team:

8. Asks for Help:

1	2	3	4	5	6	7	8	9	10
Will not ask for help no matter how much he needs it.		Will accept help and suggestions gracefully but does not ask for help.		Will turn to his classmates for advice if in difficulties but hesitates to ask instructors		Will turn to his instructor if he needs advice.		Will seek help from anyone who can aid if he feels he is in difficulty.	

Acceptance of Authority:

1	2	3	4	5	6	7	8	9	10
Fails to obey instructions or fails to carry out assigned tasks.		Pays little attention to instructions e.g. talks while instructions are being given.		Does what he is told without apparent reaction one way or another		Listens attentively to directions and makes careful note of instructions.		Accepts authority easily. Conveys a feeling that he is grateful for guidance.	

10. Response to Criticism:

1	2	3	4	5	6	7	8	9	10
If criticized becomes silent and resentful.		Does not accept criticism well presents various excuses to explain his shortcomings.		Accepts criticism stoically.		Accepts criticism and asks pertinent questions about the matter on hand.		Accepts criticism easily makes you feel that he appreciates your interest in his short-comings.	

Knowledge:

11. Over all knowledge:

Unsatisfactory ☐ Average ☐
Below Average ☐ Above Average ☐
Superior ☐

Skills:

12. History taking, physical examinations, usual ward procedures.

Unsatisfactory ☐ Average ☐
Below Average ☐ Above Average ☐
Superior ☐

Final Mark _____

_____ Instructor

_____ Departmental Chairman

NOTE: Please record if possible an incident in this student's performance that was extremely good, or extremely poor, and if possible contrast it with its opposite.

Appendix Twenty-Two

Proposed Curriculum - 1966

Time Allotments

PROPOSED TIME ALLOTMENTS

Explanation of Graphic Sheets

Outline

Sheets divided vertically into weeks and trimesters.
Sheets divided horizontally into 7 units, representing one-hour class periods.
Horizontal divisions each subdivided into five, to represent the 5 days of a schedule week.

Thus - each small block represents 1 hour of student time.

The horizontally scheduled activities represent courses of study predominantly conducted by a single department. Nevertheless, a considerable degree of correlation with other blocks and courses is expected.

The System "blocks" are periods of time where various selected departments will participate in carefully correlated learning activities, planned by the Subcommittee to provide an excellent opportunity for the student to consider the system as a whole, rather than as a medical specialty.

The actual conduct of each block will be co-ordinated by a "planning group," but the teaching will be done by departments.

The position and arrangement of courses and blocks are tentative only. The departments and planning groups may recommend to the Committee on Medical Education and the Administration, proposals re timetable scheduling.

The unscheduled time is deliberately provided to allow for:

(1) electives - approximately one half-day per week.
(2) independent study.

The Committee on Medical Education will observe student activities closely to ensure that the unscheduled time is not pre-empted by excessive assignments from the departments.

Saturday morning is not shown on Graphic Sheets, but may have to be included for convenience of scheduling, provided total scheduled time is not increased.

Note: The schedule of teaching proposed by the Committee on Medical Educati should not be regarded as necessarily permanent and immutable. The Committee, with the advice of the Subcommittees and/or Departments, must be free to recommend either minor or major adjustments in time allocations, according to experience with the initial program.

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VE MEDICINE

PHARMACOLOGY

METHODS OF EXAMINATION

Medicine - 64 (a.m)

Paediatrics - 32 (p.m.)

NEUROLOGY AND SPECIAL SENSES - 100 hours

MUSCULOSKELETAL - 60 hours

CARDIOVASCULAR - 60 hours

PREVENTIVE MEDICINE

PHARMACOLOGY

METHODS OF EXAMINATION

RESPIRATORY - 60 hours

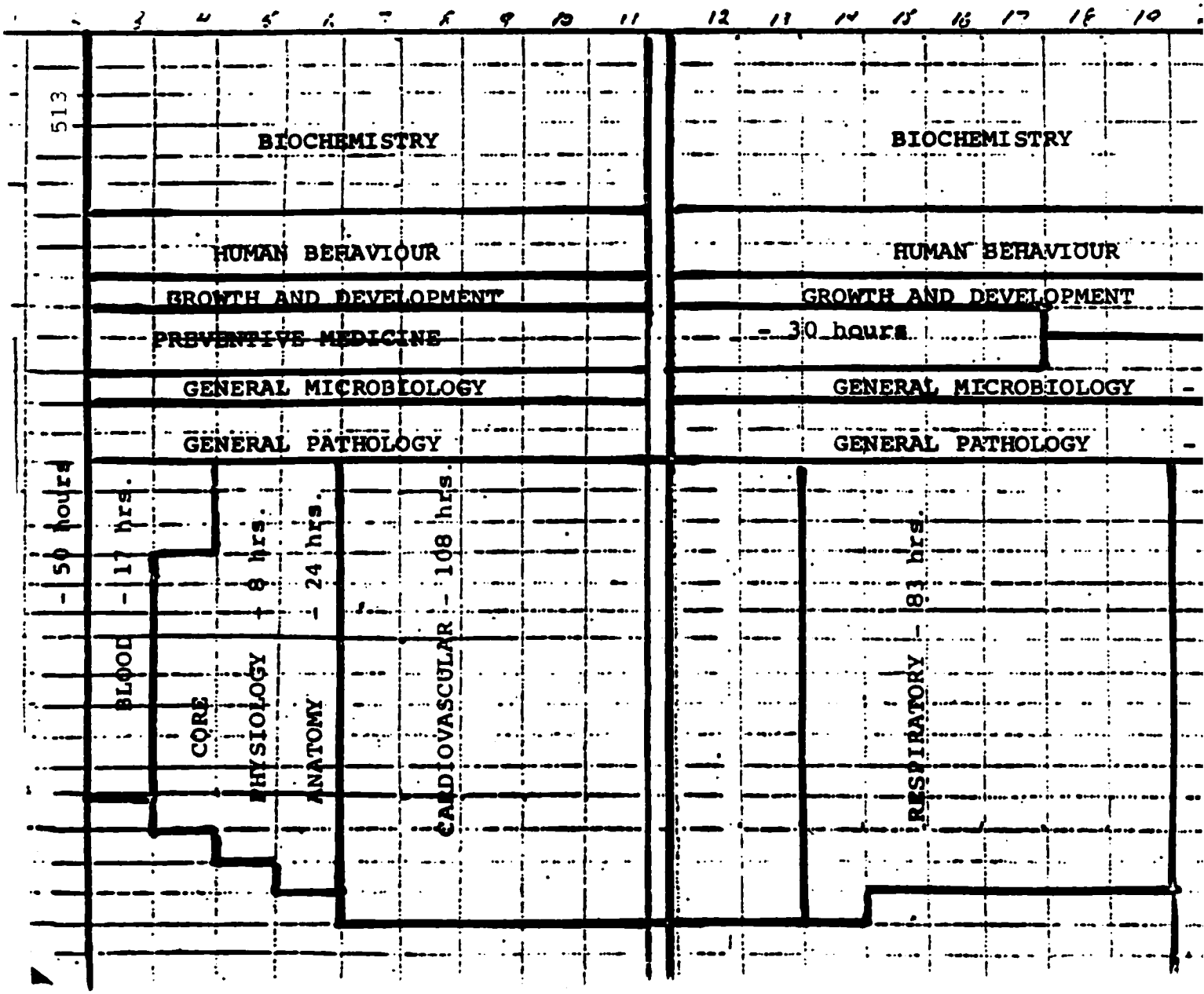
ENDOCRINE - 46 hours

TEGUMENTARY - 11 hrs.

RENAL METABOLIC - 57 hours

ELECTIVES AND INDEPENDE

PREVENTIVE MEDICINE
PHARMACOLOGY
METHODS OF EXAMINATION
RESPIRATORY – 90 hours
ENDOCRINE – 46 hours
TEGUMENTARY – 11 hrs.
RENAL METABOLIC – 57 hours
BLOOD – 29 hours
IMMUNOLOGY
PREVENTIVE MEDICINE
(including 11 Hrs. Microbiol.)
PHARMACOLOGY
METHODS OF EXAMINATION
– 25 hours
REPRODUCTION – 106 hours
GASTROINTESTINAL
Scheduled Hours
N D I N D E P E N D E N T S T U D Y


513
BIOCHEMISTRY
HUMAN BEHAVIOUR
GROWTH AND DEVELOPMENT
PREVENTIVE MEDICINE
GENERAL MICROBIOLOGY
GENERAL PATHOLOGY
BLOOD - 17 hrs.
CORE - 50 hours
PHYSIOLOGY + 8 hrs.
ANATOMY - 24 hrs.
CARDIOVASCULAR - 108 hrs.
BIOCHEMISTRY
HUMAN BEHAVIOUR
GROWTH AND DEVELOPMENT
- 30 hours
GENERAL MICROBIOLOGY
GENERAL PATHOLOGY
RESPIRATORY - 83 hrs.

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

BIOCHEMISTRY

HUMAN BEHAVIOUR

AND DEVELOPMENT

rs

ERAL MICROBIOLOGY - 44 hours

ERAL PATHOLOGY - 60 hours

RESPIRATORY - 83 hrs.

RENAL-METABOLIC - 49 hrs

(Homeostatic Mechanisms)

BIOCHEMISTRY

HUMAN BEHAVIOUR

) Paediatrics - 30 hours

) Preventive Medicine - 15 hours

ENDOCRINOLOGY - 9

TRAUMATIC SURGERY - 12

PATIENT WORK-UP
BY STUDENTS
AND
STAFF REVIEW

Medicine - 120
Surgery - 120
Paediatrics -111

PSYCHIATRY - 32 hours

PREVENTIVE MEDICINE - 32 hours

REPRODUCTION - 32 hours

CARDIOLOGY
LAB - 18 hrs

NEUROLOGY AND
SPECIAL SENSES
- 57 hrs

RESPIRATORY
- 18 hours

PSYCHIATRY

PREV. MED

REPRODUCTION

ENDOCRINOLOGY - 10

GASTROINTESTINAL
20 hours

MUSCULOSKELETAL
- 20 hours

ELECTIVE BLOCK

ELECTIVES AND INDEPE

cine - 120
ery - 120
iatrics -111

CHIATRY

V. MED

DUCTION

20 hours

MUSCULOSKELETAL - 20 hours

ELECTIVE BLOCK

RADIOLOGY - 10

OTOLARYNGOLOGY -

OTOLARYNGOLOGY CLINICA - 20 hr

ANAESTHESIA - 10

OPHTHALMOLOGY - 10

OPHTHALMOLOGY CLINICS - 20 hrs.

FORENSIC MEDICINE - 10

TEGUMENTARY - 10 hrs.

IMMUNOLOGY - 12 hrs.

PATIENT WORK-UP BY STUDENTS AND STAFF REVIEW

PSYCHIATRY - 33 hours

PREVENTIVE MEDICINE - 22 hours

REPRODUCTION - 22

BLOOD - 14

RENAL + METABOLIC - 14 hrs.

CORE LABORATORY AND PROCEDURES LAB - 35 hrs.

Scheduled hours

AND INDEPENDENT STUDY

3	4	5	6	7	8
MEDICINE	**SURGERY**	**PAEDIATRICS**		**REPRODUCTION AND UROLOGY**	
5 students	16 students	16 students		16 students 4 - Obs.(Grace) - 1 month 4 - Obs. (Infirm.) - 1 month 4 - Gyn. - 2 wks. 4 Urol. - 2 wks. 2 V.G. or 2 Camp Hill	

7	8	9	10	11	12
REPRODUCTION AND UROLOGY	PSYCHIA-TRY	FAMILY PRACTICE (If pre-ceptors are available	ELECTIVE	VACATION	
16 students	8 students	8 students	8 students		
4 - Obs.(Grace) - 1 month 4 - Obs. (Infirm.) - 1 month 4 - Gyn. - 2 wks. 4 Urol. - 2 wks. 2 V.G. or 2 Camp Hill			e.g. Rehabili-tation Dermato-logy Eye ENT Urology Basic Sc. Lab. Med. Research Anaesthe-sia or any of regular rotations		

DEPARTMENTAL TIME ALLOCATION - FIRST YEAR

ect	Department	Time	
ell Biology		50	50
Biochemistry	Biochemistry	186	
Human Behaviour	Psychiatry	60	
Growth & Development	Paediatrics	30	
	(Prev. Med.)	15	
General Pathology	Pathology	60	
General Microbiology	Microbiology	44	
Preventive Medicine	Preventive Medicine	30	425
Core Physiology	Physiology	8	
Core Anatomy	Anatomy	24	32
Blood	Physiology and Medicine	8	
	Anatomy	9	17
Cardiovascular	Physiology	39	
	Medicine	39	
	Anatomy	20	
	Assigned by Planning Group.	10	108
espiratory	Physiology	27	
	Medicine	22	
	Anatomy	14	
	Prev. Med.	3	
	Paediatrics	3	
	Radiology	3	
	Surgery	2	
	Anaesthesia	3	
	Assigned by Planning Group	6	83
enal-Metabolic Homeostatic mechanisms)	Physiology	21	
	Anatomy	12	
	Medicine	4	
	Urology	2	
	Surgery	3	
	Paediatrics	3	
	Preventive Medicine	2	
	Assigned by Planning Group	2	49
			764

Subject	Department	Time	
Endocrinology	Physiology	5	
	Anatomy	1	
	Assigned by Planning Group (Clin. Demonst.)	3	9
Gastroenterology	Physiology	20	
	Medicine	15	
	Anatomy	30	
	Preventive Medicine	2	
	Paediatrics	10	
	Assigned by Planning Group	8	85
Introduction to Traumatic Surgery	Surgery	12	12
	Total from previous page		106
			764
			870

Appendix Twenty-Three

Curriculum 1967-68

Cell Biology

1st and 2nd week

from correspondence ... to Robinson ... B 331

M- Microanatomy
B= Biochemistry
P=Physiology
PA- Pathology

PE=Pediatrics
ME=Medicine
SU=Surgery

DALHOUSIE UNIVERSITY - FACULTY OF MEDICINE
SESSION (7) 1967-1968

1st Year Medicine — 1st Week - Cell Biology — First Term

Monday	Tuesday	Wednesday	Thursday	Friday
Introduction	Film: Ultrastructure of cells (M)	Lab. Demonstration - Size and electrical properties of molecules (B)	Ultrastructure of Plasma membranes and specializations (M)	Enzymes and Cell Metabolism (B)
Cells - General Survey; Types, Histological organizations (M)	Lab. Demonstration - Viewing of illustrations of cells (M)	as above (B)	Transport across Plasma Membranes (P)	Energy Transformation in Cells (B)
Connective Tissue - Components - Functions - Interrelations (M)	as above (M)	as above, if required (B)	Film: Pinocytosis and Transport (P)	Lab Demonstration - Effect of respiratory poisons on living cells (B, PA)
	as above (Optional)			as above
Lab. - Make buccal smear and examine (M)	Chemical composition of cells (B)	Problem Discussion <u>Optional</u>	Ultrastructure of Cell Matrix and Mitochondria (M)	Lab Demonstration - Effect of Mercurials on Renal Mitochondria (B, PA)
				as above

2nd Week

	Monday	Tuesday	Wednesday	Thursday	Friday
	Ultrastructure of Endoplasmic Reticulum and Nuclei (M)	Chemical and Macromolecular organization of nucleic acids (B)	Cell Differentiation - Normal - Abnormal (PA)	Clinical Demonstration - Group 1 e.g. Neoplasms (SU)	Cellular Bases of Secretion (M)
	Cell Division (M)	Molecular Genetics (B)		Group 2 - Cell Injury e.g. - Infarcts (ME)	Cellular Events in Nerve and Muscle Function (P)
			Cell Injury and Death (PA)	Group 3 - Repair e.g. - Wounds Fractures (SU)	
			Repair and Regeneration (PA)		
	Lab. Demonstration - Chromosomal assessment and abnormalities (PE)	Clinical Demonst. - Rotation Gr. 1 - e.g. Mongolism (PE) Gr. 2: e.g. Sickle Cell disease (ME) Gr. 3: e.g. Intersexes (PE, UROL, GYN)	Problem Discussion Optional (M,P,B,PA,PE,ME)	Cellular Events in Inflammation (PA)	Integrated Symposium - One organ system in health and disease to demonstrate interrelationships of course subjects.

Appendix Twenty-Four

Excerpt from University Calendar

Faculty of Medicine - 1969

CURRICULUM

First Year: The year begins with a two-week course in Cell Biology. Its purpose is to provide an overall view of Cell Biology as it applies to human performance in health and disease. The relevance of the various biological sciences is illustrated in this preliminary block.

Four major body systems are then studied in blocks, the Respiratory System, Cardiovascular System, Gastrointestinal System, and Renal-Metabolic System. In First Year, the Departments responsible for most of this System Block programme are: Anatomy, Physiology, Medicine, and Surgery, with a number of other Departments involved to a lesser extent. Biochemistry is presented as a separate subject, but it is integrated with the System Block under consideration at any given time. Other First Year subjects are: Cellular (General) Pathology, Human Behaviour, Growth and Development, Introductory Microbiology with Immunology, and very brief introductory courses on the Blood, the Endocrine System, and Traumatic Surgery (especially emergency treatment).

Classes are held in the Sir Charles Tupper Medical Building and on the wards of the teaching hospitals. The student commences actual clinical training during this year.

The First Year is approximately thirty-three weeks in duration divided into three trimesters of 11 weeks. 864 hours of instruction is scheduled.

The elective programme is introduced in the skeletal, Respiratory, Cardiovascular, Endocrine, Renal-Metabolic, Reproductive, and Gastro-intestinal. The principal Departments responsible for these blocks are: Anatomy, Physiology, Pathology, Pharmacology, Medicine, Surgery, Obstetrics and Gynaecology. A number of other Departments make briefer contributions.
In addition to these, rather short blocks appear in Second Year on the Endocrine System, the Tegumentary System, the Blood System, and Immunology. Special time has been set aside for Human Behaviour, Preventive Medicine, Pharmacology, and Methods of Examination. Again, the Second Year is of approximately thirty-three weeks duration, and each student carries one elective throughout the three 11-week terms. Clinical experience is a part of each System Block.

Third Year: In the Third Year the time devoted to the System Blocks becomes smaller as the student has an increasing amount of direct patient contact. Approximately half of the student's time will be occupied with direct patient-related learning situations on the hospital wards.
The Subject Blocks which have been studied previously occur again in Third Year, in much shortened form. They are intended primarily to facilitate a close relationship between the clinical and preclinical sciences, as the student begins more and more to deal with patients. Some time in the Third Year is set apart for the Departments of Psychiatry, Preventive Medicine, Anaesthesia, Ophthalmology, Radiology, and Otolaryngology. The Third Year is of thirty-three weeks' duration. The student carries an elective during this year.

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Fourth Year and Interneship: In these two years, the student obtains his maximum clinical and practical experience. The programme will be altered, commencing in the spring of 1970, when the Fourth Year, or Clinical Clerkship, will be of twelve months' duration, with one month of vacation at sometime during the year. In the Clerkship programme the student functions as a member of the medical team, and assumes an increasing degree of responsibility for patient care. At the same time, his own learning requirements are carefully defined and opportunity is provided for study and investigation. The key clinical fields for experience in the Clinical Clerkship are: Medicine, Surgery, Psychiatry, Reproduction, Paediatrics, and Family Practice. Each Clinical Clerk will have a two-month elective period to pursue an additional clinical experience of his own choice.

Following Clinical Clerkship, the Faculty provides a variety of Interne appointments in conjunction with the various teaching hospitals of the Atlantic Provinces.

OLD CURRICULUM

Students in Third Year, Fourth Year, and Fifth Year in the 1969-1970 session are completing their course under the old curriculum but a number of modifications and changes have been, and are being introduced, to keep abreast of medical developments, and to provide constantly improved educational opportunities.

Third Year: Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Preventive Medicine, Psychiatry, Laboratory Medicine, Anaesthesia, Ophthalmology, Otolaryngology, Radiology, Urology.

Fourth Year: A clinical clerkship consisting of two months on Medicine, two months on General Surgery and Anaesthesia, two months on Obstetrics, Gynaecology, and Paediatrics, two months on Psychiatry, Radiology, Neurosurgery, Ophthalmology, Otolaryngology and Urology. Also Applied Anatomy and Physiology; Medical Jurisprudence, Medical Ethics, and a one-week General Practice Preceptorship.

Fifth Year: A twelve-month rotating internship, most of which is held within the Victoria General Hospital, Halifax, or the Saint John General Hospital, Saint John, N. B., with certain other affiliated hospitals providing part of the rotation. Each rotation comprises four months in Medicine, four in Surgery, two in Obstetrics, and two in Paediatrics. All rotations meet the requirements of the Canadian Medical Association. They are also recognized as a year of grad

Appendix Twenty-Five

Excerpt from

University Calendar

Faculty of Medicine - 1968

Examinations

SUBJECTS OF EXAMINATIONS

In addition to meeting the entrance requirements, candidates for degrees are required to pass periodic examinations. The requirements in each subject are covered by the work of the class or classes in that subject specified under **Classes of Instruction.** The marks obtained in term examinations, or in oral or practical examinations, may be considered in computing the final mark allowed for the year's work in each subject. The examinations in the various subjects will be held within the dates set in the University Almanac, and as posted on the Notice Boards. Examinations are ordinarily held in the following subjects, but the Head of a Department may set a term or final examination in any additional classes given in the first four years.

First Year. To be announced early in the session.

Second Year. Pathology, Microbiology, Biochemistry, Psychobiology, Pharmacology, Medicine, Preventive Medicine, Clinical Medicine.

Third Year. Surgery, Medicine, Obstetrics and Gynaecology, Paediatrics, Methods of Examination (Laboratory), Preventive Medicine, Psychiatry.

Fourth Year. By an arrangement between Dalhousie University, the Provincial Medical Board of Nova Scotia, and the Medical Council of Canada, most of the final examinations at the end of the fourth and fifth years are conducted conjointly by the University and these two bodies. Hence candidates may qualify at the same time for the academic degree, the licence of the Provincial Medical Board of Nova Scotia, and the licence of The Medical Council of Canada. In fourth year, written examinations in Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology are thus conducted conjointly. The University also sets examinations in Psychiatry and Applied Anatomy, and The Medical Council of Canada sets an examination in Public Health and Preventive Medicine.

Fifth Year. Conjoint oral and clinical examinations are held in Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, and Public Health and Preventive Medicine.

EXAMINATION MARKS AND PROMOTION

A mark of 80 constitutes a "Distinction." The pass mark is 55 in each subject, but an average of 60 is required in all of the final examinations of the year. Unless this average of 60 is obtained, the student will have failed and will not be allowed to advance to the next year or to take supplemental examinations.

SUPPLEMENTAL EXAMINATIONS

Supplemental examinations will not be allowed to students with an average of less than 60 in the final examinations of any year (failed subjects are averaged at 55 for this purpose only). Students with an average of 60 or more will be allowed to take two supplemental examinations in first year, three in second year, two in third year, and two in fourth year. Under exceptional circumstances, the Faculty may allow one additional supplemental examination in excess of the numbers mentioned above.

The regular supplemental examinations are held before classes begin in September on the dates specified in the University Almanac, unless otherwise decided by the Faculty of Medicine.

Application for admission to a supplemental examination must be made on or before the date set in the University Almanac for receiving applications. The application form may be obtained from the Dean's Office and must be accompanied by the proper fee (see page 29.)

PERMISSION TO REPEAT A YEAR

Students who have failed a year of the regular medical course may, following special consideration by Faculty, be permitted to repeat the year. In such circumstances they are required to repeat the entire work of the year, including examinations in every subject. A student who is repeating any year of the medical course is not permitted supplemental examinations. Only one year of the five-year course may be repeated.

ADMISSION TO EXAMINATIONS

Candidates for admission to degree examinations must conform to the following requirements:

1. They must have satisfied the entrance requirements.
2. They must have attended the prescribed classes regularly and punctually.
3. They must have prepared such exercises and reports as may have been prescribed, and, in the case of classes involving laboratory, practical, or clinical work, they must have completed such work satisfactorily.
4. Candidates for the final-year examinations must have fulfilled satisfactorily the following requirements:
   - (a) Attendance at clinics or as clinical clerks in the third and fourth years at such hospitals and other institutions as may be designated by the Faculty.
   - (b) Attendance on at least 20 maternity cases and, in addition, the delivery under supervision of 10 cases.
   - (c) Attendance on the post-mortem examinations conducted at the Pathology Institute over a period of at least eight months, during which instruction shall have been received in the methods of making such examinations and in framing reports.
   - (d) Service for twelve months on rotating internships approved by the Canadian Medical Association and the Faculty of Medicine. A certificate of satisfactory internship will be required from the hospital or hospitals before the student is permitted to take his final examinations.

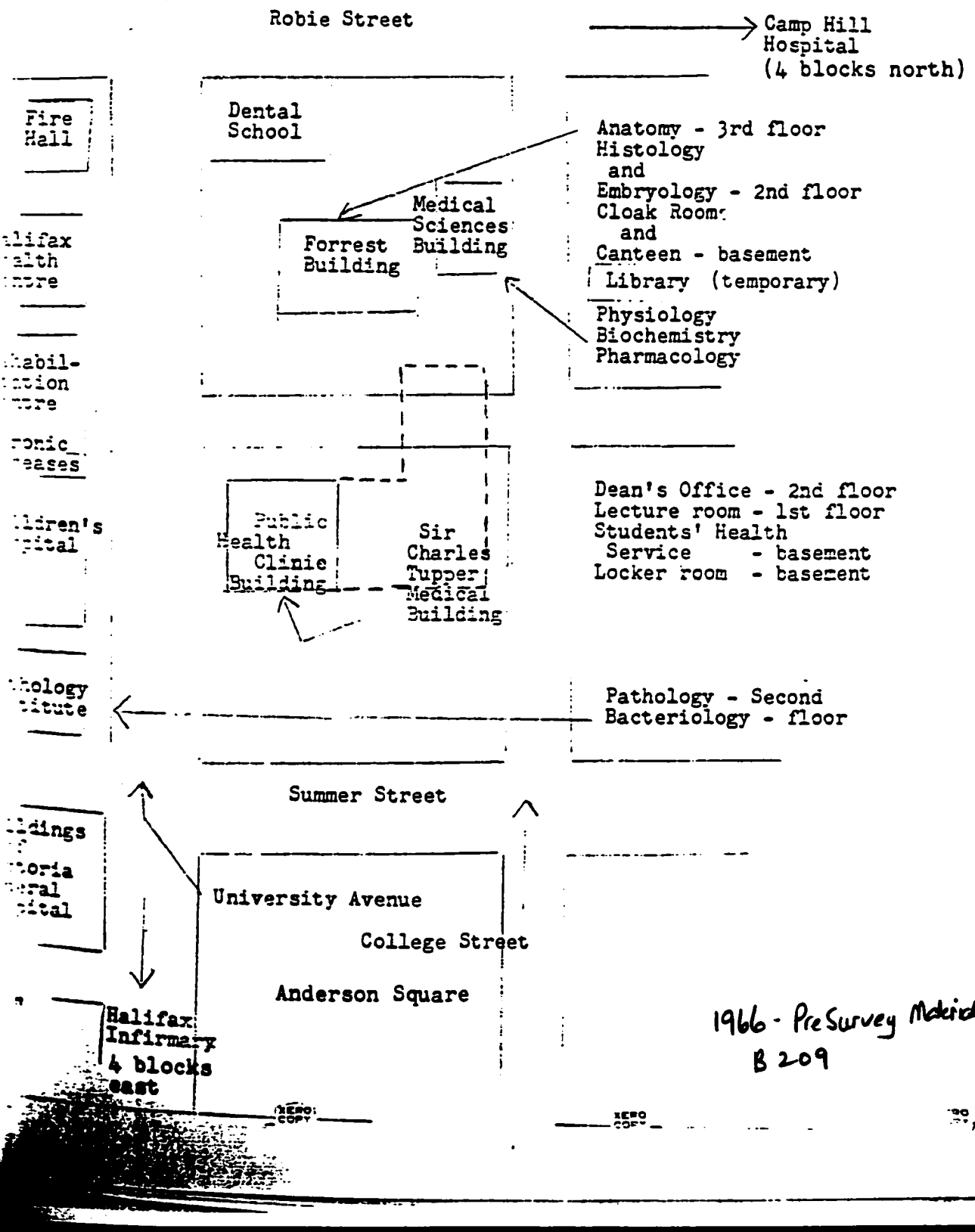
Appendix Twenty-Seven

Diagram of New Campus

Dalhousie Medical School

and Associated Hospitals 1967

Dalhousie Medical School and Associated Hospitals Halifax, Nova Scotia



1966 - Pre Survey Materials
B 209

Appendix Twenty-Eight

Provincial Grants - Required

1966-67

APPENDIX A

PROVINCIAL GRANTS REQUIRED 1966-67 *

	Present Grant	Requested* Increase.	Total Grant in 1966-67
Nova Scotia	$ 650,000.	$ 263,000.	$ 913,000.
New Brunswick	150,000.	136,000.	286,000.
Newfoundland	152,000.	128,000.	280,000.
P. E. I.	60,000.	51,000.	111,000.
	$1,012,000.	$578,000.	$1,590,000.

* Based on percentage of students from each province rounded off to the nearest thousand dollars.

APPENDIX B

PROPORTIONS OF STUDENT ENROLMENT AND GRANTS BY PROVINCE.

	Percentage of Students.	Percentage of present grant	Percentage of proposed grant.
Nova Scotia	45.4	64.3	57.5
New Brunswick	23.6	14.8	18.
Newfoundland	22.1	15.	17.5
P. E. I.	8.8	5.9	7.

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