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Mansell, D., Stahnisch, F., & Larsson, P. (Eds.). (2020). Bedside and Community: 50 Years of Contributions to the Health of Albertans by the University of Calgary. Calgary, AB: University of Calgary Press.

http://hdl.handle.net/1880/111577

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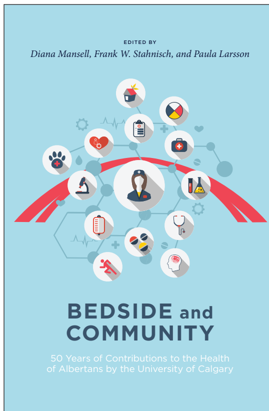

BEDSIDE AND COMMUNITY: 50 Years of Contributions to the Health of Albertans by the University of Calgary Edited by Diana Mansell, Frank W. Stahnisch, and Paula Larsson

ISBN 978-1-77385-073-3

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The Faculty of Medicine and its Response to the Changing Health-Care Context in the Province of Alberta, 1966–2016

Frank W. Stahnisch

The new University of Calgary Faculty of Medicine was a result of major administrative and political changes in the provincial health-care system in Alberta.[1] After it was established in 1966, the faculty soon became a reflexive and autonomous actor, as can be seen in its responses to the decisions and plans made by the government of Alberta.[2] This relationship built on the opportunities provided by health-care institutions and networks in the province, along with community requests and decisions at more local levels. This chapter will provide a historical overview of the major milestones from a half-century of clinical and scientific developments in the University of Calgary's Faculty of Medicine, and place them in the larger context of the advances made in the provincial health-care system.

The University of Calgary's Faculty of Medicine as a New Canadian Medical School

The medical landscape in North America has seen many rises over the previous two centuries of innovation.[3] For instance, medical understanding has transitioned from knowledge with roots in the earlier nosological

and Enlightenment traditions and diagnoses of miasmatic illnesses,[4] to a professionalized and scientific body of knowledge. The role of Canadian physicians in this transformation is a subject little discussed in the wider literature on the history of medicine.[5] Yet Canada has a rich history incorporating dual influences from its colonial parent, Britain—such as nosology, medical education, and military surgery—and its intellectual neighbour, the United States—bacteriology, public health, and more often biomedical research. These two medical cultures have stimulated a unique Canadian approach to medicine, perhaps best represented by clinical pathologist Sir William Osler (1849–1919) at McGill University.[6] Osler and his followers shaped an important historical tradition of standardized clinical methodology and strong physician engagement provided by medical researchers actively striving for overall health-care improvement within a larger medical framework. Canadian medicine has thus grown from an advantageous position at the crossroads of both heritage and innovation.

The University of Calgary developed a similarly unique position within the Albertan medical spectrum,[7] with Alberta's first medical programs created in the provincial capital of Edmonton at the start of the twentieth century. The Faculty of Medicine at the University of Alberta was built in 1913, and it soon enrolled its first medical students.[8] As the century progressed, Alberta's population further swelled. More and more immigrants arrived and settled in rural areas on the prairies and in the province's next-largest city, Calgary.[9] The resulting need for physicians pushed the development of a new university in Calgary, with a faculty of medicine to train family physicians to fill the need for family medical care in Calgary and the rural areas of Alberta. At its very foundation, the faculty of medicine in Calgary was created with an outward focus on the care of patients and contributions to the larger community.[10] In 1967, it began its medical training program with the goal of establishing a community of doctors who would be accessible to Alberta families and could give effective care within the community sphere. Over the next fifty years, the medical contributions of the University of Calgary have echoed this early outreach philosophy.

The construction project for the Foothills Provincial General Hospital at St. Andrews Heights in northwest Calgary commenced in 1962, which was first intended as a stand-alone city hospital without specific academic goals. When the hospital eventually opened its doors to the public four years later, it was the largest new clinical building in North America. The

Foothills Hospital was created with great public and medical aspirations, which—together with the burgeoning plans to also build a medical school in Calgary—culminated in the attempt to build a "Mayo Clinic North,"[11] both in its health-care functions as well as its opportunities for clinical research. This was strikingly exemplified in the surgical performance of a first kidney transplantation at the Calgary Foothills Hospital in 1971 by a team led by the British-trained Iraqi surgeon Dr. George Abouna (1934–2016).[12] A parallel degree program in nursing was set up, together with units on main campus in September 1966, shortly after the opening of the integrated (medicine and nursing) Foothills Medical Centre (FMC). The nursing program soon moved out from the FMC to establish a new medical centre on "the other side of 16th Avenue," after negotiations with the Alberta Association of Registered Nurses (AARN) came to an agreement with the young autonomous University of Calgary.[13] Over the course of its first twenty-five years, the seven-hundred-bed community hospital soon developed into a regional thousand-bed referral centre, with internationally known clinical, teaching, and scientific research units.[14]

In direct reference to the ongoing accomplishments of the Mark O. Hatfield Clinical Research Center, at the National Institutes for Health Research in Bethesda, Maryland—which opened in 1948[15]—the University of Calgary's Faculty of Medicine prided itself on having the latest, top-notch medical technology and maintaining accepted North American standards in the organization of its clinical wards and patient rooms. This was indeed a noticeable achievement, since the building process had been underfunded from the very beginning and various money-saving initiatives were employed to "build it cheaper."[16] Once established, however, the FMC—like the academic Edmonton hospitals before it—soon came to attract notable North American and European physicians as faculty, as well as clinicians, administrators, and medical educators. This occurred even though "the Dean faced the problem of competition from all the other medical schools in Canada."[17] The continuous reports to the FMC's Board of Governors pointed out the increase in registrants each year, proudly declaring "an average of 119.6 new doctors who registered for practice each year . . . . The number of practising doctors in the Province has increased from 583 in 1931 to 1,513 in 1964."[18]

Yet even though the number of doctors had steadily increased, Alberta's massive population growth threatened to widen the gap in the

physician-population ratio ever further.[19] This development featured centrally in the 1964 report of the Royal Commission on Health Services compiled by Supreme Court judge and policy advocate Emmett Matthew Hall (1898–1995). The report identified a gross shortage of doctors, specifically in anticipation for the future need to care for the "baby boomer" generation in postwar Canada.[20] Between 1964 and 1966, various studies were conducted to explore the possibility of establishing an independent medical school at the University of Calgary.[21] However, the need for additional education of medical students and the provision of registered physicians in Alberta did not result in a fast increase of available doctors through the activities of the Foothills Provincial General Hospital Board at the time.[22]

The Foothills Hospital was brought into service in 1966, independent of the previous planning processes, while the Senate of the newly established University of Calgary fervently supported the creation of a new faculty of medicine in the south of the province of Alberta.[23] Eventually, in 1966 the provincial government gave final permission that the medical teaching centre (now known as the Health Sciences Centre; see figure 1) would be built as part of the Foothills Hospital site on the northwestern outskirts of the city (now a part of the downtown district), overlooking Parkdale, along the north bank of the Bow River.[24]

The 1964 report of the Royal Commission on Health Services had already singled out the city of Calgary as a favourite site for the latest Canadian medical school. It foresaw that the projected need for physicians was making it necessary to maintain a ratio of approximately one physician per 870 people. The commission made specific recommendations for the development of new basic science facilities to educate future physicians.[25] Financial resources were made available from the Canadian Health Facilities Development Fund, which provided up to half of the construction costs for the recently planned medical schools. In 1966, following two decades of intensive political discussions, the University of Calgary received independent status as a post-secondary institution,[26] while the idea for a new medical school in Southern Alberta was also projected to engage innovative undergraduate and continuing medical education programs.[27] The newly created U of C undergraduate medical education program drew on both relevant knowledge and a task-specific reasoning process to encourage clinical problem-solving.[28] Describing this process in their review of curriculum reform, medical psychologists Frank Papa and Peter

FIGURE 1. Photograph of the opening of the Health Sciences Centre at the Foothills medical campus with Dr. Bill Cochrane and other members of the university leadership, 1970. Courtesy of the University of Calgary Archives, 84.005_02.49.

H. Harasym outline the approach taken by the University of Calgary when developing its innovative curriculum as follows:

> Reform efforts began with the notion that clinical proficiency could be measured only in terms of clinical problems. Therefore, initial efforts centered around the identification of the ways that patients present to physicians (e. g., with chest pain, dyspnea, headache, unconsciousness).[29]

In the late 1960s, three other innovative medical schools were started across Canada. They were located in the city of Hamilton in Ontario

(McMaster University), at Sherbrooke, Quebec, near Montreal, and in St. John's, Newfoundland (Memorial University).[30] Dr. Earle Parkhill Scarlett (1896–1982), a former member of staff in the Calgary Associate Clinic and an engaged internist and cardiovascular physician in the local medical community, was chosen by the Alberta Medical Association (AMA) to champion the idea for a new faculty of medicine in Calgary.[31] Dr. Scarlett had previously been the chancellor of the University of Alberta in Edmonton (from 1952 to 1958), and had actively endorsed the visionary plan for the creation of a second medical school in the affluent Western Canadian province. He pointed out that a second medical school would not draw away critical resources from the traditional "mother faculty" in the city of Edmonton, in Northern Alberta.[32]

In 1965, a report by a special committee to the Board of Governors and the president of the University of Alberta in Calgary outlined a program for the development of Calgary's new medical school. At the same time, the minister for health in Alberta, Dr. Joseph Donavan Ross (1911–84), of the Social Credit Party, publicly announced in October of 1965 $25 million construction plans that were based on previous on-site visits and meetings with the local medical community in the city of Calgary—sometimes even in rather unexpected places, as historian Antony W. Rasporich noted in a published interview with Dean William ("Bill") Arthur Cochrane (1926–2017):[33]

> I [Bill Cochrane] took him [the new minister of health] out to the rocks on the Bow River and Bowness Park with a case of beer, and we discussed for several hours the issue. And about two or three weeks later the Board of Governors had a letter . . . indicating $25 million would be available for the medical school, period.[34]

In 1966, Premier Ernest C. Manning (1908–96)—on behalf of the provincial government—sent a letter to the University of Alberta in Calgary indicating the government's wish for the university to give "immediate consideration to developing a Faculty of Medicine appropriate to the above circumstances [to train family physicians] and coordinated with the Foothills facilities."[35] The Board of Governors of the University of Calgary finally approved the creation of the medical school in February of 1966.[36]

Following the opening of the Foothills Hospital to the Albertan public, a plaque was erected in the patients' entrance hall, quoting Earle Parkhill Scarlett's thoughtful reflections on the new hospital: "Within these walls life begins and ends. Here are reverence for life, a sense of the dignity of man, the distilled medical and scientific wisdom of years and a shelter from illness."[37]

Dr. Scarlett was also an active supporter of Dean Cochrane. He was especially supportive of his plans to focus the efforts of the new medical school on community and family medicine, with the goal of producing "doctors who would do primary care" and "to provide an environment in which specialization may take place as well as for the advancement of medical science."[38] Also appointed on 1 July 1967, was the internist Dr. John Dawson (b. 1925?) as the associate dean in the Faculty Office of Medical Education. Dr. Dawson oversaw the new resident teaching programs that were established in conjunction with the traditional Calgary hospitals.[39]

The advisory committee—which was formed in August 1965 as the Special Committee for the Board of Governors and the President, University of Alberta in Calgary—braced for an expanded development of the Foothills Medical Centre. The committee endorsed this project in its communication with the provincial government, even against some considerable distrust and criticism from the established Calgary medical community. Particularly the traditional medical institutions, such as the Calgary General Hospital and the Holy Cross Hospital in the downtown district, feared that the new medical centre would draw important resources away from them.[40] The same was true for certain critical public views, which also upheld "the assumption that the tertiary care hospital is the best place to teach medical students has long been disputed," while "the attitudes of too many instructors in the tertiary care hospitals toward their colleagues who provide primary and secondary levels of medical care can, on occasion, be supercilious and derogatory, quite unsuitable in those who are to be taken as role models by students."[41]

However, when the University of Calgary Faculty of Medicine was founded in 1967, the overall benefits provided by the proliferation of desperately needed additional physicians in the fast-growing southern part of the province were superior arguments.[42] The faculty's undergraduate curriculum was innovatively based on organ systems, in order to "espouse the objective of student responsibility for self-education to scrutinize their

programs continuously and carefully to assure them that they are in fact consistent with this objective."[43] The curriculum henceforth encouraged interdisciplinary teaching and active learning, with an equal split of didactic sessions and small-group, case-based learning that attempted to move away from the previous status quo in medical education.[44] Members of the medical education program repeatedly emphasized this point, outlining the "drawback [that] the [traditional] organization of course content" led to an "intellectually isolated" teaching and testing method.[45] Early faculty member Larry Fisher describes this problem in his overview of the medical school and its mission:

> Each department exercised complete control over the courses for which it was responsible, and since many topics (e.g. the menstrual cycle) could be—and were—taught from the point of view of any one of several disciplines (for the menstrual cycle: anatomy, endocrinology, physiology, gynaecology, pharmacology) there were frequent duplications of content. . . . Each department tended to be an independent kingdom jealously guarding its space, budget, and curricular time, and seeking to extend them, so that the overall curriculum was conventionally set and modified by a general tug-of-war between departments instead of by a collaborative effort made in the best interest of the students.[46]

The University of Calgary's Faculty of Medicine formally took in its first class of undergraduate medical students in 1970.[47] However, the respective teaching facilities had not been finalized. This exceptional class of incoming students, then, which appropriately labelled itself as "the guinea pigs," could only graduate after an official (though not intended) four-year period.[48] Such construction delays—which also made it necessary for much of the educational activities to occur in lecture halls and seminar rooms on main campus—had already been experienced with the building of the Foothills Hospital itself, as an article in the *Calgary Herald* on 8 May 1963, intriguingly pointed out:

> A general hospital is, in [the hospital administrator] Mr. [L. Reginald] Adshead's [1911–2000] words, "one of the most difficult

> structures to design." It contains "many complex installations" and is not the same as "a warehouse, office building or hotel."[49]

At a time when about five thousand Calgarians sought admission to the city's two major hospitals, the Calgary General Hospital and the Holy Cross,[50] it was particularly the shortage of steel that delayed the construction of the main skeleton frame for the Foothills Hospital by about one year. Around 7,000 tons of steel was needed for the building to be finally completed, while the costs went up to $92 million in building expenses for the Foothills Hospital and Tom Baker Oncology Centre together. For nearly a decade, the Tom Baker Oncology Centre (i.e., the Cancer Centre) remained an independent health-care institution—named after the health-care educator Thomas D. Baker (1910–97), who had acted as the chairman of the Alberta Cancer Board from 1967 to 1981.[51] It formally became affiliated with the University of Calgary's Faculty of Medicine in 1976, in order to carry out oncological research and education in cancer treatment in a modern interdisciplinary arrangement.[52] The development of the clinical care and medical science facilities in the first decade of the Foothills Hospital's operations proved to be much more expensive than the figure originally earmarked in the new hospital and medical faculty's budgets.[53]

In order to preserve the budget and stabilize the challenging economic situation, Alberta businessman Alvin Libin (b. 1931) was brought in as an external advisor on a government committee that served as a "watch dog" over the provincial budget allocation. Later on, in 1979, Mr. Libin—whose Balmon Holdings Ltd. oversaw a nationwide franchise of nursing homes—was also elected as the board's chairman. In this capacity, he oversaw the continuing stream of financial issues, which the hospital administration had to face under the long leadership of Ralph Coombs (b. 1931?) between 1977 and 1991—including the creation of adequate teaching facilities, the juxtaposition of clinical wards and laboratories, as well as basic building arrangements for hygiene, electricity, and water supplies.[54]

Forming part of the three newly created medical faculties, together with McMaster University in Ontario and Sherbrooke University in Quebec, Calgary's medical school prided itself on being one of only two three-year medical programs in Canada (after Sherbrooke had turned back to the traditional four-year model, only McMaster and Calgary remained as shorter programs). Dean Cochrane outlined the philosophy of

the program in a journal article published in 1986, declaring that the MD following undergraduate medical training would only be given "on the condition that the student fulfilled two further years of graduate training in one of the three programs" of internal medicine, surgery, and family medicine.[55] This meant that through three years of undergraduate training and the supplementary two years of graduate studies, "the graduate either would be a specialist in family practice or could be considered as having completed two years towards the four-year training requirement of The Royal College of Physicians and Surgeons of Canada (RCPSC) for specialty training."[56]

Initially the new medical faculty was expected to focus exclusively on the education of family physicians from a community-based perspective and in conjunction with the medical training facilities of the local hospitals.[57] The University of Alberta's governing body previously had only given its approval to the opening of a sister medical faculty in Calgary, under the condition that the traditional medical faculty in Edmonton would hold the clinical and basic research prerogative and not face any financial cuts to its budget for substantial national and international scientific activities. During the beginnings of the new medical school, this particular organization left just the rather marginal fields of medical education, communication, and medical psychology as research areas for the Calgary faculty. This limitation was itself reflected in the large group of psychologists and teaching staff hired in the 1970s to pursue research on "problem-based learning" initiatives, a research area in which the University of Calgary gained increasing national recognition.[58] Research then extended to the outcomes of early clinical involvement of Calgary medical students and the reframing of the physician-patient relationship in community- and family-based care paradigms. The latter research area, for instance, was pioneered by Thomas ("Tom") Saunders (1922–2008), the founding chair of the Department of Family Medicine,[59] which antedated the creation of the medical faculty as a functional inter-hospital program between the Calgary General Hospital and the Foothills Medical Centre since 1966. It was the faculty's key objective "to produce doctors specializing in family medicine who will act as primary contact physicians and as co-ordinators of the activities of all members of the health team in the care of their patients."[60] The founding organizers declared that "our goal is that half of the graduates will enter this specialty; a level, which we realize, is a high one.

However, the conviction is firmly held that good comprehensive care by all members of the health team is based upon the co-ordinating activities of the specialist family physician."[61]

It was only in 1971, after the first class of students had been admitted to the new medical school in Calgary, that the Family Medicine Residency Program became firmly established and physically located at the Foothills Hospital. This planning process occurred in the comprehensive preparation for the first clinical clerks (the third-year medical students of the time) to begin their practical medical duties on the wards of the Foothills Medical Centre in Calgary.[62]

The University of Calgary's Faculty of Medicine Integrates into a Network of Health-Care Bodies in the Province of Alberta

When exploring the diverse faculty developments that happened in Edmonton and Calgary during the 1960s, it is important to also consider the addition of a third Albertan university and its contribution to the changing health-care contexts in the province. The University of Lethbridge was founded one year after the University of Calgary, in 1967, and soon incorporated programs in nursing, health science, and experimental psychology.[63] In the century since the foundation of the University of Alberta in 1908, the three university research centres in Alberta—in conjunction with a network of smaller post-secondary institutions and university colleges since the 1960s—offered a much more solid and vibrant landscape in the biomedical sciences by incorporating areas from nursing care, public health, clinical psychology, and environmental health, etc. This is particularly visible in the universities' association with the provincial programs of Alberta Health Services (the recently combined health-care system that integrated the former health regions), created on 15 May 2008, by a decree of the minister of health and wellness, Ron Liepert (b. 1949), of the Progressive Conservative Party. The association with Alberta Health Services further increased international awareness of the clinical, research, and educational activities in medicine and health care in Alberta.[64] Some of the landmark events that contributed to this recent development include the hiring of external experts, who shaped the field, institutional foundations,

and new technological and policy developments. Cochrane was especially keen on these collaborative interchanges, stating, "not only must the faculty be enthusiastic and aggressive, but it must have the support and understanding of the community, of organized medicine and of government."[65] He was concerned with the relationship between the medical school, the community, and the network of Alberta health-care institutions, and believed that "it is imperative that reasonable experimentation in medical education be implemented. The present outline of the proposed program at the University of Calgary must remain flexible to allow for modification and adjustment."[66]

Government support was also important for the establishment and growth of the University of Calgary's Faculty of Medicine. While the new medical school sent out its first admissions letters to its small inaugural cohort of medical students in 1970, the annual class sizes of medical students at the University of Alberta in Edmonton remained fairly large, in a range of 104 to 125 students.[67] Conversely, the new medical faculty started with small classes of several dozen students. In September 1970, the inaugural class of the University of Calgary's medical school was comprised of only thirty-three students, which were selected from a rather considerable group of 461 applicants.[68] The second incoming class, in February 1971, was chosen from an even greater number of 1,160 applicants. "Core" lectures and classes were presented to all students, with additional "elective" periods chosen by the students in light of the medical disciplines in which they sought to practise after graduation.[69] The undergraduate medical education program was confined to three eleven-month-long academic years (with no free summer periods for research and clinical electives, as practised in the traditional four-year programs at McGill University and at the University of Toronto). After this, a medical doctorate degree was awarded with the original expectation that the students could continue on for at least two further years of appropriate postgraduate study (in family medicine). It was planned that during the third undergraduate year, the medical students would then begin their clinical clerkship rotations with ambulatory care given an increasingly prominent role in their practical medical education.[70]

Although undergraduates were encouraged to pursue a career in family medicine during the formative years of the medical school in Calgary, residency programs were designed and initiated in other specialty

disciplines as well.[71] The additional residency programs were opened with the goal of supporting adequate programs and recruiting a comprehensive group of faculty members. In fact, the residency programs became very important to the graduating physicians of the faculty, along with the health-care needs of the Albertan public that these physicians came to serve. While at first 29 male students and only 4 female students were accepted into the program (with the ratio today closer to 60 per cent female versus 40 per cent male students), after ten years it had already grown to approximately 120 student positions. There were seven times as many applications sent in for Grade Point Assessments in 1980, after the Medical College Admissions Tests (MCATs) had been introduced on a Canada-wide basis in 1961.[72]

The situation of undergraduate teaching, however, was still very provisional, as one of the alumni of the first medical class pointed out on the occasion of the faculty's fortieth anniversary on 29 October 2011:

> We were taught in small group sessions on the twelfth floor of the Foothills Medical Centre. . . . "Our floor" was stuffed with so many things: there were tables with textbooks on them, a corner that was used for chemical demonstrations, plastic torsos and models in another one, and opposite of the secretary's area there was the "anatomy department."

He went on to describe the experience of the classroom:

> We gathered here in superb collegiality among the fellow students and together with the often-young medical instructors. I must say, we enjoyed "our floor" tremendously. . . . And, above all, the view from the windows on the hospital building's top floor was just spectacular! I've never forgotten the superb panorama, although I've since lived in California for more than three decades.[73]

Due to the lack of space, much of the teaching during the first years occurred in the lecture halls and class rooms of the Administration and Social Sciences Buildings, on the university's main campus. It was especially the period between 1973 and 1984, under the second dean of the University of Calgary's Faculty of Medicine, Dr. Lionel E. McLeod (1927–93),[74] that

many of the ensuing changes that led to the new educational and office buildings on the Foothills Campus came into being. Founding dean Bill Cochrane did not stand as a decanal candidate for a second term. After a short period as a government advisor he moved on to become the president of the University of Calgary from 1974 to 1978.[75] Yet after the class sizes in the medical school program increased over the succeeding years, courses again needed to be offered on the main campus to accommodate the need for extra class rooms, laboratories, and lecture theatres. This demanding situation had already given rise to the planning of a new Health Sciences Centre (HSC) in 1972 (see figure 1), which would later be built adjacent to the Foothills Medical Centre. The HSC would then become the main educational building for the medical school.[76]

James Hyne, the dean of graduate studies in the 1990s, credited the first ten years of growth in the medical school with securing support from the Alberta Heritage Foundation for Medical Research. He was quoted as saying that if "the University of Calgary hadn't gone from where it was in the 1960s to where it was in the late '70s when the Medical Heritage Fund came out . . . ninety percent of the Heritage Fund would have gone to the U of A and not to the U of C."[77] Yet the fact that the University of Calgary had "built what was clearly a university by the early '70s . . . [meant that] it was very hard for the Provincial authorities to say, you know we give a pittance to Calgary and put it all in Edmonton."[78]

Although the planning had already started in the early 1970s, the construction phase took more than seven years, and only ended with the inauguration of the new Health Sciences Centre in 1975. A group of architects had previously been approached in 1968 to design a physical structure to house the education programs, and this design would adequately serve the preconceived objectives of the Calgary medical school. Some architectural flexibility was thought to be essential, since the traditional department structures should be transcended over time (in fact, the new medical faculty did not have department structures for several years, but relied instead on its clinical services, unit divisions, and later, its interdisciplinary research groups).[79] The new architectural design of the medical school reflected the growing desire for interdisciplinary teaching and research. Furthermore, the Ambulatory Care Centre, a key element of the physician-training process in Calgary, became an integral part of the physical plan. This reflected a conviction in the medical faculty that a

strong training aspect outside of the traditional hospital environment was important as well. One of the architects contacted for this project was the German-born, Bauhaus-trained Eberhard Zeidler (b. 1926). Zeidler had gained a lot of recognition in the Canadian medical world for his planning of the new medical school at McMaster University, where he put an organic planning style to play. It allowed for an accommodation of the respective units on several floors in the academic institution, which was likewise suggested as the main architectonical element for the Calgary building projects in the mid-1970s.[80]

Continuing Responses of the University of Calgary's Faculty of Medicine to the Calgary Health Region and Alberta Health Services' Contexts

Between the 1920s and '50s, patients who needed specialized services from all larger cities in Alberta—including Calgary, Red Deer, and Lethbridge—had to be transported to the University of Alberta's Royal Alexandra Hospital in Edmonton by automobile, ambulance, or occasionally even propeller airplane, to receive diagnostic attendance and special clinical treatment.[81] The largest hospital in Calgary, the Calgary General Hospital, had been created as a community hospital, and had been operating from its location at 7th Street and 9th Avenue since 1890. During the first half of the twentieth century, it developed more and more specialized services—for example in internal medicine, surgery, and family medicine—which the academic medical community in Calgary could draw upon.[82] This focalized culture also led to the remarkable foundation of subspecialized units and programs that would attract extraordinary practitioners and researchers to Southern Alberta, even before the official foundation of the new academic medical school at the University of Calgary in the 1960s. An illustrative example was the hiring of the surgeon Dr. Allan Lockwood Hepburn (1924–2010) by the Holy Cross Hospital. He was hired in 1951 and worked at the Holy Cross until 1953. Lockwood then took up neurosurgical residency training at the Mayo Clinic in Rochester, Minnesota. Following his graduation as a fellow of the American College of Surgeons, in 1956, he returned to Calgary to become the chief of the neurosurgery services at the Holy Cross and Calgary General Hospitals. Moreover,

he served as the president of the College of Physicians and Surgeons of Alberta beginning in 1976, and served as a medical coordinator to the Workers' Compensation Board of Alberta until his retirement in 1996.[83]

Another influential clinician and early member of the University of Calgary's Faculty of Medicine was the South African–born surgeon Dr. Peter Cruse (1927–2006). He had received his MD from the University of Cape Town and pursued his postgraduate training at the Durban McCord Zulu Hospital before earning his British Fellowship in Surgery in hospitals in the Greater London area in the United Kingdom. After migrating to Canada, he first worked in private practice, then as a surgeon at the Calgary General Hospital, before transitioning to the Calgary Foothills Hospital when it opened in 1966. Peter Cruse became very active as the president of the new hospital's medical staff, organizing balls and helping to kick-start the tradition of the annual Stampede Breakfasts on the Foothills Campus during the wild days of rodeo at the festive celebration of the Western frontier spirit that takes place in the city every July. In 1967, Dr. Cruse organized the Wound Infection Surveillance Program, which explored various factors that influenced the wound infection rate among hospital patients. This clinical research program was soon internationally recognized. By 1977, Dr. Cruse's methods brought the Foothills' clean post-operative infection rate from 3 to 5 per cent down to an impressive 0.6 per cent. These developments were decisive for the subsequent approval of the local residency-training program in surgery through the Royal College of Physicians and Surgeons of Canada, in 1970, along with the related residency-training program in plastic surgery at the University of Calgary Faculty of Medicine.[84]

In addition to the impact brought to bear by many unique individuals in the city, the Calgary Medical Society proved to be a very active player too, since most of the local clinical physicians were members of this professional association at the time.[85] This body was established in 1906, and likewise came to incorporate the physicians in the nearby towns. Originally called the Calgary and Districts Medical Society, it aligned suitably with the Alberta Medical Society and the Royal College of Physicians and Surgeons of Canada.

In the more than one hundred years since its foundation, the Calgary Medical Society had shown itself to be a notable stakeholder of the interests of the local physicians and the community it served. In the 1960s it,

too, supported the idea of establishing the Calgary medical school, as the internist and psychiatrist Gerald M. McDougall (1935–2015) emphasized in his volume *Teachers of Medicine*, on the early days of the medical profession in Calgary: "The Calgary Medical Society formed a committee to be 'advisory' to the Minister of Health [Ross] and the administration of the Foothills Hospital during its construction. The Minister was known to usually accept his own advice or that of a very few close friends."[86] The Calgary Medical Society further strove to establish social relations with the medical staff associations of all Calgary hospitals, and its membership incorporated the entirety of the academic disciplines across medicine and surgery in Calgary.[87]

The 1960s saw significant turning points in the province of Alberta. The populations of its two major cities, Edmonton and Calgary, doubled, with about half of the population living in urban centres rather than in rural settlements, as was previously the norm. In 1967, an effective health-care system made for further diversification of medical and nursing facilities, with the introduction of Medicare in Canada.[88] This development was seconded by the arrival of new research and health-care technologies. In 1973, for example, efforts were made to purchase a computer tomography (CT) scanner for Calgary with the intention to "allow [the] departments of Radiology and Neurosurgery to compete with the leaders of [the] country."[89] In 1974, the Foothills Hospital received political priority over the Calgary General Hospital for the installation of the respective computer tomograph. This achievement was largely due to the engagement of radiologist Dr. Hector Ewart Duggan (1916–89) and neurosurgeon Dr. Francis ("Frank") E. Leblanc (b. 1935?). The first CT scanner in Western Canada came into clinical and research use in March of 1975.[90] That such innovative research technology arrived in Southern Alberta proved to be a major factor in the enhancement of local radiological, surgical, and neuroscientific activities, culminating in the creation of the interdisciplinary Department of Clinical Neurosciences at the University of Calgary's Faculty of Medicine in 1980. The new department was innovative and interdisciplinary, merging the preceding divisions of neurology and neurosurgery under the leadership of the new dean of the medical faculty, Dr. Mamoru ("Mo") Watanabe (b. 1931).[91] Its existence also led to the subsequent approval of a residency-training program in pediatric neurology at the University of Calgary Faculty of Medicine, through the Royal College

of Physicians and Surgeons of Canada. This was accompanied in 1983 by the further accreditation of a residency-training program in emergency medicine by the Royal College.[92]

Within a few years of its foundation, the Foothills Hospital had come to attract many thousands of patients from the city of Calgary and from Southern Alberta more generally. However, an additional independent institution was planned by a task force put together by the pediatrician and later dean of the medical faculty Dr. Grant Gall (1940–2009). The additional institution would be an interdisciplinary hospital for children in Southern Alberta, since "not only were there more births, but children were now likely to survive to adult life. There was a sharp fall in deaths in childhood, and after the age of one year, death in childhood became uncommon."[93] Initially, the Calgary General Hospital Bow Valley Centre had to be used as an interim pediatric health-care facility to meet the heightened demands. It comprised the Bridgeland-Riverside area that was provided by Calgary City Council in 1980, along with Calgary General Hospital lands and the adjacent open space from the neighbourhood. This foreshadowed the discussion instigated through a commissioned study by Price Waterhouse for Calgary Health Services, chaired by the former provincial Progressive Conservative politician Louis ("Lou") Davies Hyndman (1935–2013), about a possible abandonment of the Calgary General Hospital in lieu of the newly built Foothills Medical Centre, which found that "in the midst of public support for this move [the government] would be able to close the Holy Cross and the Calgary General hospitals without opposition."[94] The close proximity of the Alberta Children's Hospital would favour the decision. Hyndman presented a few options that were under review by the Alberta Children's Hospital and the other hospitals "at the same time as the public protests were continuing. There were detailed cost analyses and a study of the move's impact on quality of care."[95]

The Calgary General Hospital in conjunction with the Foothills Medical Centre and the University of Calgary Faculty of Medicine provided their feedback about the Children's Hospital over many months in 1980. However, the medical community in both Calgary hospitals criticized the planning document. On the one hand, the existing departments of the Foothills Hospital were threatened in their breadth and scope by its composition. On the other hand, the Calgary General Hospital raised concerns about the potential externalization of two of its major clinical and

research programs. The creation of the new Alberta Children's Hospital was finally approved in recognition of the "premises with their needs in mind, by professionals skilled in paediatric care and under the control of an administration dedicated to the best interests of children and their caregivers."[96]

After official approval had been received from the Royal College of Physicians and Surgeons in 1980, a supplementary residency-training program in neurology was created at the University of Calgary's Faculty of Medicine. Dr. Robert Lee (1931–2018) was appointed as the program's first director, although a complete centralization of the neuroscientific services in the Foothills complex had to await the closure of the Calgary General Hospital in 1998. That building's subsequent demolition followed from the verdict of Alberta's premier, Ralph Klein, while between 1992 and 1997 a new Department of Clinical Neuroscience at the University of Calgary's Faculty of Medicine was created under the deanship of Dr. Eldon R. Smith (b. 1941).[97]

The Impact of the Alberta Heritage Foundation for Medical Research

Many of the changes since the 1980s were made possible through the inauguration of the Alberta Heritage Foundation for Medical Research (AHFMR) in 1980. Created with an endowment of $300 million and overseen by a board of trustees, it began funding researchers in the very year of its creation.[98] The then dean of the Faculty of Medicine, Dr. McLeod, became the first president of AHFMR and continued to lead the foundation for nearly a decade between 1981 and 1990. Through innovative commitments to biomedical research in the province, the foundation soon gained increasing international acknowledgement as one of the major North American medical research funding institutions. The foundation's board recruited more than 150 biomedical researchers to the province, who subsequently engaged in the training of more than 3,000 investigators, as well as the development of the first interdisciplinary research groups in Edmonton and Calgary.[99] Other objectives included an interdisciplinary educational program that permitted a close translation of medical sciences to their clinical application. The construction of impressive research

complexes with additional laboratories, workplaces, seminar rooms, and administrative offices was later planned in the cities of both Edmonton and Calgary. Later, the University of Lethbridge also received additional infrastructure support when its health research facilities grew as well.[100] At the same time, Dean McLeod continued to work on bringing further medical scientists to Calgary, who would influence the research and teaching directions in the Faculty of Medicine for the coming decades. McLeod himself would later be recognized for his administrative capabilities when he was appointed president of the Royal College of Physicians and Surgeons of Canada, president of the Association of Canadian Medical Colleges, and a member of the Canadian Institute for Advanced Research.[101]

In 1987, a special fund was taken out of the endowment to finance two "Heritage Medical Research Buildings" at the University of Alberta and the University of Calgary. Although AHFMR funding priority was normally given to attract the most promising and influential research personnel, these research buildings—which were opened one and a half years after the creation of the special fund—were planned to house the increased number of biomedical researchers at the U of C and the U of A.[102] Over the course of twenty-five years, 130 researchers and 1,000 students were supported (often multiple times) by the foundation at all four research-intensive universities in the province (which in addition to the Universities of Calgary and Alberta included the University of Lethbridge and Athabasca University). The AHFMR was a non-profit, charitable organization that had supported select, top-quality health researchers and trainees; however, it was later dissolved through a decision by Advanced Education Minister Douglas Alan Horner (b. 1961). Horner publicly announced the end of the foundation's salary grants in 2010, a decision endorsed by the Alberta government led by the Progressive Conservative Party at the time, which had itself supported the creation of the foundation three decades before.[103] This momentous decision resulted in an abrupt pause to an incredible success story in biomedical research and the health sciences for which the province had so far been admired internationally.

Since 2004 the research profile of the University of Calgary Faculty of Medicine was further diversified through the creation of six (now seven) research institutes that cut across the medical school's departmental organization. These interdisciplinary institutes were joined, in 2011, by the

Institute for (Population and) Public Health (now known as the O'Brien Institute for Public Health). Between 2003 and 2009, for example, the McCaig Bone and Joint Centre was planned and opened at the Foothills Hospital as a "mirror institute" in Calgary after the establishment of a heart institute in Edmonton in order to meet the needs of an ever-increasing population in the province that attracted large numbers of migrating workers from other Canadian provinces and from abroad.[104]

The focus on medical science, represented by the creation and functioning of the research institutes at the University of Calgary's medical faculty, was furthered in 2008 through the first Canadian Gairdner Award received by the director of the Hotchkiss Brain Institute, Dr. Samuel Weiss (b. 1955). Weiss received the award for his discovery of the anatomical existence of neuronal stem cells, which put an end to a century-long debate in the field of neuromorphology.[105] The institute was established through a foundational gift from Calgary's Hotchkiss family in 2004, with the support of the University of Calgary and the Calgary Health Region (now Alberta Health Services).[106] It was founded as the Hotchkiss Institute for Brain Research in the University of Calgary, Faculty of Medicine, and moved into the Health Sciences and Health Research Innovation Centre (HRIC) building, which was officially launched in 2010.[107] The new buildings had been planned since 2007, and the HRIC opened in several phases, continuing until summer 2010. The completion of the laboratory and office fitting of the HRIC and Teaching, Research and Wellness (TRW) buildings (originally planned as the Translational Research Wing) offered new space for wet and dry labs, the latest improvements in medical technologies, and the outpatient clinics projected to serve 150,000 patients each year.[108] By the early 2000s, the Faculty of Medicine had six institutes, each of which had "embarked on individual efforts to communicate their research activities with the Faculty of Medicine and other key stakeholders."[109] In the faculty's 2007 self-study report, it was noted that many institutes were active in research dissemination and public outreach.[110] The Hotchkiss Brain Institute maintained a website and distributed its own electronic newsletter regularly, along with a "Report to Community," which was printed annually. Additionally, both it and the Infection, Immunity and Inflammation Institute held town halls periodically to provide information and gain feedback from their members.[111]

Similarly, the Clark H. Smith Brain Tumour Centre at the University of Calgary was opened in March 2004; it henceforth emerged as the home of a comprehensive translational research program that promised to enhance the process of discovery and the application of research knowledge in the clinical care programs. The research landscape in basic and clinical neurosciences was further diversified through the establishment of the bachelor of science in neuroscience in November 2009, which was a joint venture of the Faculties of Medicine, Arts, and Science.[112] Clinical neurologist and bioethicist Dr. Sheldon Roth (b. 1938) served as the program's inaugural director.[113]

Reflections on Health-Care Changes and Legislative Initiatives in Alberta

In 1994, the Calgary Regional Health Authority was created. It lasted only until June 2008, when the Alberta government again abolished the existing health regions and replaced them with a single new provincial entity—the Alberta Health Services network.[114] To answer some of the emerging demands on the health-care system in the province, the University of Calgary Faculty of Medicine also launched a new clinical presentation (CP) curriculum, based on continuing medical education principles, enhanced physician-patient relationships, as well as better medical communication processes and information management. The new curriculum was later described in a scholarly article in *Academic Medicine*, which outlined how the faculty had broken from the traditional model of "disciplines, body systems, or clinical problems" and "carefully evaluated the advantages and disadvantages of each of these models in seeking to revise their school's curriculum."[115] According to the article, the faculty had found that "all three models fell short of a curricular structure based on current knowledge and principles of adult learning, clinical problem solving, community demands, and curriculum management."[116] Thus the faculty designed a strategic plan to revise the curriculum based on patient examination and "120 clinical presentations (e. g., 'loss of consciousness/syncope') were defined and each was assigned to an individual or small group of faculty for development based on faculty expertise and interest," and as a result it had created a "new competency-based, clinical presentation curriculum."[117]

The new prospectus sought to emphasize students' responsibility for their educational process, with a special focus on a team-based approach to patient care. It was also recognized at this early stage that there was a need for a greater proportion of medical education to occur outside traditional hospital environments and to instead focus on family practice and community medicine. Professors and clinical researchers were recruited from Canada, the United States, Great Britain, and Europe. The faculty henceforth diligently approached Canadian physicians from other provinces holding American academic positions and encouraged them to return to Canada. Seven senior academic staff subsequently came to the University of Calgary from the United States; and the university also successfully engaged a new director of animal care facilities, who was also responsible for overseeing the medical vivarium.[118]

The other important focus that developed within the maturing medical school was faculty research programs. It soon became apparent that the success of the new medical school as a whole depended upon its professoriate and full-time investigators producing meaningful medical research that sustained the scientific life of the school and inspired its new student cohorts.[119] The faculty's Research Committee emerged as one of the medical school's most active and regular committees. It had increased its portfolio and administrative influence between 1981 and 1992 under the deanship of Mo Watanabe. The increasing emphasis on research was exemplified a few years earlier in a presentation given by Dr. McLeod at the first Government House Dinner. He said:

> It is very important to remember that medical research has given us the ability to prevent poliomyelitis, to cure or prevent tuberculosis, and in so doing have helped us to close down whole networks of expensive institutions. Medical research has removed typhoid, malaria, diphtheria and whooping cough from the role of mass killers. If we can provide research workers with the potential for continuing their diligent struggle for decisive technology of modern medicine, they will eventually explain the causes of cancer, coronary disease, and kidney failure. Hopefully we can then prevent or cure them, and we can throw away the dialysis machines and close the vast cardiac, surgical departments.[120]

In 1997, Dr. Grant Gall—who was an associate dean under Eldon R. Smith from 1992 to 1997—was appointed dean of the University of Calgary's Faculty of Medicine. Dr. Gall held this position for two terms, spanning a full decade of full-scale administrative leadership between 1997 and 2007. He was a tireless worker and, as a trained paediatrician, he was instrumental in convincing the Alberta government of the need for a new children's hospital to serve the city of Calgary and all the communities in Southern Alberta.[121] He emphasized the importance of children's influence during the planning process itself, which had led to novel building changes such as low windows, bright colours, and a special entrance for the so-called "chemo kids." The resulting structure came to be widely known and celebrated as the Calgary children's "Lego House." The Institute of Maternal and Child Health was also established in 2004 to complement perinatal care and medical research activities around the developmental stages of childhood, puberty, and adolescence.

As someone who had been brought up on a farm in Saskatchewan, Dr. Gall further recognized the need for veterinarians in the medical school's vicinity, and he advocated for the creation of the University of Calgary Faculty of Veterinary Medicine. The requirement for such a faculty had become particularly prominent in the awareness of Albertans when Mad Cow Disease broke out in the Western Canadian provinces in May of 2003.[122] In the fall of 2005, the government of Alberta formally established the faculty—the first one in the province.[123] Throughout his career, Dr. Gall was also highly active in relation to the Canadian Institutes of Health Research. He served on various committees and also chaired the Experimental Medicine Grant Review Committee. He supervised a successfully funded laboratory for more than twenty years and was recognized as a leader in intestinal adaptation and diarrheal diseases.[124]

During the period of Dr. Gall's deanship, the Faculty of Medicine created a second undergraduate educational program for the bachelor of health sciences degree, which was finally approved on 7 May 2002. This development was made possible by a major donation from the O'Brien family, a fact reflected in the program's name, the O'Brien Bachelor of Health Sciences Program. It totalled $5 million dollars in research and administrative revenues at the time. The official opening of the centre occurred in April 2005, and the first class of forty-eight students graduated from the four-year program in 2008. Previously, in March of 2003, the

Alvin and Mona Libin Foundation presented the largest ever one-time donation to the Calgary Health Region and the University of Calgary. It totalled $15 million and contributed to the creation of the Cardiovascular Institute of Alberta.[125]

Dr. Tom Feasby assumed the deanship of the Faculty of Medicine in July 2007. His term would soon come to be marked by negative economic growth, as it took place during another one of the volatile boom and bust cycles in Alberta's resource-dependent economy. The crash of the stock markets in the fall of 2008, and the decline in oil prices since that time, led the externally available research and education funds to take a plunge.[126] At the same time, the steep increase in the Calgary population to approximately 1.2 million inhabitants meant that the provincial government, along with Alberta Health Services, would need to continue planning for the Health Innovation Park (better known as the South Health Campus). The new institution opened to the public in 2008, with the first functional unit on the hospital campus being a second Department of Family Medicine.[127] During the recent deanship of Dr. Jonathan B. Meddings (appointed in 2012), a $100 million gift from Canadian businessman Geoffrey A. Cumming, along with matching funds of $100 million from the government of Alberta, led to the rebranding of the medical school as the Cumming School of Medicine,[128] while another $10 million gift made by the O'Brien family resulted in the renaming of the seventh faculty-based research institute as the O'Brien Institute for Public Health in the fall of 2014.

Conclusion

The brief historical analysis presented in this chapter offers some insights into the relationship between the initial planning and functioning of the University of Calgary medical school, prevalent educational and medical research demands over the past fifty years, along with general health-care needs in Calgary that were often aligned with major medical processes of the time. The image emerging from the short history of the University of Calgary's Faculty of Medicine is that of a fairly direct response to changing health-care contexts in Alberta. Between 1966 and 2016, the Foothills Medical Centre and the faculty have been in an intricate give-and-take relationship that was largely determined by governmental positions and decision-making processes, altered by economic growth and recession

periods, as well as ad hoc opportunities and external demands that were born out of frequent structural changes in Alberta's health-care and medical funding agencies.

The Faculty of Medicine was created in conjunction with the newly autonomous University of Calgary during a period of rapid growth in Canadian post-secondary academic institutions; it was clearly the need for physicians (particularly family doctors) that led to the establishment of the second medical school in Alberta—with its first cohort of students admitted in 1971—to serve the growing Canadian population. The 1980s, especially, marked a shift toward more diversification in research and clinical education, while the Faculty of Medicine considerably increased its size and scope. It has emerged as one of the larger medical schools in Canada, with particular areas of clinical, biomedical, and health-care research strengths, while still continuing a process of redefining its strategic development, its position among the other Canadian medical schools, and its contribution to the provincial health-care system of Alberta. The faculty was originally created in response to the growing pressures in the medical scene, but since its existence has arisen as a major driver for change within Alberta's medical profession and health-care landscape.

NOTES

Research for this chapter was supported by a grant from the Heritage Preservation Partnership Program through the Alberta Historical Resources Foundation (#10005374) and a discretionary grant from the University of Calgary's Cumming School of Medicine (#RT757418). The author is grateful for the provision of collected papers from an earlier project on the "History of the Medical School" in Calgary by psychologist Lawrence ("Larry") A. Fisher (b. 1929?), anatomist Cyril J. Levine (1928–97), and physician Tom Saunders (1922–2008). The author also wishes to thank Mr. Dennis Slater (Alberta Health Services Archives) for the provision of information and sharing of resources, as well as Ms. Paula Larsson, MA, MSc (University of Oxford) for her editorial read-through and meticulous adjustment of the English language of this chapter.

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