



The Science and Art of Medicine at McGill University

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Almost 200 years ago, a general hospital and a medical school were established with the goal of addressing the needs of the growing community of immigrants who came to Montreal in search of prosperity in furs and timber. Within a few years, the school became the Faculty of Medicine of the newly created McGill University, named for the fur trader who gave the land and the initial endowment to establish it.

Over the ensuing decades, the Faculty of Medicine has accounted for much of McGill's international reputation. The Faculty has produced many illustrious graduates, including Sir William Osler who helped found the Johns Hopkins School of Medicine and established the basis of modern medical education, as well as many others who have gone on to become leaders around the world. The Faculty has also been home to a great number of outstanding academics, such as Brenda Milner and Wilder Penfield, as well as the site of major discoveries, such as the development of carcinoembryonic antigen, the first clinically-useful human tumour marker, and 3-TC as a treatment for HIV infection. The Faculty has also expanded to include professional programs in nursing, physical and occupational therapy, speech pathology, and population and global health. Today, it counts more than 1,700 graduate students covering all aspects of health research, from genomics and molecular biology to health policy and bioethics.

Still, the medical school remains at the heart of the Faculty. Like other Canadian schools, it is mainly publicly funded and tuition fees for in-province students are low. Because healthcare, including medical education, is primarily the responsibility of the province, almost all our 185 students each year are from the province of Quebec.

Competition to get in

Entry into medical school is extremely competitive, with eligibility being determined primarily by overall scholastic performance. Unlike most schools in Canada and the United States, McGill does not require the Medical College Admission Test (MCAT), in large part because many of our students come from French language institutions and the test is only available in English. Nevertheless, we have far more qualified applicants than we can accommodate. Candidates are assessed based on a strict set of criteria, including a structured interview process known as Multiple Mini-Interviews (MMIs), which are intended to identify those who are best suited to a career as a physician.

The Faculty also has an MD-PhD program, designed to increase the number of clinician scientists. Successful applicants must meet the criteria for both medical school and graduate training and are allocated time away from medical studies to complete their research training. Students may choose from a very wide variety of topics, ranging from systems biology to social studies of medicine.

Patient- and student-centred learning

The undergraduate medical education program is based on the four-year American model, as Canadian medical schools have reciprocal accreditation with the schools in the United States. While about 60% of the class enters medicine with a bachelor's degree, an alternate pathway allows students to begin the program early, provided they have sufficiently high marks and the appropriate prerequisites. Students are expected to have mastered the basics of biology, physiology, genetics and statistics before medical school to accelerate



Figure 1 Dr. David H. Eidelman.

their understanding of clinically relevant topics.

Although its underlying structure is unchanged, the undergraduate medical education curriculum was redesigned in 2011 to better reflect the needs of Canadian society. With an aging population and greater prominence of chronic disease, primary care and general medicine have been given a central place. For example, all students spend time during their first year in the office of a family doctor, and many of the instructors that students encounter in the pre-clinical phase of the curriculum are family physicians.

The new curriculum launched under the name “Patient at heart, Science in hand”, has three major components, along with several longitudinal elements. The first 18 months (Fundamentals of Medicine and Dentistry), are largely focused on the basics of health and disease as well as therapeutics. A wide variety of pedagogical approaches are used, from small groups to self-directed learning. The next component (Introduction to Clinical Practice), is a year-long experience aimed at preparing students to take on the responsibility of caring for patients. The final 18-month are spent in clerkship, where students begin to apply what they have learned to the care of patients, under supervision. Students also benefit from longitudinal courses that continue across the major components, including: social accountability; population health and health advocacy; professional identity and practice; and scholarship, critical thinking

and knowledge translation.

A major consideration in the design of our curriculum is the concept of a continuum of learning from medical school to residency to independent clinical practice. Residency training is a university responsibility in Canada, making it easier for our learners to see their time in clerkship as a prelude to the first year of their residency. To help facilitate this transition, students are offered a specific course at the end of their final year, which serves as a bridge.

As in other medical schools, we have introduced programs to address the stress associated with medical school. The WELL (Wellness Enhanced Lifelong Learning) Office provides a variety of support services to medical students, including a career advisor who can provide guidance on matters related to career choice, electives and residency applications, which helps ensure students are well informed about the postgraduate medical education market.

Continuously evolving

While medical knowledge, technology and practice have steadily evolved over the last 200 years, we expect the rate of transformation to accelerate, transforming the role of the physician. Medical education must find ways to prepare the next generation of doctors to meet these challenges. It is also incumbent on the medical student to commit to lifelong learning, to stay abreast of these transformations throughout her career.

Amidst the change there exists one constant, the needs of our patients, which must continue to guide us in all that we teach and do.

Introduction of Dr. David H. Eidelman

A McGill graduate and native Montrealer, Dr. David Eidelman (*Figure 1*) is Vice-Principal (Health Affairs) and Dean of the Faculty of Medicine at McGill University. Prior to his appointment January 1, 2012, Dr. Eidelman served as Chair of the McGill Department of Medicine and Physician-in-Chief at the McGill University Health Centre (MUHC) for seven years. Dr. Eidelman previously served as Director of McGill’s Division of Respiratory Diseases. His research interests are in the pathophysiological mechanisms of chronic lung disease.

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