Medical History in Canadian Undergraduate Medical Education, 1939-2012

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Abstract. The virtues of learning medical history for medical students have long been argued. Surveys of Canadian medical schools were done in 1939, 1968, and 1999 to discover details about the inclusion of medical history in undergraduate medical education (UME). In 2012, we completed our own survey. While medical history is more commonly included in the core UME curriculum now than in the past, half of Canada's schools still do not require it. An analysis of trends over time reveals the central importance of longstanding and emergent prejudices and cultural influences as barriers to more widespread inclusion of medical history.

Keywords. medical history teaching, medical education, survey analysis, medical culture

Résumé. Les vertus de l'apprentissage de l'histoire de la médecine par les étudiants en médecine ont été souvent vantées. Des enquêtes ont été menées en 1939, 1968 et 1999 dans des écoles de médecine canadiennes afin d'amasser de l'information sur la présence de cette matière dans la formation. En 2012, nous avons complété notre propre enquête. Bien que l'histoire de la médecine soit plus souvent incluse dans les curriculums que par le passé, la moitié des écoles canadiennes ne l'exigent toujours pas. Une analyse des tendances à travers le temps révèle l'importance centrale de préjugés et de facteurs culturels anciens et récents ayant fait obstacle à une adoption plus large de l'histoire médicale.

Mots-clés. Enseignement de l'histoire de la médecine, formation médicale, enquête, culture médicale

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Over the years, many individuals have commented on the merits of learning medicine's history for medicine's students and its

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practitioners.[1] The history of medicine is said to: contextualize medical practice, reveal the provisional and fallible nature of medical knowledge, foster a cautiousness and humility in the medical thinker, complement the teaching of bioethics through illustrative real-life examples, instill humanity in medicine's white-coated experts, improve the skills of medical history-taking and constructing, improve the skills of critical appraisal and interpretation of evidence, promote scholarship, and contribute positively to professional identity-formation. For those familiar with medical history, these claims seem reasonable; these outcomes are also indisputably important to the practice of medicine. Yet, the history of medicine does not occupy a place in all undergraduate medical education (UME) programs in Canada. Its inclusion within the medical curriculum has varied considerably over time and across institutions.

A number of surveys of Canadian faculties of medicine were undertaken to discover details about medical history teaching in the UME curriculum, first by Henry Sigerist in 1939,[2] and later by others in 1952,[3] 1968,[4] and 1999.[5] Past surveys serve as signposts, informing us as to where medical history teaching has been, and perhaps, where it is going. Much has changed since 1939. Eight new medical schools were established in the last 70 years and now more than ever medical education is delivered in multiple complementary ways, including through small group and problem-based learning. More recent data would enrich our understanding of whether and how we are exposing students to medical history in contemporary UME. Although the American Association for the History of Medicine (AAHM) conducted a study of North American medical school course catalogues in 2008,[6] it lacks the comparative depth and completeness that a questionnaire can provide. Thus, we surveyed educators at the 17 accredited faculties of medicine in Canada regarding history of medicine content in their core medical school curriculum, as well as regarding electives, research opportunities, and extracurricular opportunities. Here, we compare these data with the results of previous surveys in order to trace the path of medical history teaching through time and suggest a course for the future.

Henry Sigerist, director of the Johns Hopkins Institute of the History of Medicine from 1932 to 1947, initiated the first survey of history of medicine in the medical curriculum. In the spring of 1939, Sigerist sent a questionnaire to the deans of North American medical schools, including all nine Canadian schools, inquiring about the state of medical history teaching. Four schools (Laval, Montreal, Toronto, and Alberta) indicated formally required instruction in medical history.[7]

David Tucker led the next study, a review of North American medical school course catalogues, in 1952 on behalf of the AAHM. Seven of the eleven Canadian medical schools were included and Tucker found that six of them (Alberta, Laval, Montreal, Ottawa, Toronto and Western)

now allotted core curriculum time to the history of medicine.[8] While this would seem to suggest that nearly all schools at this time taught medical history to their students, three of the schools excluded from the analysis did not devote core curriculum time to the subject in 1939 or in 1968 when the next survey was completed, suggesting that the proportion reported by Tucker is inflated due to sampling bias. A conservative interpretation of the evidence offered by the AAHM report is that at least half of the schools included mandatory history of medicine lectures, an increase from 1939.

Between January 1967 and June 1968, the National Institutes of Health (NIH) in the United States funded a field survey of medical schools in the US and Canada. Campuses were visited and key informants, including deans, history instructors, and students, were interviewed. Genevieve Miller published the results of the survey in 1969 and reported that only four of the thirteen Canadian schools then graduating medical students (Alberta, British Columbia, McGill, and Western) required students to learn history of medicine as part of the curriculum,[9] a considerably lower proportion than that reported by Sigerist 30 years earlier. Remarkably, among the four schools in which history of medicine was required learning in 1939, by 1968 it only remained mandatory at the University of Alberta.

Then in 1999, Ivan Diamond, a medical student at Queen's, initiated the next survey, a questionnaire sent to all 16 Canadian medical schools. This time, nine schools (Dalhousie, Montreal, McGill, Ottawa, Queen's, Western, Manitoba, Saskatchewan, and British Columbia) included the history of medicine in the core curriculum,[10] a considerable proportional increase from 1968. More recently, the AAHM reported from their study of medical school course catalogues that five schools (Queen's, Western, the Northern Ontario School of Medicine, Alberta, and Montreal) include required learning in the history of medicine.[11] However, the incompleteness of these data and limitations of the method of data collection raise doubts about the reliability of their findings and make comparison with the results of other surveys difficult.

Against this historical backdrop, from 2011-2012, as medical students in Toronto, we sent electronic surveys to faculty members associated with the now 17 Canadian medical schools. Our informants were those known to be involved in medical history teaching, as well as faculty members involved in professionalism portfolios, under which the history of medicine is sometimes included. Recognizing the breadth of ways that schools now deliver material to students, we asked about core curriculum content, including lectures, but also about electives, research opportunities, and extracurricular activities accessible to undergraduate medical students. With follow-up, we obtained responses from all schools (Table 1).

Table 1
History of Medicine in Canadian Undergraduate Medical Education, 2011-2012

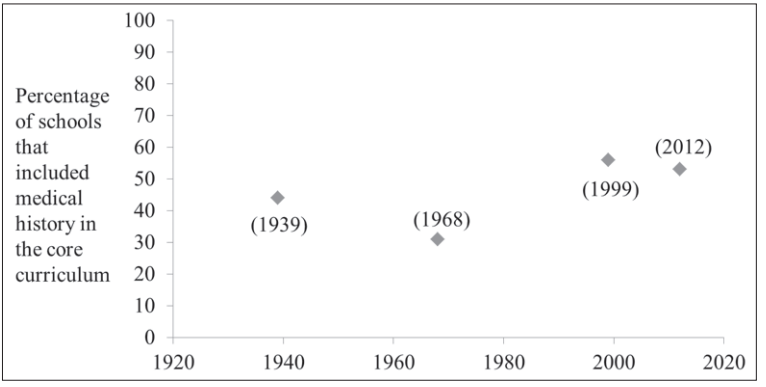
Medical School	Core Curriculum Content (hours)	Electives	Research Opportunities	Extracurricular Activities
University of Alberta	N	Y	N	Y
University of British Columbia	N	N	N	N
University of Calgary	Y (3)	Y	Y	Y
Dalhousie University	N	Y	Y	Y
Université Laval	N	Y	Y	N
University of Manitoba	Y (9)	N	N	N
McGill University	N	Y	N	Y
McMaster University	N	Y	N	Y
Memorial University	Y (20)	Y	Y	Y
Université de Montréal	N	N	N	N
Northern Ontario School of Medicine	Y (15)	N	Y	Y
University of Ottawa	Y (3)	Y	Y	N
Queen's University	Y (14)	Y	Y	Y
University of Saskatchewan	Y (5)	N	Y	N
Université de Sherbrooke	Y (8)	N	N	N
University of Toronto	N	Y	Y	Y
University of Western Ontario	Y (1)	Y	N	Y

As in 1999, we found that nine medical schools include the history of medicine in the core (non-elective) curriculum. Content is usually delivered in lectures and mostly by faculty members with formal postgraduate training in history, with allotted curriculum time varying widely from one hour to twenty hours. Interestingly, six of the schools that did not include history of medicine in the core curriculum did offer electives, as well as research and/or extracurricular opportunities in medical history, evidence of some recognition that medical history has value for

UME. Students in almost every UME program can learn some medical history if they are keen, but half of Canada's schools lack either the expertise or the willingness to grant the subject the same status held by subjects in the core curriculum. Overall, 11 schools offered opportunities for elective history of medicine study, compared with 12 in 1999. Extracurricular medical history activities included clubs, speakers' series, and locally hosted conferences.

Figure 1 shows the percentage of schools that included the history of medicine in the core UME curriculum in 1939, 1968, 1999, and 2012. In most years, about half of Canadian schools granted curriculum time to medical history, which is most likely indicative of differing opinions as to whether or not the subject is fundamental to medical education, but may also be influenced by the local availability of those with the expertise to teach it. Miller's field survey supported the importance of the former factor over the latter. The 30-year period between 1939 and 1968 witnessed a substantial decrease across North America in the number of medical schools that included history of medicine content, with a more modest decrease among the subset of Canadian schools. Over the same period, the number of graduate departments offering degrees in medical history at these universities and the number of full-time historians with appointments in medical schools increased.[12] Rather than a lack of *bona fide* historians, Miller found that negative impressions among students, who sometimes felt that medical history was a waste of time, and among medical school deans, who often considered it a luxury or a bore, were partly to blame for the drop-off in medical history teaching. In the midst of a universal movement to decrease lecture hours in favour of electives, those deciding medical history's fate gave it lower priority than other staples of the medial curriculum and it was among

Figure 1



History of medicine in the core undergraduate medical curriculum in Canada, 1939-2012.

the first topics to be dispensed with.[13] Miller concluded that, compared to 1939, "interest in and respect for historical studies in medicine are at a lower level today [in 1969] in the majority of schools."[14] We should add that during this 30-year period there was also a considerable shift in who did medical history and where it was institutionally housed. While previously considered a hobby for amateurs and retired physicians, over the 20th century the study of medical history became the job of professional historians with non-clinical backgrounds.[15] With the professionalization of the history of medicine, the serious study of medicine's past became the domain of history departments rather than medical faculties, potentially contributing to medical history's waning presence and popularity in medical schools.

The lamentable lack of history of medicine teaching would be partly remedied over the following 30 years. By the time Diamond conducted his survey in 1999, the proportion of schools including medical history in their curriculum had increased to over 50%. Although Diamond drew attention to the fact that there were also now twice as many faculty positions in medical history, including the Hannah Chairs in the History of Medicine,[16] Miller's study demonstrates that creating new faculty positions is not enough. How important was the creation of the new Chairs to the late 20th- century boom in history of medicine teaching?

In 1971, the estate of Dr. Thomas Cotton established a history of medicine chair at McGill University. Associated Medical Services (AMS) subsequently established five Hannah Chairs at Ontario medical schools between 1974 and 1977, and in 1995, contributed to the endowment of the chair at McGill, which became the Cotton-Hannah Chair in the History of Medicine.[17] Two of these six schools, namely McGill and Western, had already included medical history in the core medical curriculum in 1969 and continued to do so in 1999. Another two of the schools, Toronto and McMaster, did not include it in 1999 even after receiving a Chair. Only the two remaining schools, Queen's and Ottawa, did not include medical history in the curriculum in 1969 but did so 1999. So at best, the arrival of AMS could explain some of the new enthusiasm for the history of medicine beginning during the period 1969-1999 and sustained through to the end of the century. Although AMS eventually introduced educational grants to support the teaching of history in UME, this additional funding did not begin until 2004.

The spike in medical history teaching might also reflect increased attention to the social determinants of health in Canada and the world. In 1986, 39 nations present at the First International Conference on Health Promotion, sponsored by Canada and the World Health Organization, ratified the Ottawa Charter for Health Promotion. The charter acknowledged social dynamics such as peace, education, income, social justice, and equity as "prerequisites for health."[18] Increased

consideration of how the social determinants of health could be taught in medical education may have drawn attention to the relevance of the social history of medicine.[19]

Diamond's survey also revealed that most UME deans considered learning medical history important for medical students, especially for the development of a sense of profession.[20] Since 1999, professionalism has become a dominant theme in UME. The Canadian-born CanMeds Physician Competency Framework, which undergraduate medical curriculum committees have fully embraced over the last decade, organizes curriculum objectives and trainee assessment around seven core roles, including the Professional role.[21] Despite the recognition that the history of medicine could teach professionalism, there was no net change in the number of schools including medical history in the required curriculum or offering elective opportunities from 1999 to 2012, which calls for some serious contemplation around what the longstanding and emergent barriers might be for the history of medicine.

One of the recurring challenges is convincing the students. On their tour of North American schools in 1968, Miller's group encountered resistance to medical historical knowledge among many students who felt it was not worth their time; after all, it was not included on their Board examinations.[22] As our peers and clinical mentors would agree, medical students are a tough crowd, critical of the need to learn topics that do not have obvious and immediate impact on patient management. To an extent, this tendency is born of necessity, as they are expected to digest a lot of knowledge during medical school. Many students have an interest in topics in the life sciences and are familiar with them from their premedical studies. Thus, they will put up with a certain amount of technical biomedical science detail. However, not all students will have a genuine interest in medical history and many may view the subject as too alien and too far removed from the clinic. It is incumbent on lecturers who teach medical history to follow Miller's advice and deliver it in a way that is interesting and relevant. They must face the reality that students wield power over their own learning, both through evaluations and feedback and through choosing what to pay attention to. Examining students on history of medicine content is one way to ensure their attention. As in 1968, board examinations, including the Medical Council of Canada Qualifying Exam and United States Medical Licensing Exam, do not presently examine medical history knowledge.

Curriculum directors and committees also have to be convinced of medical history's merits. In an evidence-obsessed climate, rational arguments based on common sense, like the many reasons given for the importance of learning medical history, are often not enough. Nowadays in medicine, evidence is equated with population studies and

to date these have not been done to show that medical students who receive history of medicine as part of their medical education are better professionals, more humane and astute, than those who do not. Those kinds of experiments are difficult to do and the results are even more difficult to interpret. It should be noted, however, that none other than tradition or rational arguments justify the inclusion of most of the topics in the core curriculum, exposing a prejudice that works against the history of medicine.

A further barrier is special to medicine *qua* medicine and that is its anti-historical nature. Medicine after Flexner is too often reduced to a science.[23] With the proliferation of clinical decision rules and clinical practice guidelines in recent decades, this reduction is as manifest now as ever. As part of their initiation into the scientific research community, newcomers are not expected to read from the canons of science, be they Newton or Mendel.[24] Instead, they are trained in the modern methods and norms for asking research questions and are handed recent journal articles that build on the dominant theory and models of the day.[25] Similarly, trainees in the medical community need not be familiar with medicine's canons (Avicenna or Osler). During their education, they also learn dominant biomedical theory and norms; for them, these norms have to with managing patients effectively and ethically. More recently, trainees and doctors are also expected to keep up to date with journal articles. Modeled after science, medicine eschews the past as outdated and inconsistent with good (scientific) practice rather than potentially relevant and enlightening. It is not surprising that organizers of medical history education events face hurdles when applying for continuing medical education (CME) accreditation.[26]

In the last 20 years, the penchant for the latest and greatest knowledge has grown due to the evidence-based transformation in medicine. Though introduced loudly to the world in 1992, evidence-based medicine (EBM) has had an increasing presence in UME since the time of Diamond's 1999 survey. It may serve as an emergent barrier for medical history as a result of two of its ideals: the need to keep up with the latest medical literature, and the privileging of clinical research evidence as the best evidence for the exercise of clinical judgement. Together, these messages may teach medical students to keep up with the latest high quality clinical research evidence and, given the time constraints of clinical life, not much else. Historical research evidence is not included in the hierarchies of evidence taught by EBM (except perhaps as "clinical experience," which is relegated to the lowest tier of most hierarchies). Many authors have commented on the resulting paradox that some of our most trusted therapies, such as antibiotics and insulin, justified by a long history of successful use, are not supported by "high quality" evidence.[27] The paradox may be resolvable but it could still prove

difficult to convince students and doctors of the importance of historical evidence against the countervailing messages implicit in the new EBM paradigm.

Even in light of these difficulties, the professionalism agenda in contemporary medical education has created opportunity for medical history, the kind of opportunity that the "medical humanities" are benefiting from. Educators are recognizing the importance of the humanities, including literature and the fine arts, for developing professional competency, and in fact, medical education accreditation organizations in the U.S. and Canada now require schools to include humanities teaching in the curriculum.[28] At Dalhousie, this recognition led to the creation of the first medical humanities department in 1992, led by Dr. T. J. Murray, a pioneer in making way for humanities in medical education.[29] The history of medicine could profit from the medical humanities movement by asserting itself as a medical humanity, one that is not redundant with others in terms of what it has to offer for the teaching of medical professionalism.

One surprising revelation we had while comparing the results of surveys from the past 70 years is that all 16 of the Canadian medical schools established by the end of the 20th century have included history of medicine in the core curriculum at some point in their history, before removing it (and sometimes including it again later). The status given to medical history in UME fluctuates over time even within the same school. The task for proponents of the history of medicine is not to "break into the curriculum" but to ensure that its value is always considered during frequent episodes of curriculum restructuring. While the value of medical history in medical education is certainly recognized more in the last couple of decades than it was earlier in the 20th century, it is not seen as valuable enough to be a part of the non-elective curriculum in half of Canadian programs. The culture of medicine, with its influence on students, educators, and administrators, may be the most powerful determinant of medical history's fate through time.

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NOTES

1 See, for examples, the following: Daniel K Sokol, "Perspective: Should We Amputate Medical History?" *Academic Medicine*, 83, 12 (2012): 1162-64; Jacalyn Duffin, "Why History of Medicine in the Undergraduate Medical Curriculum?" *University of Toronto Medical Journal*, 88, 2 (2011): 127-28; Richard Horton, "A Manifesto for Reading

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2 Henry E. Sigerist, "Medical History in the Medical Schools of Canada," *Bulletin of the History of Medicine*, 8 (1940): 303-8.

3 David A. Tucker, "Committee to Survey the Teaching of the History of Medicine in American and Canadian Medical Schools," *Bulletin of the History of Medicine*, 26 (1952): 562-78.

4 Genevieve Miller, "The Teaching of Medical History in the United States and Canada: Report of a Field Survey," *Bulletin of the History of Medicine*, 43 (1969): 259-67. Also, Genevieve Miller, "The Teaching of Medical History in the United States and Canada: Report on Individual Schools (part III)," *Bulletin of the History of Medicine*, 43 (1969): 553-86.

5 Ivan Diamond, "Teaching Medical History at Canadian Medical Schools: A Survey," *Queen's University Health Sciences Journal*, 5, 2 (2001): 42-44.

6 Jennifer Gunn, Jeremy Greene, Laura Hirshbein, and Geoffrey Hudson, "Ad hoc Committee on Survey of Medical Schools 2008 Report," 2008, http://www.histmedorg/ahc_s_m_s.htm. Accessed 7 April 2011.

7 Sigerist, "Medical History in the Medical Schools," p. 303-8.

8 Tucker, "Committee to Survey the Teaching of the History of Medicine," p. 562-78.

9 Miller, "Report on Individual Schools (part III)," p. 576-86.

10 Diamond, "Teaching Medical History," p. 42-44.

11 Gunn, "2008 Report," p. 6.

12 Miller, "Report of a Field Survey," p. 267.

13 Miller, "Report of a Field Survey," p. 262-66.

14 Miller, "Report of a Field Survey," p. 263.

15 Gert H. Brieger, "Guest Editorial: The History of Medicine and the History of Science," *Isis*, 72, 4 (1981): 536-40.

16 Diamond, "Teaching Medical History," p. 43-44.

17 See "AMS's Contribution to the History of Medicine and Health," http://php.ams-inc.on.ca/?q=about&page=0%2C1. Accessed 14 November 2012. "McGill University Faculty of Medicine," http://php.ams-inc.on.ca/?q=partners_and_colleagues/mcgill_university_faculty_of_medicine. Accessed 14 November 2012.

18 Ottawa Charter for Health Promotion (Ottawa: World Health Organization, 1986), p. 2.

19 For examples of these discussions, see Frank Bane, "Organizing Medical Education to Meet Health Needs," *Annals of the American Academy of Political and Social Science*, 337 (1961): 29-35.

20 Diamond, "Teaching Medical History," p. 43-44.

21 Geoff Norman, "CanMEDS and Other Outcomes," *Advances in Health Sciences Education*, 16, 5 (2011): 547-51. The CanMEDS roles were developed as part of the Educating Future Physicians of Ontario (EFPO) project in the 1990s. EFPO was a joint initiative between Ontario's five medical institutions and Associated Medical Services, intended to better align medical education with the evolving needs of the province. For more information, see Victor R. Neufeld, Robert F. Maudsley, Richard J. Pickering, Jeffrey M. Turnball, W.Wayne Weston, Merrilee G. Brown, and Janice C. Simpson, "Educating Future Physicians for Ontario," *Academic Medicine*, 73, 11 (1998): 1133-48.

22 Miller, "Report of a Field Survey," p. 265-66.

23 For a detailed reflection on the popular conception of medicine as a science, see Kathryn Montgomery, *How Doctors Think: Clinical Judgment and the Practice of Medicine* (Oxford: Oxford University Press, 2006).

24 The lack of appreciation in science and medicine for canons is also noted by Horton in "Reading Medicine," p. 872.

25 Kuhn called this collection of norms and dominant theory a scientific paradigm. He also believed that paradigms prohibit an honest reflection on the past and that, within a scientific community, history is used mainly to illustrate the success of the present paradigm or to present paradigmatic problems as a teaching aid. See "XI: The Invisibility of Revolutions" in Thomas Kuhn, *The Structure of Scientific Revolutions,* 3rd ed., (Chicago: University of Chicago Press, 1996).

26 Jacalyn Duffin, "Lament for the Humanities in Continuing Medical Education," *Canadian Medical Association Journal*, 183, 12 (2011): 1452.

27 For the history and philosophy of evidence-based medicine, including a solution to the paradox mentioned here, see Jeremy Howick, *The Philosophy of Evidence-Based Medicine* (Oxford: Wiley-Blackwell, 2011).

28 David J. Doukas, Laurence B. McCullough, and Stephen Wear, "Perspective: Medical Education in Medical Ethics and Humanities as the Foundation for Developing Medical Professionalism," *Academic Medicine*, 87, 3 (2012): 334-41; and M. G. Kidd and J. T. H. Connor, "Striving to do Good Things: Teaching Humanities in Canadian Medical Schools," *Journal of Medical Humanities*, 29, 1 (2008): 45-54.

29 Thomas J. Murray, "Why the Medical Humanities?" *Dalhousie Medical Journal*, 26, 1 (1998): 46-50.