Making the Case for History in Medical Education

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What is the future of the history of medicine at medical schools? It is now possible to see both a crisis and an opportunity. When the American Association for the History of Medicine surveyed 174 medical schools in the United States and Canada in 2008, it found that 98 "had no indication of history" and that another 19 might not have had any as well. While 51 schools did have "some indication of history of medicine offerings," it was hard to find information and the programs generally were not well organized.[1] Historians at medical schools have found themselves competing with medical ethics and the medical humanities for a share of the shrinking pool of faculty positions, curricular hours, grant support, and other resources. Such concerns exist as part of the broader angst about the crisis in the humanities, a crisis well demonstrated by the 2013 report from the American Academy of Arts and Sciences.[2]

At the same time, there are reasons for considerable optimism. History of medicine continues to be a thriving academic enterprise, with excellent work by faculty and graduate students at many universities. It has achieved impressive popular interest, with two histories of medicine -- *The Emperor of All Maladies* and

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[1] Jennifer Gunn, Laura Hirshbein, Geoffrey Hudson, and Jeremy Greene, "AAHM Ad Hoc Committee to Survey the Teaching of History in Medical Schools in the United States and Canada," 10 April 2008. For a more recent survey of the situation in Canada, see Jonathan Fuller and Margaret M. Olszewski, "Medical History in Canadian Undergraduate Medical Education, 1939-2012," *Canadian Bulletin of Medical History*, 2013, *30*, 199-209.

[2] American Academy of Arts & Sciences, *The Heart of the Matter: The Humanities and Social Sciences for a Vibrant, Competitive, and Secure Nation* (Cambridge: American Academy of Arts & Sciences, 2013), available at http://www.amacad.org.

The Immortal Life of Henrietta Lacks -- becoming runaway bestsellers.[3] The American Association of Medical Colleges (AAMC) has formally recognized the importance of the medical social sciences by inserting a new section on Critical Analysis and Reasoning Skills into the 2015 MCAT (Medical College Admission Test). Efforts are now underway to expand this precedent and encourage both the LCME (Liaison Committee on Medical Education) and ACGME (Accreditation Council for Graduate Medical Education) to add medical humanities and social sciences (including history) into the competencies required of medical students and residents.[4]

The simultaneous perception of crisis and opportunity presents historians of medicine with a challenge. Is history relevant and useful for medical students and physicians, as well as for nursing, public health, and all health-related fields? Instead of simply answering "of course," scholars need to think carefully about this question. Historians of nursing have already been working on this: the American

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[3] Siddhartha Mukherjee, *The Emperor of All Maladies: A Biography of Cancer* (New York: Scribner, 2010); Rebecca Skloot, *The Immortal Life of Henrietta Lacks* (New York: Random House, 2010). Neither book was authored by a historian of medicine.

[4] For the MCAT, see Jules Dienstag, "The Medical College Admission Test -- Toward a New Balance," *New England Journal of Medicine*, 2011, *365*, 1955-1957. For the hoped-for competencies, see David J. Doukas, Laurence B. McCullough, and Stephen Wear, "Medical Education in Medical Ethics and Humanities as the Foundation for Developing Medical Professionalism," *Academic Medicine*, 2012, *87*, 334-341. The presidents of the American Association for the History of Medicine (John Eyler) and the Canadian Society for the History of Medicine (Susanne Klausen) both asked the AAMC to include a question about history of medicine on the survey given to graduating medical students (which includes questions about law, ethics, and health policy), but this has not been done. See Jacalyn Duffin, "Lament for the Humanities in Continuing Medical Education," *Canadian Medical Association Journal*, 2011, *183*, 1452.

Association for the History of Nursing began disseminating guidelines on *Nursing History in the* Curriculum in 2001.[5] When historians of medicine decide to engage with health professionals and their education, we need to craft careful and specific arguments about where and why history is relevant, and about how history content can be integrated into curricula and other training venues. In a world where many interests make demands for curriculum time and attention, historians of medicine need an aggressive strategy.

This is not a challenge that all historians have to take on. For reasons of institutional setting and professional or personal interest, it is likely that only a subset of historians of medicine will want or be able to engage with medical education and other health professionals. Many historians of medicine are busy enough on undergraduate campuses, where the field is increasingly popular, or at public health schools, where the scholarly interests of historians and social epidemiologists align naturally. However, for the historians of medicine who work on medical campuses, and the others interested in engaging clinicians, it is essential that the case for relevance be made well. Success should have spillover effects that benefit the field more broadly. Efforts by any subset of historians of medicine to attract attention and resources to the field will benefit all historians of medicine. Moreover, many of the arguments about the relevance of history of medicine for medical education can also be used to make the case for why nurses,

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[5] American Association for the History of Nursing, *Nursing History in the Curriculum: Preparing Nurses for the 21st Century* (2001). Available at https://www.aahn.org/position.html.

public health professionals, undergraduates, and historians more generally (i.e., academic historians in other fields) ought to take history of medicine seriously.

A historical review shows that this is not a new mission. Historians of medicine have strategized to create a role for history in medical schools for more than two centuries. Over this time, many valuable arguments have been made about the possible contributions of history. We believe that even stronger arguments can be made. Current developments in the education of medical students and other health professionals also present new opportunities for historians to make arguments that will resonate more powerfully with educational priorities. We make the case for history, not just as a non-specific model of fostering professionalism or combating hubris, but as an essential component of medical knowledge, reasoning, and practice. Historical analysis contributes essential insights to our understanding of disease, therapeutics, and institutions--things that all physicians must know in order to be effective, just as they must learn anatomy or pathophysiology.

We focus here on the role of history in medical schools in North America. While the substance of our arguments can be applied to other forms of health education (i.e., osteopathy, pharmacy, nursing, public health), or to other areas, the politics and opportunities faced by historians of medicine differ in their details in North America, Europe, and elsewhere, in terms of institutional support, regulatory regimes, and the relationship of history of medicine to the medical humanities more broadly (a movement that can be both an opportunity and a threat for

historians of medicine). With North America in mind, we offer specific advice about how to couch the case for history of medicine in the language of competencies, a system that has become the coin of the realm in medical education in the United States and Canada.

The crisis and opportunity demand that historians take an affirmative stance, not a defensive posture. Medicine and medical education always change. Physicians and medical educators have a clear desire to guide that change more actively. History can and should have an important role to play. It can help to shift the knowledge, culture, and practice of medicine, but only if historians develop and deploy careful arguments and work to make those arguments heard.

The Wheel of History

Physicians and historians have long struggled to define a role for history in medical education. There is much we can learn from the remarkable continuity of the concerns, solutions, and obstacles that have arisen. Since classical times, physicians have turned to history in pursuit of both pragmatic knowledge and professional inspiration.[6] René Laennec, for instance, used his 1804 thesis to defend the continuing relevance of Hippocrates to medical practice.[7] In the eighteenth century, however, new ideas about the value of the history of medicine

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[6] Frank Huisman and John Harley Warner, "Medical Histories," in *Locating Medical History: The Stories and Their Meanings*, ed. Huisman and Warner (Baltimore: Johns Hopkins University Press, 2004), 1-30, 5.

[7] Jacalyn Duffin, *To See with a Better Eye: A Life of R.T.H. Laennec* (Princeton: Princeton University Press, 1998), 49-53.

began to appear. German medical schools fostered the study of history as a way to understand the development of medical knowledge so that practitioners would understand what methods had been useful in the past and which had led them astray. Scholars also worked to situate the history of medicine within the broader currents of history. In his five volume *Versuch einer Pragmatischen Geschichte der Arzneikunde* (*Essay on a Pragmatic History of Medicine*, 1792-1803), Kurt Sprengel described the many contributions of the history of medicine: it revealed the development of the human mind; it promoted a better understanding of medical knowledge; it fostered a sense of civic responsibility; and it taught students to find value in ideas that might seem strange, a way of teaching them intellectual modesty and tolerance.[8] Instead of entering into debates with dead physicians, historians sought to distill valuable lessons for living physicians.

Over the decades that followed, German scholars reiterated and refined these arguments, whether offering history as an antidote to hubris or arguing that medical history was a valuable epistemological tool that could advance physicians' understanding of the etiology of disease through the study of historical pathology.[9] Similar arguments emerged in France, England, and the United States. Thomas Jefferson, for instance, hired his personal physician, Robley Dunglison, to teach medicine -- and its history -- at the University of Virginia, based on the belief that

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[8] Huisman and Warner, "Medical Histories," 6.

[9] Huisman and Warner, "Medical Histories," 7. See also George Rosen, "The Place of History in Medical Education," *Bulletin of the History of Medicine*," 1948, *22*: 594-629, 600-601.

"the student should learn something of the earlier progress of the science and the art."[10]

Physicians' attitudes towards their history began to change in the late nineteenth century. As laboratory science rose to prominence, French and German medical researchers worked to purge medical knowledge of Naturphilosophie.[11] They turned instead to new knowledge derived from the natural sciences. When German medical knowledge became the model for American reformers in the 1870s and 1880s, the pedagogical shift crossed the Atlantic. Biomedicine, a modernist endeavor, demanded historical narratives that emphasized rupture over continuity. This rupture transformed relationships between physicians and their history. Medical history no longer seemed directly relevant to medical knowledge and practice. Doctors increasingly used the past as a foil to highlight the triumphs of medical progress. The past, however, was not abandoned. Medical history offered a set of philological, nostalgic, and political tools to reinforce a continuity of tradition and clinical authenticity in the face of rapid technological and

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[10] Richard J. Dunglison, "Preface," to Robley Dunglison, *History of Medicine from the Earliest Ages to the Commencement of the Nineteenth Century* (Philadelphia: Lindsay and Blakiston, 1872), iii. See also Rosen, "Place of History," 605. Dunglison taught a triumphalist narrative of the rise of rational medicine, from Hippocrates to his present, but abstracted a general principle relevant for every physician: "we ought to be very tardy in embracing any sect or system. The true means for the improvement of medical science are observation and reflection, systems having too much the effect of distracting the practitioner from these important objects of study." See Dunglison, *History of Medicine*, 274-275.

[11] Rosen, "Place of History," 602, 608; Huisman and Warner, "Medical Histories"; Warner, "The Humanising Power of Medical History: Responses to Biomedicine in the 20th Century United States," *Medical Humanities*, 2011, *37*, 91-96.

epistemological change.[12] The founding faculty of the Johns Hopkins University School of Medicine embodied this modernist paradox. Even though they explicitly emulated the pedagogic models of German biomedical science, John Shaw Billings, William H. Welch, and William Osler also sought what John Warner has called the "rehumanisation of medicine." "Representing medical history as a partial antidote to excessive reductionism, specialisation, commercialism and cultural disintegration," Warner argues, "they cultivated an ideal of the 'gentleman-physician' well versed in the classic liberal arts."[13] These elite physicians made a vigorous case for history. Osler was especially interested in how history could be taught amid the "everyday work of the wards" in order "to train insensibly the mind of the student into the habit of looking at things from the historical standpoint."[14] Welch's commitment to the value of history, in turn, led to the founding of the Institute for the History of Medicine in 1929.

Eugene Cordell, who became the president of the Johns Hopkins Historical Club (established in 1890), offered a careful case for history in 1904. He emphasized six potential contributions:

"1. It teaches what and how to investigate."

"2. It is the best antidote we know against egotism, error and despondency."

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[12] John Harley Warner, "The Aesthetic Grounding of Modern Medicine," *Bulletin of the History of Medicine* 88 (2014): 1-47.

[13] Warner, "Humanising Power," 3. See also Huisman and Warner, "Medical Histories," 14-15.

[14] William Osler, "A Note on the Teaching of the History of Medicine," *British Medical Journal*, 1902, *2*, 93.

"3. It increases knowledge, gratifies natural and laudable curiosity, broadens the view and strengthens the judgment."

"4. It is a rich mine from which may be brought to light many neglected or overlooked discoveries of value."

"5. It furnishes the stimulus of high ideals which we poor, weak mortals need to have ever before us; it teaches our students to venerate what is good, to cherish our best traditions, and strengthens the common bond of the profession."

"6. It is the fulfillment of a duty -- that of cherishing the memories, the virtues, the achievements, of a class which has benefited the world as no other has, and of which we may feel proud that we are members."[15]

While he was as willing as any other to celebrate medicine's luminaries, or to mine the past as a trove of forgotten discoveries, Cordell was more interested than Osler and his peers in exploring the embarrassing history of failures and paths not taken. "It is probable," Cordell suggested, "that we may learn equally as much from the follies, omissions and failures of the past as from its successes and achievements. Experience will always be fallacious and judgment difficult, and it is not likely that error can ever be avoided. It is well for us to realize that the future may pluck many a feather from even our ambitious wings, who plume ourselves on our

[15] Eugene F. Cordell, "The Importance of the Study of the History of Medicine," *Medical Library and Historical Journal*, 1904, *2*, 268-282, 281-282.

attainments."[16] Convinced of the essential importance of the field, Cordell believed that history of medicine "should be taught in no desultory fashion, but as thoroughly as any other," with a professor at every university, required courses with 16 to 20 lectures, and rigorous exams. He looked forward to the day when medical schools would be judged by their attention to history and the field would hold "a front rank in the curriculum."[17]

If Cordell's vision did not come to fruition over the century that followed, much of the work that has been done to make the case for history of medicine has nonetheless followed his lead, even if unacknowledged. Writing on the eve of World War II, Henry Sigerist, who succeeded Welch at the Institute of the History of Medicine at Hopkins, described how history could give students a broader vision of the role of doctors in society and empower them to take deliberate social action. "The study of history is not a luxury," Sigerist explained: "History determines our life. Whatever situation we face is the result of historical developments and if we want to act consciously and intelligently we must be aware of developments and trends."[18] Erwin Ackerknecht, who held the second chair in the history of medicine in the United States (at the University of Wisconsin), explained that a fundamental epistemological relationship existed between medicine and history, "insofar as

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[16] Cordell, "Importance," 280. He continued: "He only is wise who realizes this fact, listens to the wholesome confessions of the past and is ever on his guard" (281).

[17] Cordell, "Importance," 282.

[18] Henry E. Sigerist, "Medical History in the Medical Schools of the United States," *Bulletin of the History of Medicine*, *1939*, *7*, 627-662, 659.

history too tends to be a science and yet remains an art."[19] History could therefore contribute to both the scientific and humanistic ambitions of medicine.

By the 1960s, history of medicine had established footholds -- full time professors, departments, or graduate programs -- at nineteen North American medical schools.[20] It had important allies in libraries that had significant collections in the history of medicine, including the National Library of Medicine, the Institute for the History of Medicine, the College of Physicians of Philadelphia, the New York Academy of Medicine, the Countway Library of Medicine, the Osler Library of the History of Medicine, the Wangensteen Historical Library, the Clendening History of Medicine Library, and others. The basic arguments, however, remained the same. In 1966 the Macy Foundation and the National Library of Medicine hosted a conference to assess the state of the field. George Rosen led the discussion of what history should be taught to medical students. By showing how medicine changed over time, history offered perspective on current trends and helped physicians cope with future change.[21] In his commentary at the conference, Charles Rosenberg argued that "the only case for a compulsory course is one based on a belief that the physician should somehow have a broader feeling for the place of

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[19] Erwin H. Ackerknecht, "The Role of Medical History in Medical Education," *Bulletin of the History of Medicine*, 1947, *21*, 135-145, 145.

[20] Genevieve Miller, "The Teaching of Medical History in the United States and Canada," *Bulletin of the History of Medicine*, 1969, *43*, 259-267, 260.

[21] George Rosen, "What Medical History Should Be Taught to Medical Students?" in *Education in the History of Medicine*, ed. John B. Blake (New York: Hafner Publishing Company, 1968), 19-27.

medicine in society, a greater sensitivity to the alternatives that might exist."[22] Amid all the discussions at the Macy Conference, the arguments for history remained quite modest: history taught perspective, humility, and openness to change.

Efforts to extend the reach of history into medical school curricula were by and large undermined by widespread perceptions that history of medicine was an antiquarian affair taught by aging academics once they had lost their ability to innovate. The chair of the Department of the History and Philosophy of Medicine at the University Kansas, physician and historian Robert Hudson, criticized fellow historians in 1970 for their overemphasis on ancient history, especially Greek and Egyptian texts. "History for history's sake," Hudson complained "is no more acceptable to the current urbane student than the approach in basic science that uses a lecture on muscle metabolism limited to the professor's own pet enzyme." History needed to be made relevant for the student, so that they might more easily absorb its insights. "Think of it as teaching by suppository," Hudson quipped; "the essential ingredients are inserted but without the bitter after-taste."[23] Guenther Risse argued in 1975 that historians had to link past and present. The actual content mattered little, as long as the teaching emphasized how history could inform physicians' understanding of contemporary social contexts and ethical questions.[24]

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[22] Charles Rosenberg, "Commentary," in *Education in the History of Medicine*, 31-34.

[23] Robert P. Hudson, "Medical History -- Another Irrelevance?" *Annals of Internal Medicine*, 1970, *72*, 956-957, 956.

[24] Guenter B. Risse, "The Role of Medical History in the Education of the 'Humanist' Physician: A Reevaluation," *Journal of Medical Education*, 1975, *50*, 458-465.

Over the past twenty years, historians of medicine, many now armed with professional credentials in both history and medicine, have made the case for history with renewed vigor. Much of their writing, however, repeats these earlier arguments: history demonstrates that medical knowledge and practice are products of specific social contexts, which have changed over time and will continue to do so. By focusing attention on the social contexts of medicine, history emphasizes the human relationships between patients and doctors that are at the core of the medical enterprise.[25] John Warner emphasized salutary effects on student psychology, especially "the sense of participating in a changing tradition (with both the subversion and reassurance it can bring)."[26] Susan Lederer, Ellen More, Joel Howell, and Jacalyn Duffin, channeling Ackerknecht, have emphasized the parallels between the craft of history and medicine, both of which operate as semiotic disciplines.[27] Duffin has also argued that history of medicine needed to be recognized as an important scholarly pursuit in its own right: "medical history is a

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[25] Joel D. Howell, "An Elective Course in Medical History," *Academic Medicine*, 1991, *11*, 668-669; Susan E. Lederer, Ellen S. More, and Joel D. Howell, "Medical History in the Undergraduate Medical Curriculum," *Academic Medicine*, 1995, *70*, 770-776; Barron H. Lerner, "From Laennec to Lobotomy: Teaching Medical History at Academic Medical Centers," *American Journal of Medical Sciences*, 2000, *319*, 279-284; Jacalyn Duffin, "Infiltrating the Curriculum: Triumphs and Disasters in Bringing History to Future Doctors," in *Students Matter: The Rewards of University Teaching*, eds. J. Kevin Dorsey and P. K. Rangachari (Springfield, Ill. Southern Illinois University School of Medicine, 2012), 74-92.

[26] Warner, "Correspondence," *Canadian Bulletin of Medical History*, 1991, *8*, 146-148, 146-147.

[27] Lederer, More, and Howell, "Medical History"; Duffin, "A Hippocratic Triangle: History, Clinician-Historians, and Future Doctors," in *Locating Medical History*, 432-449; Duffin, "Infiltrating the Curriculum: Triumphs and Disasters."

research discipline as compelling as any of the basic and clinical sciences."[28] Howard Kushner has picked up a different (but still old) thread, "applied medical history." By analyzing the construction of disease syndromes, history could suggest testable, novel hypotheses to biomedical researchers. Citing work by historians on flu, cigarettes, or PANDAs, Kushner and Leslie Leighton have suggested that "there are appropriate and compelling reasons to create a collaborative environment to bring the two professional cultures of medical history together."[29] In 2012 Jonathan Fuller and Margaret Olszewski surveyed Canadian medical schools. Despite historians' now familiar arguments (e.g., history contextualizes practice, reveals contingency and fallibility of knowledge, fosters humility, complements bioethics, instills humanity, improves history-taking, trains critical thinking, contributes to professional identity), medical schools still had not recognized or implemented the full potential of history of medicine.[30]

As this brief survey of discussions of the role of history in medical education reveals, there are surprising continuities from Cordell's time (and before) to the present. History offers perspective on medical knowledge and practice, suggesting humility where confidence too often exists. It re-humanizes medicine in the face of

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[28] Duffin, "Infiltrating the Curriculum: An Integrative Approach to History for Medical Students," *Journal of Medical Humanities*, 1995, *16*, 155-174, 155. See also Duffin, "Lament for the Humanities"; Duffin, "Infiltrating the Curriculum: Triumphs and Disasters."

[29] Howard I. Kushner and Leslie S. Leighton, "The Histories of Medicine: Toward an Applied History of Medicine," in *Humanities in the Twenty-First Century: Beyond Utility and Markets*, eds. Eleonora Belfiore and Anna Upchurch (London: Palgrave MacMillan, 2013), 111-136. See also: Kushner, "Medical Historians and the History of Medicine," *Lancet*, 2008, *372*, 710-711.

[30] Fuller and Olszewski, "Medical History."

scientific reductionism and demonstrates that medicine is fundamentally social, an encounter between two (at least) humans, each embedded in social, economic, and political contexts. It socializes students into the profession, imparting its ideals while simultaneously sensitizing them to the socialization imposed on them. And, in some cases, it can be a source of clinically useful information.

Persistent Obstacles

The striking continuity of arguments on behalf of the value of history in medicine has been paralleled by an equally striking continuity of barriers to its implementation. Some are structural. Osler complained in 1902 about "the present crowded stated of the curriculum" that left little time for formal courses in history.[31] Others are more cultural. Cordell bemoaned the general loss of interest in history: "we of this age are too much carried away with the rage for novelty."[32] Sigerist surveyed the field in 1939 and claimed that few places outside of Johns Hopkins took history seriously. Three problems were widespread: "1. lack of time [in the curriculum]; 2. lack of personnel; 3. lack of funds."[33] Writing a decade later, Owsei Temkin placed some of the blame on historians: although they all agreed about the importance of history at medical schools, they could not agree about its form and content.[34] A generation later, Lester King, commenting on Rosen's presentation at the Macy conference in 1966, asserted that the most basic problem for the field

[31] Osler, "A Note," 93.
[32] Cordell, "The Importance," 273.
[33] Sigerist, "Medical History," 657.
[34] Owsei Temkin, "Summary," following Rosen, "Place of History," 628-629.

was that "we cannot seriously maintain that it makes 'better' doctors in any practical sense."[35]

These writings also make clear that there was never a "golden age" in which history of medicine was well supported and funded in North American medical schools. Instead, as the institutional foothold of history waxed and waned, historians always decried the current state of affairs. Cordell reported in 1904 that only three of fourteen schools surveyed had a course, "a shocking neglect, an inexcusable apathy." At Harvard lectures had been attempted, "but 'no great interest was shown' and they were discontinued."[36] In 1939 Sigerist found history at 70% of medical schools, but it was often of low quality. He hoped that North American schools would assume responsibility for the field as the coming conflict threatened Europe: "We who have the privilege of living under infinitely better conditions have the duty to carry on and to keep the torch of medical humanism burning."[37] Yet eight years later Ackerknecht remained pessimistic. Knowledge of history of medicine among practitioners and the general public "seems at a low ebb": misunderstanding of basic facts about Lavoisier, Schilling, or Servetus was widespread; students lacked the language skills needed to read the classics; and old knowledge no longer had practical value.[38]

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[35] Lester S. King, "Commentary," in *Education in the History of Medicine*, 28-31, 28.

[36] Cordell, "The Importance," 273, 272.

[37] Sigerist, "Medical History," 659.

[38] Ackerknecht, "Role of Medical History," 136.

When the AAHM surveyed the field in the 1950s, it found organized courses at 47% of US schools (37 of 79) and all seven Canadian schools, with required courses at 20 and 6 schools respectively. But the authors acknowledged that such a crude count said little about substance.[39] When Genevieve Miller redid the survey in 1969, she found that the numbers had slipped to 45% of US schools and 39% of Canadian schools, a decline that was especially frustrating given the dynamism of the field itself in the 1960s.[40] Hudson presented these findings in the *Annals of Internal Medicine* in an article entitled "Medical History -- Another Irrelevance?" He offered a grim prognosis, with natural science content increasingly dominating medical school curricula.[41] Advocates for history offered two different visions. The American Osler Society, founded in 1977, turned to history for an exemplar of professionalism. It was "dedicated to memorialize and perpetuate the just and charitable life, the intellectual resourcefulness, and the ethical example of Sir William Osler."[42] In 1990 a group of activist-historians established the Sigerist Circle to provide a forum for critical historical scholarship in pursuit of progressive

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[39] Franklin D. Murphy, William Middleton, W.F. Norwood, J.A. Curran, D.J. Davis, and D.A. Tucker, "Report of the Committee to Survey the Teaching of the History of Medicine in American and Canadian Medical Schools," *Bulletin of the History of Medicine*, 1952, *26*, 562-578; David A. Tucker, "Report of the Committee to Survey the Teaching of the History of Medicine in American and Canadian Medical Schools," *Bulletin of the History of Medicine*, 1954, *28*, 354-358.

[40] Miller, "Teaching of Medical History," 264. For a discussion of the surveys, see Fuller and Olszewski, "Medical History." They estimate that "about half" of schools offered adequate history of medicine between 1940 and 2012 (203).

[41] Hudson, "Medical History," 956.

[42] American Osler Society, Homepage, available at http://www.americanosler.org, accessed 30 March 2014.

social policy.[43] The two societies reflected very different visions of the contributions that history could make, but they were both firmly convinced of its relevance.

Competing Proposals

It is striking to see such stability over time in both the core arguments for the history of medicine and the key obstacles against it. Historians remain as frustrated by their marginal position in medical education in the twenty-first century as they were in the twentieth century. But something about medical history keeps people engaged, despite all the forces that pull it and medical education in different directions. This durability is a real accomplishment in a field as obsessed with novelty as medicine. What can be done to harness this enduring interest more productively? Several proposals are available. Each picks up on different claims of relevance and would take the field in different directions within medical education.

The debates are most visible with regards to professionalism, an area in which many deans understand that history, along with other humanities and social sciences, can make a valuable contribution. What does professionalism mean, and how can history teach it? Charles Bryan and Lawrence Longo emphasize how history can foster two modes of professionalism, "nostalgic" and "activist." Past physicians, notably Osler, provided a role model of grace and humility. Others, such as Sigerist, demonstrated social activism. Why did these two forms of

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[43] Sigerist Circle, "About," available at http://www.sigeristcircle.org/sigeristcircle.org/About.html, accessed 30 March 2014.

professionalization matter? Bryan and Longo worried about "a takeover (seen by some as hostile, and by others as inadvertent) of professional virtues and values by government and capitalism." By celebrating a tradition of exemplary physicians, nostalgic history "fosters a sense of belonging and solidarity as members of a profession, not a trade." By tracing traditions of public service and social justice, history "promotes activist professionalism, fostering a sense of civic responsibility and opposition to excessive commercialism."[44] Daniel Sokol has similarly argued that history of medicine can be taught to demonstrate and inculcate high standards of professionalism and medical ethics.[45]

Another proposal has taken a more functional approach to professionalism. David Doukas, Laurence McCullough, and Stephen Wear have organized the PRIME initiative, the Project to Rebalance and Integrate Medical Education. They argue that training in the medical humanities broadly -- not just history -- can "promote humanistic skills and professional conduct in physicians." History, for instance, "helps medical students and residents to stand in the past so that what we now take for granted, which is usually invisible, becomes visible and therefore open for critical appraisal. History also teaches that medicine is a profoundly social enterprise requiring that the social dimensions of medicine be identified and

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[44] Charles S. Bryan and Lawrence D. Longo, "Teaching and Mentoring the History of Medicine: An Oslerian Perspective," *Academic Medicine*, 2013, *88*, 97-101.

[45] Daniel K. Sokol, "Should We Amputate Medical History?" *Academic Medicine*, 2008, *83*, 1162-1164.

critically appraised."[46] This enhanced awareness, in turn, will make physicians better professionals who make substantial contributions to patient care.

A third proposal, from Germany, shifts the focus away from nostalgic or instrumental professionalism and towards social theory. Igor Polianski and Heiner Fangerau implemented a medical humanities curriculum at the medical school at Ulm grounded in science studies, with discussions of paradigms, discourses, biopolitics, and postmodern sociology of medicine. They try to capture students' attention not with promises of professionalization, but by intellectual engagement: "The widespread prejudice among medical students that the history of science is merely an exercise in memorization, that medical ethics is an emphatic moral sermon, that some humanities courses are like coffee breaks, is countered directly."[47] They report that their students value this "harder" approach to the medical humanities.

A New Synthesis

Medical students can be a tough audience for the medical humanities. They approach the knowledge taught to them with one eye firmly on the bottom line: is this knowledge relevant for the future? Students have an uncanny ability to parse the curriculum and divine what parts of their coursework will be more or less represented on their medical boards and other assessments, regardless of what their

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[46] Doukas, McCullough, and Wear, "Medical Education," 334, 337.

[47] Igor J. Polianski and Heiner Fangerau, "Toward 'Harder' Medical Humanities: Moving Beyond the 'Two Cultures' Dichotomy," *Academic Medicine*, 2012, *87*, 121-126, 125.

professors say. They quickly figure out how to pass courses, survive on the wards, and get through their licensing exams. Medical school faculty members, meanwhile, have a different bottom line: how to allocate limited time in the curriculum. The consequence of these forces is the same. Both groups triage their attention to the topics that seem most immediately relevant. If deans and students emphasize only that which is relevant, then historians of medicine have no choice but to remake the case for history's relevance within the current priorities of medical education. And this, we believe, is entirely doable.

While we see value in the long-standing arguments and in the recent proposals, we suggest a different approach, one that harnesses aspects of the other proposals but places its emphasis elsewhere. We recognize, as the PRIME initiative does, that competencies are a key aspect of medical education for the time being, and that history needs to make its case through their language. However, we should not let a single narrow focus on one competency -- professionalism -- define the value of all that we do. Moreover, it will likely be difficult to produce convincing evidence that history teaching can produce more professional, humane, or empathic physicians.[48] Second, while we share Polianski and Fangerau's ambition to increase the sophistication of social science teaching in medical schools, we do not think that social theory is the path most likely to succeed in North American medical schools. Instead, we believe that historical analysis can contribute to medical education in exactly the same ways as anatomy,

[48] Fuller and Olszewski, "Medical History."

biochemistry, or pathophysiology: as a fundamental component of medical knowledge. If this argument can be made visible through solid pedagogy, then the system of competencies can itself become a structure for demonstrating the value of history.

Based on our experience teaching history of medicine to undergraduates, graduate students and medical students at several institutions, with a collective experience of many decades, we have found myriad ways in which history can make essential contributions to medical knowledge. Our approach begins with a series of specific claims that have self-evident plausibility and relevance for medicine:

• The burden of disease changes over time. A thorough understanding of disease (something that all doctors should have!) includes knowledge of the non-reductionist mechanisms that can account for these changes over time (e.g., social determinants of disease).

• What counts as disease -- definitions, diagnostic practices, and social meanings -- is historically contingent. Physicians need to appreciate the factors that account for how definitions of disease change over time, and their consequences.

• Medical therapeutics, and understandings of their efficacy, are dynamic. Good medical care depends on an understanding of the changing values and evidence reflected in claims of therapeutic success.

• Medical knowledge is produced through specific social, economic, and political processes. History provides critical perspective on the contingency of

knowledge production and circulation, fostering clinicians' ability to tolerate ambiguity and make decisions in the setting of incomplete knowledge.

• Health inequalities, in both the burden of disease and in treatment access and outcome, have persisted for millennia. History offers essential perspective about the causes of inequalities and possible solutions.

• Medicine has influenced -- for worse and for better -- how race, ethnicity, gender, sexuality, and class are understood and managed. History offers robust tools for understanding these dynamics.

• Medical education, research, and practice take place across disparities in status and power. History demonstrates how and why this has happened.

• Medical technologies exist as part of broader social systems. History shows that innovation is not always progress, that technologies have unanticipated costs and consequences, and why improvements are not always implemented.

• The roles of physicians, their professional structures, and the social contexts of practice change over time. Understanding this history helps physicians navigate their shifting environments.

• Hospitals, medical schools, and health care systems are the byproduct of a long series of political struggles and compromises. History explicates the current structures, their limitations, and prospects for reform.

• Health-seeking behaviors have changed significantly over time. Historical perspective allows physicians to be more effective as they work within this dynamic, pluralistic medical marketplace.

• Medicine is one of many societal responses to disease in individuals and populations (e.g., nursing, public health, social work, religion, etc.). History offers perspective on the changing role of medicine in society.

• Historical study has shown how individuals' experiences of their bodies have changed over time (and across culture). Physicians cannot assume a universal experience of health or disease.

• Ethical dilemmas in medical research and practice change over time. History reveals the specificity of social, economic, and political forces that shape ethical judgments and their consequences.

This list is meant to be suggestive, and it is far from exhaustive. It is a series of talking points for anyone who wants to make the case for history's role in medical education. A historian, asked by a dean of medical education why history matters, could respond with any of these arguments. Any one of them can be the basis for an informal teaching session or a lecture. Together they provide an outline of possible courses. The list also highlights possible areas of research for students who want to engage more seriously with the history of medicine.

Claims about the relevance of history can also be cast in a more thematic approach, clustering around five core themes for the history of medicine:

(1) Disease changes over time, not just definitions of disease and diagnostic practices, but also the underlying burden of disease. A thorough understanding of disease includes knowledge of mechanisms that can account for both the

determinants of the changing burden of disease and the shifting categories and meanings that shape the impact of disease on individuals and society.

(2) Medicine is a product of history, meaning that medical knowledge, technology, and practices are produced, implemented, and evaluated in specific social, economic, and political systems. History facilitates critical perspective on the contingency of knowledge production and circulation. It demonstrates that medical innovations are not always progress; instead, they often have unanticipated costs and consequences. Good medical care recognizes the changing values and standards of knowledge that have shaped our shifting understanding of therapeutic efficacy. This recognition fosters clinicians' ability to tolerate ambiguity and make decisions in the setting of incomplete knowledge.

(3) Health inequalities persist with respect to both the burden of disease and treatment access and outcome. Populations become vulnerable because medical education, research, and practice take place amid disparities in status and power. History offers key analytical perspective on the intersection of biological and social processes in the categories of race, ethnicity, gender, sexuality, and class, and offers essential perspective about the causes of persistent inequalities and about possible solutions

(4) Health care systems are in constant flux, including the roles of physicians, their institutions, and the social contexts of practice. Each component -- the profession, medical schools, hospitals, and public health -- is the result of a long series of political struggles and compromises. Patients, meanwhile, exhibit

complex health-seeking behaviors in a dynamic, pluralistic, medical marketplace. History explicates the current structures, their limitations, and prospects for reform.

(5) Ethical dilemmas in medical research and practice, are contingent to specific historical and social contexts. History reveals the specificity of social, economic, and political forces that shape ethical judgments and their consequences. It provides an important approach for understanding and teaching medical ethics.

Taken together, these specific arguments about the history of medicine and the themes that they reflect demonstrate the undeniable value of history to medical theory and practice. History does not just convey an attitude towards medical knowledge and practice (e.g., recognizing its contingency, an antidote to hubris). Instead, historical analysis -- alongside molecular biology or pharmacology -- can make fundamental contributions to our understanding of disease and therapeutic efficacy. The traction of each argument might vary from school to school, depending on local personnel, institutional mandates, and funding arrangements. Nonetheless this list demonstrates the breadth, relevance, and importance of insights from the history of medicine.

Our list is longer and more specific than those offered by past historians. It reflects the ways in which historians have refined their understanding of the dynamics of medical knowledge and practice as the field of history of medicine developed over the twentieth century. By showing the number of crucial insights that history can offer, it makes it more difficult for skeptics to dismiss history of

medicine as window dressing for gentlemanly physicians. As Rudolf Virchow famously pointed out in 1848, "Medicine is a social science, and politics nothing but medicine at a larger scale." Historical analysis remains a uniquely powerful means to highlight the relevance of social science to medical research and clinical practice.

Historians and the Tyranny of Competencies

In his essay on the "tyranny of diagnosis", Charles Rosenberg argued that the bureaucratic necessities of modern administrative systems (e.g., hospitals, insurers, etc.) exert a powerful influence on how doctors conceptualize and operationalize disease.[49] Medical educators now experience a subset of this problem, the tyranny of competencies. Over recent decades, driven by a range of forces, competencies have emerged as the guiding philosophy for the design of educational systems, especially in the highly regulated environments of health care.[50] Whether articulated by educational associations or professional societies, medical students, residents, and practitioners face a bewildering array of competencies that they must acquire through training.

Similar drives towards specification and standardization have not (yet) swept graduate training in history (or the social sciences, humanities, and sciences more broadly). Historians often are not merely skeptical about but actively bristle at the

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[49] Charles E. Rosenberg, "The Tyranny of Diagnosis: Specific Entities and Individual Experience," *Milbank Quarterly*, 2002, *80*: 237-260.

[50] Mary-Jo DelVecchio Good, *American Medicine: The Quest for Competence* (Berkeley: University of California Press, 1995).

competency-based approach to pedagogy. Perhaps heeding the prescient insights of Max Weber, social scientists are suspicious of the "iron cage" of bureaucratic rationality that competencies seem to represent. But when historians want to engage with medical education, they cannot ignore competencies. While individual historians can and should continue to define what they feel to be important for their own research, and continue to maintain their own goals, there is a pragmatic urgency to engage with the shifting world of competencies (e.g., "How I Learned to Stop Worrying and Love the Competencies"?). This investment will facilitate our efforts to engage with educators, deans, credentialing bodies, and accreditors of Continuing Medical Education (CME). The good news is that it is not difficult, and does not require the sale of our humanistic souls. With some careful thinking, the kind of historical scholarship that we already do can be worked into the emerging competency structures, even fitting some that are currently not well covered by other areas of medical training.

In principle, competency-based approaches to medical education are simple, even tautological: medical education should train physicians to be at least marginally proficient in the things that physicians need to do, hence the "competence" rubric. The catch -- and the nub of the argument currently splitting the field of medical humanities -- lies in the structure of competencies. Competency systems typically require metrics for assessing goals and outcomes of education, ideally accompanied by a form of evidence production. This expectation allows educators to determine whether a given educational

intervention is likely to move students along the path of developing skills in the particular competency.

The competency agenda in medical education has been pushed from a variety of institutions in medical education, including the Liaison Committee for Medical Education (LCME), the Accreditation Council for Graduate Medical Education (ACGME), and the Liaison Committee for Graduate Medical Education (LCGME). The Association of American Medical Schools (AAMC) has recently taken on a coordinating role and attempted to standardize the plethora of competency regimes that now circulate in the world of medical education. After analyzing at least 153 different lists of competencies from different institutions, AAMC has produced a more coherent system of eight domains and 58 competencies (see Figure 1).[51] The domains -- patient care, knowledge for practice, practice-based learning and improvement, interpersonal and communication skills, professionalism, systems-based practice, interprofessional collaboration, and personal and professional development -- map onto broader projects of medical education as it has taken shape over the past century. A similar approach characterizes the CanMEDS approach of the Royal College of Physicians and Surgeons of Canada, in which "petals" of competencies expressed as "roles" overlap and cluster around the central nugget of "Medical Expert": Communicator, Collaborator, Advocate, Professional, Manager, Scholar (see Figure 2).

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[51] Robert Englander, Terri Cameron, Adrian J. Ballard, Jessica Dodge, Janet Bull, Carol Aschenbrener, "Toward a Common Taxonomy of Competency Domains for the Health Professions and Competencies for Physicians," *Academic Medicine*, 2013, *88*, 1088-1094.

We believe that the continuity of arguments for the relevance of history in medical education can be translated into the new language of competencies. There is no need to restrict the relevance of history to the domain of "Professionalism" (Domain 5). One could just as easily argue that historical perspective provides a crucial element for "Knowledge for Practice" (Domain 2), specifically in Competency Area 2.5: "Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care seeking, care compliance, and barriers to and attitudes towards care." Critical analysis about how and why diseases change over time can fit into "Practice-Based Learning and Improvement," specifically 3.10: "continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcome." Historical analysis is crucial to understanding the reason why Domain 7, "Interprofessional Collaboration," became a problem to address in the first place. Historical perspective on the development of our fragmented health care system provides crucial insights into the challenges of "Systems-based Practice" (Domain 6). Without being tied to any single competency domain, history is relevant for developing skills in many domains -- and with some thought and appropriate modesty, it can be shown to be important for all.[52]

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[52] The *AAMC Reporter* left the door open for social sciences, as noted in April 2011: "in addition to essential sciences, a competency-based curriculum may address topics in anthropology, sociology, or communications. Jane Sherwin, "Competency-Driven Medicine Takes Shape," *AAMC Reporter*, May 2011, available at

Exactly how history can be implemented will depend on many factors: the structure of the curriculum at the medical school, the interests of the relevant course directors, and availability of historians of medicine for teaching. One strategy is to keep an eye open for topics that other courses are struggling to cover. At one medical school, for example, conversation with the head of the first-year reproductive block revealed that she was actively looking for faculty members who could teach about the different meanings of "sex" and "gender," gender disparities in health and health care, and the complexity of sex determination and intersex. This opened the door for a historical literature that engaged the students, covered the material in a sophisticated way, and satisfied a series of different competencies (e.g., social sciences applied to clinical care, communication with patients from diverse backgrounds, fostering sensitivity to diversity, and recognizing the ambiguity and uncertainty that is common in clinical care). The success of that lecture, in turn, helped to build audiences for the visibility of medical history among students, other course heads, and the dean of medical education. Similarly nuanced lectures have been given about race, poverty, health care reform, and other politicized topics that often become points of conflict between faculty and students. Inroads that begin with individual lectures and workshops can build audiences for elective courses, independent research projects, and other educational opportunities that feature history of medicine.

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https://www.aamc.org/newsroom/reporter/april11/184286/competency-based_medical_education.html, accessed 30 March 2014.

It is also possible to extend the existing language of competencies and formulate additional competencies that history can teach. This might include deeper understanding of professional roles and values, for instance appreciating the nature of illness and suffering as well as the goals and limits of medicine. History can inform decision making, whether by helping students to tolerate ambiguity in clinical scenarios or demonstrating how to appraise clinical management from a historical perspective. It grants insight into the current structure of health care systems, something that can enable deliberate reform. By providing examples of successful and unsuccessful medical research, patient-doctor communication, physician behavior, or health care reform, it can contribute to the acquisition of more traditional competencies. And it can inspire students to elicit and write patient histories worthy of a historian (and physician).

Historians of medicine need not fear competency-based curricula, any more than they need to fear the advent of small-group learning or the use of online course materials. Medical education since well before Flexner has been in constant reform, yet each reform has acknowledged the enduring value of historical thinking for physicians in training. The many arguments for the value of history can be adapted to the AAMC or CanMEDS taxonomy of competencies for medical education, and presumably to whatever pedagogic taxonomies appear in the future. By mapping our list (or others' lists) of the arguments for history alongside the school's selected competencies, historians working on health science campuses can construct their own tailored approaches for making the case for history. Facility

with competency frameworks can also help historians make the case for CME accreditation at history of medicine meetings. If a school identifies deficiencies in its coverage of a certain competency, historians can readily find examples of successes and failures in these areas to illustrate their meaning and importance. A competency approach might even be helpful as part of continuing efforts to convince the AAMC to include questions about history teaching in the exit surveys given to graduating medical students in North America.[53]

How can historians harness their experiences, develop a vision, and engage more effectively in medical education? Osler, in 1902, reached further back and quoted Thomas Fuller's 1639 *History of the Holy War*: "History maketh a young man to be old, without either wrinkles or grey hairs; privileging him with the experiences of age, without either the infirmities or inconveniences thereof."[54] The original passage continues: "Yea, it not only maketh things past, present; but enableth one to make a rational conjecture of things to come. For this world affordeth no new accidents ... Old actions return again, furnished over with some new and different circumstances."[55] This old answer argument still remains one of the best. Historians of medicine, however, cannot rely on such intuitive assertions of the wisdom of history. Instead, they can define precisely the contributions that history offers to medical history and practice, frame these, as needed, in the

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[53] Duffin, "Lament for the Humanities."

[54] Thomas Fuller, quoted in Osler, "A Note," 93.

[55] Thomas Fuller, "To the Honourable" (6 March 1639), *The Historie of the Holy Warre* (Cambridge: 1640), A3 verso - A4.

language of competencies, and engage with the ongoing reforms of medical education.

Figure 1

List 2

Reference List of General Physician Competencies*,†

1. Patient Care

Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

1.1 Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice

1.2 Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging, and other tests

1.3 ‡Organize and prioritize responsibilities to provide care that is safe, effective, and efficient[7,11]

1.4 ‡Interpret laboratory data, imaging studies, and other tests required for the area of practice[7,9,13,17,35,IRC]

1.5 Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment

1.6 Develop and carry out patient management plans

1.7 Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making

1.8 ‡Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes[2,4,9,IRC]

1.9 Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health

1.10 ‡Provide appropriate role modeling[7,11]

1.11 ‡Perform supervisory responsibilities commensurate with one's roles, abilities, and qualifications[10,32,IRC]

2. Knowledge for Practice§

Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care

2.1 Demonstrate an investigatory and analytic approach to clinical situations

2.2 Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations

2.3 ‡Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making, clinical problem-solving, and other aspects of evidence-based health care[IRC]

2.4 ‡Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations[4,5,26,33,34,36,37,44]

2.5 ‡Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care seeking, care compliance, and barriers to and attitudes toward care[9,34,37,44]

2.6 ‡Contribute to the creation, dissemination, application, and translation of new health care knowledge and practices[4,9,30]

3. Practice-Based Learning and Improvement

Demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning

3.1 Identify strengths, deficiencies, and limits in one's knowledge and expertise

3.2 Set learning and improvement goals

3.3 Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes

3.4 Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement

3.5 Incorporate feedback into daily practice

3.6 Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems

3.7 Use information technology to optimize learning

3.8 Participate in the education of patients, families, students, trainees, peers, and other health professionals

3.9 Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care

3.10 ‡Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes[4,9,23,30,35,37]

4. Interpersonal and Communication Skills

Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals

4.1 Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

4.2 Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies (see also 7.3)

4.3 Work effectively with others as a member or leader of a health care team or other professional group (see also 7.4)

4.4 Act in a consultative role to other health professionals

4.5 Maintain comprehensive, timely, and legible medical records

4.6 ‡Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics[9,32,40]

4.7 ‡Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions[33-35,37,40]

(Continues)

List 2
(Continued)

5. Professionalism

Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles

5.1 Demonstrate compassion, integrity, and respect for others

5.2 Demonstrate responsiveness to patient needs that supersedes self-interest

5.3 Demonstrate respect for patient privacy and autonomy

5.4 Demonstrate accountability to patients, society, and the profession

5.5 Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

5.6 Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations

6. Systems-Based Practice

Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care

6.1 Work effectively in various health care delivery settings and systems relevant to one's clinical specialty

6.2 Coordinate patient care within the health care system relevant to one's clinical specialty

6.3 Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care

6.4 Advocate for quality patient care and optimal patient care systems

6.5 Participate in identifying system errors and implementing potential systems solutions

6.6 ‡Perform administrative and practice management responsibilities commensurate with one's role, abilities, and qualifications[30,31]

7. Interprofessional Collaboration

Demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient- and population-centered care

7.1 Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust

7.2 Use the knowledge of one's own role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served

7.3 Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations

7.4 Participate in different team roles to establish, develop, and continuously enhance interprofessional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable

8. Personal and Professional Development

Demonstrate the qualities required to sustain lifelong personal and professional growth

8.1 Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors

8.2 Demonstrate healthy coping mechanisms to respond to stress

8.3 Manage conflict between personal and professional responsibilities

8.4 Practice flexibility and maturity in adjusting to change with the capacity to alter one's behavior

8.5 Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients

8.6 Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system

8.7 Demonstrate self-confidence that puts patients, families, and members of the health care team at ease

8.8 Recognize that ambiguity is part of clinical health care and respond by utilizing appropriate resources in dealing with uncertainty

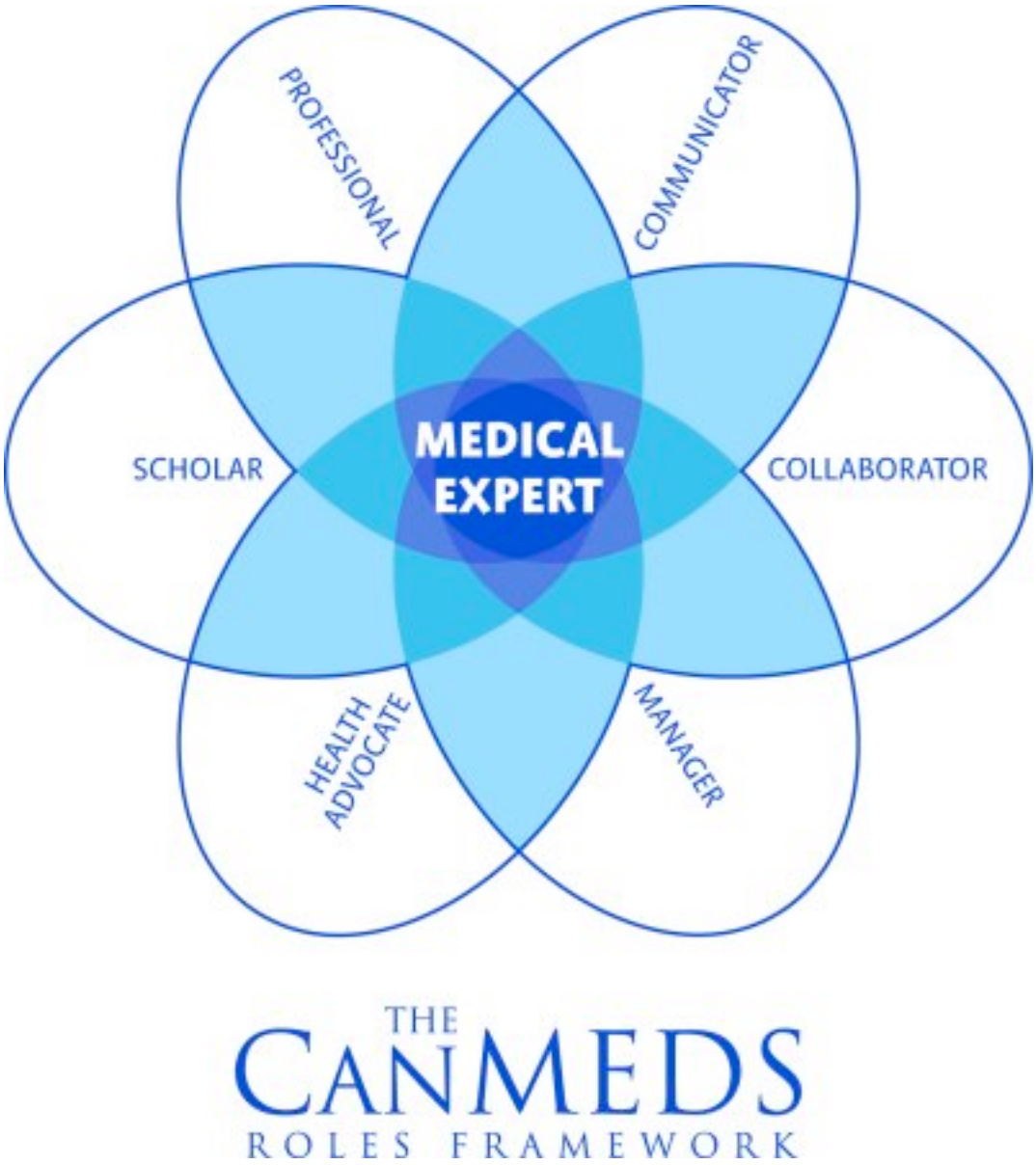
* This list is not intended to supplant any current regulatory requirements. It is solely intended as a robust reference list of physician competencies that captures the essence of competency frameworks published as of June 2012.

† Unless otherwise indicated, the domains of competence are reproduced or adapted from the following sources: Domains 1–6, Accreditation Council for Graduate Medical Education, General Competencies[29] and Common Program Requirements[17,18]; Domain 7, Interprofessional Education Collaborative Expert Panel, Core Competencies for Interprofessional Collaborative Practice[28]; Domain 8, Pediatrics Milestone Working Group, Pediatrics Milestone Project.[21] Some of the competencies in each domain represent modifications or adaptations of original language to accommodate overlapping concepts from a number of competency lists.

‡ These competencies were added on the basis of the authors' review of 153 competency lists. The sources from which the "new" competencies were adapted are cited. RC indicates that at least one was a specialty/subspecialty review committee's list of competencies. See Supplemental Digital Appendix 1 (http://links.lww.com/ACADMED/A138) for the list of RC sources.

§ This domain is titled "Medical Knowledge" in the ACGME framework.[29,18] The authors revised the domain name in this reference list to incorporate frameworks from other health professions.

Figure 2


PROFESSIONAL
COMMUNICATOR
SCHOLAR
MEDICAL EXPERT
COLLABORATOR
HEALTH ADVOCATE
MANAGER
THE CANMEDS ROLES FRAMEWORK