

A Call to Include Medical Humanities in the Curriculum of Colleges of Osteopathic Medicine and in Applicant Selection

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Medicine stands at a crossroad. Disruptive physician behavior has increased, and patient satisfaction has decreased. A growing body of knowledge demonstrates that the medical humanities assist in the creation of compassionate, resilient physicians. Incorporating medical humanities into the medical school curriculum promotes the development of compassionate, culturally sensitive physicians, and also encourages the development of resilience in health care professionals at a time when internal and external pressures on physicians are increasing.

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Disruptive physician behavior has a negative effect on patient satisfaction and quality of medical care.^{1,2} Accordingly, efforts to enhance professionalism among graduates of medical schools are expanding.³⁻⁵ To promote the development of compassionate, culturally sensitive, and resilient osteopathic physicians, the authors call for the broad inclusion of the medical humanities in the curriculum of colleges of osteopathic medicine (COMs). Further, they propose a modification in the selection criteria of prospective students to include a humanistic assessment. In the present article, we outline ways to implement such strategies.

Training the Whole Physician

The stated values of osteopathic medicine, including its dedication to the whole patient, are increasingly conflicted.^{6,7} Under the current business-based model of medicine, the values of speed, productivity, and short-term cost-efficiency have superseded the more traditional values of humanity and relationships.⁶⁻⁸ This change has contributed to 3 major challenges facing all of medicine today: (1) unprofessional behavior on the

part of students and physicians; (2) a disproportionate emphasis on science and technology, favoring cure over care,⁹ and (3) the oft-stated belief that emotional distancing is a way to reduce the emotional costs of medical practice while maintaining objectivity.

If the osteopathic medical profession is truly serious about treating the whole person, COMs must show their students how to engage with every facet of the human organism—physical, emotional, spiritual, familial, and societal. Furthermore, the osteopathic medical profession must model this approach by teaching the whole student. By considering the well-being of the students entrusted to them, COMs will be honoring the profession's core philosophy.

Unprofessional Behavior

Gerald Healy, MD,¹⁰ past president of the American College of Surgeons, contended that inadequate interpersonal skills and lack of professionalism are 2 crucial challenges facing medicine. Reports of increasing levels of disruptive, unprofessional behavior by physicians is proof of these challenges.¹⁰ Reported examples of unacceptable physician conduct include refusal to perform duties, physical abuse, verbal insults, disrespect, and yelling.¹⁰ A study conducted by the American Association of Critical Care Nurses found that the majority of nurses and other nonphysician clinicians experienced condescending, insulting, or rude behavior from a physician, and one-third reported verbal abuse.¹¹ Other publications, including the 1999 Institute of Medicine report, *To Err is Human: Building a Safer Health System*,¹² have focused on the negative impact of unprofessional physician conduct on patient safety.¹³

Given the confidentiality required of physician licensing boards, it is difficult to identify trends of disciplinary action against physicians. Reasons for discipline-based actions include unprofessional behavior and professional incompetence, as well as substance abuse, inappropriate prescribing practices, and fraud.¹⁴ Complaints from the public of disruptive physician behavior, including disrespect, disagreement about expectations of care, inadequate information, distrust, perceived

unavailability, and interdisciplinary miscommunication and misinformation highlight this growing problem.¹⁵

A Disproportionate Emphasis on Science

In analyzing physician misconduct, it is reasonable to assess the education of medical students. Is osteopathic medical education well-rounded? Is it concerned with the whole individual, student as well as patient? Many COMs teach the traditional sciences, both basic and clinical, with elective courses in ethics. Stressing only the sciences without a nod to the humanistic side of medicine is “evidenced in accreditation standards generally and in the policies of student admissions and high stakes assessment benchmarks specifically.”¹⁶ A century ago, medical education in the United States heeded Abraham Flexner’s call to integrate laboratory science with clinical training, but an unintended effect was to minimize subjects deemed irrelevant to new, scientific medicine.¹⁷

Science and technology remain the jewels of contemporary medicine, but scientific understanding alone is insufficient for effective medical practice.^{18,19} Objective data by itself cannot help osteopathic medical students develop the interpersonal skills needed to interact competently with patients, staff, and colleagues. To develop the compassionate healers that our patient-centered philosophy demands, osteopathic medical education needs to be reexamined and reconstructed to incorporate the humanities as elective courses, required courses, or both.

“Soul Loss” as a Result of Emotional Distancing

Many physicians experience what Campo²⁰ has referred to as the “tedious difficulties of practicing medicine in a modern era increasingly dominated by economic constraints, technological hubris, and multicultural differences.” Physicians commonly respond to these pressures by:

‘Distancing,’ the process whereby physicians remove themselves from the particulars of patients’ experiences of illness. Distancing supposedly helps physicians be dispassionate, arrive at more accurate diagnosis, and provide scientific treatment.²⁰

It also provides physicians with a way to manage their feelings and to attempt to protect themselves emotionally. But such a response reveals a lack of insight into the vital role that awareness of self, others, and context play in diagnostic assessment and appropriate, ethical behavior and treatment. Distancing oneself from patients and their concerns, however, creates a major roadblock to effective and ethical patient care, as well as to the physician’s satisfaction with his or her practice of medicine.

Memoirs by physician writers Groopman,²¹ Klass,²² Selzer,^{23,24} and Vergheze²⁵ point out the “soul loss” that physicians can experience when they remain aloof. Peete,²⁶ Sulmasy,²⁷ and Grubb²⁸ have discussed how the practice of medicine has lost its soul, while Remen²⁹ has stated that “medicine involves more than teaching its science” and suggests that “recapturing the soul of medicine may mean that medical educators must help students learn how to find meaning in the work of medicine.” Student physicians in particular need mentoring and modeling to help them develop resilience to job stresses and avoid distancing. Student physicians must learn to cope effectively with the pressures and conflicts they will face in their careers. Central to this ability is the capacity to remain present, empathetically attuned, and self-aware in relation to patients and colleagues.

Moving Toward a Solution

The issues outlined above have prompted more and more attention from medical educators around the country.^{3,30} The public’s dissatisfaction with medicine has risen in concert with increasing unprofessional behavior on behalf of physicians, prompting calls to address the issue of professionalism in medicine.³¹ For example, in 2010, the centenary of the Flexner report, a group of distinguished scholars from the disciplines of ethics, history, literature, and the visual arts, working as the Project to Rebalance and Integrate Medical Education,³¹ held its first workshop. Among other observations, the investigators noted that a number of professional medical organizations and accrediting

bodies had responded with a call for increased professionalism in medicine and in medical education.³¹ The project also included the first critical appraisal of the definitions, goals, and objectives of teaching medical ethics and humanities.

Similarly, the Medical College Admission Test (MCAT) is being revised to address behavioral, professional, and ethical issues. Beginning in 2015, the MCAT will undergo its first substantive change since 1991. A new section, “Psychological, Social, and Biological Foundations of Behavior,” will test understanding of these domains, including the following:

perceptions and reactions to the world; behavior and behavior change; what people think about themselves and others; cultural and social differences that influence well-being; and the relationships among socio-economic factors, access to resources, and well-being.³²

Darrell G. Kirch, MD,³² president and chief executive officer of the Association of American Medical Colleges, announced this change, emphasizing that “Being a good doctor is about more than scientific knowledge. It also requires an understanding of people.”

In response to these many challenges, Cooke et al³³ advocated for a broader conception of professionalism. Specifically, they identified self-awareness and reflective practice, interpersonal relationships, and acculturation as domains of medical practice whose place in the medical curriculum requires review and expansion.

Renew Interest in the Humanities

To further develop and strengthen students’ humanistic values and commitments, many medical schools are re-introducing the humanities across their curricula.³⁴

Several definitions of *humanities* and their role in medicine shed light on why these disciplines may influence professional and ethical behavior, address the disproportionate emphasis on science in medical education, and aim to prevent the soul loss experienced by

many practicing physicians. According to the Ohio Humanities website:

The humanities are the stories, the ideas, and the words that help us make sense of our lives and our world. The humanities introduce us to people we have never met, places we have never visited, and ideas that may have never crossed our minds. By showing how others have lived and thought about life, the humanities help us decide what is important in our own lives and what we can do to make our lives better. By connecting us with other people, they point the way to answers about what is right or wrong, or what is true to our heritage and our history. The humanities help us address the challenges we face together in our families, our communities, and as a nation.³⁵

In a commentary article from 2012, Zimmerman and Marfuggi write:

The medical humanities offer insight into the human condition, suffering, personhood, community responsibility, and a historical perspective of medical practice. The humanities challenge physicians to act as responsible stewards of a revered profession’s resources.¹⁶

A blogger at the New York University School of Medicine states:

Medical humanities also points the way toward remedial education in habits of the heart. Nowadays, our culture disvalues liberal education, is skeptical of virtue, and, in particular, glorifies self-aggrandizement over altruism. Thus, today’s medical students usually lack a liberal education and often a belief in virtue. These factors make them more vulnerable to a culture of medicine that reinforces egoism, cynicism, and a sense of entitlement. Medical humanities (whatever it is) may assist students in resisting these negative forces by opening their hearts to empathy, respect, genuineness, self-awareness, and reflective practice.³⁶

The humanities assist medical professionals during their education and then throughout their careers:

to empathize with the sufferings of others, reflect critically on medical knowledge and discourse, create new representations of the medical experience, and confront moral, psychological, and ethical dilemmas.³⁷

The Des Moines University College of Osteopathic Medicine Experience

During the past several decades, humanities content has gradually crept into medical school curricula, most often as medical ethics courses. The Des Moines University College of Osteopathic Medicine (DMU-COM) has had an ethics curriculum for more than 15 years, but only in the past decade have other humanities offerings become available. Expanding our humanities offerings is consistent with our belief that these courses provide our students an important means of focusing on human issues and behaviors. The subjects, situations, and dilemmas covered in the medical humanities

can create a welcome and necessary space to acknowledge the conflicting demands and stresses that are part and parcel of our working lives...and to connect through our shared humanity with the individuals who entrust themselves to our care.³⁸

Osteopathic medicine emphasizes that human beings are more than bodies: “The body is a unit...the person represents a combination of body, mind and spirit.”³⁹ To fail to teach the disciplines that speak particularly of the mind and spirit is to fail to uphold an important principle of osteopathic medicine.

In our opinion, studies of the human condition should be part of the curriculum of every COM. To accomplish this goal, COMs must reflect on their own histories, commitments, and resources. To move forward, each school will need a champion—a dean, a department chair, or other dedicated individual—with the vision and energy needed for such an undertaking. Faculty commitment is also a critical component.

In our experience, students hunger for context-based learning. Many of these students arrive on campus with

deeply held feelings of altruism, but they find few opportunities to nurture those passions. A too-common result of this lack of nurturing of humanistic ideals is the blunting or complete suppression of those ideals. To address this concern in part, DMU-COM instituted elective courses⁴⁰ that deal with many of the serious issues surrounding medicine today, and we allow students to explore the context of these issues and their emotional reactions to them. The students often report delight in being exposed to literature, drama, or nonfiction literature dealing with the humanistic dimension of medicine. In addition, students find that their exposure is thought-provoking and that it often alters their perspectives by increasing their humility and their nonjudgmental acceptance of others’ differences.

Besides more formal curricular offerings in the humanities, DMU-COM has also developed a number of extracurricular opportunities. In 2007, we initiated the DMU-COM chapter of the Gold Humanism Honor Society⁴¹ to honor those students who are exemplars of the ideals of humanism in medicine. The university also commenced publishing a student-run arts and literature journal, *Abaton*,⁴² intended as an outlet for creative writing and art for medical students and students of other health professions. A university-wide publication that has gained national recognition, *Abaton* is housed in and nurtured by our department. Student interest in the medical humanities has increased so much at DMU-COM during the past decade that students have formed a Medical Humanities Special Interest Group, a student club mentored and sponsored by our department. Several tested suggestions for moving in these directions, based on DMU-COM’s experience, are outlined in the *Table*.

Matriculants to COMs should expect their institutions to model and explain the humanistic philosophy of osteopathic medicine and provide them with a humanistic context for patient care. Students should be able to trust that their educators can provide them the tools to practice medicine effectively and also to flourish in their personal lives.

Table.
Suggestions for Medical Humanities Initiatives at Colleges of Osteopathic Medicine

Initiative	Description
Curricular Modifications	
Dedicated humanities program	Courses in ethics, history, arts, philosophy, and behavioral medicine emphasize the wider importance of the humanities
History of osteopathic medicine	Introduction to the traditions, history, and philosophy of medicine, as well as the history of the osteopathic medical profession to provide the basic contextual information about the distinctiveness of the osteopathic medical profession and students' own identity, activities, and relationships
Planning in stages	Introduce academic content in stages; if resources are limited, collaboration with other local colleges or universities can significantly enhance the capacity to provide humanities offerings
Extracurricular Activities	
Student clubs and organizations	Chorus, string quartet, medical humanities special interest group
Gold Humanism Honor Society Chapter	Honors students who exemplify humanism in their interactions with faculty, peers, and patients
Literary and arts activities	Writing workshops, reading retreats, and other arts-related experiences for interested students provides opportunities without the pressures of the standard curriculum (eg, grades, class rank)
Student-led publications	Encourages personal reflection and expression
Special Events or Symposia	
Visiting scholar programs	Brings national figures from the disciplines of medical ethics and medical humanities to campus; events may be as widely disparate as poetry readings and probing discussions of the nature of suffering

COM Admission Requirements

All medical schools face a challenge when selecting applicants for admission on the basis of academic attributes that likely predispose them to develop into scientifically competent professionals.⁴³ It is equally challenging to identify and avoid choosing those who are likely to develop unprofessional behavior. Application submissions provide little information on an applicant's personal attributes to determine his or her suitability as a future osteopathic physician.

The MCAT score and grade point average are reasonably good determinants of academic success in the first 2 years of medical school, but they are not strongly correlated with later outcomes in medical school or practice.⁴⁴ It has been more difficult to identify measures capable of predicting nonacademic success (eg, professionalism

and high ethical standards) using the resources employed by most medical schools in the admissions process. A record of undergraduate courses in the humanities, coupled with other demonstrations of commitment to the human dimensions of medicine, may provide useful ways to identify students with these capacities.

In 2012, Eva et al⁴⁵ reported that medical students whose admission qualifications included successful completion of a 12-station Multiple Mini Interview (MMI) scored higher on the Medical Council of Canada Qualifying Examination. Kirch⁴⁶ noted that the MMI "appears to be an effective technique for probing dimensions ranging from applicants' responses to novel situations to their reactions to an ethical conflict." He further noted that the MMI is a single but important part of an

admissions process known as holistic review, designed to give balanced consideration to “the multiple ways in which applicants may prepare for and succeed as medical students and doctors.”⁴⁶ One of the 3 goals of *holistic review* of student applicants is “to gauge their intrapersonal and interpersonal competencies, such as integrity and compassion.”⁴⁶

We therefore propose that COMs reevaluate their admission processes to include a holistic review that assesses attributes that likely predict humanistic behavior in these future osteopathic physicians. We suggest that COMs also recognize the value of the humanities in the premedical school curriculum (eg, undergraduate courses and MCAT scores). Further, adding a component to applicant interviews investigating ethics, humanities, and professionalism may provide valuable insight into the character of applicants.

Summary

Medicine in general and osteopathic medicine in particular face a number of critical issues, including unprofessional behavior on the part of practicing physicians and medical students, the disproportionate emphasis on science, and the soul loss experienced by many physicians. In the corporate-influenced and production-oriented models of health care delivery, humanism in the medical setting may be forgotten or perhaps seen as inconvenient. There may be a reduced emphasis on empathic engagement with patients and a push for faster turnaround times instead. The result is that patients are dissatisfied with physicians, physicians are dissatisfied with their jobs, and the humanistic principle of osteopathic medicine is devalued. We contend that engagement with patients on a personal level is critical to understanding and appreciating those we serve and is crucial for effective, patient-centered care. Emphasizing the humanities in our medical schools is a way to expose students to the breadth and complexity of the human condition, engaging them in reflective practices that are central to critical thinking and ethical practice. The incorporation of the medical humanities into the curriculum can help

promote the development of more compassionate, empathetically attuned, and resilient health care professionals dedicated to serving the whole person. To help ensure that the students we choose for the path to DO will uphold the osteopathic principles, modification to the admission screening processes may provide greater insight into applicants’ experiences, attitudes, and behaviors.

References

1. Leape LL, Shore MF, Dienstag JL, et al. Perspective: a culture of respect, part 1: the nature and causes of disrespectful behavior by physicians [perspective]. *Acad Med*. 2012;87(7):845-852. doi:10.1097/ACM.0b013e318258338d.
2. Leape LL, Shore MF, Dienstag JL, et al. A culture of respect, part 2: creating a culture of respect [perspective]. *Acad Med*. 2012;87(7):853-858. doi:10.1097/ACM.0b013e3182583536.
3. Birden H, Glass N, Wilson I, Harrison M, Usherwood T, Nass D. Teaching professionalism in medical education: a Best Evidence Medical Education (BEME) systematic review. *Med Teach*. 2013; 35(7):e1252-1266. doi:10.3109/0142159X.2013.789132.
4. O’Sullivan H, van Mook W, Fewtrell R, Wass V. Integrating professionalism into the curriculum: AMEE Guide No. 61 [review]. *Med Teach*. 2012;34(2):e64-e77. doi:10.3109/0142159X.2012.655610.
5. vanMook WN, de Grave WS, van Luijk SJ, et al. Training and learning professionalism in the medical school curriculum: current considerations. *Eur J Intern Med*. 2009;20(4):e96-e100.
6. Hartzband P, Groopman J. Money and the changing culture of medicine. *N Engl J Med*. 2009;360(2):101-103. doi:10.1056/NEJMp0806369.
7. Marino RV. Musings on humanism, medicine, and medical education. *J Am Osteopath Assoc*. 2013;113(3):196-197. <http://www.jaoa.org/content/113/3/196.full.pdf>. Accessed August 11, 2014.
8. Chen PW. Putting a price on compassion. *The New York Times*. January 15, 2009. http://www.nytimes.com/2009/01/16/health/15chen.html?_r=0. Accessed August 11, 2014.
9. Hauerwas S. The refusal to cease suffering [keynote address]. Presented at: 2nd Annual Meeting of the Society for Spirituality, Theology & Health, Duke University; June 3, 2009; Durham, NC.
10. Healy G. Critical elements to model in medical education. Presented at: Innovating and Updating the Medical School Curriculum. September 14, 2010. <http://www.nyas.org/MediaPlayer.aspx?mid=eaf2ee2e-898e-4b8b-ada7-ddb06a19964a>. Accessed August 11, 2014.
11. Whittemore AD; New England Society for Vascular Surgery. The impact of professionalism on safe surgical care. *J Vasc Surg*. 2007;45(2):415-419.
12. Institute of Medicine. *To Err Is Human: Building a Safer Health System [report brief]*. Washington, DC: National Academies Press; November 1999. <http://iom.edu/~media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20report%20brief.pdf>. Accessed August 11, 2014.

13. Saxton R, Hines T, Enriquez M. The negative impact of nurse-physician disruptive behavior on patient safety: a review of the literature. *J Patient Saf.* 2009;5(3):180-183. doi:10.1097/PTS.0b013e3181b4c5d7.
14. Morrison J, Wickersham P. Physicians disciplined by a state medical board. *JAMA.* 1998;279(23):1889-1893.
15. Wofford MM, Wofford JL, Bothra J, Kendrick SB, Smith A, Lichstein PR. Patient complaints about physician behaviors: a qualitative study. *Acad Med.* 2004;79(2):134-138. <http://medicine.nova.edu/~danshaw/residents/readings/PatientComplaintsaboutPhysicianBehaviors.pdf>. Accessed August 11, 2014.
16. Zimmerman T, Marfuggi R. Medical humanities role in medical education. *World Med Health Policy.* 2012;4(2):1-11. doi:10.1515/1948-4682.12.
17. Cooke M, Irby DM, Sullivan W, Ludmerer KM. American medical education 100 years after the Flexner report. *N Engl J Med.* 2006;355(13):1339-1344.
18. Pedersen R. Empathy development in medical education—a critical review. *Med Teach.* 2010;32(7):593-600. doi:10.3109/01421590903544702.
19. Working Party of the Royal College of Physicians. Doctors in society: medical professionalism in a changing world. *Clin Med.* 2005;5(6 suppl 1):S5-S40.
20. Campo R. "The medical humanities" for lack of a better term [A Piece of My Mind]. *JAMA.* 2005;294(9):1009-1011. doi:10.1001/jama.294.9.1009.
21. Gropman J. *The Measure of Our Days: A Spiritual Exploration of Illness.* New York, NY: Penguin Books; 1998.
22. Klass P. *A Not Entirely Benign Procedure, Revised Edition: Four Years as a Medical Student.* New York, NY: Kalpan Publishing; 2010.
23. Selzer R. *Raising the Dead: A Doctor's Encounter With His Own Mortality.* New York, NY: Penguin Books; 1995.
24. Selzer R. *Down From Troy: A Doctor Comes of Age.* New York, NY: William Morrow & Co; 1992.
25. Verghese A. *My Own Country: A Doctor's Story.* New York, NY: Vintage Books; 1995.
26. The soul of medicine [interview with John Peteet]. Harvard University website. <http://projects.iq.harvard.edu/rshm/soul-medicine>. Accessed August 22, 2014.
27. Sulmasy DP. *The Rebirth of the Clinic: An Introduction to Spirituality in Health Care.* Washington, DC: Georgetown University Press; 2007:xii-xiii.
28. Grubb BP. With a little more soul. *Card Electrophysiol Rev.* 2003;7(1):85-87. doi:10.1023/A:1023659511108.
29. Remen RN. Recapturing the soul of medicine: physicians need to reclaim meaning in their working lives. *West J Med.* 2001;174(1):4-5. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1071213/>. Accessed August 22, 2014.
30. Jha V, Bekker HL, Duffy SR, Roberts TE. A systematic review of studies assessing and facilitating attitudes towards professionalism in medicine. *Med Educ.* 2007;41(8):822-829.
31. Doukas DJ, McCullough LB, Ware S; Project to Rebalance and Integrate Medical Education (PRIME) Investigators. Medical education in medical ethics and humanities as the foundation for developing medical professionalism [perspective]. *Acad Med.* 2012;87(3):334-341. doi:10.1097/ACM.0b013e318244728c.
32. Kirch DG. New Medical College Admission Test approved: changes add emphasis on behavioral and social sciences [news release]. Washington, DC: Association of American Medical Colleges; February 16, 2012. <https://www.aamc.org/newsroom/newsreleases/273712/120216.html>. Accessed August 11, 2014.
33. Cooke M, Irby DM, O'Brien BC. *Educating Physicians: A Call for Reform of Medical School and Residency.* San Francisco, CA: Jossey-Bass; 2010.
34. Pevtzow L. Teaching compassion: humanities courses help aspiring doctors provide better care. *Chicago Tribune.* March 20, 2013. http://articles.chicagotribune.com/2013-03-20/health/ct-x-medical-school-arts-20130320_1_doctors-students-humanities. Accessed August 11, 2013.
35. About – Ohio Humanities. Ohio Humanities website. <http://www.ohiohumanities.org/explore.html>. Accessed August 11, 2014.
36. Coulehan J. What is medical humanities and why [commentary]? Literature, Arts and Medicine Blog. NYU School of Medicine website. <http://medhum.med.nyu.edu/blog/?p=100>. Accessed August 11, 2014.
37. Program in medical humanities: our mission. Oregon State University website. <http://oregonstate.edu/cla/medical-humanities/mission>. Accessed August 11, 2014.
38. Richardson R, Kirklin D, eds. *Medical Humanities: A Practical Introduction.* London, England: Royal College of Physicians; 2001:13.
39. Special Committee on Osteopathic Principles and Osteopathic Technic, Kirksville College of Osteopathy and Surgery. An interpretation of the osteopathic concept. *J Osteopath.* 1953;60:8-10.
40. Courses. Des Moines University website. <https://www.dmu.edu/behavioral-medicine-medical-humanities-and-bioethics/courses/>. Accessed August 11, 2014.
41. Mission statement. Gold Humanism Honor Society. University of Louisville School of Medicine website. <https://louisville.edu/medicine/studentaffairs/mission-statement>. Accessed August 11, 2014.
42. Abaton [about]. Des Moines University website. <http://www.dmu.edu/abaton/>. Accessed August 11, 2014.
43. Salvatori P. Reliability and validity of admissions tools used to select students for the health professions. *Adv Health Sci Educ Theory Pract.* 2001;6(2):159-175.
44. Julian ER. Validity of the Medical College Admission Test for predicting medical school performance. *Acad Med.* 2005;80(10):910-917.
45. Eva KW, Reiter HI, Rosenfeld J, Trinh K, Wood TJ, Norman GR. Association between a medical school admission process using the multiple mini-interview and national licensing examination scores. *JAMA.* 2012;308(21):2233-2240. doi:10.1001/jama.2012.36914.
46. Kirch DG. Transforming admissions: the gateway to medicine [editorial]. *JAMA.* 2012;308(21):2250-2251. doi:10.1001/jama.2012.74126.

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