

Virtual Mentor
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The Humanities in Medical Education

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FROM THE EDITOR

Presenting the Case for the Medical Humanities

When medical educators first suggested including the arts and humanities in the traditional medical curriculum about two decades ago, there was no precedent for such inclusion, and the proposal felt more radical than it was. Not since the 1910 publication of the Flexner report, which issued a ringing condemnation of the state of education at most medical schools at the time, had the curriculum faced such seemingly far-afield innovation. But at least Flexner, in seeking the death of commercial medical schools and urging the linkage of schools with established universities, set American medicine on a course compatible with the burgeoning enthusiasm for scientific discovery [1]. By contrast, the concept of the medical humanities felt surprising, displaced, possibly irrelevant, ego-dystonic, as it were. There is a perception, even now, that the idea of the medical humanities is something that appeals only to a fraction of left-wing academics who, in the absence of data or proof, are postulating a change that would take place at the expense of teaching more valuable subject material.

Advocates of the medical humanities believe that Flexner's infatuation with the "hyper-rational world of German medicine created an excellence in science that was not balanced by a comparable excellence in clinical caring" [2]. They point to breaches of professional ideals seen in incidents like the Tuskegee experiments and the treatment of Henrietta Lacks, to the dissipation of empathy and physician burnout and suicide, and to students who look at the mammoth task of memorizing arcane facts and protocols for each standardized exam and feel disappointed, as though they are being turned into technicians and nothing more—and they demand better. They do not believe that humanities courses are attempts to enhance personal characteristics that—according to the "therapeutic" critique of medical humanities—are already formed and unchangeable in medical students and residents [3]. These advocates would ground us and bring us back to human sensibility using tools such as art, literature, and music, so that we might address, regard, and respond differently to the people we aim to heal, so that a patient's presence before us could become for us a moral occasion, a measure of our moral life as it is lived moment to moment [4].

In calling for a new Flexner-esque report that would broaden the focus of medical education and supplement practice-based learning with courses in patient communication, medical ethics, and medical humanities, we decided to sample the diverse perspectives held by experts in medical education. The physician and trainees who have come together in this issue of *Virtual Mentor* share an ever-growing sense that medical education—and the practice of medicine—would flourish if student and resident learning took place within a culture infused with the study of art and literature. We share the belief that the medical humanities differs from bioethics and medical ethics; they represent distinctly

different ways of analyzing information, viewing the world, confronting dilemmas, and teaching students. Despite our shared sensibility and beliefs, a need exists for evaluation of the utility of medical humanities programs. This need is discussed in the three ethics cases that lead off the issue.

Carolyn Gaebler and Lisa Lehmann take on the case of a young medical student coming to grips with the question of how his peers respond to medical humanities courses and how those courses should be graded. Gaebler and Lehmann question whether grading is the only way medical schools can communicate their priorities to students. Johanna Shapiro and Joel Shallit discuss whether forcing residents to take a break from their clinical duties and trek over to the local museum is an attempt to force-feed empathy to unwilling participants. Do such exercises really address the problem of physician burnout? In her commentary, Rimma Osipov explores the case of a young physician scientist who bristles at the idea of having to take medical humanities courses when he does not plan to become a clinician. Osipov discusses the need for a new “multicultural, multilingual investigator” who can fluently translate the languages of basic science, clinical activity, and public policy and communicate with collaborators, community partners, and patients who may have radically different conceptions of the problem being studied.

In separate articles, David Jones and Joel T. Katz grapple with the fundamental question: what can the arts and humanities offer medicine? David Jones asks why humanities advocates are challenged to prove the value of art and the humanities educating physicians. “No one asks for evidence that surgery rotations improve measurable endpoints in the majority of students who do not become surgeons,” he points out. Katz tackles the issue through the lens of a residency director of a leading internal medicine program, acknowledging that, while many humanist traits (compassion, patience, professionalism) are hard to measure, perhaps we can look to clinical outcomes in programs where the humanities have been inculcated into the training. Are patients actually faring better? If so, can we postulate a causative connection?

Two essays deal directly and practically with the timing of humanities education. In his essay, Nicholas Kluesner meditates on the question of where in the continuum of medical education—premedical, medical school, residency—the need for integration of humanities with science coursework is greatest. David Muller describes the evolution of Mount Sinai’s HuMed program to recruit humanities majors in their sophomore year of college, freeing them from academic requirements such as the MCAT so they can immerse themselves more in their chosen disciplines. According to Muller, HuMed scholars have shown no statistically significant difference from traditional students in test results or residency placement.

Therese Jones describes the evolution and structure of the arts and humanities program at the University of Colorado’s Anschutz Medical Campus. The program is singular in its wide and comprehensive scope, intersecting with the curricula of medical school, pharmacy school, nursing school, and physical therapy, among others, in a cohesive way, using the humanities as the binding glue.

Macey Henderson and Jennifer Chevinsky discuss the importance of media narratives in informing the public about controversies in medical ethics. Their essay illustrates how a powerful media narrative not only helped a young girl with cystic fibrosis receive a lung transplant that saved her life but caused the Department of Health and Human Services to take a close look at pediatric organ donation policy. But can narratives have ethical force? Faith L. Lagay reviews a journal article by Howard Brody and Mark Clark that lays out rigorous conditions for comparative critiquing of the narratives that guide our action and decision making.

The four essays that end the issue show directly how images, art, music, and religion can improve patient care and physician self-care. Sarah Leavitt talks about producing a comic book description of her mother's journey through Alzheimer disease, arguing that comics "break down narrative events into their most necessary moments" to ably convey complicated stories and intense emotion. Laura Safar maps the progress of dementia through her artist-patient's self-portraits. Safar re-introduced art therapy to her patient, which reawakened the patient's identity as an artist.

In discussing an ancient Talmudic aphorism, "The best of doctors go to hell," Andrea Schwartz describes her search to understand this cryptic statement through a long and rich history of interpretation. Over the course of her residency training, Schwartz kept returning to this phrase in diverse settings, uncovering new interpretations and finding that it had the ability to spark astounding conversations about what it means to be a "good doctor." Finally, Lisa Wong, pediatrician and symphony orchestra director, discusses what it is that musicianship can bring to doctoring, by elaborating on the beautiful and unusual friendship between famed surgeon Dr. Theodor Billroth and composer Johannes Brahms.

Thank you for dipping into this issue of *Virtual Mentor*. We hope that we've succeeded in defining the scope of and awakening your interest in the medical humanities.

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ETHICS CASE

Fostering Student Engagement in Medical Humanities Courses

Commentary by Carolyn Gaebler and Lisa Soleymani Lehmann, MD, PhD, MSc

It's a Tuesday afternoon, and Daniel, a first-year medical student, sits down with his classmates in a sunlit conference room to discuss a documentary they have all just watched about the daily lives of wheelchair-bound patients and the challenges of the complex medical system those patients have to navigate. The course in which the documentary was shown is not graded because of the difficulties in assessing what a student learns from the study of the humanities in the medical context. As Daniel sees his classmates logging onto social networking sites on their laptops and only peripherally participating in the discussion, he wonders if the course should be graded, even though it differs from most medical school courses by trying to foster unquantifiable attitudes such as empathy, patience, and comfort with complexity. What is the best way to demonstrate to medical students that the administration believes that studying the humanities is important to the education of a physician?

Commentary

The situation Daniel describes is all too common. Medical students, basic science faculty, and medical school administrators often have a hard time appreciating the value of the humanities in medical education. Will engagement with the humanities affect students' board scores, their understanding of the mechanisms of disease, or their ability to diagnose a serious illness? The rewards of giving the film sustained attention might include a basic familiarity with the resources available for people in wheelchairs and, perhaps more importantly, the limits of those resources. But the film might also impart a sense of the logistical challenges of living with disability, the structures of marginalization in our society, the hostility or frank indifference of other human beings, the small victories, the idiosyncrasy of experience, the ache of an absent limb, or the tone and texture of other people's lives. What the film and the discussion are designed to elicit is curiosity and empathy.

Daniel's classmates are missing an opportunity to learn from and build upon each other's thinking about the film and to deepen their understanding of patients' experiences with disability that can form a foundation for connecting with those patients in meaningful and effective ways. They forgo absorbing themselves in and opening themselves up to understanding another person's experience.

Like Daniel, we worry about the seriousness with which medical students encounter the social sciences and humanities in our curriculum. To become healers, we must become technically proficient and master a large body of facts, but we also need to learn to interpret those facts within the broader context of social practice—the things

that bring people to medical care and the things that keep them away—and within the narrow but irreducibly complex context of individual lives.

Recognizing this need, an increasing number of medical schools have introduced coursework in the social sciences, ethics, arts, and narrative disciplines. We applaud the efforts of institutions to address this need for humanism in medical education and professional culture more broadly. But, like Daniel, we perceive ambivalence and hesitation around this feature of the curriculum. The hesitation arises not, we think, from a disregard for the goals of the medical humanities—goals like the fostering of empathy, critical thinking, and thoughtfulness, goals of manifest urgency—but from skepticism about the premise that qualities like empathy and thoughtfulness can be taught in the first place. There is little data to prove to medical school administrators or medical students that exposure to the humanities results in more humanistic physicians, greater professionalism, or better patient outcomes.

For students to take their nonscience classes—the format and content of which may seem to some of them foreign and lacking rigor—seriously, their institutions must take them seriously. Building buy-in for the medical humanities calls for both a normative analysis of the intrinsic and instrumental value of the humanities and quantitative and qualitative research to illuminate the role of the humanities in cultivating professionalism and improved patient outcomes. There is a need for more empirical research on the educational outcomes of humanities education in medicine. Does the study of the social sciences and history lead to greater self-awareness and humility? Does the study of ethics promote ethical behavior and comfort with uncertainty? Does a course in bioethics cultivate critical thinking skills and habits that can be transferred to other areas of medicine? Do stories teach empathy [1]? Do patients feel more comfortable with physicians who have wide-ranging intellectual interests and curiosities [2]? Preliminary research suggests that the answer to these questions is yes, but the empirical literature is sparse. There is an urgent need for greater funding to support this research.

There are cognitive as well as affective claims for including material from many disciplines in medical training. In broad strokes, the cognitive arguments use metaphors of stretching and translating: thinking critically in the realm of philosophy helps us think critically in the ICU. The affective arguments privilege wholeness, a profound understanding of the human condition, and professional identity: doctors who are interested in poetry are less likely to burn out and more likely to inspire trust [3]. There are, therefore, at least two different dimensions to the role of the humanities in medical education. Disciplines like ethics and art can develop cognitive capabilities; the social sciences, literature, poetry, film, and history can foster empathy and compassion [4]. The most important link between the cognitive and affective arguments is curiosity. Curiosity is linked intimately on the one hand with wonder, aesthetics, and discovery and, on the other hand, with empathy [5]. The more curious we are about other people's experiences, the better able we are to empathize, and the more we empathize, the more we want to learn how to help our patients achieve better health outcomes.

Once educators are committed to pursuing the humanities in teaching, how might they go about doing that? Making time for the humanities at all stages in medical school curricula is a critical first step. We need to go beyond the required ethics and professionalism courses to a more robust integration of the humanities into medical education. Medical schools could promote ongoing dialogue between students and faculty about the goals of education in the humanities. Faculty role models who are open to and supportive of diverse modes of inquiry can pass that seriousness and curiosity on to students. Similarly, students who are articulate and passionate about history, literature, bioethics, or the creative arts influence their medical school communities.

As Daniel's case illustrates, the culture in which an educational activity is embedded is critically important to that endeavor's success. He wonders if his classmates would be more likely to participate in the discussion if they received grades for this course like they do for their basic science courses. Daniel's conjecture indicts both the students, who have chosen not to give the exercise their full attention, and the institution, which, by intimating that nonscience courses are unimportant or less important than science courses has, in some sense, given them license to disengage.

But grading isn't necessarily the only way priorities are communicated. The preclinical work at many institutions is now pass-fail, yet students take their science classes seriously. Our experience has been that what students respond to, more than simply grades, is being challenged. To engage effectively in science classes, medical school requires a functional proficiency in math, and, in particular, statistics. Writing and reflection are the statistics of qualitative inquiry. We can nurture medical students' intellectual and personal growth by helping them develop their writing. Writing fosters development of the skills needed to deal with uncertainty, encourages us to step back and question our behaviors and attitudes, teaches us to frame problems before we try to solve them, and helps us understand the plurality of patients' experiences. Sharing written responses with other students generates a healthy accountability. Furthermore, reflective writing is an aspect of the humanities that trainees can continue throughout their careers [6]. Reflective writing exercises, rather than grades, are more likely to be an effective strategy to engage students in the humanities.

As physicians, we encounter individuals and communities in some of their most vulnerable moments. Our training for that work must include mastery of knowledge and technical competencies, but if we do not also help future doctors cultivate intellectual and emotional flexibility we do a disservice to the students whom they may someday teach and the patients for whom they will care.

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ETHICS CASE

A Night at the Museum—Helping Residents “See” Their Patients

Commentary by Johanna Shapiro, PhD, and Joel Shallit, MD

Katherine is a third-year medical student on her internal medicine rotation at an academic medical center that serves as a busy tertiary-care hospital for its region. The residents she works with are swamped with work; when they are not actively admitting and caring for patients, they are inundated with paperwork, submitting online orders, and completing health record notes. Katherine knows that the residents are kind and generous people who have been selected twice—for medical school and then for residency—on the basis of test scores, academic performance, and character recommendations. She cannot help but note, however, their frustration with patients who demand so much of their time, their irritation with nurses who page them about questions the residents think have obvious answers, and their eagerness to “turf” patients to another service or practice center to lighten their case loads. She can understand the origins of these behaviors while feeling that the residents are in danger of burning out and becoming more cynical than would be healthy for a long-term career.

One evening, Katherine’s entire team is asked to stop working at 4 p.m. and take a trip to the Museum of Fine Arts. The residency program director is an advocate for innovative approaches to encouraging self-reflection among the residents and helping them see patients as people rather than diagnoses. He has asked the internal medicine teams to take turns going to the museum to look at and frame discussion around artwork as a way of generating conversation about medicine, patients, and life as a trainee. Katherine hears the residents complain that this outing is intended to force-feed them empathy and humanism; they consider it a waste of time that could be better spent on patient care and leaving the hospital at a decent time.

Commentary

Medicine is both an art and a science. As the great William Osler noted, “The practice of medicine is an art, not a trade; a calling not a business; a calling in which your heart will be exercised equally with your head” [1]. Residency programs struggle to balance art and science with seemingly endless, often overwhelming hard work. It is no wonder then that, for stressed, burned-out residents, such as the ones Katherine observes, art and perhaps even science take a backseat to just getting the work done. In the hypothetical (but in our experience, very plausible) dilemma posed, we see three interrelated issues. First is the residents’ perception that a “field trip” to a museum is a waste of time, distracting them from their real work. The second is that the residents resent being “force-fed” empathy and compassion. The third issue is how to acknowledge and address the residents’ negativity and burnout.

Is the Museum Outing a Waste of Time?

We would argue that, properly structured and facilitated, as this program director obviously intends it to be, the proposed visit to a museum offers not a distraction from work, but another (essential) perspective on work. What better way to teach residents to “see” attentively, imaginatively, and nonjudgmentally than by exploring art itself? The painter Paul Klee wrote, “Art does not reproduce the visible, rather it makes visible” [2], suggesting that art does not mimic what we see but makes us see what is there in other ways. Spending a few hours learning to see paintings will in fact contribute to these residents’ learning to “see” their patients more deeply—not only their signs and symptoms, but also their lived lives, their social circumstances, their hopes and fears regarding their illnesses.

Research supports the clinical value of this arts-related activity. In the mid-1990s medical educators at Yale decided to sharpen their learners’ observational skills by taking them out of the classroom and into the art museum, where they asked them to consider a few simple questions: What do you see? What’s going on? Why do you think that? The result was a significant improvement in the students’ visual thinking [3]. These findings have since been replicated in many studies [4-6], and other research has documented that exposure to art also improves students’ empathy and perspective-taking skills, as well as building narrative competence and meaning making [7, 8]. This growing body of scholarship provides evidence that, far from being “a waste of time,” studying art can enhance the art of medicine. Since it is the responsibility of the program director to ensure that learning the art as well as the science of medicine receives attention, one could argue that this activity would simply be advancing an essential educational goal.

Are the Residents Being “Force-Fed” Humanistic Attitudes?

There is concern among learners that curricular attempts to promote professionalism and humanistic values are condescending and disrespectful [9]. These objections also surface when humanities and arts are incorporated into the curriculum. Of course, it is absurd to claim that merely by going to an art museum learners will somehow become more compassionate physicians. Exposure to art cannot produce, widget-like, more humanistic, caring doctors [10], and residents and other learners are right to resist such simplistic causal assertions. However, with skilled facilitation, the art museum experience can move residents beyond the comfort zone of what they think they know and what they think is important, not only about paintings but about patients [11]. By encouraging perspective taking and critical thinking [12], the session can help residents become aware of how quickly, simply by looking at someone, most of us form judgments, make assumptions, and develop stories about him or her. By listening to the ideas of their fellow residents, they discover how, from identical visual information, others draw very different conclusions and expectations. Finally, by becoming informed about the historical, sociocultural, and psychological background of the artist, they may form opinions about his or her intent in creating the work.

Learning a different way of “seeing” in the museum context will not produce humanism in learners. What the museum session *can* do is encourage learners to hold an “open view” of what something means or what is important about it for a longer period of time; it *can* open a dialogue among learners about what happens when they look at their patients; and it *can* help them become aware of what is assumed and conveyed in their clinical gaze [13]. Similarly, as residents share with one another the stories they have so quickly constructed about the paintings, as well as the “evidence” they used to formulate these stories, they can begin to realize that there are multiple ways of understanding patients and that keeping an open mind and suspending judgment are steps to truly receiving the patient’s story. The value of cultivating this more reflective way of seeing lies in its stimulation of questioning, imagining, and challenging processes, all of which are relevant to clinical practice.

How Do We Attend to the Residents’ Skepticism and Burnout?

No educational intervention should be undertaken without sensitivity to learners’ concerns about it. Pedagogical theory emphasizes the importance of engaging learners’ objections rather than attempting to impose learning in a top-down manner. Despite our advocating for the value of a night at the museum, we do not wish to ignore the residents’ resistance and resentment. Therefore, we advocate a respectful and curious exchange with skeptical learners about their doubts.

At least two factors may be contributing to the residents’ negativity. First, their contempt for the exercise may be rooted in the medical education culture, which legitimizes certain forms of learning as relevant and valuable and deems others tangential or useless [14, 15]. This perspective could be critically examined with the residents, clarifying that the event does not simply represent a break from clinical duties but in fact has significant clinical relevance, as noted in the above-cited research. The residents’ negative reaction may also be secondary to their burnout, as Katherine, the astute student in the scenario, suspects. This issue might be effectively addressed by pointing out that one goal of the museum visit is to help stimulate empathic interest in and curiosity about their patients; then discussing evidence suggesting that physicians who are connected emotionally to patients find their work more meaningful, which in turn acts as an antidote to burnout [16, 17].

Final Thoughts

Medical residency should be more than merely problem-based learning. It should be more than asking for the chief complaint, doing the physical exam, running a multitude of lab tests and imaging studies, and finally generating a diagnosis and treatment plan. If that represented the sum total of clinical practice, it could be performed by robots. As any clinician knows, however, it also takes a nonjudgmental, scrupulous gaze, an inquisitive mind, and an empathetic heart to heal the patient. An activity that helps to develop residents’ observational, perspective taking, and imaginative skills clearly should have a place in their education. A night at the museum is an important way to emphasize attentive seeing, nonjudgmental curiosity, and appreciation for multiple perspectives. In so doing, it offers the

potential to encourage truly patient-centered care and help revitalize residents' appreciation for the work of doctoring in the process.

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Joel Shallit, MD, a radiologist with an extensive background in art history, is an adjunct assistant professor at the University of California, Irvine School of Medicine. He teaches a class entitled Examine the Painting/Examine the Patient in which medical students, through studying great works of art, learn to apply their visual thought process to improving their clinical diagnostic abilities and compassion.

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ETHICS CASE

Do Future Bench Researchers Need Humanities Courses in Medical School?

Commentary by Rimma Osipov

Mike is a second-year medical student on the MD/PhD track. He bristles at the idea of having to take a medical humanities course along with the rest of his classmates because he knows that his career will be entirely research-oriented, with little or no clinical time. The humanities course engages students in discussions of literature, film, and art designed to help them better understand the meanings illness has for patients and how caring for patients can affect physicians. Mike feels that, by those criteria, he is not a good candidate for the course. A few weeks later, the dean of students receives a petition from Mike asking to be exempted from the course requirement.

Commentary

Sinclair Lewis's sweeping 1925 novel, *Arrowsmith*, chronicles the life and times of Martin Arrowsmith, a brilliant physician-scientist struggling to balance his drive for medical discovery with the demands of clinical practice and the politics of the research world. In navigating this landscape, Arrowsmith makes some difficult decisions that shape his career and his perspectives on what it means to be a clinician and a scientist [1].

Once a staple of high school English classes, *Arrowsmith* seems to have fallen out of favor in recent decades [2]. Mike, who was no doubt a studious, science-focused premedical student, is unlikely to have encountered his literary predecessor, Martin Arrowsmith, even as an undergraduate. Thus, he is also, perhaps, less likely to appreciate that the questions he faces as a medical student drawn to the scientific rather than the clinical aspects of medicine are not new or unique. Unlike Arrowsmith, who at the end of the novel is able to realize his dream of pursuing his passion for pure research, Mike, after his long journey as an MD/PhD trainee, will face a medical research arena with very different needs, values, and opportunities.

As somebody who envisions himself as a future bench researcher, Mike has nothing against humanities courses as he understands them; he simply feels the skills they build are clinically focused, and thus not particularly useful to an aspiring basic scientist. To a medical school dean, Mike's petition to, in effect, adapt the curriculum to his individual needs may be perceived as representing a sense of entitlement. The fact that he wants to eliminate the medical humanities course presumably to focus on his lab responsibilities is of equal concern. Would Mike think it appropriate to request exemption from a genetics course because he intends to focus his lab career on, for example, action potentials in neuroscience? Most

medical and scientific educators would turn down such a request. Knowledge of genetics would be critical to his ability to communicate with other scientists and perhaps to the broader and deeper work he may undertake later in his neuroscience career.

Furthermore, although he may not ultimately become a clinician, Mike will need to complete clinical rotations in order to attain the MD portion of his degree, for which a basic knowledge of genetics is expected of him, just as it is of his clinician classmates. To many medical school deans, and certainly to course directors in the medical humanities, Mike's request to be excused from a curricular medical humanities requirement would seem equally shortsighted. As educators, however, these individuals may take the opportunity to treat Mike's petition as a "teachable moment," since his approach indicates that he may not fully appreciate the contributions of the medical humanities or the skills and knowledge he will need as a future physician-investigator, particularly one trained as an MD/PhD.

Mike's views of science as an entering student may reflect a popular-culture myth of science as an emotionally disengaged, purely rational activity undertaken by brilliant scientists largely working on their own. This myth may have had more truth in Sinclair Lewis's day. The bacteriological revolution that had done much to marry science and medicine was still under way, and the great breakthroughs of the late nineteenth and early twentieth centuries offered hope that complex diseases would be discovered to have specific causes and targeted solutions. By the middle of the twentieth century, with the turn to molecular biology, biomedical science became increasingly specialized. Concerned that the gulf between physicians and scientists was widening, the NIH established the Medical Science Training Program (MSTP) in 1964, with the aim of training MD/PhDs, a special group of clinicians that would bridge this gap, "bring[ing] the insights of clinical experience to their research and vice-versa" [3].

Since the 1960s MD/PhD programs have grown to comprise 3 percent of all graduating US medical students and to represent a \$42-million annual federal investment [4]. The roles this small but influential group of physician investigators has come to fill have evolved with the times. In a consensus statement on future directions in research training, Meyers et al. summarize the complexity of contemporary research questions: "In addressing current public health challenges such as obesity, cancer, and mental health disorders, it is inconceivable that a single researcher, working alone, will make significant headway, particularly when one considers the need to transcend the continuum of research from basic discovery to social policy" [5].

In a study of career choices by MD/PhDs, Brass and colleagues see this group as uniquely "prepared to lead and be effective members of dynamic matrices that solve these problems" [6], such a multidisciplinary translational teams (MTTs) and other clinical and scientific collaborations. Although mainly trained in the lab, "instead of becoming basic scientists with only a distant memory of their medical training, many

MD/PhD program graduates are conducting translational and patient-oriented research as well as basic research” [6]. In 2007 only 5 percent of the MD/PhDs in their study chose not to pursue a residency, and that number has been consistently dropping, as has the number of MD/PhDs with primary appointments in basic science departments [7]. With a recent slowdown in federal research support, the flexibility of MD/PhDs has made them more valuable than ever.

The initial hope that the “master molecules”—germs and genes—would unlock cures for most disease and illness has faded. Stevenson et al. identify a shift away from “the reductionist strategy” geared to “establish a single specific cause” that dominated biomedical science in Arrowsmith’s day [8]. Increasingly, researchers are recognizing that “many of the most important health problems...appear to be generated by complex etiological pathways, including highly interactive societal, psychological, and biological mechanisms” [9]. Biomedical science, they recognize, is in need of some new, more holistic approaches to complexity.

The humanities disciplines recognize complexity and contribute to holistic approaches to patients and their illnesses. Scholars such as Rita Charon, Ronald Carson, and Catherine Belling have offered important perspectives on the ability of humanities education to build specific skills physicians will need in their future careers. Although clinician-scientists may use these skills differently, they need them no less. Through the introduction of literature, fine arts, music, and creative opportunities, humanities courses lift many medical learners out of their comfort zone, validating alternative ways of reading, seeing, communicating, and experiencing. As Rita Charon puts it, humanities “pries open for renegotiation fundamental ways of knowing” [10]. Students more familiar with the quantifiable information taught in medical and premedical curricula become aware that this perspective is not the only or even the most comprehensive way to see health, illness, and healing. Taught well, Ronald Carson argues, the humanities help students become respectful of “other intelligences and sensibilities” [11], teaching a commitment to true communication and an empathic approach to others. Much has been written about how this awareness can contribute to medical education and clinical care, but, as Mike asks in this case, how could it possibly make him a better scientist?

Scientists are beginning to recognize the value of humanities education and the skills it builds for interdisciplinary communication as well as for critical thinking outside of the traditional, reductive science paradigm. With 25-35 percent of NIH and NSF requests for applications (RFAs) calling for multi/interdisciplinary approaches, Meyers et al. assert that the “multicultural, multilingual investigator” will do best in such an environment [5]. By this they mean a researcher who can read, speak, and understand the languages of basic science, clinical activity, and public policy, as well as translate fluidly among them—communicating with collaborators, community partners, and patients who may have radically different worldviews and conceptions of the problem being studied.

Catherine Belling argues that the medical humanities does not simply replace the “blunt reductionism” of scientific training with “fuzzy holism” but instead teaches an “incisive attention to specificity” through its methods of close reading and textual analysis [12]. For Belling, teaching literature to medical learners helps them see “all knowledge—scientific, clinical and cultural” as a text that needs critical interpretation “before it can be understood and deployed” [13]. She demonstrates this technique with a reading of the play *Wit*, but also with a scientific paper on mouse models of ovarian cancer. Much like works of drama, she demonstrates, scientific papers have a conventional form, an agenda, a context, and an innate ethics. Becoming familiar with this analytical method may help science students become better readers and translators of scientific knowledge [14]. A growing contingent of medical educators has published work that suggests that, much like close reading, “close looking” or “close listening” in engaging with art and music can help develop skills that enhance clinical and scientific work—training observational abilities that can be honed in the lab and clinical setting [15-18].

As Robert Coles framed it in a classic 1979 article, one of the major and unique contributions of humanities teaching is to stimulate moral reflection in medical learners. He argued that the most important ethical choices physicians make are not about “procedures (to do or not to do) or plugs (to pull or not to pull) but the fateful decisions of everyday life we are constantly making” [19]. Reading certain works of literature in the setting of medical humanities courses, Coles posits, can encourage this kind of broad perspective. Unlike traditional, rules-based ethics courses, literature, he argues, helps learners recognize the ethical dimensions of everyday choices. Coles uses *Arrowsmith* as an example of such a work of literature, explaining that Lewis “knew how professional lives become threatened, cheapened, betrayed. And he knew that such developments take place gradually, almost innocently” [20].

As Mike progresses through his training, he may well make some very different choices about his future career than he can imagine as a second-year medical student. Even if Mike joins the shrinking contingent of MD/PhDs who do not engage in any clinical duties after medical school, the decisions he makes in his professional life are no less likely to impact the lives of others. As a scientist, Mike will have to decide what kind of work he does: will he address a major public health problem such as cancer or preterm birth, or will he do basic research for its own sake? Will he stay in academia, or will he work for industry? Will he choose to mentor students? How will he balance his work and family responsibilities? He will need more than his lab experience to help him think through the implications of these choices.

Whether Mike follows the path of most of his fellow MD/PHDs and becomes more clinically involved or remains a basic scientist, he will have no less need for the skills of careful reading, nonreductive understanding, sensitive communication, and moral reflection that humanities exposure builds. For these reasons, Mike’s dean is justified in refusing his request for exemption from his medical humanities course. She may also understand, however, that Mike’s specific interests within the course

may be somewhat different. Just as medical students with an interest in research are given the opportunity to supplement medical school courses in genetics or immunology with a journal club, perhaps this should be the case with the humanities. Mike's dean may discuss this possibility with the medical humanities course director: how to bring the moral and epistemological insights of the humanities to the scientific as well as the clinical training of MD/PhDs and other future physician-investigators. Perhaps they could begin by reading *Arrowsmith*.

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MEDICAL EDUCATION

Applied Medical Humanities: Addressing Vexing Deficits, Promoting Enduring Skills

Joel T. Katz, MD

In a complex health care environment, like the one in which I practice, some days it feels like the number of things that can go wrong match the many things that go right. Take, for example, Ms. Smith. A month ago she noticed a sore throat that she couldn't shake and called the office for further direction. Unfortunately, the message ended up in our office's "medication desk," rather than the "message desk," and those folks don't interact with each other, so Ms. Smith waited for a response in vain. When she was seen more than a week later, she was annoyed by the delays; the overworked and beleaguered urgent care physician, Dr. Jones, was way behind by the time he met her and was moving briskly and defensively. Low-grade fever, erythematous pharynx. The doctor ordered rapid strep and influenza swabs (both negative). A week later, the patient's condition had not improved, so over the phone the nurse ordered a CT scan to search for a deep neck abscess—also negative. Had the adverse circumstances for communication, reflection, and teamwork not conspired against them, Ms. Smith might have shared her subacute systemic decline with Dr. Jones, along with the fact that her husband had died the year before, compounding her pain with grief and isolation, and Dr. Jones might have noticed her petechiae. Had the preparation been right, they might have found a path to mutual empathy, a collaborative alliance, and a complete blood count four weeks before the subsequent emergency department visit that established the diagnosis of acute myelogenous leukemia (AML).

Dr. Jones knows all about AML—the pathobiology, genetics, epidemiology, staging strategies, treatment algorithms, and prognosis—yet he missed the subtle clues in her story and examination, and his exceptional scientific preparation was flummoxed by insufficient preparation to communicate with a suffering patient or impact a system that left him and his team disconnected and vulnerable in ways that they could not anticipate or ameliorate.

Some stresses on the unraveling fabric of our health system include the widening gap between clinician and patient, inequitable disparities in access to and outcomes of care, the high prevalence of burnout and loss of purpose among health care professionals, the favoring of a purely intellectual over a holistic view of patient care, and our culture's "losing sight of how the arts and humanities inform and elevate the work of healing" [1]. The medical humanities can be a tool to address and remediate specific deficiencies in the existing science-based curriculum and medical culture.

Medical humanities is a broad interdisciplinary field that uses the humanities, ethics, social sciences, and the arts to understand health and disease and to improve medical education and medical care. By “applied medical humanities,” I refer to interactions with literature, poetry, photography, film, theater, visual art, music, and so on, intended to address specific healing competencies that are in some sense related to biomedical science and to thereby promote behaviors, beliefs, skills, and practices that can improve individual and societal health.

While young, the field and the methods have gained steam [2] and, hence, attracted criticism. In traditional quarters, there may be criticism of the medical humanities as “soft” science. Another commonly encountered and acknowledged challenge is that of finding time in the already compressed and intense medical school curriculum. The pressure on curricular time means that humanities interventions are frequently optional. One could argue that, treated this way, they attract those least likely to need them. Ultimately, justifying time and resources spent on humanities initiatives will require demonstrating their impact on specific training needs and clinical outcomes.

Abilities and traits that can be influenced by such pedagogy are many and include communication, teamwork, empathy, reflective practice, comfort with ambiguity, and specific doctoring skills such as physical examination and clinical decision making. Emerging data indicate that training in the humanities is associated with better doctoring skills [3]. The applied medical humanities can encourage health care professionals to become more humanistic (e.g., reflective, empathetic, collegial) or can teach traditional medical skills in ways that turn out have a greater or more enduring impact (e.g., physical examination, clinical thinking, communication). For example, three decades later I recall almost every “clinical” detail (including the profound portrayal of suffering) in Flannery O’Connor’s *The Enduring Chill*, yet was unable to memorize or utilize the same content when presented with a textbook list of brucellosis symptoms.

There are many ways of integrating the humanities into education and training. Such experiences can be had in classrooms or in clinics, alone or in groups. Medical humanities can be the central theme for required classes (e.g., doctoring, the patient experience, history of medicine) or can be used to enrich and extend existing courses (e.g., interviewing, physical diagnosis, palliative care). Medical schools, residencies, fellowships, or CME programs can offer elective enrichment experiences for those with either special interests or special needs. For example, the Harvard Medical School course “Training the Eye” integrates fine arts observation exercises, related lectures on physical examination, and bedside clinical rounds to develop and reinforce core physical examination skills for first-year medical students [4]. These methods have been adapted to address more sophisticated physical examination skills for internal medicine residents. The Brigham and Women’s Hospital internal medicine residency uses art museum-based exercises to teach challenging ACGME-required competencies in multidisciplinary teamwork, communication and professionalism. Thomas Jefferson Medical School is initiating a humanities- and

arts-based reengineering of the first-year curriculum to improve empathy and reflection and prevent burnout [5].

One beautiful aspect of applied medical humanities is the flexibility with which they can add value at any stage of training. In almost all cases no prior training is required. Because they lie outside the traditional scientific domains and, perhaps, outside trainees' inhibitions, the medical humanities can also reopen doors to ways of learning that may have been securely locked. Finally, the humanities provide a unique opportunity for colleagues to interact outside the typical disciplinary and hierarchical divides (e.g., promoting teamwork between physicians and nurses, surgery and anesthesia, patients and clinicians).

How could exposure to the medical humanities have changed the fates of Ms. Smith and Dr. Jones? Imagine that personal experience with narrative could increase Dr. Jones's sensitivity to the factors contributing to his patient's stress and disengagement and his willingness to raise them even in a brief encounter. Imagine that Dr. Jones's physical examination course in medical school included visual arts training, which has been shown to increase participants' ability to expand the quantity and depth of accurate clinical observations [6]. Imagine that the full clinic staff had participated in multidisciplinary team-building exercises using staged theatrical scenarios to get to know each other, break down rigid hierarchical structures, and improve bidirectional communication—all of which might have helped everyone overcome barriers within the clinic and between clinic and patient. Imagine that Dr. Jones's professional identity was well-grounded and buoyed by exploration of the works of physician-poets William Carlos Williams or Rafael Campo. One could imagine that the clinic staff would be more attentive to patients and each other, more able to communicate, and more flexible in approaches to problem solving. One could imagine that leadership training anchored in literature, history, or film could even inspire doctors to take on the deeply embedded systems-based deficits in the flawed clinic structure that set the stage for the Smith-Jones, and many other, encounters.

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MEDICAL EDUCATION

FlexMed: A Nontraditional Admissions Program at Icahn School of Medicine at Mount Sinai

David Muller, MD

Early in the twentieth century, before the era of antibiotics and the discovery of DNA, students were required to take biology, chemistry, organic chemistry, and physics in order to apply to medical school. Today, in the era of personalized genome sequencing and the unraveling of the mysteries of HIV, students are still required to study biology, chemistry, organic chemistry, and physics in order to apply to medical school.

Medicine in the twenty-first century is global, digital, personalized, genomic, and team-based. In addition, our national social conscience has finally been awakened in the form of the Affordable Care Act, and this will require a very different kind of physician to enter the ranks of the medical profession. Despite all the evidence that clinical medicine and biomedical science have evolved more rapidly than practically any other field of study, very little has changed in the way we prepare students for medical school.

The prevailing opinion among American medical educators is that current premed preparation has little relevance to clinical care, biomedical research, or societal needs [1-3]. The century-old model of premedical preparation subjects smart, innovative, motivated students from across the broad spectrum of our society to an educational experience that is not focused on—and may even detract from—the development of self-directed, collaborative learners. Such a model does not nurture the attributes medical students will need to care for the underserved, perform breakthrough research, and fix our health care system. And it has engendered “premed syndrome”—a culture that rewards intense competition for grades and sacrifices excellence in learning for excellence in test taking. Organic chemistry has developed a reputation as the course that weeds out those who cannot memorize vast amounts of information and regurgitate it for an exam. But is this a necessary skill when the entirety of medical knowledge now fits in the palm of one’s hand, and the drive to learn new material and the ability to synthesize information and make connections are far more important than one’s ability to recall established facts?

This hyperfocus on memorizing, test performance, and grades leaves very little time for important intellectual pursuits that can help students become better doctors. Subjects such as bioethics, health policy, and biostatistics are critically important to the practice of modern medicine, yet are sorely neglected.

Perhaps most tragic is the impact that this preparation has had on our ability to attract and recruit a diverse pool of applicants to medicine. Research has shown that the required courses with the least relevance to medicine, such as organic chemistry, have the greatest influence in “weeding out” students from underrepresented backgrounds; some struggle with the coursework, but many simply avoid taking these courses altogether. There is also a controversial but growing body of evidence that suggests that the MCAT itself may be a socioeconomic, rather than intellectual, barrier. Many students simply cannot afford the time and money required to take the preparatory courses necessary to achieve the highest possible score on the MCAT.

In addition, the weight many medical school admissions committees give to MCAT scores significantly undermines what would otherwise be a more holistic approach to evaluating candidates for medical school.

The MCAT is a valid and reliable examination that has a high degree of predictive value for future medical school performance. Much of the MCAT’s importance in admissions decisions, however, has to do with the extent to which MCAT scores have become a key variable in determining a school’s national ranking by the *US News and World Report (USNWR)*. The fact that an incoming medical school class’s median MCAT score is used as part of *USNWR* ranking points to a narrow, perhaps skewed, view of who will make a good doctor. For example, there is ample evidence that all students who score 30 or above on the MCAT have a 90 percent or better chance of “unimpeded progress” in their medical school career. Can we really make the case that a student with an MCAT score of 35, and a 94 percent chance of unimpeded progress, will necessarily be a better doctor? And yet the *USNWR* rankings pressure schools to give preference to the applicant with that 35, even if a more holistic review reveals that the student with the lower MCAT is more well-rounded, from an underrepresented group, or more accomplished in other activities [4].

We need to focus on what’s missing from premedical education: academic rigor with less grade-driven competition, flexibility and opportunities for self-directed learning, and coursework that is more relevant to and more closely aligned with society’s needs.

Twenty five years ago Nathan Kase, who was dean at Icahn School of Medicine at Mount Sinai at the time, created the Humanities and Medicine (HuMed) Program at the school to address these concerns. Humanities majors were recruited in their sophomore year of college. If accepted, they were exempted from taking the traditional science requirements or the MCAT. They had to complete their undergraduate coursework and spend one summer at Mount Sinai studying clinically relevant science, and they had the option of taking up to two years off after college. The hope was that they would acquire a broad and diverse education, avoid premed syndrome, and perform as well as their peers despite not having the same science preparation.

We now know that these students are indistinguishable from their peers in almost all outcomes that are tracked in medical school and beyond. This includes receipt of clerkship honors, membership in Alpha Omega Alpha Medical Honor Society, distinction in research, school leadership roles, and membership in the Gold Humanism Honor Society. There is a small but statistically significant (six-point) difference in Step 1 Board scores, with HuMeds scoring lower than their peers. We did find an encouraging tendency toward pursuing general medical specialties and psychiatry among HuMeds, although this finding was not statistically significant [5]. At the very least, HuMed has taught us that medical schools do not have to be so risk-averse when it comes to establishing nontraditional pathways to admission that are aligned with a school's particular missions, culture, and priorities.

Taking these lessons to heart—and eager to engender meaningful reform in premedical education—we at Mount Sinai have created FlexMed, an early assurance program that is modeled after HuMed but is open to students of all majors. FlexMed students are not encumbered by many of the traditional science requirements, they are free to challenge themselves academically without fear of jeopardizing their grades, and they are not required to take the MCAT. They are required to complete coursework in ethics, health policy, and statistics; if they choose not to pursue a science major, we will provide them with basic coursework in biochemistry, cell biology, and genetics prior to matriculation. We believe that these are the sciences that will be crucial to the future of health care and biomedical research.

In our first recruitment season we received approximately 750 applications for 35 spots, from over 180 different colleges across the country. A preliminary review of the applicant demographics shows more racial and ethnic diversity than in our typical applicant pool, as well as a larger number of students from nontraditional majors, both in the humanities and in computational sciences like physics, engineering, mathematics, and computer science. FlexMed has allowed our school to focus more on evidence of leadership and exceptional performance outside the classroom, in areas like independent research, advocacy and social justice, music, athletics, and achieving success despite significant socioeconomic barriers.

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MEDICAL EDUCATION

Creating a Space for the Arts and Humanities at the University of Colorado Anschutz Medical Campus

Therese Jones, PhD

Building an arts and humanities program at a health sciences campus doesn't usually involve an actual building. When I joined the faculty at the University of Colorado Anschutz Medical Campus in 2009, there were two projects under construction. The first was my responsibility—the Arts and Humanities in Healthcare Program. The second was the physical space that would house it and the Center for Bioethics and Humanities. While those of us engaged in the development and implementation of academic programs approach our work as largely conceptual—despite seeing our efforts actualized when students come into our classrooms or when journals publish our scholarship—this project would be literally concretized with steel, glass, drywall, and paint. Thus, the stated mission of the program reflects both aspiration and actualization: to provide a unique facility and a comprehensive network in order to develop and integrate transformational learning, groundbreaking scholarship, and exceptional artwork within the environments of health care education, research, and practice.

In fact, where the Arts and Humanities in Healthcare Program lives is as critical to its work as what the program does. It is both a physical space—with a dedicated and secure art gallery, an in-the-round auditorium with four screens for presentations and films and a concert grand piano gracing the foyer—and a place to exchange ideas, inspire collaboration, foster compassion, fuel imagination, and transcend boundaries. It is here in the Fulginiti Pavilion for Ethics and Humanities that the program realizes the universal power of the arts and humanities to connect student and teacher, patient and professional, citizen and artist, benefactor and institution. One local art and architecture critic described the facility as “a space for reflection ... [whose] impact is immediate, both tactically and emotionally.... It breathes and also provides breathing space, a rhythm, for the overall campus” [1]. Within this special environment, the day-to-day work of the program encompasses education, inquiry, expression, and engagement.

Education

The education program focuses on three areas:

- *Relevant and rigorous integration of the arts and humanities into health professions education and practice for all schools and allied programs on the campus.* This program integrates humanities content into the required undergraduate medical school curriculum through, for example, student discussions of literary texts and their own reflective writing during anatomy

lab or sessions on learning to look at works of art as a way to improve observational skills. In the physical therapy program, seminars explore disability across the lifespan through film, literature, and art. Electives such as the semester-long Film in Healthcare course for pharmacy students and intensive seminars for senior medical students such as Film and Mental Illness and HIV/AIDS and American Culture are highly successful.

- *Innovative and sustainable collaborations with faculty in the humanities and arts across the University of Colorado.* This collaborative endeavor includes the development and implementation of a new minor in health humanities for undergraduates, the ongoing development of a track in the health humanities in the Master of Humanities program, and a universitywide educational program in disability studies that will be available to all students with the future goal of awarding them a certificate in the field.
- *Creative and accessible programs for the community.* These programs include a weekly lecture series on the arts in medicine, writing workshops, film festivals, and an initiative in music and medicine that connects faculty, students, staff, and the public for collaborative work in the areas of performance, research, and arts-based therapy.

Inquiry

The program contributes to scholarship and research:

- As the home of the *Journal of Medical Humanities*, the foremost peer-reviewed academic journal in the interdisciplinary project of applying the arts and humanities to health care education, practice, and research.
- As a setting for regional, national and international conferences.

Expression and Engagement

The program supports community outreach through the arts with:

- Publications such as an annual literary and arts magazine.
- Musical performances by a professionally directed choir and orchestra.
- Workshops with visiting artists and writers.
- Art exhibits related to the workings of body, mind, and spirit and to the experiences of health, disease, and disability.

Just as the sciences require special facilities to support human discovery, so also must the arts have distinctive spaces to celebrate human imagination, and the gallery at the Fulginiti Pavilion is dedicated to bridging the cultural divide between science and art to explore the most essential questions about human experience: who we are and how do we care for one another? To ensure that the arts are incorporated into student education, clinical practice, and the daily life of our community, the gallery provides a secure venue for curated exhibitions of painting and photography and multimedia installations.

Since its opening in September 2012, we have mounted seven major exhibits for approximately 16,000 visitors, including *Four Questions*, created by Judy Chicago

and Donald Woodman. Mounted on large, accordion-style panels, the work poses ethical questions related to the atrocities of the Holocaust raised by contemporary science and medicine. *Tattoo Nation*, a photographic exhibit and documentary film by Eric Schwartz, had special appeal to visitors with its portraits of bodies inscribed with designs that affirm group identity, proclaim religious beliefs, or present a pictorial autobiography on the geography of the skin. Our most recent exhibit in the gallery is *The Joe Bonham Project: Drawing the Stories of America's Wounded Veterans* [2]. Joe Bonham is the central character in Dalton Trumbo's 1938 novel, *Johnny Got His Gun*. Horribly wounded in combat, he wants to tour the country in a glass box as a living example of the realities of war, but that hope is never realized, and Joe lives out his days—alone and forgotten. In February 2011, a group of artists began documenting the experiences of service members and their families undergoing medical treatment in trauma wards and rehabilitation centers for devastating injuries, so that a new generation of “Joe Bonhams” would not be forgotten. The exhibit not only includes the visual representations of wounded warriors but also their life stories, bearing witness to the grueling journeys of American veterans who have survived the harrowing terrors of combat but have not come out “intact.”

These exhibits bring artists to campus for public presentations and classroom discussions and provide opportunities for related programming such as panel presentations, film screenings, and faculty lectures. Moreover, our students have the opportunity to exhibit their own art, such as one senior medical student's mixed media work illustrating her longitudinal research project on the social, personal, and medical challenges of persons with mental illness in our city, or another student's piano and vocal performance as part of his research project on musical compositions as illness narratives by artists with serious mental illness.

Whether it is integrating content into curricula, collaborating across disciplines, or creating opportunities for expression and engagement, the Arts and Humanities in Healthcare Program works creatively and energetically to build community and to transform the culture of academic medicine with and from a unique and beautiful building.

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JOURNAL DISCUSSION

The Ethical Force of Stories: Narrative Ethics and Beyond

Faith L. Lagay, PhD

Brody H, Clark M. Narrative ethics: a narrative. *Hastings Cent Rep.* 2014;44(1):S7-S11.

Don't be fooled by the first four words—"Once upon a time"—in Howard Brody's and Mark Clark's challenging 2014 article "Narrative Ethics: *A Narrative*" [1]. You would be mistaken to think you were in for a simple tale with a clear-cut lesson. "Narrative Ethics: *A Narrative*" begins by recounting the short history of narrative medicine and narrative ethics from the late 1980s until about 2010. The narrative *medicine* part of the account is straightforward enough: attending to patient stories reaps benefits. Such narratives reveal patients' explanations for their illnesses and the meaning the experiences have for them; they give patients a voice in the medical story the physician is constructing. Physicians dedicated to healing welcome the understanding of their patients that these narratives provide.

Things get murkier with the attempt to "use narrative toward *ethical* ends" [2]. The relationship between understanding a patient's illness experience and making ethical decisions about his or her care—without recourse to such other ethics approaches as principlism, casuistry, or virtue ethics—is neither obvious nor uncomplicated. Narrative ethics' claim is that one can "gain ethical insight and wisdom directly from narratives and without appealing to rules, principles, or other ethical constructs" [2]. Aesop's fables make a similar claim—the morals derive from the stories. If the grasshopper sings and dances all summer (while the ant is laying-in food), and he therefore starves in winter, a child unschooled in moral theory or principles can deduce that the grasshopper's actions have brought him a certain sort of harm—death. (Unless, as in some revisionist versions of the story, the saintly ant pities the grasshopper and takes him in for the winter).

But, just as with principlism and even virtue ethics, the trouble comes when the narratives (or principles or virtues) conflict. Listen to the grasshopper's side of the story. The miserable little ant spends the glorious summer carrying crumbs as big as she is on her back—she can neither see the sun nor feel its warmth—all to sustain life in an uncomfortably cold mound during the winter waiting for the next summer's drudgery to begin. (Aesop's fabled insects lived multi-year lives.) "You call that living," the grasshopper might declaim as he goes out in a blazing dance of defiance during the red and gold profusion of autumn. This all sounds quite silly, but can be deadly serious when the grasshopper is a 20-something motorcyclist who refuses leg

amputation and life-sustaining burn treatment or the ant is a 70-something woman whose caregiving for a demanding, sick spouse has hastened her own death.

As the intentionally simple example above suggests, the “ethics” part of narrative ethics is achieved by comparing stories—“one critiques a story with other stories.... The stories with which one is attempting to do ethical work can usefully be compared both to other particular stories and also to more general stories or genres” [3]. Narrative ethics derives its warrant from the comparative critiquing of stories.

At this point in the discussion, Brody and Clark say that “it helps to know something about narrative structure and how stories operate” [3], and they turn to the 2010 work of sociologist Arthur Frank, *Letting Stories Breathe: A Socio-Narratology* for that knowledge. Frank has contributed much to narrative medicine throughout its 30-plus-year history, and Brody and Clark say that the 2010 book, in which Frank creates and names the discipline of socio-narratology, might also be read “as a treatise primarily about ethics” [4].

I did not detour to read Frank’s book in order to complete my review of the Brody and Clark article, accepting their judgment on which aspects of Frank’s work are key to the narrative ethics enterprise. They refer to many; I will use a couple. The first is the generally acknowledged role of narrative in organizing and making sense of the quotidian. Frank goes so far as to say that events that happen every day are merely “candidate experiences” in a person’s life until they match up with an explanatory story that turns them into real “experience” [3]. He says that the repertoire of stories that cultures and individuals carry around teach people what they should pay attention to and value and what they can ignore or hold in contempt [5].

A second idea of Frank’s, and the one that is critical to ethics work, is that new stories that don’t fit with existing stories “make trouble” [2]. These stories, one presumes, arise from candidate experiences that do not “fit” with existing narratives but for some reason cannot be ignored. We count the idea or experience as “real” but do not know whether to value it or hold it in contempt. Growing up in the antebellum South, for example, we may have daily “candidate experiences” with the workers on the plantation that do not fit the “Aesopian” version of the lazy slave that our culture lives by.

How do we know when the trouble these dangerous stories make is beneficial (i.e., moral-growth-promoting) and when it is harmful (i.e., moral-growth-stunting)? The ethics work of narrative can only be done if we “tack back and forth” between stories that make sense of our lives and stories that challenge those existing stories and cause us to “exchange overly simple views of the world for more nuanced and complex ones” [6]. Stories that “keep us from seeking alternative stories” [7] or that “call us to violence toward other groups and simultaneously make it seem disloyal to seek other points of view” [8] are dangerous in a harmful way because they do not allow us to perform ethically essential comparison. What is not said outright in the article is that closed philosophical and belief systems that dictate “right action” could

possibly foreclose opportunities for comparative critiquing of “trouble-making” narratives and, hence, for moral growth.

It is because narrative ethics is, thus, essentially open and dialogic that it is so difficult to describe, so indeterminate: “certain things will remain unclear and in tension because of the very nature of narrative ethics,” Brody and Clark say [2]. I would say, “because of the very *demands* of narrative ethics.”

Beyond Narrative Ethics

Brody and Clark touch briefly on virtue ethics and even more briefly on the debate in moral psychology over the comparative roles of reason and emotion in ethics. I will leave the topic of virtue ethics alone for now, but take up the latter—the roles of reason and emotion in ethics—to “widen” Brody’s and Clark’s message in “Narrative Ethics: A *Narrative*.” The broader message I want us to think about is this: The dialogic approach to discovering moral knowledge is the *way* not just of narrative ethics but of all humanist endeavors. Humanism is a “hermeneutic and dialogic enterprise,” just as Brody and Clark state that narrative ethics is [2], but humanism is a far more encompassing one. Humanism is not a philosophy, set of principles and maxims, or a religion. It is not a closed, coherent system for explaining events in the phenomenal world. It *is* an educational ideal, the goal of which is to make the most of what it means to be human—the use of *logos* (language and reason), development of fellow feeling (sympathy and empathy), desire for self-knowledge, and a confidence that rules for ethical conduct can be drawn from the affairs and interests of humans without recourse to divine revelation. Humanism has no manifestos or treatises that tell us what action is the right one in a given set of circumstances; that knowledge must be worked out in coming to “know thyself” and in the examining of each life.

Fully realizing what it means to be human, then, demands unceasing comparison of our current, settled understanding of the world, our culture’s collection of stories, and new narratives that don’t match the existing stories. Each time a mismatch occurs, the humanist asks, “What do I believe and how do I feel about the collection of narratives I live by and this new candidate?” It is only by rigorous, truthful, often painful self-examination and reflection that a tentative new place to stand is arrived at. To touch on the debate in moral psychology, feelings cannot be abandoned in favor of thoughts, or vice versa, in establishing the “new place to stand.” The Greek tragedians knew the importance of emotion in the development of self-knowledge long before neuroscience connected emotion to physical health and recognized its necessary role in decision making.

In narrative ethics, the continuous process of realizing our humanity entails comparative critiquing of stories; in communicative ethics, it entails arriving at the uncoerced consensus of all those who will be affected by a proposed action [9]; John Rawls calls the process reaching “wide reflective equilibrium” [10]. Whatever the vocabulary, it is the process by which we hone, through rigorous, unblinking comparison—and compromise—the narratives that will guide our decisions until the

next dangerously challenging narrative comes along. And it is yet another reason why medicine is incomplete without study of the humanities that, collectively, humanism comprises.

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STATE OF THE ART AND SCIENCE

Use of Art Making in Treating Older Patients with Dementia

Laura T. Safar, MD, MA

Medicine and the visual arts stem from essential human activities: learning about and taking care of our fellow humans and communicating with them. The intent of this article is to elucidate and describe therapeutic applications of art making in the elderly population, particularly those affected by dementia.

A three-axis model provides a frame for organizing the interactions between medicine and the visual arts. Longitudinally, visual functioning is part of an individual's life from infancy through old age. We learn about the world through visual stimuli from early on and we continuously receive, process, and produce visual information (e.g., in the process of nonverbal communication). We can think of the visual arts as a subset of all visual functioning.

Cutting across the visual functioning axis at each life stage, visual art activities may be part of what people do for education, recreation, work, and self-expression and communication. Art activities can help develop cognitive abilities including visuospatial and attentional capacity, abstract thinking, and fine motor skills, all involved in the executing of an art project. We can then think of art activities along this second axis as contributing to the individual's development of cognitive reserve, brain plasticity, and resilience.

This takes us to the third axis, where I place the health-illness continuum and medical care: inasmuch as they contribute to cognitive and emotional development, connection with others, and experience of joy, art activities help promote and maintain health. Once illness strikes, art activities can be part of the therapeutic tool set and assist in health restoration and rehabilitation.

I am going to expand on the function that art activities can serve among the elderly population. The enjoyment of the arts is important to many healthy senior citizens who attend art classes at senior centers and visit art museums. They may augment the skills that older persons retain, enabling them to make meaningful expressions [1] and promoting social and emotional growth [2]. In the increased focus on the building of cognitive reserve and the prevention of cognitive decline and dementia, participation in cognitive and leisure activities is emerging as one of the avenues to maintaining and developing cognitive skills in older age [3, 4]. Art activities are well suited to serve this function: they can be fun and social, and they promote learning. Importantly, they engage most brain circuits involved in our day-to-day activity.

Two functionally specialized pathways are essential for the processing and production of visual information [5]. The ventral visual pathway, with occipitotemporal localization, is involved with recognizing *what* we see. In art, we may then use our internal visual representations of people, animals, and objects to depict them in paintings and drawings. The dorsal stream, with occipitoparietal localization, allows us to perceive *where* an item is located in space and to see a scene as a whole. We apply these functions when we look at a painting and when we organize the composition of an art piece. The dorsal visual pathway also allows us to understand spatial locations so that we can act in space [6]. The language neurocircuits participate in the interpretation and depiction of symbolic, language-based concepts in visual form in a painting. The dorsolateral prefrontal cortex helps with the planning and organization of an artistic project. The frontal cortex may also have an inhibitory role in creativity [7]. The cortical and subcortical motor areas, along with the somatosensory pathways, are involved in skillful manipulation of art tools. Art viewing and creating also engage the vast neurocircuitry responsible for emotional processing, regulation, and expression.

In the setting of medical and psychiatric illness, art can be an excellent therapeutic tool and may assist in rehabilitation [2]. In the presence of degenerative brain illness, brain lesions change the nature of the art patients produce. The art of those with Alzheimer disease generally shows a gradual decline that parallels the decline of other cognitive abilities [8, 9]. In contrast, some patients with frontotemporal dementia (FTD), especially those with left anterior degeneration and preserved posterior parietotemporal regions, may temporarily acquire new artistic skills [10, 11].

Many individuals with dementia participate in art therapy activities in adult day programs, assisted living facilities, and nursing homes [12]. The Alzheimer's Association Memories in the Making Art Program has assisted in developing some of these efforts [13]. Several art museums, including the MFA in Boston and MOMA in New York City, have held art programs for people with dementia and their caregivers; such programs tend to succeed as measured by engagement, communication, and pleasure for the participants [14].

Art activities can be part of a plan to manage agitation and other behavioral problems in the demented elderly. Visual creativity can help these patients maintain communication with others, including their loved ones, when other forms of cognitive functions are markedly impaired. A neurologist and I integrated neurological and psychiatric care, art therapy, and verbal psychotherapy in the treatment of one of our patients, a professional artist who developed corticobasal degeneration in her fifties [15]. While hers was a case of early-onset dementia, many of the principles we used in her treatment can be applied to patients with late-onset presentation. She came to our cognitive and behavioral neurology clinic due to gradually progressive difficulties in her visuospatial functioning. Her parietal lobes—especially on the right hemisphere—were significantly affected. In

consequence, her dorsal visual pathway, which is fundamental in perceiving and depicting space and in making art, was clearly impaired.

In the few years prior to her diagnosis she had been immersed in her work, creating a series of abstract landscapes (figure 1).



Figure 1.

With the decline in her capacity to represent tridimensional space, her paintings acquired a flatter quality (figure 2).



Figure 2.

She had drawn a number of urban landscapes (figure 3) and, when no longer able to draw perspective, she created “new” versions by making collages with pieces from her older drawings (figure 4).



Figure 3.



Figure 4.

By the time she first saw us, she had completely stopped making art, which was a source of great distress for her. I met with her periodically at her home-based art studio. With a neurological understanding of her illness, her neurologist and I were able to design specific art therapy interventions that contributed to her preserved functioning and helped develop compensatory strategies for her deficits. The therapeutic benefits of this interdisciplinary approach could not have been achieved otherwise. Our interventions, while not able to alter the ultimate course of the illness, significantly improved her quality of life, reawakened her capacity to exercise her identity as an artist, brought back her enjoyment of art making, and provided a sense of hope.

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POLICY FORUM

Expanding Humanities Training beyond Medical School

Nicholas Kluesner, MD

Working in the emergency department of a busy tertiary care center, I am afforded a vantage point for encountering the behaviors and attitudes of my resident colleagues at their most challenging times. Contributing to their mounting list of consultations and providing a steady stream of admissions, I add to their already clinically overwhelming and emotionally exhausting workloads. Thus, it is no surprise when I receive a long-winded sigh or a standard dose of admission “push-back” on the phone. I would like to present an example of this daily reality—the case of Dr. Fish and Arlene—and submit a perspective on how this came to be and what we might do about it.

Arlene was a 72-year-old native of small-town Iowa, known to her community as the retired librarian. Her husband had long since passed away from the typical diseases of a farmer (coronary artery disease and chronic obstructive pulmonary disease mixed with stubbornness-delayed medical care). Arlene came to the ED in acute pain after church one morning. Following the necessary imaging, labs, and ED management, we consulted attending physician Dr. Fish about admitting her. For all the familiar reasons, what ensued was a circus of brainstorming other consulting services who might take the admission instead and rustling up medical comorbidities to justify a primary medical admission before the obligatory long sigh and acceptance. All the while Arlene sat on the ED stretcher, floating between doses of opioids, wondering who was who, what the plan was, and why she had not moved in three hours. This demonstrates how Samuel Shem’s classic work *The House of God* [1] has become an unfortunately true portrayal of medical training rather than a sour satire.

To better understand Dr. Fish’s disposition in the ED, one must first understand the “hidden curriculum” that has trained him. In their seminal work, Hafferty and Franks expose the socialization process within medical education that teaches students (largely without their knowing) to regard the patient and their medical colleagues as “objects of work and sources of frustration, and antagonism” [2]. In this process of indoctrination, even the most virtuous and rightly resolved student succumbs to a culture that facilitates or even rewards Dr. Fish’s practice in the ED. This indoctrination does not absolve Dr. Fish of his personal responsibilities; rather he is the “canary in the coal mine,” calling attention to our diseased training process and culture.

Hafferty and Franks clearly and correctly identify this problem, but only start to develop a solution. They recommend a top-down acknowledgement, understanding, and correction of our professional culture as physicians (or at least of faculty physicians). And while their ten-page work makes great strides in the first two steps, it does not suggest exactly how to effect that change in our culture. Many advocate that exposure to various aspects of the humanities during the medical-school years is the next step needed to move this cultural shift along.

In 2014, Boudreau and Fuks, in reviewing the historical trends of humanities in medical education—which have largely been peripheral and extracurricular until recently—resurrected an Aristotelian concept of *phronesis* (φρόνησις) [3]. This characterization of practical wisdom as combining “disposition, reasoning and action” in the development of a particular moral actor may offer a framework for understanding the role of humanities in physician education. Alasdair MacIntyre’s important work in moral theory, *After Virtue*, argues that through “practicing” activities—be it history, ethics, or even poetry or portrait painting—that exercise positive attributes, values, or virtues, physicians habituate these personal qualities in a more integral way [4]. And, to their credit, medical schools have responded to calls for integration of the humanities into medical education with restructured curricula, mentoring, and expectations to encourage and reward humanist values of honesty, integrity, justice, social awareness, and patient-centered medical care.

Now, close friends may identify this as my dry sarcastic humor surfacing, but what I have concluded from these reflections on medical education and personal virtue is that the first, necessary step for addressing the case of Dr. Fish may be for him to take up poetry, portrait painting, the study of ethics, or some other similar “practice,” to use MacIntyre’s term. But that is too little, too late for Arlene—and maybe even for Dr. Fish. Exactly what specialty Dr. Fish practices and what disease process Arlene has are irrelevant and intentionally ambiguous, because what I believe is most important is that Dr. Fish and I had the same medical school education. We attended the same “patient-based learning” small groups and the same course on ethics and had the same narrative essay assignments—all in a curriculum designed to counteract Hafferty’s “hidden curriculum” and imbue MacIntyre’s habituation of virtuous practices. So what is different about Dr. Fish’s training? There are really only two times at which Dr. Fish’s development could have been changed—premedical education and graduate medical education.

Growing political and economic pressures have resulted in initiatives to promote undergraduate study in science, technology, engineering, and mathematics (“STEM”) [5]. While few if any have called for a reciprocal de-emphasis on the humanities, the effect of this pressure is obvious. There has been a clear increase in STEM majors—with a rise in engineering majors, for example, of roughly 57 percent over the last decade [6]. Furthermore, undergraduate curricula largely allow students to select whichever courses suit them after basic core requirements are satisfied. While this allows for a wonderful diversity of experience and opportunity to explore new interests, it also allows undergraduates to select coursework with

their GPAs rather than educational goals in mind. The observational research on STEM statistics demonstrates clear trends between the larger economic and job pressures and students' majors since the 1970s [5]. And this is not a new trend—I myself was advised out of an advanced philosophy course with a not-so-subtle allusion to the fact that the grade I received in this difficult advanced course could hurt my application to medical school. I was viewed as quite unusual on the interview trail when I ultimately added a major in philosophy. Thus, the components were available in the undergraduate curriculum for all students to engage in personal and professional development, if premedical educators were to follow medical schools' lead and incorporate those components into the premed curriculum.

But even then, study of the humanities in the premed years would not suffice. I would like to blame a difference in our premedical foundations in humanities as the difference between Dr. Fish and me, citing my intentional training in humanities which introduced me to a virtuous, patient-centered practice of the medicine I had yet to learn, contrasted with his “cake” classes and ambivalent checking-off of requirements. But the truth is Dr. Fish and I are not different at all. In fact, I *was* Dr. Fish just a few months ago while rotating off service, and I embarrassingly do not know anything about Arlene's personal story. I continue to wonder, as I reflect on my undergraduate and medical school educations which so keenly integrated the humanities, how could that have come to be?

The answer lies again in the insidious and robust hidden curriculum. Interns and senior residents are just as susceptible—perhaps more so—to unspoken institutional cultures and pressures. As residents become more specialized and advanced in their training, they become all the more likely to assimilate to their environmental influences. In other words, it is much easier for an emergency medicine resident to say “that isn't an emergency” than it would be for the undifferentiated medical student who only sees a patient in pain. (In fact, this is what has led the medical student section of the American Medical Association to serve as a “moral barometer” for the General Assembly.) What these examples show us is that something critical happens after medical school to adversely affect our moral characters as physicians. This is the hidden curriculum of what we call residency.

Yet, while residents may be all the more vulnerable to the hidden curriculum pressures, few residency programs can boast a robust, integrated training program in the humanities that develops their residents' virtue beyond medical knowledge and technical skills—despite the Accreditation Council for Graduate Medical Education's having listed “professionalism” and “interpersonal skills and communication” as required core competencies for all residency training programs [6]. Yet, using our emergency medicine residency program at the University of Iowa as a representative example, only this year—after training emergency physicians for more than 11 years—did we develop a dedicated, intentional curriculum in medical ethics beyond didactic PowerPoint presentations on the Emergency Medical Treatment and Labor Act (EMTALA) and the “four principles.” And while this is an important step for us, it remains stridently away from the emerging medical school

standard of integrated humanities training to promote the development of empathy, social awareness, honesty, and patient-centered medical practices. Certainly mentorship from our fantastic faculty core can be cited as the primary mechanism for professional development, but this overlooks two objections: first, role modeling, while important, does not have the integrating power of habituated practices for moral development, and, second, if our faculty are themselves products of this medical training culture, how can we expect anything other than the same “hidden curriculum” mistakes?

In conclusion, while we may be seeing an explosive proliferation of literature and programs on integrating the humanities into medical school education, its presence in the training of premedical students and resident physicians is minimal and possibly even decreasing. Medical school is only one step on the developmental continuum of training the virtuous physician. If our understanding that medical training as a process of moral enculturation is correct—and I believe it is—then we must now expand our efforts to develop the integration of humanities training (not just teaching) into the premedical and graduate medical education spheres.

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MEDICINE AND SOCIETY

A Complete Medical Education Includes the Arts and Humanities

David S. Jones, MD, PhD

Of the many crises in health care today, one of the most troubling is the perceived loss of empathy among medical students and residents. Medicine, at its core, is about caregiving [1]. Empathy and compassion are essential. When the empathic connections between patients and doctors are broken, both patients and doctors suffer: patients receive worse care, and physicians burn out. The causes of the problem have been described well: students learn medicine within a health care system that does not prioritize caregiving. Instead, they admit patients, order and interpret tests, formulate treatment plans, and discharge those patients—sometimes within the same shift. Time pressures and a hidden curriculum value efficiency, not compassion.

Solutions to the problem are less clear. Educators have long worked to figure out the best ways to teach medical knowledge and skills. If the perpetual efforts to reform curricula are any indication, this remains a work in progress. What is at issue here, however, is a question of character. Empathy, along with compassion, sincerity, dedication, professionalism (whatever that means), and even just being a good listener are all traits anyone would want in a doctor. These traits are most likely as important as a physician's technical expertise. But how can character be taught? Medical students are often taught how to act empathically, with a toolkit of gestures and utterances designed to convey concern. But everyone knows that there is a gulf between demonstrating empathy and being empathic.

Advocates for the arts and humanities in medicine have offered their disciplines as a partial solution to the challenge of character education. They argue that the arts and humanities can be used to teach empathy, professionalism, and other character competencies. While these approaches have value, they may actually undersell the contributions that the arts and humanities offer medicine.

Many authors have described how training in the arts and humanities can foster professionalism, listening skills, cultural sensitivity, ethics, empathy, or a commitment to humanism [2]. Literature, for instance, challenges readers to see the world from the perspective of another person and develop empathy for the characters. This can help medical students and physicians in many ways. Practice at imagining oneself in another's shoes, for instance, can help a frustrated doctor sympathize with a noncompliant patient. Music, meanwhile, focuses attention on active listening. Some physician-musicians arrange performances for patients and

find that this different way of being with patients transforms their interactions with them [3].

Viewing art, too, can enhance clinical practice. By asking clinical teams to spend time with works of art and to work together as a team of nonexperts to interpret a painting's mysteries, art educators can break down communication barriers within clinical teams and foster teamwork. The curiosity and questioning that follow when clinicians are presented with an artwork can inform the curiosity and questioning required when clinicians encounter patients [4]. Anthropology and history can teach students about the diversity of human experience across space and time. They encourage students to reflect seriously on their own values and perspectives, things they might otherwise take for granted.

The efforts to make the case for arts and humanities in medical education have had to grapple with the recent turn in medical training towards competencies, milestones, and empirical assessments of educational outcomes. The Association of American Medical Colleges recently sifted through 153 lists of competencies from different institutions and distilled what it hopes will be a more coherent system of 8 domains and 58 competencies [5]. Advocates for the arts and humanities often latch onto Domain 5, Professionalism: "Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles" [6]. According to the leaders of one recent effort, the Project to Rebalance and Integrate Medical Education,

The major goal of medical education in ethics and humanities is to promote humanistic skill and professional conduct in physicians. Patient-centered skills enable learners to become medical professionals, whereas critical thinking skills assist learners to critically appraise the concept and implementation of medical professionalism [7].

The challenge there, as the authors admit, is how to show that professionalism has actually been taught.

Many groups have taken up the empirical challenge. One study, a collaboration between the Museum of Fine Arts in Boston and the Brigham and Women's Hospital, used an art education intervention to demonstrate that it was possible to train medical students to be more astute observers of radiological images [8]. A recent analysis by the Narrative Medicine group at the College of Physicians and Surgeons at Columbia University used focus groups to characterize the ways in which training in narrative medicine can "support complex interior, interpersonal, perceptual, and expressive capacities" [9]. These skills "can bring patients and clinicians into authentic contact as a prelude to action" [10].

It is easy to understand why advocates of the arts and humanities have felt compelled to document the instrumental benefits of their disciplines. Competencies and

empirical assessments have become the currency of the realm in medical pedagogy. These efforts, however, raise many concerns.

Can the benefits conferred by training in the arts and humanities be measured? Psychologists and education researchers have developed validated scales of empathy, cultural sensitivity, professionalism, visual literacy, and much more. It is possible to use pre- and postintervention surveys to demonstrate positive changes in these scales. But is that really what matters? Modern pedagogic gold standards often feel bureaucratized, reductionist, even dystopic. Is medical education nothing more than a series of competencies, attainment of which can be documented by an improved score on a scale? And why is proof that the arts and humanities make better doctors seemingly required, while similar demands for justification are not made on the traditional components of medical education? Most medical school courses have not been subjected to pre- and posttest evaluation. While final exams show that courses in anatomy and molecular biology teach medical students anatomy and molecular biology, no one has shown that this makes them better doctors. No one asks for evidence that surgery rotations improve measurable endpoints in the majority of students who do not become surgeons. Exposure to surgery, anatomy, and molecular biology are simply assumed (with good reason) to be an essential part of a complete medical education.

Would it be possible to assume that the arts and humanities are also an essential part of a complete medical education? Societies have valued the arts and humanities for as long as we have records of societies—for millennia. In its 2013 report about the crisis facing the humanities and social sciences, the American Academy of Arts and Sciences made a powerful case that these disciplines are essential to civic life [11]. They are “a source of national memory and civic vigor, cultural understanding and communication, individual fulfillment and the ideals we hold in common.” The humanities “remind us where we have been and help us envision where we are going.” They “foster creativity, appreciation of our commonalities and our differences, and knowledge of all kinds.” The social sciences “reveal patterns in our lives, over time and in the present moment.” They “help us understand what it means to be human and connect us with our global community” [12]. Together the humanities and social sciences “go beyond the immediate and instrumental to help us understand the past and the future” [13]. If these things are valuable for civic society writ large, then they are valuable for medicine. Medicine, after all, is at the heart of the caregiving on which so much of society relies.

Much of the value that the arts and humanities offer to medicine cannot be reduced to simple measures. Literature, for instance, provides a mode of practice for difficult aspects of medical care. Medical students and physicians inevitably face difficult moral choices and other dilemmas in patient-doctor relationships. Would you, as a clinician, ever withhold a diagnosis from a patient if a family asked? Would you be willing to implement an advanced directive and withdraw life support from a dying patient? Bioethicists can teach arguments, rules, and expectations, but literature can often be more valuable. Students can encounter these dilemmas, in advance, through

reading, whether fiction (e.g., Alberto Tyszka, *The Sickness*) or memoir (e.g., Philip Roth, *Patrimony*). When encountering difficult situations in reading, students have the chance for sustained, thoughtful reflection, as well as the chance to appreciate and reconcile multiple perspectives. They will then be better prepared to respond well when they encounter these dilemmas on the wards [14]. I doubt that the value of this kind of reading, or the similar value of sustained engagement with poetry, art, or music, can be quantified in “pre-post” assessments.

There is another way in which the focus on character training and professionalism undersells the contribution of the arts and humanities. I can make the case best for the field I know best—history. The history of medicine need not be merely an exercise in documenting the triumphant march of medical progress or of highlighting the lives of past clinicians as paragons of clinical value—though this too can be useful [15]. Instead, history of medicine can make fundamental contributions to medical knowledge. Medical students need to understand disease, but they are only taught aspects of its complexity (e.g., common manifestations, pathophysiology, underlying molecular biology). Other aspects of disease demand an understanding of social science. *Why* did tuberculosis decline in Western Europe and the United States by 90 percent before the advent of antibiotics [16]? *Why* have obesity rates in the United States doubled over the past generation [17]? Answers to these questions cannot be found in a molecular biology class. Instead, the answers lie in the shifting social, economic, and political worlds that patients inhabit [18]. Anyone who would claim to understand disease—as doctors should—must understand the social determinants of disease. History, by asking students to consider carefully the mechanisms of disease change over time, can open their minds to the complex interactions between individual and society.

Doctors need similar perspective about therapeutic efficacy [19]. What does it mean to say that a treatment worked? Doctors might be reassured by a favorable change in some biomarker or evidence that the prescribed drug targets a relevant molecular pathway. Patients often focus on different outcomes, whether based on an improvement in symptoms or relief simply from knowing that they are fighting the disease. When patients and doctors value different outcomes, they can end up with different assessments of efficacy, something that drives a wedge between them. The history of therapeutics demonstrates the complexity of efficacy. Pushing students to think seriously about why bloodletting remained popular for thousands of years, or why lobotomy rose and fell over a two-decade period, can help them to recognize the many factors that influence how doctors, patients, families, and societies judge the value of medical care.

The richer understanding of disease and therapeutics provided by history should be an essential part of medical education. I suspect that scholars and practitioners of the other arts and humanities can produce strong arguments for their own domains. These disciplines need not simply be instruments used to teach nonspecific character traits such as empathy, teamwork, and professionalism. While they can do that, they can do much more.

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MEDICINE AND SOCIETY

Medical Ethics and the Media: The Value of a Story

Macey L. Henderson, JD, and Jennifer Chevinsky

“Judge Rules Sarah Murnaghan Can Be Put on Adult Donor List” is just one of many headlines about this medical story that filled national news outlets during early June of 2013. A ten-year-old girl being treated at the prestigious Children’s Hospital of Philadelphia for cystic fibrosis was reportedly “dying” while waiting for a lung transplant [1].

Up until June 2014, Organ Procurement and Transplantation Network (OPTN) and United Network for Organ Sharing (UNOS) policy dictated that lungs for children under the age of 12 be strictly allocated in the US on a first-come, first-served basis, unlike lungs for adults and children over 12, which are allocated by an algorithm (Lung Allocation Score) that takes into account factors such as disease progression and life expectancy [2]. What began as one mother’s fight to save her child’s life through medical treatment she believed her daughter deserved quickly transformed into a public controversy about organ transplant allocation policies that was widely broadcast to the American public via television, newspapers, and digital media sources.

Frustrations over the unavailability of suitable pediatric donor lungs for transplant became the central issue of Sarah’s story. Advocates such as Pennsylvania Senator Pat Toomey and Representative Pat Meehan pushed for the expansion of transplant policies to include suitable adult organs [3], but adult donor lungs are themselves a scarce resource. After Sarah’s parents took her story to national media and news outlets, allowing the press an intimate look at her fragile condition while they argued her case in the US District Court for the Eastern District of Pennsylvania, things began to change. “Sarah” became a character in a larger story about the survival of an innocent child, a child who could have been born into any family. One of the arguments presented by the family was that “the pool of lungs donated from adults is more than 50 times larger than the pool of lungs donated from children” [4].

On June 5th, 2013, following an emergency hearing, Judge Michael Baylson directed former Health and Human Services (HHS) Secretary Kathleen Sebelius to issue a temporary suspension of the under-12 rule [1]. In an attempt to provide an ethically appropriate response, the OPTN instated a temporary one-year appeals process, which expired June 20th of 2014, for all children under the age of 12 whose doctors believed they might benefit from adult lungs. In the end, Sarah received two lung transplants—the first, a pediatric lung that failed, and the second, an adult lung that,

on the first anniversary of the transplant, had held up well enough for Sarah to breathe unassisted [5].

During the June 2013 plea to temporarily suspend the rule so Sarah could be put on the adult lung waiting list, former Secretary Sebelius ordered an investigation of the research on outcomes of pediatric lung transplantation for those with cystic fibrosis. Sarah and her parents could not wait, so the suspension was put in place before the review was completed, but data gathered during the suspension has added to the evidence base for forming current organ transplant policies.

A Double-Edged Sword

“We’ve helped a lot of other kids, too. There are about 10 kids listed right now who wouldn’t have been listed for adult lungs and at least one other child that’s gotten a transplant like Sarah,” her mother, Janet Murnaghan, said in a video posted on Facebook that showed Sarah breathing on her own after her successful transplant [6]. It is clear that those who utilize social media for health care advocacy purposes or seek the assistance of the press to tell a story through popular or mass media usually do so to gain support, increase awareness, or change public and professional opinion about their cause. Sarah’s case did just that. “I think that this issue raised awareness that there may be circumstances where children like Sarah ought to be able to request an exception,” said Dr. Stuart Sweet, director of a pediatric lung transplant program and writer of the original OPTN lung allocation policy, in an interview with NBC News [6]. This concept in some ways parallels the recent and controversial “right to try” rules popping up in states such as Colorado, Missouri, and Louisiana, where families have garnered social media support for allowing people with conditions refractory to available medical treatments to have access to pharmaceutical therapies that are still in clinical trials [7].

However, the most effective health policies consider large-scale statistical and public health data in addition to personal narratives. We should not forget that there are scientific and ethical reasons that the under-12 rule was created in the first place. The Scientific Registry of Transplant Recipients (SRTR) reviewed trends over time in deceased-donor lung transplant waitlist mortality and transplant rates. It found that the mortality rates of children aged 0-5 on the waitlist were higher than they were for adolescents (aged 12-17 years) or adults (aged 18 years and older), but the rates among children aged 6-11 years were the same as those of adults [8].

Lung transplantation in pediatric patients is associated with high postoperative morbidity and mortality, which is due largely to the recipient’s underlying comorbidities or medial conditions [9]. Furthermore, lung transplantation for the treatment of cystic fibrosis has been shown in several retrospective studies to have only marginal benefit [10]. Therefore, it is unclear whether allowing children between the ages of 6 and 11 with cystic fibrosis onto the adult lung-transplant waiting list will be a better use of the available organs, or, furthermore, whether it will make the system more just. In fact, it might shift organs away from adolescents

or adults, unfairly giving only children between the ages of 6 and 11 two pools of organs from which they could potentially benefit.

The under-12 rule, like all OPTN/UNOS policies, was originally a result of deliberation and consensus of an expert panel that took account of medical, ethical, legal, and other stakeholder input to craft a rule intended to uphold the ethical values of *justice* and *fairness* that underpin the entire US transplant system [11, 12]. While Judge Baylson and Secretary Sebelius were successful in aiding Sarah, OPTN/UNOS has the legal authority and responsibility to review its policies and procedures to ensure that they reflect the most recent medical and scientific evidence. As a direct result of Sarah's story, The OPTN/UNOS Lung Allocation Policy Review analyzed the effects of the two-tiered lung-allocation priority system which was implemented in 2010 (in which there are two separate systems, one for children 6-11 and one for children over 12 and adults). In this policy review, it was found that a higher percentage of children under 12 on the wait list died within a year of getting listed after the policy went into effect than had beforehand (30 percent, rather than 26 percent of children aged 6-11) [13]. In addition, analysis of recent OPTN/UNOS lung offer data demonstrated that fewer children under 12 received at least one lung offer than did older children and adults [14]. These studies do not suggest that increasing organ offers to children between the ages of 6 and 12 will significantly impact long-term mortality rates, because factors other than organ offers—especially those related to clinical condition—contribute to their outcomes. However, increasing organ offers may decrease *waiting-list mortality* among children, which currently mirrors adolescent and adult rates.

This data must be paired with the aforementioned mortality study, as our nation decides whether the goal of our transplant system should be to further minimize waiting-list mortality, by increasing organ offers to pediatric groups, or to attempt to maximize long-term survivability with organ transplantation, by giving the organs to adolescent and adult groups with overall higher rates of survival. It is also important to remember that more organs in one population pool means fewer organs available in another population pool; in other words, a child with cystic fibrosis who receives an adult organ is obtaining a precious resource that would have otherwise been transplanted in an adult who may have received a greater benefit. Of course this relates the difficult questions that underlie the transplant system: how can we, in an unbiased way, judge the amount of benefit that an individual receives from an organ? If we agree that the length of life lived with the new organ is an important consideration, it certainly seems that policies such as those governing pediatric lung transplantation with adult organs need further investigation and deliberation.

Although a full analysis of reasons for policy change will likely be revealed over the coming months, on June 23, 2014, the OPTN/UNOS board of directors voted to keep the new rule allowing children under the age of 12 to have access to the adult waitlist, illustrating the victory of Sarah's campaign for new lungs [15]. We expect that the rates of lung offers, organ rejection, waiting-list mortality, and long-term

survival will continue to be assessed as the adult waitlist becomes a mainstream option for children between the ages of 6 and 11 years old.

The narrative of Sarah's lung transplant controversy, as framed by the media, had the ability to change the treatment plan for one patient, the transplant options for pediatric patients during the year of the suspension, and US health care policy for the future. Sarah's story illustrates the power of medical narratives to bolster awareness of complex issues in medical ethics for physicians, medical students, and the public by bringing forward an anecdote that is widely relatable.

Mass Media's Impact on Promoting Action in Health Care

A broadly disseminated, emotionally affecting narrative such as the story about Sarah's lung transplant arouses sensitivity to ethical issues in medicine and helps us to experience a situation emotionally, asking questions like: *What if this were my child? What if this were my patient? What if this occurred in my hospital?* Mass media has the ability to promote this kind of reflection and empathy by drawing attention to aspects of medicine and public health from a different perspective than that adopted by dry coverage of legislative wrangling over policy.

Over the last three decades, the term "narrative medicine" has emerged to recognize the importance of patients' stories in helping physicians understand and be moved by patients' experiences of their illnesses. Can media stories of individual patients' experiences be considered part of medical narrative? We think so. Journalism and social media have the ability to accompany patients through the ordeals of an illness, promote the recognition of the impact and burden of diseases, and convey knowledge formerly known only to those who experienced it. Furthermore, as seen through Sarah's story, news coverage often contains the opportunity for moral evaluation, either implicitly or explicitly, of challenges and debates over health care decisions, resource allocation, and the validity of scientific research that informs health policy. The American public responds to the media's ability to shape and impact ethical decision-making—and has been doing so for decades.

Physicians must recognize that these stories are intended to move readers and policymakers toward particular goals. Media narratives help make population-level studies accessible to the public, but not without the risk of replacing necessary large-scale statistical studies with "n of one" anecdotes. Transparency of media coverage of issues of ethical debate in health care can be improved if journalists remain committed to high-quality reporting and data presentation that includes different opinions and promotes dialogue. Recognizing the power a narrative can have in shaping opinions, organizations such as the Association of Health Care Journalists should hold their membership accountable for adhering to the principles of accurate storytelling the organization promulgates [16]. At the same time, it is the responsibility of physicians and the medical profession to weigh in on the clinical efficacy and ethical soundness of those goals, so that evidence- and experience-based stories are a recognized part of the larger narrative.

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HISTORY OF MEDICINE

Music and Medicine: Harnessing Discipline and Creativity

Lisa M. Wong, MD

It is one of the superficialities of our time to see in science and in art two opposites. Imagination is the mother of both [1].

Theodor Billroth (1829-1894), musician and surgeon

Music and healing have been inextricably linked throughout history. The Greek god Apollo was not only god of the sun, but god of both healing and music. The highly refined skills developed in musical training—listening, collaboration, empathy, attention to detail, and aspiration to excellence—are skills that are equally highly valued in the practice of medicine. Several innovative physicians in the last 300 years were also highly accomplished musicians:

- In France, Dr. Rene Laennec (1781-1826) was a flutist who was known to build his own wooden flutes. He later went on to invent the first stethoscope—a long hollow tube made of wood [2].
- In Russia, Dr. Alexander Borodin (1833-1887) played several instruments and composed two symphonies, three operas, and two string quartets, among other works. He was an organic chemist and physician who also helped establish the first medical school for women in St. Petersburg [3].
- In the US, Dr. Thomas Sudhof, winner of the 2013 Nobel Prize in Medicine for his work in cell transport, credited his bassoon teacher Herbert Tauscher as his source of inspiration [4].

There have been and are thousands of physician-musicians we will never hear about—these are just a few. Is there a connection between the training one undergoes and the skills one needs to become an accomplished musician and the training and skills it takes to be an excellent physician?

Let us consider the life and practice of the exemplary physician-musician Dr. Theodor Billroth (1829-1894), who is widely recognized as one of the most influential and innovative surgeons of his day. Although he first wanted to pursue a career as a pianist, his family persuaded him to study medicine, and he ultimately embraced the field and established himself as a disciplined scientist, superlative teacher, and surgical pioneer [5].

In Vienna, Billroth had the opportunity to push the boundaries of surgery: he was among the first to develop surgical procedures for cancers of the larynx and thyroid, along with the gastrojejunostomy techniques that still bear his name. He was as methodical as he was innovative; when he developed a surgical procedure, Billroth

considered its pathophysiologic basis and practiced on cadaveric specimens and animal models prior to operating on patients.

Billroth was also a pioneer in surgical ethics: many of his then-innovative ideas are now standard practice. He advocated transparency in surgical care, insisting on postsurgery audits and open discussion about unsuccessful as well as successful procedures to improve patient outcomes—a precursor to today’s morbidity and mortality rounds. As an educator, he invited students to observe his operations, organized meetings for article reviews, and developed a journal.

What is less known in medical circles is that Billroth’s creativity was fueled by his deep engagement in music. An accomplished pianist at an early age, he later learned the viola and violin and became a close friend of composer Johannes Brahms. At the age of 38, Billroth became chief of surgery at the University of Vienna, the youngest physician to hold that position. Billroth initially found it difficult to socialize with his older medical colleagues and was happy for the companionship and musical collaboration he had with Brahms and other musical luminaries his age residing in Vienna.

Billroth hosted frequent evening musical gatherings for friends and fellow musicians, which often featured premieres of the works of Brahms [6]. The composer, in turn, relished holding discussions with people in other fields. He was fascinated by the logic of scientific reasoning and greatly admired Billroth’s understanding of medicine and music [7].

In gratitude for their friendship, Brahms dedicated the first two of his string quartets to Billroth in 1873. Two years later, Brahms dedicated his third quartet to another musician-physician, T.W. Engelmann (a cellist and physician interested in cardiac physiology) [8]. Billroth, humbled, wrote to his colleague Engelmann about this honor from Brahms: “I am afraid these dedications will keep our names in memory longer than the best work we have done; for *us*, not very complimentary, but beautiful for humanity which, with the right instinct, considers art more immortal than science” [9].

So what is it that musicianship can bring to doctoring? In his 2011 article “What Musicians Can Teach Doctors,” Frank Davidoff compares the training of highly skilled musicians with that of highly skilled physicians and considers the flexibility necessary for creativity to flourish in the arts of music and medicine. While recognizing that not all fine physicians are musicians, Davidoff suggests that a number of elements important to musicians (and other artists) also bear upon good doctoring. These include the fact that the practice of medicine is, like music, essentially “performance”; that learning and teaching in both fields are best accomplished through coaching; that practice is as important as talent, or more so; that continual integration of practice into daily work and performance is essential; and that expertise in both disciplines results from innovation by individual

practitioners that is built on a foundation of fluency with standard procedures [10]. Practice in the arts can help inculcate these values and hone these skills.

Dr. Daniel Roses, distinguished professor of surgery at New York University and musician, describes what made Brahms and Billroth so unique and successful:

They examined everything they did with relentless self-discipline: nothing left their hands that was indifferent.

They accepted no truth second hand. They retested, reapplied, reassessed...and ultimately *reformed* the heritage in surgery and music which they had inherited [11].

Creativity, in each case, was balanced by a clear dedication to excellence. Creativity coupled with dedication to excellence and lifelong commitment to practice is a formula for success in many vocations. The centrality of these skills and attributes to both medicine and music, nonetheless, can only enhance the masterful performance, life, and enjoyment of the physician-musician.

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IMAGES OF HEALING AND LEARNING

Tangles: An Illness Narrative in Graphic Form

Sarah Leavitt

My mother, Midge, died in 2004, after about six years of suffering from Alzheimer disease. She was just 60 years old. Her diagnosis had been a complete shock; she was young and healthy and there was no family history of the disease.

As soon as I realized that something serious was wrong with Mom, I started writing about it in my journal, driven by a need to record the strange and scary changes that were happening to her. It wasn't just that her memory was failing; everything was changing—her speech, the way she held herself, the way she moved through space, even her facial expressions. As our family travelled through the heartbreaking and bizarre world of Alzheimer disease, I continued to record as many details as I could.

Soon I knew that I wanted to do more than write in my journal; I wanted to publish my writing. Over the years of Mom's illness, I experimented with telling the story through poetry, autobiographical fiction, and "lyrical nonfiction." None of it felt right. Writing a straightforward nonfiction account felt closer to what I wanted to achieve.

After Mom died, I went through my journals. They contained not only written entries, but also small sketches of incidents that had happened, and the last journal included drawings I'd made of my mother the night before she died, recording what I knew would be my last glimpses of her. I realized I wanted to combine the text and images and write a graphic memoir, i.e., a comic book.

I'd published a few short comics, including one about the things that people said to my family when they found out that Mom was sick [1], but it's fair to say that I really didn't know what I was doing. For some reason that didn't stop me. Over the next four years I worked on the book that eventually became *Tangles: A story about Alzheimer's, my mother, and me*, published in the US in 2012.

Before I talk specifically about *Tangles*, I want to mention just a few of the amazing comics that inspired me—all of them about serious issues, many about illness and death (my favorite kind!). The book that introduced many people to the idea that comics can be weighty and complex is *Maus* by Art Spiegelman, which is about Spiegelman's father's experience during the Holocaust and their father-son relationship. *Maus* won a Pulitzer in 1992 and really is required reading for anyone who wants to understand the power of comics. *Cancer Made Me a Shallower Person* by Miriam Engleberg, *Mom's Cancer* by Brian Fies, and *Epileptic* by David B are all

excellent examples of “graphic medicine,” the recently coined term for comics about medical issues [2]. Numerous works by Lynda Barry and Aline Kominsky Crumb showed me the power of simple expressive drawings combined with frank, gritty prose.

I read as many comics as I could, as well as books *about* comics and how they worked, including Scott McCloud’s *Understanding Comics* and Will Eisner’s *Comics and Sequential Art*. I took a lot of writing classes, but mostly figured out the drawing part on my own. I ended up with a simple style of pen and ink drawing that I often refer to as “scruffy.”

In his recent book *MetaMaus*, which is exactly that, Art Spiegelman discusses his decision to use the comics form. He argues that comics lend themselves to direct communication and clarity: “For me, it’s an art of compression that breaks narrative events down to their most necessary moments” [3].

I certainly found this to be true when I was creating *Tangles*. I lived across the country from my mother—she was in Fredericton, New Brunswick, and I was in Vancouver—so I visited a few times a year. I experienced her deterioration in short, intense encounters, which were full of pain, along with many moments of unexpected joy and tenderness. Comics, with their short bits of text and economical, gestural drawing style, felt completely appropriate to convey the force of these short but packed-full encounters.

As I read more and more comics, I developed a preference for very simple, sketchy drawings; I found them much more powerful than detailed, “realistic” artwork. This was borne out by the theory that I read, particularly Scott McCloud’s discussions of how comics readers identify more immediately with pared-down drawings, how they can more easily imagine themselves as the main characters and insert themselves into the stories. This ability to engage the reader is particularly valuable for comics about difficult and painful experiences. When I look back at *Tangles* now, I wish that some of the drawings were more polished or skillful, but I wouldn’t make them any less sparse.

Using comics also allowed me to convey multiple layers of a single experience, like conflicting emotions or contrasts between thoughts and speech. With both text and image at my disposal, I could use one to enhance the other or create juxtapositions that were jarring or darkly humorous. For example, the words in a character’s speech balloon might be completely different from those in her thought balloon. Or the caption for a drawing of a tragic situation might inject some edgy humor. Our family was often laughing and crying at the same time, and I think this is a common experience when loved ones are seriously ill or dying.

The excerpt shown here is about the first time I had to deal with intimate personal care for my mother.

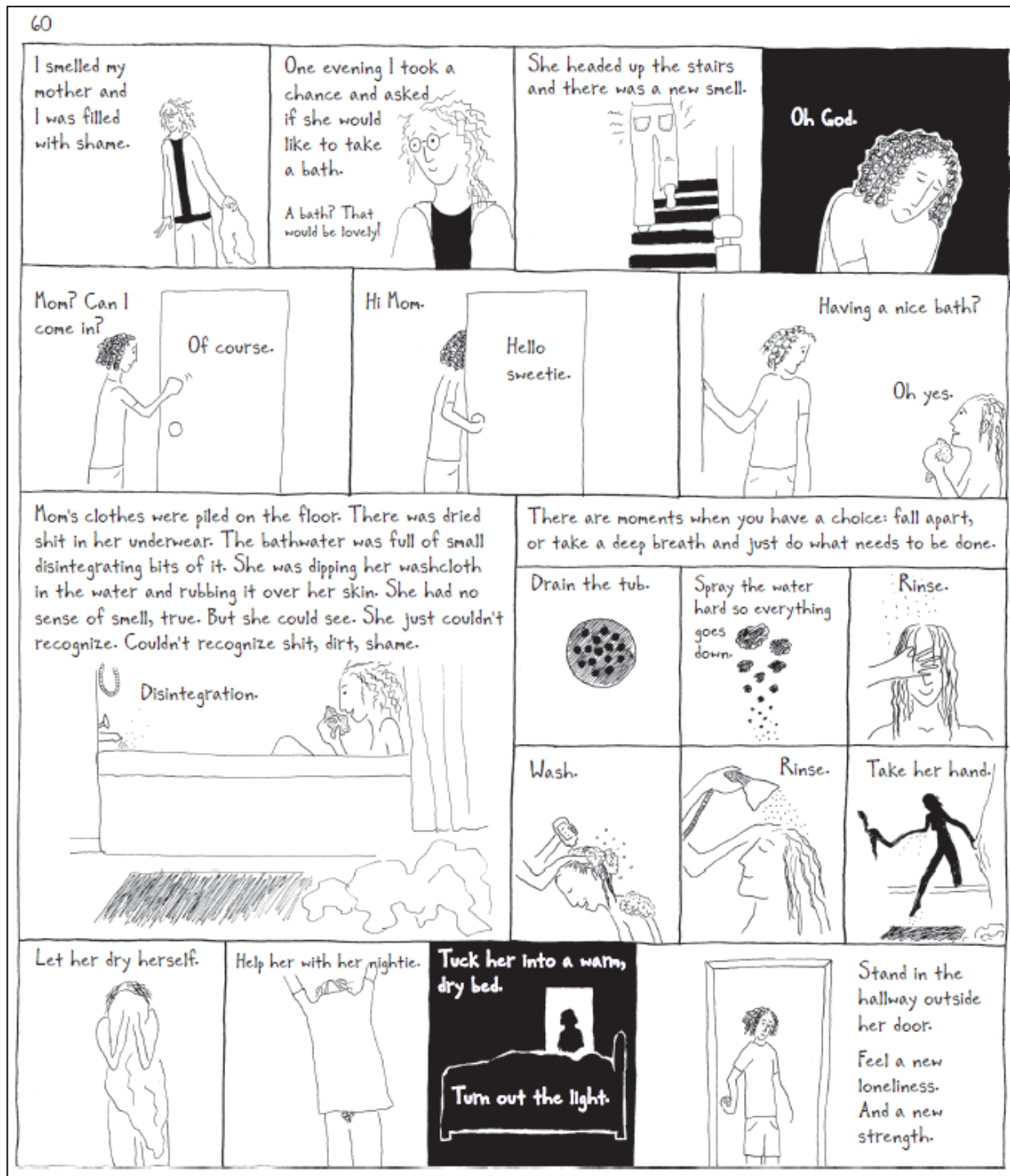


Figure 1. Excerpt from *Tangles: A story about Alzheimer's, my mother, and me*. Copyright Sarah Leavitt. Reproduced by permission of Skyhorse Publishing.

There were many ideas that I wanted to convey. First of all, just the sheer horror of finding my mother sitting in the tub, completely oblivious to the feces in the bathwater. Then the mechanics of the situation—what I had to do to get my mother clean; this sort of figuring out of logistics is a big part of why it's so exhausting to

care for someone with this disease. I also wanted to show some of what this meant for our relationship, what it meant for me as her daughter to do this kind of caretaking. And finally, I wanted to convey that this incident was a key part of my realization that I needed to grow up, and fast, if I wanted to be a real help to my parents.

In comics, words and pictures combine to form something new, a condensed and potent medium that has the ability to convey complicated stories and intense emotion. This is what I love about comics and what I tried to achieve with *Tangles*.

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Sarah Leavitt teaches in the Creative Writing Department at the University of British Columbia, Canada. Her first book, the graphic memoir *Tangles: A story about Alzheimer's, my mother, and me*, has been highly praised by literary critics, health professionals, and readers for its unflinching portrayal of Alzheimer disease. Leavitt is working on a second book.

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MEDICAL NARRATIVE

“The Best of Doctors Go to Hell”: How an Ancient Talmudic Aphorism Can Inform the Study and Practice of Medicine

Andrea Wershof Schwartz, MD, MPH

“Doctors help their patients make it through the ‘hell’ of disease and suffering,” offered a dark-haired student, her soft voice ending in an upward inflection, as if asking us if we agreed with her interpretation. In a light-filled room on the second floor of the Museum of Fine Arts, Boston, we sat together, a group of undergraduates led by a medical student and a resident, debating the meaning of a provocative passage in the Talmud that reads, “The best of doctors go to hell” [1]. We were engaged in this age-old ritual of interpretation as part of a workshop on the humanities and medicine, and I smiled thinking about the first time I had come across this strange phrase. I was then an idealistic undergraduate student, preparing to apply to medical school, seeking ways to connect my passion for learning medicine and caring for patients with my background in studying biblical and rabbinic texts. The troubling passage had grabbed my attention as unusual within Jewish texts and tradition, which overall reflect a very positive outlook on physicians and medicine.

The Talmud, a sprawling ancient collection of Jewish teachings, narrative, and law compiled over centuries, is replete with controversial passages that have been subject to generations of interpretation and commentaries. In fact, the very layout of a page of Talmud, in traditional typesettings of this 63-volume collection, conveys a type of conversation across generations of scholars and rabbis: the ancient text of the Mishna, dating from around the second century of the common era, sits in the center of the page, followed by later rabbinic commentary, and then surrounded by marginalia, font size growing ever smaller, added over the centuries, with modern editions continuing to ring the conversation. A delightful book by Jonathan Rosen, aptly titled *The Talmud and the Internet*, likens the hyperlinks on a webpage that take the reader to explore new windows and topics to the Talmud’s myriad rabbinic interpretations and digressions from the main topic that invite the reader to explore related ideas [2]. So when I came across this perplexing Talmudic line, “the best of doctors go to hell,” which actually appears in a passage about parents discouraging their children from certain undesirable career paths (apparently donkey drivers were considered particularly dishonorable by the ancient rabbis), I knew I could turn to the commentaries to find some ideas of how to interpret this phrase and what it might mean for physicians today.

My search to understand this cryptic statement took me through its long and rich history of interpretation. I drew on my graduate training in Jewish studies to decipher

the Hebrew and Aramaic texts, and found myriad explanations of this line, most of which contained some type of ethical exhortation to physicians to uphold the highest moral standards in their work. Over the course of my residency training, I've had the opportunity to study and interpret this phrase in diverse settings and have been struck by the amazing conversations it can spark about what it means to be a "good doctor."

During a session on ancient attitudes toward medicine at Harvard Medical School's Cultivating Humanism symposium last spring, an experienced physician laughed ruefully about the "hell" of medical training that must be endured to become a full-fledged doctor, while another understood this line to criticize doctors who treat the disease but do not care for the patient as a suffering person. Indeed, some ancient and medieval commentaries take the "best of doctors" to be a sarcastic reference to physicians who lack sufficient humility, believing they know everything and failing to ask for help when they reach the limits of their knowledge. Others interpreted "the best of doctors go to hell" as an indictment of physicians who would not treat patients who could not pay, perhaps reflecting the realities of the interpreters' time. Still others took a theological bent, describing physicians as arrogant, not respecting divine power sufficiently because they felt they could avoid illness in their own families by knowing how to practice hygiene and eat healthy foods or could even exert power over life or death.

Not all the ancient commentaries were critical of doctors, however. A medieval commentator who was also a physician, Nachmanides (also known as Ramban), used this passage to cite the dangers inherent in medical treatment in his day, writing that a treatment may help one patient but harm or kill another and that even the "best," most well-intentioned doctor may harm a patient or commit an error. A fascinating essay by an Israeli physician, Dr. Benjamin Gesundheit, includes a modern reading imagining that doctors who spare their patients harsh but potentially helpful treatments could be consigned to hell for missing opportunities to save lives [3]. Taken out of its original context, this passage has also been used to teach about the importance of empathy, of the best of physicians going "through hell" alongside their patients as they suffer through illness.

As I finish my residency training and begin fellowship training in geriatric medicine, the Talmudic passage serves as a cautionary call from ancient times reminding physicians to engage in constant learning and demonstrate humility in the face of the enormous complexity of both the human body and of our patients at vulnerable moments in their lives. The text and its many interpretations aside, the format of the Talmud itself emphasizes this message: just as the words of these texts convey subtle layers of meaning and can be understood in multiple different ways, so too can our patients' stories and symptoms. Studying ancient texts, and the humanities more generally, can help us sharpen our powers of interpretation and our sensitivity to nuance when it comes to caring for patients with complex conditions and hearing their personal narratives. Indeed, in both form and substance, "the best of doctors go to hell" offers timeless lessons on revisiting assumptions about what words mean,

and about the importance of humility, curiosity, and empathy for our patients, as we undertake the challenges and reap the meaningful rewards of being physicians.

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Suggested Readings and Resources

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