

The Imagination in Medical Education

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Next year's going to be even bigger, days will be brighter, nights longer and darker, more people dying, more babies born, and me in the middle of it all.

Ray Bradbury, "Dandelion Wine"

The medical school curriculum as it exists today cannot, by itself, provide the full education medical students need to become the best versions of themselves as physicians and human beings. Like every professional curriculum, it is focused on a narrow body of knowledge – in this case, medicine, and there is certainly a great deal of knowledge that every medical student needs to assimilate to qualify as a physician. But physicians are not mere technicians, who sit at a desk, laboratory bench, or computer console, eyes fixed all day on data streams. Instead, physicians get to know and care for human beings, and to do this well, it is necessary to explore and connect with persons, whether they be patients, families or colleagues. It requires not just a large fund of knowledge and battery of skills, but a well-honed moral imagination, the capacity to understand how health and life look to another human being.

Why don't medical school curricula excel at fostering moral imagination? There is simply too much anatomy, physiology, and pathology, too much medicine, pediatrics,

and surgery to get across. Moreover, the instructional methods of medical education, such as pre-recorded lectures and solitary study, are not conducive to the development of essentially interpersonal capacities, a problem severely exacerbated recently by the COVID-19 pandemic. Perhaps most problematic is the contemporary regime of medical assessment, with its heavy reliance on multiple-choice tests, which by their very nature hardly engage the moral imagination at all. There is a big difference between selecting the one best response and asking good questions, listening attentively, formulating and testing different hypotheses, and all the while learning about one's fellow human beings as one goes along.

To enable medical students to become the best physicians and human beings they can be, they need to extend their education beyond the walls of the contemporary medical school into families, communities, and ultimately, the human condition. The key to caring well for patients is to genuinely care for patients, and this means getting to know patients deeply – the ways in which each patient is both totally distinctive and shares certain essential attributes with every other. And this is where the arts come into

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play. In enabling us to get beyond the technical aspects of medicine into its human dimension, the arts have more to offer than science. To see why this is so, it is helpful to focus on a single form of art and a single artist. Consider a largely unknown resource located less than a block from the Indianapolis campus of the Indiana University School of Medicine.

This resource is the Ray Bradbury Center, which houses his office and library. Bradbury, who was born in Waukegan, Illinois in 1920 and died in Los Angeles, California in 2012, was one of the nation's foremost writers of fantasy, horror, science fiction, and mystery stories. As such, he loved books and believed deeply in their power to engage and enhance the imagination. Of course, these books were not textbooks or test preparation manuals, the learning resources with which the attention of many contemporary medical students is glutted, but something very different. Bradbury was thinking of novels, collections of short stories, and the like. He knew that to become fully human, a prerequisite to becoming a health professional in full, we must become more imaginative, and his writing aimed to expand and deepen the human capacity to see human situations and the world from alternative perspectives.

Bradbury spent his life with books, not because he was a bookworm but because he knew they are the best resources available to expand the human imagination. We can never become another person, but we can imagine how another person sees the world, feels about it, and wishes it would be. Imaginative literature allows us to glimpse the full range of human possibility, to consider how our lives might turn out if we pursued different paths, what it is like to give in to and resist various forms of temptation, and what, ultimately, we aspire to contribute through our lives. It is impossible to become a good investigator, whether in the examination room, the laboratory, the classroom, or the boardroom, without continually nurturing and developing one's imagination. We must imagine how life could be different before we can fully appreciate what it is.

Consider perhaps Bradbury's best-known work, *Fahrenheit 451*, named after the temperature at which book paper ignites. Superficially about book burning, this 1953 novel imagines a dystopian world in which human imagination has been criminalized. "Schools," he writes, "are turning out more runners, jumpers, racers, tinkerers, grabbers, snatchers, fliers and swimmers instead of examiners, critics, knowers, and imaginative creators,"

and the world "intellectual" has become a "swear word." To prevent people from discontent, they are molded to consider only one side of a question. The burning of books represents the effort to destroy the human imagination. To this poisonous, dehumanizing vision of human life Bradbury offers a powerful antidote: "Stuff your eyes with wonder. Live as if you'd drop dead in ten seconds. See the world. It's more fantastic than any dream made or paid for in factories."

Our most valuable resources in medicine are not the budgets by which we too frequently presume to set boundaries on the possible, the physical plants of office buildings and hospitals that would be nothing more than empty shells if patients and those who care for them did not report there, or the sophisticated equipment found in intensive care units and operating rooms. Instead, our most valuable resources are people and the stories they tell, which teach us what we really are, how we fit into the greater scheme of things, and what it means to be really grateful for it all. >>

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Consider these words of Bradbury:

Every so often, late at night, I come downstairs, open one of my books, read a paragraph and say, My God. I sit there and cry because I feel that I'm not responsible for any of this. It's from God. And I'm so grateful, so, so grateful. The best description of my career as a writer is "at play in the fields of the Lord." It's been wonderful fun and I'll be damned where any of it came from.

Applied to health professions education, we should focus less on students' capacities to reproduce countless facts and operations and more on nourishing their imaginations. They must learn not only to extract relevant facts from the patient's history, physical examination, and laboratory findings, but to imagine themselves in the place of their patients, to glimpse what a disease, injury, or disability means in the larger context of the patient's life, and above all in situations where hopes for recovery and cure have been exhausted, to give them their full attention and be fully present with them. Bradbury wants us not only to act, to fix, and to make, but to witness, imagine, and wonder. A career in the health professions is a profound human privilege, a ring-side seat at the human drama, and it would be a terrible waste if students' capacities to recognize and respond to it languished untapped.

In the field of medicine, what books might best promote this goal? To understand the implications of our shared vulnerability to disease and injury, the ineluctability of mortality, and the range of ways human beings can respond to them, medical students can turn to no better source than Homer's "Iliad." To understand how a physician's good intentions can be warped by outside pressures and decline from neglect, there is no better text than George Eliot's "Middlemarch." To glimpse what it is like to pass through the gauntlet of mortal illness and some of the insights it can spawn on

how to live, it would be difficult to beat Tolstoy's "The Death of Ivan Ilych." And Albert Camus' "The Plague" does a superb job of confronting its readers with the question whether physicians as healers are fundamentally aligned with or fighting against the forces of nature.

Short stories have an equally important role to play. Consider, for example, the shorter works of two great Russian authors, Anton Chekhov and Mikhail Bulgakov, both of whom were practicing physicians. Chekhov, who kept practicing medicine long after he had become a successful writer, composed such masterpieces as "Longing," often mistranslated "Misery," which beautifully explores the human need for someone with whom to share our difficulties and suffering in life, a call that all physicians should be well prepared to answer. Likewise, Bulgakov's "A Young Doctor's Notebook" contains the story "Morphine," showing how overwork, discouragement, and confusion can drive a physician to doom. In the same league are the short stories of William Carlos Williams, an American physician, whose tale "Jean Beicke" explores the indomitable will to life amid even the most desperate of human circumstances.

To burn books is to destroy ideas, and to destroy ideas is to miniaturize and superficialize the human mind and heart. Bradbury wants not sterile efficiency but life in full, and he wants it in abundance. In each human being, each patient and health professional, we find all of life refracted, and our mission as educators is not to simplify and streamline but to welcome and glory in this plenitude, helping health professions education and practice awaken, challenge, and nurture full human beings. To learn to be enthused about what is most worthy says far more about imagination than memorization. We must focus less on what is easy to teach and assess and more on what really matters most. In doing our part to foster such a vision of health professions education, we sustain and develop what is ultimately best in patients, physicians, and humankind.