The Moral Imperative: Bioethics Education for Physicians and Scientists

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As an aspiring physician, I craft my undergraduate course schedule meticulously based on the exhaustive laundry list of required pre-medical courses, ranging from organic chemistry to mechanics to statistics. Like the countless other premed students at Harvard and all across the country, I am expected to be proficient in all of the above areas, but amidst this long list of core competencies is the glaring lack of one subject — bioethics.

At Harvard, I have been lucky to enroll in courses that would completely change my outlook on medicine and science at-large. One course in particular stood out — "Biotech Ethics" was a class where we'd discuss the ethics of emerging technologies, from genetic engineering to artificial wombs, from dilemmas as presently prominent as the high cost of prescription drugs to futuristic ponderings like designer babies. This course brought an entirely new, humanistic perspective to the rigorous pure science courses that had dominated our college experiences. We read Kant, Bentham, and Aristotle, but more importantly, we engaged in lively discussions with our classmates and professor, debating the most pressing ethical issues surrounding the very technologies we, as future physicians and scientists, would be involved in developing and democratizing.

These transformative experiences led me to ponder much more than the potential ills of a society populated by designer babies; I began to wonder how many students entering medical school, graduate school, or adjacent technological fields were void of ethics education. Yet, this is merely a symptom of an education system that fails to prioritize ethics education — not a single medical school in the U.S. requires bioethics as a prerequisite. While most medical schools do offer ethics in their curricula, students' exposure and engagement to the medical and scientific fields occur much earlier. Many students begin joining research labs and shadowing physicians from their undergraduate years, and sometimes even before then. Building a strong foundation in ethics starting from the undergraduate years reinforces the idea that ethics is a nonnegotiable skill set for future physicians. Hence, bioethics ought to be required for premedical students and highly encouraged for all undergraduate students entering adjacent scientific and technical fields.

Conversely, there are many risks that arise from a failure to promote bioethics education among medical professionals. Among the most haunting case studies we discussed in class was Purdue Pharma's orchestration of the opioid epidemic, contributing to the death of over 645,000 people. To boost sales of the highly addictive opioid painkiller Oxycontin, Purdue Pharma aggressively marketed Oxycontin to physicians. Studies have shown that physicians who received payments from opioid providers tended to prescribe substantially higher quantities of oxycodone and hydrocodone. While many doctors were deceived by false advertising, the exacerbation of the opioid epidemic by physician prescribing tendencies have garnered significant national attention, with 12 physicians being charged with the illicit distribution of 6.6 million opioid pills and submission of $250 million in false billings. In the face of corporate ethical breaches, we need physicians who will stand as bulwarks of morality in protection of their patients. While it may be naive to claim that a more robust bioethics education could have prevented these crimes, we cannot discount the need for greater emphasis on bioethics as a foundational principle for future healthcare professionals.

The consequences of insufficient bioethics education are perhaps equally dire for those working in adjacent scientific and technology fields. Similarly haunting was the role of McKinsey in aiding and abetting Purdue Pharma's stronghold over the opioid epidemic. In class, we scoured through slide decks to find what can only be described as ruthless "business tactics" to drastically increase opioid sales, poisoning the American public. Eventually, McKinsey paid nearly $600 million in damages for its role in "turbocharging" OxyContin sales. Yet, the cognitive dissonance was palpable in that session — we all knew that countless classmates of ours are eagerly anticipating consulting return offers and may go on to advise companies engaged in ethically questionable practices. 63% of Harvard's graduating class of 2020 joined a consulting, tech, or finance firm, many of whom graduated without extensive exposure to tech or biotech ethics. It is troubling to imagine a future class of business and technology leaders who may lack the judgment to critically evaluate the ethical consequences of their actions, ruthlessly pushing forward in pursuit of profit.

To me, the greatest benefit of an education in bioethics is not simply to be able to recite moral principles, but rather, to develop critical reasoning about the deep moral controversies that surface in a world where technology outpaces regulation. Even today, we grapple with countless avenues of technology that have stumped policymakers in terms of ethical regulation, with AI being the most evident. Every ethical misstep adds another crack to Pandora's Box, potentially spreading unease and concern throughout society. The examples are unfortunately plentiful — from Pfizer's trovafloxacin testing on Nigerian children to He Jiankui's genetically altered babies. Hence, it is not enough to retroactively govern through ethics boards, which provide slaps on the wrist as ethical breaches are committed. Instead, our current approach must be supplemented by robust ethical training for each future physician and scientist starting from their undergraduate years.

It is not too much to expect premed students to be at least as proficient in bioethics as they are in electricity and magnetism. It is not too much to expect graduate students entering scientific fields to be at least as proficient in tech ethics as they are in calculus. As those who have the capacity to be on the front lines of innovation, whether it be in the clinic, lab, or conference room, our society needs a generation of careful thinkers who set ethical boundaries as we navigate the exciting technological advances of the future.