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December 19th, 2024

Student Essay Competition 2024

The topic of this year's Student Essay Competition was "Will advancements in technology make me a better doctor?"

1st place: Ellen Ni Chinseallaigh, UCC.
2nd place: Alex Raducan, UCD,
3rd place: Jason Dowling, UCD.

L-R: Ellen Ní Chinseallaigh (UCC) winner of the student essay competition pictured with Dr Leo Varadkar, and Alex Raducan (UCD), who placed second in the competition at the 2024 Doolin Lecture, RCSI, Dublin 2 on Saturday 7th December.

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Will Advancements in Technology Make Me a Better Doctor?

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"The art of medicine consists in amusing the patient while nature cures the disease." — Voltaire.

Medicine exists at the intersection of science and art, where evidence meets empathy, and technology enhances intuition. As a medical student in Ireland, I am aware of the long tradition of medicine in this country, where the doctor has historically been more than a healer—a confidant, a community anchor, and a source of wisdom. At the same time, Ireland has a proud legacy of innovation in the medical field. Revolutionary technologies such as the hypodermic syringe, developed by Francis Rynd in 1844, and the modern cardiac pacemaker, created with input from Irish-American inventor Wilson Greatbatch, serve as a testament to our ingenuity. As I navigate my journey to becoming a doctor, I find myself contemplating how these innovations, and the newer tools emerging in the digital age, will shape my career. Will advancements in technology make me a better doctor? Or will they simply make me a more efficient one? To answer this, I must explore how technology can elevate my abilities while helping me preserve the humanity that defines the art of medicine.

Before examining how technology might shape my future role, it is essential to reflect on what it means to be a good doctor. A good doctor is not defined merely by diagnostic accuracy or surgical skill but by the ability to truly see the person behind the illness. This is central to the theory of *Patient-Centered Care* (PCC), which emphasizes treating the patient as a whole person rather than focusing solely on symptoms. Yet, there is another, less commonly discussed framework—Virtue Ethics—that plays an equally critical role in defining a good doctor. Virtue Ethics, influenced by Aristotle's philosophy, suggests that a good doctor is not just technically proficient but embodies key virtues like compassion, courage, humility, and practical wisdom. The model emphasizes that moral character, rather than purely clinical knowledge, is central to excellence in medicine. As a medical student, I am beginning to realize that these virtues will guide me through situations that demand not only scientific expertise but also ethical judgment and emotional intelligence.

In this framework, practical wisdom (phronesis) is paramount. A good doctor, according to Virtue Ethics, must know when to apply medical knowledge and when to rely on intuition and experience, especially in complex or ambiguous cases. For example, practical wisdom may involve recognizing when to pursue aggressive treatment and when to prioritize the patient's

quality of life, understanding their values and preferences. This approach values the doctor's moral character and the development of virtues as much as their technical abilities.

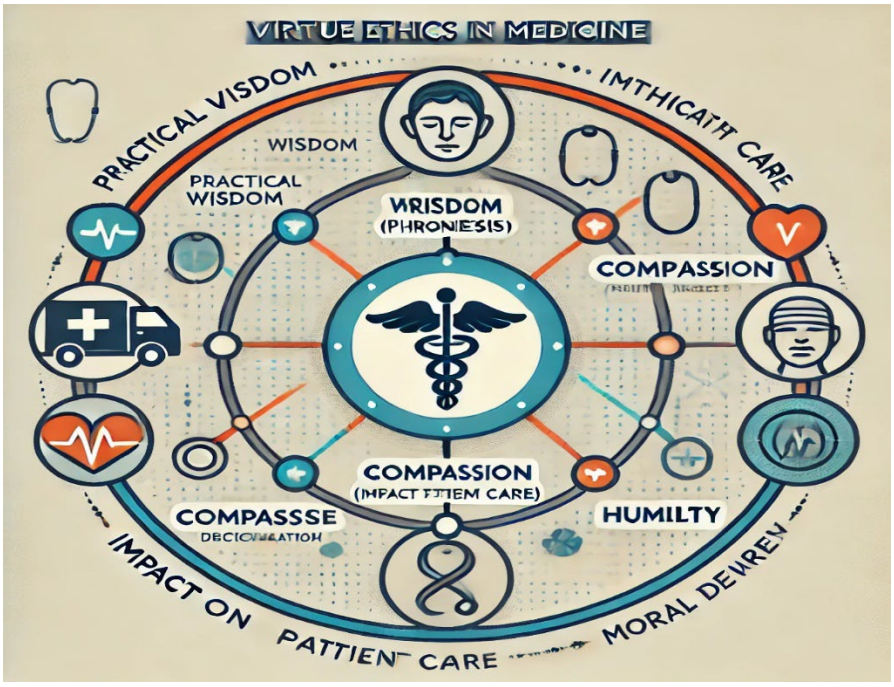

Image 1: Virtue Ethics in Medicine; It shows the central concept with the key virtues—Practical Wisdom (Phronesis), Compassion, Courage, and Humility—radiating outward and connected to their impact on patient care, communication, and ethical decision-making.

Reflecting on how far medicine has progressed, I try examining the issue from the other way around: if I had no technological skills and relied solely on the knowledge and abilities I currently have as a medical student, would I be prepared for the demands of modern medicine? The answer is a resounding no. I have already seen how technology augments my learning and enhances my developing clinical skills. Tools such as simulation labs and virtual reality scenarios allow me to practice procedures and clinical decision-making in a safe, controlled environment. Technology has not only accelerated my learning but has also given me a glimpse of how it can augment my future practice. Each tool I encounter—from electronic health records to bedside ultrasound devices—helps me envision a career where I can diagnose and treat patients with greater precision and speed.

Despite these enhancements, I remain fundamentally human. My effectiveness as a future doctor may be amplified by technology, but my essence will be rooted in my ability to connect with patients on a personal level, to listen deeply, and to bring compassion to moments of

profound vulnerability. This duality—being both technologically proficient and intrinsically human—defines the type of doctor I aspire to be.

Imagine a patient presenting with subtle symptoms such as fatigue, fever, and unexplained weight loss. Twenty years ago, diagnosing such a case required intuition and time-intensive testing, with the potential for missteps along the way. Today, advancements in technology offer transformative possibilities. Artificial intelligence (AI) can analyze patient data against millions of medical records to provide differential diagnoses almost instantaneously. As a medical student, I have seen how wearable technology and remote monitoring devices empower doctors to deliver care in new ways. Tools like continuous glucose monitors or heart rate trackers provide real-time data, allowing for proactive interventions. Such devices are particularly valuable in rural areas, including those in Ireland, where accessing specialist care may require extensive travel. Irish medical technology companies such as HealthBeacon have already developed innovative solutions to improve medication adherence and chronic disease management, making these advancements tangible in everyday practice.

Despite these advantages, reliance on technology comes with risks. Algorithms lack the nuanced judgment honed through experience. They cannot interpret the cultural or emotional context of a patient's life, nor can they capture the unspoken fears and aspirations that often emerge during face-to-face consultations. To truly leverage technology in my future practice, I must combine its computational power with the human insights gained from compassionate listening.

The integration of technology into treatment has revolutionized care, offering precision and personalization previously unattainable. Robotic surgery systems, such as the Da Vinci Surgical System, enable minimally invasive procedures with incredible accuracy. Advances in pharmacogenomics allow treatments to be tailored to a patient's genetic profile, reducing side effects and maximizing efficacy.

Irish medical research has also contributed significantly to this progress. For example, the invention of the hypodermic syringe by Dublin physician Francis Rynd laid the foundation for modern drug delivery systems. Today, cutting-edge Irish innovations, like bioabsorbable stents developed by companies with a strong presence in Galway, continue this legacy, offering safer and more effective treatments. While these technologies enhance my ability to provide optimal care, they also raise ethical and practical challenges. Many of these tools are expensive, and equitable access remains a pressing concern. As a medical student, I am learning that being a good doctor means advocating for systemic reforms to ensure that technology benefits all patients, not just those in well-resourced urban centers or private healthcare systems.

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Voltaire's observation about the art of medicine reflects a timeless truth: healing often stems as much from connection as from treatment. The patient-doctor relationship is central to this process, fostering trust and enabling open communication. Technology, however, risks disrupting this dynamic. Telemedicine, for example, became a cornerstone of care during the COVID-19 pandemic, bridging gaps in access and ensuring continuity. Yet, virtual consultations can miss critical nonverbal cues—subtle changes in posture, expressions of hesitation, or signs of frailty—that are vital to diagnosis. The screen, while convenient, introduces a barrier to the deep connection that defines good medicine. As a student, I see this challenge as an opportunity to develop my communication skills, ensuring that patients feel heard and understood even in digital spaces. By blending technology with in-person care, I hope to strengthen the therapeutic alliance, ensuring that patients feel cared for holistically.

Technology has the power to transform medicine, enhancing diagnosis, treatment, and patient outcomes. It enables me to learn faster, work more precisely, and reach patients in new and innovative ways. However, being a better doctor will require more than mastering advanced tools. It means preserving the empathy, ethics, and humanity that define the art of healing.

In the words of the poet Rumi, *"Let yourself be silently drawn by the strange pull of what you really love. It will not lead you astray."* For me, that love is the art of healing—an art that technology can illuminate but never replace.

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