Disrupt, innovate, and transform in the era of COVID-19

Today we live at an inflection point. For many, it’s a world where things change at amazing speeds, from a patient’s clinical status to a global position on risk mitigation. And it’s this rate of change that has caught us either unprepared or unaware. While this notion of speed is far from new, in today’s context, this speed is being defined by the emergence of COVID-19. Instant gratification is becoming less about gratification and more about a new normal driven by social and clinical necessity. Thus, I want what I when when I want it (IWWIWWIWI) may become a new clinical abbreviation that competes with the good old PRN. In this case, it’s I want what I want when I want it. Perhaps we can even extend this from I want to I need.

Some clinicians may remember the early days of arterial blood gas testing. The puncture of the radial artery with glass syringe, the bag of ice, and the rapid trip to the laboratory in the basement of the hospital defined an element of both technological sophistication and foot speed. Today, the glass syringe and quick footwork has, in many instances, been replaced by technology. But the story is much richer than a simple advancement of technology. This transformation has moved beyond just this blood test to the new reality of patient and consumer empowerment. Pulse oximetry has become the domain of both the physician and the consumer. Yes, I can check my oxygen partial pressure while I’m typing on my keyboard.

Technology is becoming less an option and more of an imperative. From robotic microsurgery to artificial intelligence used to read chest x-rays, traditionally human tasks are being supported—if not replaced--by technological advances. Technology now offers us the opportunity to enhance many aspects of clinical practice from physical agility to cognitive function. As technology and artificial intelligence advance, the burden of many aspects of care can shift, freeing up the clinician for a higher and richer level of patient engagement. The heavy cognitive lifting of medicine may very well be transformed from medical school and on up revealing a new dynamic that facilitates adaptive thinking versus that conventional element of bookish memorization.

Innovation and technology are now part and parcel of the practice of medicine. In many ways, has made us more human and these advantages extend to everyday tasks. Technology allows us to expand the richness of life to experience more sights, sounds, thoughts, and perhaps other senses that we have not even discovered. And it’s these same advances that will allow medicine to evolve the personal relationship that exists between clinician and patient, and even the relationship between clinician and technology itself. And these profound changes, driven by technological advances, that create a new and richer reality, expanding our perceptions and introducing new sensory and computational skills to our human armamentarium.

At the heart of our technological revolution are data. Some may argue that data are the new oil or even the new currency. But it might be better to consider data as a fundamental window into humanity. Just as the telescope and the microscope provided a new and eye-opening view of the universe, data will allow us to see vast connectivity and complexity that can define humanity. One simple comparison to today’s COVID-19 pandemic and we can quickly see how the role of data allows us to tackle this disease. From bench science to social distancing, data are our best shot to understand and mitigate this disease. Yet the tsunami of information is simply beyond the comprehension of any human, even that uber-human in the white coat. The solution is not to work harder but to work smarter, and shift the burden to technology and AI. When the shift happens, another magical event will emerge to the surprise of clinicians and patients alike, the rise of empathy and engagement. Clinical senses—partnered with human sensory activity—will allow clinicians to touch with robotic exactness, see with electronic lens clarity, hear with digital fidelity, and listen with exacting sensitivity. What emerges is nothing even close to robotic but the advancement and extension of human capability.

Today’s technology dynamic forces the clinician to engage with a computer screen with their backs turned to the patient. Tomorrow’s reality is that technology will drive aspects of care, like the physical exam, or peering into a microscope, and allow physicians to discover a richer and deeper relationship with medicine and mankind. And it’s this realization that allows us to discover that innovation and technology aren’t our masters, but tools to enhance our skills and improve care. In the final analysis, innovation is infectious and there is no cure.

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