

Virtual Mentor

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FROM THE EDITOR

Let There Be Light

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Recently, scientists were able to slow the speed that light travels to a near crawl. Using super cooled sodium atoms, Professor Lene Hau and her colleagues ultimately brought light to a momentary, but complete stop "It's nifty to look into the chamber and see a clump of ultracold atoms floating there. In this odd state, light takes on a more human dimension; you can almost touch it," Professor Hau reported in the Harvard University Gazette [1]. This extraordinary discovery shatters what was once considered one of the universe's great constants, the speed of light at 186,282 miles per second.

In our technology-driven society, such discoveries open the door to many practical applications. These include vastly more powerful computers and enhanced optical devices, as well as the possibility of more secure electronic communications that protect our medical, financial, and other personal information. At a more philosophical level, these enlightening experiments by Professor Hau fundamentally challenge our conception about the nature of our physical and biological reality, and force us to reexamine what we believe to be constant or inalienable in our everyday lives and society as a whole.

In the world of medicine, scientific advances and breakthroughs continually change how physicians learn and practice. But while the science of medicine is in constant flux, many believe that the art of medicine is based in large part on the fundamental nature of the patient-physician relationship. These fundamental features include the vulnerability that is created by illness and disease; and the information asymmetry between the lay and professional. Therefore, a physician's ethical and professional obligations are strongly shaped and dictated by the nature of the patient-physician relationship. But, what if these features of the patient-physician relationship are neither universal nor constant, how would this alter the physician's ethical identity and role when caring for the patient?

In this theme issue of the *Virtual Mentor*, we explore how advances in telemedicine, the Internet, and other emerging communication and computing technologies are challenging the fundamental conception of what constitutes a patient-physician relationship. To some, emerging technologies such as e-mail and the Internet provide patients with greater access to their physicians and empower them with readily retrievable health information. Few would argue that in rural and other underserved areas, a "virtual" relationship would be better than none at all.

But at the same time, others challenge the notion that an ideal therapeutic relationship can or should exist absent face-to-face contact, and are concerned that this physical distance between patients and physicians may accelerate a trend towards a more cognitive, less caring model of patient-physician interactions.

Beyond the implications of "virtual medicine" on the nature of the patient-physician relationship, these emerging technologies raise other issues such as the privacy and security of health information on electronic databases; a digital divide that further aggravates disparities in the health care system here and abroad; and new legal liability and economic reimbursement issues surrounding such activities. Thus, like the technologies of the past such as the telegraph, telephone, and television, new and emerging technologies in virtual medicine offer significant benefits, but also potential harms. Given our unprecedented reliance on technology today, our "love affair" with technological fixes must be balanced with the understanding that inherently human problems such as those in medicine cannot be remedied by technology.

With such rapidly changing technologies, the implications and consequences of "virtual medicine" are yet to be fully identified, let alone completely understood. We hope that this theme issue will shed some light on a technological evolution that will have revolutionary effects on how we learn and practice medicine. We expect that the ensuing online discussions will provide our readers with an opportunity to share their views and that together we can explore ways of addressing challenges when patients and their physicians interact and relate "online." As a little known philosopher once said, the path to enlightenment is, we hope, lined with lots of lamps - let there be light.

References

1. Cromie WJ. Physicists slow speed of light. *Harvard University Gazette*. Feb. 18, 1999.

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