Special Section: The Newest Frontier: Ethical Landscapes in Electronic Healthcare

Guest Editorial

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In the advent of the 21st century there can be no doubt that we have entered uncharted territory as we continue to employ diverse information and communication technologies (ICT) within healthcare. This is simply a matter of fact, at least for the Western world. But, as a question of value, what are the ethical and social ramifications of this healthcare trek? What assessments can we render on this murky, barely explored topography? A utopian answer is that ICT would deliver us to a technologic garden of healthcare delights. Here, health-related information and services abound and healthcare professionals and patients, under the protection of an electronic, global umbrella, operate in perfect harmony for the good of patients. A dystopian answer, however, is that the augmented use of ICT would abandon us in a technological abyss where patients and healthcare professionals are alienated from each other, where informational privacy is impossible, and, in the end, where healthcare is more about buzzing and whirring gadgets and less about people in need. These, of course, are antithetical and extreme views, but they do shed some light on both the hopes and concerns associated with healthcare's ICT-laden future.

The papers in this Special Section, without the hyperbole, also touch on both the hopes and concerns of electronic healthcare. The first two papers of this section deal with an emerging field known as bioinformatics. In the first article, entitled "Bioethics, Business Ethics, and Science: Bioinformatics and the Future of Healthcare," Ken Goodman and Anita Cava examine, from the points of view of bioethics and business ethics, the use of computers to collect and store personal genetic information. They argue that the relatively new field of bioinformatics is as much about business as it is about healthcare and that it would be a serious mistake to think otherwise.

Following Goodman and Cava's paper, Sheri Alpert's "Privacy Issues in Clinical Genomic Medicine, or Marcus Welby, M.D., Meets the $1000 Genome," focuses on the likely inclusion of genomic data in electronic medical records, potential threats to informational privacy, and the need for uniform standards for protecting identifiable patient information. Alpert, like Goodman and Cava, argues that the rapidly emerging field of bioinformatics raises a host of ethical, social, and legal challenges that need immediate attention.

On a very different topic, Kenneth De Ville's paper, "'The Cure Is in Hand'? The Brave New World of Handheld Computers in Medicine," argues that for nearly two decades observers have been predicting a much larger role for computers in the bedside practice of medicine. According to De Ville, the PDA

may have finally brought these predictions to reality. Although caution is advisable with regard to some uses of PDAs, De Ville claims that it is equally obligatory, ethically and legally, to identify those uses for which resistance to change is no longer professionally and ethically justified.

In the fourth paper of the issue, ''Ethical Challenges of Telemedicine and Telehealth,'' Bonnie Kaplan and Sergio Litewka explore various ethical and policy issues related to the use of telemedicine and telehealth systems. In particular, they look at issues of privacy, confidentiality, informed consent, and the potential for increased patient autonomy and independence provided by telemedicine and telehealth.

In Cynthia Baur's article, entitled ''An Analysis of Factors Underlying E-Health Disparities,'' she examines how the ''digital divide,'' the lack of access to information and communication technology, is itself a healthcare ethics issue as more and more healthcare services rely on ICT for their provision. Baur shows us that ICT disparities can and do translate into healthcare disparities.

The next two papers address the threats that information and communication technologies pose for personal identifiable health information and propose various principles and guidelines for minimizing such threats. In ''An Architecture for Privacy in a Networked Health Information Environment,'' Carol Diamond, Melissa Goldstein, David Lansky, and Stefaan Verhulst discuss how the creation of a networked health information environment leads to an increased threat of privacy intrusions, with a potentially devastating impact on healthcare quality and access. They describe the risks we face and propose a framework to minimize those risks. In particular, they propose nine principles to protect privacy in an information age.

In ''Organizational Repertoires and Rites in Health Information Security,'' Ted Copper, Jeff Collmann, and Henry Neidermeier report on a case study responding to an important breach of the confidentiality and integrity of identifiable patient information of the Kaiser Internet Patient Portal. They stipulate key elements required for protecting patient information and argue that, from the perspective of theories about highly reliable organizations, effective health information security programs must not only respond to security breaches, but also anticipate them.

Finally, in ''Net Effect: Professional and Ethical Challenges of Medicine Online,'' Art Derse and Tracy Miller explore the ethical, legal, and policy implications of practicing medicine online. The authors not only look at the benefits and challenges of practicing online medicine, they also identify the likely legal and ethical features required for establishing online physician–patient relationships.

The papers in this section provide a panoramic overview of the landscape of present-day electronic healthcare. In doing so, they may help guide us into unknown regions as we map healthcare's future by means of policy, technical standards, funding, and ethical ideals.