This section features original work on the ethical, legal, policy, and social aspects of the use of computing and information technology in health, biomedical research, and the health professions. For submissions, contact Kenneth Goodman at kgoodman@med.mimai.edu.

Introduction: Symposium on Ethical Issues in Data Science and Digital Medicine

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Whether patients are aware of it or not, electronic health records (EHR) will affect their care and treatment more than any other technology.

At ground, and perhaps at worst, EHRs are mere isomorphs of the decrepit and dysfunctional paper chart, and their earliest versions were designed more for billing and scheduling than for improving patient care. Some are difficult to use, and endure no small amount of well-earned opprobrium.

At their best, they will improve efficiency in retrieving and analyzing patient records, enlighten hospital operations and quality improvement, foster and shape "learning healthcare systems," and collectively serve as a source of vast amounts of data and information for biomedical research. Until then, at least, the EHR industry is a rich source of ethical and policy challenges. As hundreds of companies make computer-based patient record systems, competition is robust, and communities of academic researchers are working to advance the science of biomedical informatics.

Simultaneously, there is a growth of interest in the ethical issues emerging from, or elicited by, the use of computers in healthcare.

Emerging and evolving technologies are often the source and sometimes the sustainer of bioethical inquiry and analysis. A parallel phenomenon influences policymakers and legislatures seeking to metabolize and act on technological change.

Unfortunately, it has become commonplace to observe that both ethics and policy tend to lag behind emerging technologies.

Fortunately, health information technology provides a rich source of material for the ethics and policy communities. To recall the list from the inauguration of this special section of the *Cambridge Quarterly of Healthcare Ethics*,[1] these issues include

- Bioinformatics, biorepositories
- The business of health information technology
- Decision support systems and prognostic scoring systems
- Disability and health informatics
- EHRs
- Government regulation of health informatics tools
- Information and communications technology (ICT)
- International issues, including harmonization and best practices

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- The Internet and the World Wide Web
- Laboratory information management systems
- Mobile health
- Personal health records
- Privacy and confidentiality
- Professional–patient relationships
- Public health informatics
- Remote presence healthcare and medical homes
- Replication of research results
- Research and informatics
- Responsible conduct of research (RCR)
- Robots and digital/virtual companions
- Safety, quality, and evaluation
- Social networking
- Software engineering and writing

As much as or more than organ transplantation, genetics, or end-of-life care, for example, health information technology is a fertile ground for ethical analysis: analysis that should guide policy.

Unlike other technology-driven ethical issues, those shaped by health information technology are for the most part not influenced by political or religious values. One can infer little or nothing about a writer's politics or religion by that writer's arguments regarding privacy, the clinician–patient relationship, or the appropriate use of diagnostic expert systems, for example.

It should not go unnoticed that EHRs, big data, and other topics are emerging as cornerstones of conferences and workshops seeking curricular innovation. This is a good and wholesome development, and it augurs a rich and useful literature and engaging pedagogy. Following is a symposium of selected reports[2] addressing the issues of EHRs and patient confidentiality, the use of patient portals to access health information, and the alleged loss of "narrative" in clinicians' notes and reports. The symposium gives a sense and flavor of the breadth of ethical challenges posed by the rapidly expanding use of an exciting and promising new technology.

Notes

1. Goodman KW. Addressing ethical issues in health information technology. *Cambridge Quarterly of Healthcare Ethics* 2015;24:252–4.
2. Comprising part of the "Ethical Issues in Data Science and Digital Medicine" conference held in 2014 at the Icahn School of Medicine at Mount Sinai, New York, New York.