

Virtual Mentor

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Does Health Information Technology Dehumanize Health Care?

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Many authors lament that the entry of health information technology (HIT) into health care is likely to make medical practice more impersonal and less humane [1]. We are all aware of instances in which the availability of technology can lead to depersonalization of health care. The availability of CT scans might encourage doctors to neglect thorough history taking and neurological exams in the evaluation of headache. Echocardiograms might lead to declines in auscultation skills. Likewise, HIT could erode human interactions in clinical care.

The danger is that developers, lawmakers, researchers, and quality organizations, in their zeal to demonstrate “meaningful use” of HIT, might establish design requirements for systems that mandate such extensive documentation at every visit that it eats up the already limited time doctors have to actually care for patients. The most common concerns about HIT have little to do with the technology itself, but everything to do with design principles and implementation.

New technologies are simply new tools. Humans have been using tools for a long time. Whether a new tool adds to or detracts from our humanity has less to do with the tool than it does with how and why we choose to use it.

Effect on the Patient-Physician Relationship

Concern that new technology might interfere with the patient-doctor relationship is nothing new. In the 1700s, many physicians worried that the invention of the stethoscope would depersonalize care by allowing a physician to listen to the patient’s heart at a distance rather than placing an ear on the patient’s chest. In the early 1900s, doctors were concerned that Harvey Cushing’s sphygmomanometer would “intervene between patient and doctor” and “dehumanize the practice of medicine” [2, 3]. These concerns are understandable, but depersonalization of practice does not necessarily accompany the introduction of new technology.

Today’s “dehumanization” worry centers on documenting patient information on a computer. The truth is that excessive emphasis on documentation can occur even when a paper chart is used. We have all known doctors who kept their noses in the paper chart for the entire visit, completely avoiding eye contact and emotional connection with their patients.

One of the upper-level resident colleagues in the primary care practice where I trained was famous for his ability to legibly write down a full patient history while

maintaining eye contact with the patient nearly the entire time. His patients felt like they were getting his full attention; yet his charting, which he completed in patients' rooms, was impeccable. I've never seen anyone do it better. If we adopt a tool we must be determined to learn how to use it well and for its proper purpose. Both paper and electronic charts are like musical instruments: they require practice to use effectively. Even a good tool can be used poorly.

The scientific literature also suggests that the impact of HIT on patient-centered care is highly variable. Although some studies suggest that use of electronic medical records can adversely affect doctor-patient communication [4], most studies find neutral or positive effects on patient satisfaction [5]. The effect of HIT on communication depends on highly variable design features and implementation.

Effect on Quality of Care

Electronic health records (EHRs) and health information exchanges (HIEs) are purportedly designed to reduce medical errors, make documentation easier, and facilitate the exchange of health information so that it is readily available at the point of care. Optimally deployed, HIT should reduce documentation time, automate critical processes in preventive and chronic disease care, and reduce medical errors. These are good purposes.

Unfortunately, while some studies show that HIT systems can achieve these purposes [6], the literature is rife with examples in which HIT has failed to do so, and recent evidence suggests that EHRs have done little thus far to improve ambulatory care quality [7]. Consider the following case.

Case 1. A 19-year-old woman went to a specialty doctor because of difficulty equalizing ear pressure when flying or swimming underwater. Before she saw the doctor, she spent 30 minutes filling out forms and providing insurance information and underwent complete audiologic testing, despite having no hearing problems. Finally the doctor examined her, talked with her, documented his findings in a state-of-the-art EHR, and referred her to his colleague down the hall. Before she met the second doctor, a nurse prepared her for a nasal endoscopy by packing her nose with gauze laced with analgesic and a vasoconstrictor. The patient felt nervous because she didn't understand what was going to happen.

She was escorted into the second doctor's examining room, but he was busy documenting patient information and didn't look up from his computer for several minutes. He performed the nasal endoscopy, taking plenty of time to explain her prognosis and the alternatives she might take in treatment. During the course of her 3-hour visit she was given acoustic reflex testing, tympanometry, and the nasal endoscopy. The results were all dutifully recorded in the clinic's EHR, and a flurry of computer-generated letters arrived a few days later. The clinic was thorough and provided excellent advice, but the young woman left the clinic with more "care" than she had bargained for and a bill for about \$1,000.

The competent and thorough doctors in this case were engaged in electronic documentation and the use of technology. But the case hints at an insidious problem. While the use of the latest HIT was apparent at every phase of her visit, its purpose was less clear. Was the clinic's use of HIT improving the patient's care, or was it functioning primarily as a tool for billing and profit generation, defensive medicine and malpractice avoidance? From the patient's perspective, the purpose for which the HIT is employed determines its benefit.

Effect on Privacy

In addition to fears about quality of care and the patient-doctor relationship, some worry that EHRs may lead to loss of privacy or the misuse of personal information. EHRs must be designed to minimize that risk. No tool is failsafe; in the wrong hands, even a pencil can be used as a weapon. All technologies need safeguards—regulations or guidelines on proper use—to protect us from abuses of the new powers these technologies give us.

The Health Information Portability and Accountability Act (HIPAA) laid out stringent privacy rules for electronic health information, but HIPAA is a long and extraordinarily complex set of rules. It is up to professional associations and trade organizations and is ultimately a core function of the government to ensure that effective rules are designed and established to protect patient privacy. At the same time, we all have a strong interest in making sure that these rules are economical, simple, and not excessively proscriptive.

Will Computers Take over Medical Practice?

A computer takeover is unlikely. Patients' desire for emotional connection, reassurance, and a healing touch from their caregivers is well documented and longstanding [8, 9]. Studies also demonstrate the effectiveness of the "therapeutic touch" of physicians who care and connect emotionally with their patients [10].

Nevertheless, some specialties may diminish in importance or decrease in size as information systems improve, while others will expand. In particular, most experts expect primary care to expand as HIT enables physicians to provide patient-centered, personal, and, at the same time, population-based care in the context of a medical home. Because information systems automate the mundane but essential tasks of preventive care and chronic disease management, they can give physicians more time to spend with their patients. For example, does it improve personalized care for a physician to use pencil and paper to calculate weight-based heparin dosing or to adjust medication dosing for renal clearance? Of course not. Automated drug-dosing systems save physician time for the important human parts of medicine, while augmenting patient safety.

Can Using HIT further Humanize Health Care?

Every other major industry in the world has employed industrial quality-control techniques and computers to standardize and improve products and services, a move that has led to continual improvements in available products, quality, efficiency, and

cost. Why has health care—one of the most complex of industries—been a laggard? Should it not be the first to embrace the enhanced capabilities available through HIT?

Experts suggest that physicians are among the most resistant to change of all professionals. They fear loss of control and want to see medicine remain a cottage industry. But, paradoxically, we may be able to provide more personalized care than ever for our patients if we have the courage to industrialize in the right way for their sake. We can utilize HIT to make sure that every patient gets the right care, at the right time, at the right place. People want to get health care wherever they are—close to home, in their homes, or far away. And numerous examples worldwide now demonstrate that HIT can enable connected doctors to deliver the best evidence-based care to every person they see. Here's an example.

Case 2. A 10-year-old American boy went to an emergency room in a small town in Italy after injuring his knee skiing. When he arrived with his family after 5 p.m., no receptionist was on duty. A passerby told his family to go directly into the patient care area of the emergency room. A physician visually assessed the child on arrival and promised to be with him in 30 minutes.

Thirty minutes later, she called the family into a room. He had a laptop open, and the family prepared themselves for the typical barrage of questions about insurance and employment before care began. Instead, she asked three things: boy's name, passport number, and address. Then she began to care for the boy. The physician obtained an X-ray only after performing a thorough physical examination of the knee, and took a few minutes to document in the EHR along the way. The family and child left better informed and reassured, and received a bill by mail a couple months later for about \$100.

In this example, the required EHR documentation supported the purpose of the visit, rather than becoming the centerpiece of it. The EHR was virtually invisible in the process of care because it was simply an extension of the physician's caring for the child. Yet it enabled the physician to deliver the needed care at the time and in the place it was needed—thousands of miles from the patient's home.

Most regions in Italy use electronic medical records in the ambulatory sector as well. Italian doctors regularly make home visits, day or night, and they use HIT to do it, bringing your EHR with them to your home when you are sick, so that you can, once again, get the right care, at the right time, in the right place. In this system, inappropriate and unnecessary emergency room visits are prevented, high emergency and hospital costs are avoided, and people get the care they need most when they need it: before they get deathly ill.

If we truly want to provide personalized and humanistic care, we can. We must avoid designing and using technology only to increase profit or help us avoid malpractice litigation. Whenever we are tempted to adopt a new technology, we should carefully

examine our own motives and those of the technology purveyor or seller. Unless we have clear vision and a goal of providing truly good care, we can never hope to use technology to its fullest potential.

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