

On the Same Page

Embracing the Digital Age

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When I was a medical student, one of our jobs on clinical clerkships was to arrive early in the morning before rounds and obtain a list of laboratory tests ordered for patients on the ward that day. We would draw their blood, label the tubes and take the samples to the laboratory. Prior to afternoon rounds, we would return to the lab and collect slips from small cubbyholes with the test results for each tube. The medical student was responsible for entering these data on flow sheets for lab tests in the appropriate section of each patient's chart. X-rays or other studies done that day would also be accumulated for presentation on rounds.

This system might seem quaint, but it had its advantages. Medical students got to know their patients, felt like an integral part of the team, and—compulsive as they are (and fearful of the Chief Resident)—usually made sure that all of the lab results were in the chart. For many years, use of paper records with handwritten entries by all members of the health-care team, supplemented by other paper records on lab results, imaging studies, pathology reports, outpatient visits, pharmacy records, billing and insurance information, etc., evolved in a patchwork fashion. But now, with the explosion of digitized information from widely disparate sources, this system is crumbling under its own weight. Moreover, we have come to realize that this approach to health records does not optimize patient safety and quality, timeliness or cost-effectiveness.

Each step in the process of obtaining, recording and transmitting a lab result is subject to error. Has the right label been completed on the right patient? Has the specimen been transmitted to the right lab, and have the correct data been recorded on the appropriate results slip with the right identifying information? Has this information been recorded correctly in the appropriate part of the medical record? Have the results been interpreted properly by the health-care team in the full light of all other available information on the patient? Has all of this been done in a timely fashion?

Lab results, of course, are only the tip of our health-information-system iceberg in 2009. Many patients have been harmed worldwide by misplaced decimal points on drug orders or by administration of the wrong drug due to sloppy handwriting. Cost has been dramatically increased by prescribing brand-name drugs when lower-cost generics are available. Many imaging studies and invasive procedures have been performed because the health-care team is unaware that the same studies and procedures were recently performed elsewhere, or does not trust written reports in the absence of the actual images. Overall efficiency and quality of care have been adversely impacted by highly variable approaches to the same clinical circumstance by different clinicians. Many studies in the literature have demonstrated the advantage—both to patient outcome and to system efficiency—of standardized order sets and standardized protocols for the management of common clinical situations.

For these reasons and others I'll detail below, we have begun a national search to fill a new position of Chief Information Officer for the Health Science Center and the UF&Shands Health System. This individual will be responsible for implementing electronic medical records (EMR) across our academic health center, and also for coordinating all other aspects of information

systems at the HSC and Shands. (We do not anticipate that any current IT staff will change their employer status, or their immediate supervisors.)

Recognizing the growing pitfalls of written medical records, clinicians, hospitals and health systems have been increasingly adopting uniform approaches to electronic records. An integrated billing function (one bill for many different services) is typically where institutions begin; lab results, imaging and pathology often follow. Outpatient health records and inpatient electronic order entry usually come next. System “prompts” around generic drugs, clinical protocols and other strategies to improve quality and reduce cost can be added. Often, however, the different systems don’t talk to each other—to use the current buzzword, they lack “interoperability.”

More recently, physician practices, hospitals and health systems have been implementing a more integrated approach—electronic medical records. Ideally, these systems either utilize the same platform or can be programmed to exchange information easily. Where is the University of Florida Health Science Center and the UF&Shands Health System on this continuum? At the moment, we use a combination of written medical records and multiple electronic systems that, for the most part, are not interoperable. One very bright spot is that, after 18 months of planning and significant financial investment, the College of Medicine’s Faculty Practice has begun to implement an integrated electronic medical record in our ambulatory practice sites. The inaugural EMR go-live occurred in August at the college’s Family Medicine practice at Old Town, and was an unqualified success. It will take approximately 24 months to extend the Epic electronic medical record to all of the over 35 UFP clinics. The EMR will provide a comprehensive platform for documenting and reviewing clinical care, ordering and reviewing diagnostic tests and e-prescribing, as well as offering a secure internal clinical messaging system for faculty, staff and patients. Benefit from the EMR should span our clinical, educational and research missions.

Over the past several years, the faculty practice group of the COM regional campus at Jacksonville successfully implemented an electronic medical record using Allscripts. The College of Dentistry has recently selected a new electronic clinic management system that will be installed in student, resident and faculty practice clinics, as well as college-owned clinics in Hialeah, Jacksonville and Seminole. The implementation will allow the clinical operation to transition to an electronic dental record in the near future. The College of Nursing is in final negotiations for purchase of a new electronic health record and practice management system for Archer Family Health Care, the college’s comprehensive, nurse-managed health center. Implementation is scheduled for the first part of 2010 and will include access to a national database of 30 safety net providers’ health-care outcomes, thus providing rich opportunities for research in addition to improvements in care delivery.

It is important that we integrate the EMR initiative of the COM faculty practice with Shands at UF (SUF), and that we achieve interoperability with the EMRs of the other HSC colleges. An integrated approach to electronic medical records is also an important goal for the Jacksonville campus. At SUF, the initial plan was to delay the implementation of a hospital EMR for a period of time. Due to the strategic advantages of EMR, however, its beneficial effects on patient quality and safety, and the federal decision to link Center for Medicare and Medicaid Services (CMS) reimbursement to “meaningful use” of electronic medical records, we decided to begin vendor selection, design and implementation immediately. I am pleased to report that this process is underway. The EMR system for Shands at UF will also include other North Central Florida hospitals in the Shands Health System.

Beyond electronic medical records, revolutionary change has occurred in the way we communicate and access information in the time between the Age of Aquarius of my medical school days and the current digital age. Yet, we have not taken full advantage. Those who wish to find out about our Health Science Center and/or the clinical services at Shands will not look at a brochure, or even call—the first thing they will do is visit our Web pages. That's certainly what I did when I was trying to find out about the place. Our plan is to make our Web site maximally user friendly. Make believe you're a patient and search for a symptom that you might have, e.g., knee pain. Where does the site take you? How much did you find out about knee pain and where you could go for help? Does the site convey integration between providers and hospitals, and also about our research in this area? Is there opportunity for interaction? Now make believe you're an applicant for one of the colleges, for one of our residencies, or for a specific area of graduate education. Does the material on the site entice you to move to Gainesville? Finally, make believe you're a researcher, a visiting professor, a news reporter—do our Web sites convey the excellence, breadth of resources and excitement of our academic health center?

We want to make these functions, as well as an array of others, easily available and navigable. Our e-mail system, and the areas of medical informatics, clinical research data base management, high-speed computing and "Web 2.0" interactivity, are also priorities.

Of course, in this process we will do our best not to lose the forest for the trees. Health care is ultimately about a relationship between two people—a clinician and a patient. And the science we do at an academic health center is intended ultimately to improve the human condition. What was true in the day and words of Albert Einstein—"it has become appallingly obvious that our technology has exceeded our humanity"—rings even more true today. We will strive to make sure that our technology is not an end in itself but a means to help us advance the art of science and medicine in the service of humanity.

Best regards,

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