Early in the morning on Saturday, April 2, a woman arrived at the DHMC Emergency Department suffering from abdominal pain. Her case marked a turning point for Dartmouth-Hitchcock: she was the first patient admitted using a new, comprehensive electronic health record (EHR).

Many DH staff compared this transition to an earlier milestone: the 1991 move from Hanover, N.H., to the then-brand-new campus in Lebanon. Twenty years ago, however, the primary change was in where people worked. Once they figured out where to go, their jobs remained largely the same. By contrast, says Todd Vogt, senior director of the conversion to the EHR system, implementing that transition has required changing how 7,400 people work—all from one day to the next, and without disrupting the care of patients.

To those outside the world of medicine, a new format for health records may not seem of great significance. But the change was about much more than record-keeping. A key goal of the switch to the new system, dubbed “eD-H,” was to improve the care patients receive; the process took years of preparation, thousands of hours of staff time, and an investment of about $80 million.

Despite the pervasiveness of technology in almost every facet of modern life, health care has remained surprisingly reliant on paper to keep track of patient care. A 2010 survey by the Centers for Disease Control and Prevention found that 50% of physicians use some form of EHR, but only about 10% use a system considered comprehensive. And the most recent rigorous survey of hospitals, published in 2009 in the New England Journal of Medicine, found that less than 2% of hospitals use EHRs in every clinical unit—as DH now does.

There are a number of reasons for this slow pace, including the complexity of patient care and the high cost of adopting EHRs. Dr. David Blumenthal, the national coordinator for health information technology in the U.S. Department of Health and Human Services, believes that “the widespread use of electronic health records in the United States is inevitable.” But, he admits, “inevitability does not mean easy transition.”

Federal legislation passed in 2009 allotted up to $27 billion over 10 years to encourage the switch to EHRs. Organizations that meet certain standards—called “meaningful use” requirements—will be eligible for significant payments from Medicare and Medicaid. In the case of DH, that could mean recouping about $30 million over the next few years. This legislation, explains Dr. Andrew Gettinger, a leader of DH’s transition, is just one of many reasons that now was a good time for DH to make the change to a new system.

Gettinger is an enthusiastic early adopter of personal technology, and he’s enthusiastic about the benefits of technology in health care, too. An anesthesiologist by training, he is also DH’s medical director of information systems and informatics. Having worked at DHMC since 1983, he has seen—and helped lead—a number of technological changes.

In the mid-1980s, DHMC developed its own software, known as CIS for “clinical information system,” to handle basic medical record-keeping functions, such as patient demographics, in some departments. Other units, including nurses on in-
The months leading up to the transition to the new EHR were intense. Every one of DH’s 7,400 clinical employees had to take up to 16 hours of training on the system—requiring over 1,300 hands-on classes, like this one—and then pass a proficiency test before being allowed to use it.

Gettinger also pointed out that the new system uses a number of evidence-based order sets, meaning it should be easier for caregivers to pull up the best available information about how to treat patients. For example, if a patient is admitted to DHMC because of a heart attack, eD-H will list all of the treatments that would typically be provided to such a patient, according to the very latest evidence. A doctor may decide to change some of those treatments based on the condition of history of an individual patient, but the expectation is that the evidence-based order set should help standardize care and cut down on medical errors.

He added that the fact that the data that’s entered into the system will be consistent regardless of the patient, caregiver, or location should make it easier to track the care provided across DH sites, to bill for the services provided, and to report on the quality and outcomes of care.

Vogt says it should also help make handoffs from one caregiver to another easier, because everything about a patient is in the system, so there is only one place a clinician needs to look to see everything about a patient.

In addition, the switch to eD-H is intended to improve patients’ own ability to access information about their care. Using a website dubbed “myD-H,” patients will be able to schedule appointments, look over their medical records from home, and see the results of various tests, among other functions.

But despite the benefits, it was clear that the transition was not going to be easy. Gettinger concedes that the strategy for the transition involved rolling out eD-H before it was perfect. “We’re going to go forward with a methodology that involves putting in place what we think is workable, but it’s still workable, but it’s not quite fully baked, but it’s good enough for clinicians to use it,” he said a few weeks before April 2. Vogt added that doctors and nurses had many good suggestions for improvements to the software, but that at some point it was essential to move forward, even if the system was not yet perfect. The plan is to continue to optimize it, but by fixing any pressing problems and then, over the long term, by figuring out how the system needs to be changed to make it work more effectively and efficiently. “The reality is, just get it out there and then see what you need to do to fix it,” Gettinger said before go-live. “It will be a little bumpy over the next couple of months, but we’ll be there.”

Dr. James Bernat, a neurologist, said in the days leading up to the transition that he was a bit apprehensive about how it would go. “I must say that the complexity of it and the learning curve to become well-versed is in greater than I’d anticipated,” he said. “It’s very complicated.”

Bennett, an expert on medical ethics, also expressed concerns that are relevant to the use of any EHR system. He is very conscious of the need to make patients feel that they—rather than the computer—have the attention of doctors and nurses. “I think engaging with the patient, looking at the patient, making the patient feel that this is about them is important,” he said. “Every—every—every other doctor and nurse at DHMC—went through hours of training to learn to use the new system, he acknowledged it would not be until he was using it with real patients that he would know with any certainty how it would go. “Until you’re really doing it, you’re not going to feel confident about it,” he said.

The plan was to start ringing. They were there to ease the transition by answering questions as clinicians called for help in using the new system. And, particularly in the first few days, there were many calls to answer. The “incident command center,” which was set up at the Medical Center and which was available to start ringing. They were there to ease the transition by answering questions as clinicians called for help in using the new system. And, particularly in the first few days, there were many calls to answer. The “incident command center,” which was set up at the Medical Center and which was available to
Sandra Dickau, the vice president of patient care, arrived at DHMC at 5:00 a.m. on April 2. She says the staff she talked to in the days leading up to the switch were both excited and apprehensive. In the end, she observes, it went well. “It’s a huge change for us, but in the inpatient side of the house we’ve done very well,” she says. “It has gone incredibly smoothly.”

One reason for that success, Dickau says, is that everyone remained focused on patient care despite whatever problems arose with the new system. “Our motto has been the patient first, each other second, and the chart third,” she says.

Both Orfanidis and Dickau cite a number of benefits of the new system, particularly the fact that every piece of information about a patient is now available within the electronic record, making it unnecessary to hunt through pages and pages of paper records to find relevant details. “The information will be so much more readily available at your fingertips,” Dickau says. And, Orfanidis adds, having electronic records gets around the infamous problem of doctors’ handwriting.

Merrens believes that eD-H also makes it easier for physicians to discuss a patient with nurses, as all the necessary information is readily available. But, he acknowledges, actually finding the information in eD-H can be frustrating. He compares the transition to driving a car in England. “You’re still driving a car, but the rules are totally different,” he says. Overall, he adds, “it was a little bit bumpy at the beginning,” but within a few weeks of the transition he had seen significant progress in doctors’ and nurses’ facility with the system.

A few physicians expressed deeper skepticism about the benefits of eD-H. One described the system as “clunky,” noting that it is less intuitive than CIS. The primary problem, he adds, is that it takes much longer to get anything done than it did before. He concedes that additional experience may make using eD-H more efficient, but he predicts that it will always take longer to get most things done in eD-H than it did before.

Another physician worried that every task requires so many steps that it will be difficult to conduct effective patient meetings, noting that a 15-minute appointment does not leave a lot of time to fill out all of the fields required by the system.

One resident was happy about the ability to access patient information from anywhere in the Medical Center but was finding it difficult to maneuver among the program’s many tabs and fields. Indeed, many doctors appreciated having so much data at their fingertips, but they seemed overwhelmed by the process of trying to find the most relevant information.

Gettinger acknowledges that learning to navigate in the new system is not easy. “It’s very complicated,” he says. “You can get lost very fast.” He thinks it will just take time for doctors and nurses to feel comfortable using it. He says he reminds them that it takes a lot of work to develop the ability to interact effectively with patients, regardless of whether a computer is part of the process.

Some of the precepts are pretty simple, he says—don’t look at the computer during the first few minutes of an interaction with a patient, make eye contact, try to establish good rapport early on. “The computer is an easy fall guy” for bad interactions with patients, he adds.

Some physicians have also expressed doubts about the long-term benefits of the system, pointing out that there is not a lot of published evidence showing that EHRs actually improve patient care. But Gettinger believes that the ability to gather standardized data will eventually lead to improvements in care. He says that being able to show continued on page 61
Years of change & suffering
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Dartmouth-Hitchcock Medical Center, Lebanon, NH

Remembrance
The nation was not long in waiting to commemorate the Civil War after the cessation of hostilities. Memorials were built and encomiums were offered to the living and the dead of both the North and South.

In 1913, the Dartmouth Class of 1863 raised funds for a large bronze plaque listing the name, rank, and unit of all 56 classmates who had served in the Civil War—including three who had fought for the Confederacy. The College then had a similar plaque made, as a companion piece, listing by class the 73 alumni who had died in the war—63 for the Union cause and 10 for the Confederacy. Including the names of troops from both sides is “very rare on war memorials,” according to the late Charles Wood, Dartmouth’s Daniel Webster Professor of History, in A Guide to Dartmouth War Memorials. “It must be remembered, though,” Wood explained, “that this memorial was created only in 1913, a half-century after the event and at a time when the elderly veterans of both sides were beginning to hold joint encampments at major battle sites where for the first time they found it possible to salute each other’s valor and honor.”

Today, 150 years later, the Civil War still maintains an almost unmatched hold on the imagination of Americans. Each year, millions of people visit Civil War battlefields and museums, research ancestor who fought on either side, and even visit the war memorials, watch Civil War-related films and television programs, read a seemingly unending stream of books and magazine articles (including this one!), and collect artifacts, photographs, and ephemera.

The Civil War sesquicentennial, which runs from 2011 to 2015, will likely spark, renew, and intensify interest in the now-long-ago struggle. Thankfully, recent scholarship and the challenges they faced.

Nevertheless, myths still prevail among the general public. There is more yet that can be learned, and shared, about those “years of change and suffering.”

On the Record
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Doctors who have patients cared for by other doctors is a powerful way to inspire changes that can lead to better care. “The value of an electronic health record is that you are able to acquire that actionable data and then feed it back to the clinical communities for them to make changes,” Gettner says. He notes that CES was able to track some basic measures, such as a list of medications and a patient’s height, weight, and other similar information, but it could not be used for more sophisticated data-gathering.

The ability to collect and analyze data is also integral to DH’s involvement in a new national program—the High Value Healthcare Collaborative, a collective effort by leading health systems to compare the quality, outcomes, and costs of care for a number of common conditions, such as knee replacements.

For more about this initiative, see dartmed.ed/1v102.

Following go-live for eD-H, Berner said that the transition had gone about as he expected. It was taking time to master all of the features available in eD-H and to figure out how to use it. “You haven’t reached the end of the learning curve,” he added, “once we all learn how to use it well, I’m sure it will go smoothly.”

A early test of eD-H will come when the organization attempts to qualify for federal “meaningful use” payments later this year. The initial standards that must be met in 2011 and 2012 include keeping track of patients’ demographics, information, as well as safety features such as checking for potentially dangerous interactions among the medications a patient is taking.

Starting in 2011, there will be still more requirements, which could earn DH and other institutions additional payments. And, by 2015, the Centers for Medicare and Medicaid Services will likely penalize organizations that remain unable to meet the meaningful use requirements.

Vogt says eD-H has everything needed to earn meaningful use payments—it’s up to staff to be sure the system is used effectively. “It’s not a technical issue, it’s getting folks to change,” he says. “And I think we’re going to be successful.”

Gettner, as he admits, shows off his iPad and says it is possible that he is too technophobe. “He believes technology can be used to even greater effect in health care in the future.”

“Technology is going to become much more user-friendly,” he says. “It’s going to be much easier to bring it to clinical care.”

“This is a golden opportunity,” agrees Vogt. “But we don’t often get the funding and the staff for two years to think about how you want to improve what you’re doing. . . . I think we’ve done a good job of really leveraging all of the resources that Dartmouth has committed to making this a successful project.”

Despite the difficulty of the transition, Berner points out that the limitations of CES made it essential to change. “There are many roads to the same destination,” he says. Berner adds, mentioning the evidence-based order sets as but one example.

And Berner believes that merely making the transition was beneficial. “You look for challenging experiences to test your group,” he says. And this one, he maintains, “has strengthened our culture.”

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