Moving Gradually Toward a Paperless World

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by Mark Hagland

HIM professionals may not be totally ready for a paperless environment—but then again, neither is anyone else.

Linda Fischer Smith remembers well the days (after all, they were just a couple of years ago) when she and her colleagues in the health information management area at Kaiser Permanente-Colorado spent about 90 percent of their time tracking down paper records in and around 17 medical offices across the Denver-Boulder area. With 600 physicians, 2,500 staff, and 350,000 members, Kaiser-Colorado's medical network was constantly embroiled in search-and-deliver missions across a vast metropolitan area. Every day, say Kaiser-Colorado executives, couriers delivered 25,000 paper medical records across a 100-square-mile service area.

"It was crazy!" Smith recalls. "We had a pretty hefty courier system, and we used that system to locate and deliver charts across our service area. That included not only 17 sites where medical records might live, but also our home office and our archive storage site, which was in more of a warehouse setting. So when a patient made an appointment in an office that was other than his home office, we would courier that chart to another site. You can imagine when a patient would be seen, say, in a primary care physician's office, and then the next day in a specialist's office, often the patient would make it there and the chart would not." In short, she concedes, "We had huge issues with medical records."

Fortunately, all that began changing when Kaiser-Colorado began the rollout of its electronic medical records (EMR) system, which was completed by late 1998. At the same time, Kaiser-Pacific Northwest, the national managed care organization's Portland-based plan, finished its own EMR implementation. Now, very little paper needs to go from one place to another, and only a small vestige of the courier system remains, for very small numbers of documents that for a variety of reasons are still handled in paper form.

The implementation, Smith says, has been "hugely successful." In fact, she enthuses, "It's totally changed the way in which we deliver managed care." Not only has implementation of an EMR at Kaiser-Colorado made the lives of physicians easier, they now have "much better, more accurate information for decisions they make for patients," Smith says.

And that has been a key element in the initiative, says Andrew Wiesenthal, MD, associate executive director of the Permanente Federation, the Oakland-based physician organization affiliated with Kaiser Permanente and a key driver of the automation of medical records in both Colorado and the Pacific Northwest.

In the past, Wiesenthal notes, it was never possible for two physicians involved in the care of the same patient (a primary care provider and a specialist, for example) to look at that patient's medical record at the same time and consult on any issues. Now, such interaction is instantly possible. And, considering the volume of clinical information being circulated through Kaiser's medical clinic system in Colorado (Kaiser has contracts with three affiliated hospitals in Denver and Boulder, but owns none in that state)—in any one month there are 800,000 record requests of some kind in Colorado, with 200,000 new progress notes opened—"the idea that we could manage that traffic via delivery of paper records for so long was nutty, when you look at it," Wiesenthal says.

Of course, this positive and necessary change has clearly had an effect on how HIM professionals at Kaiser clinics in Colorado work. "Their jobs are completely different, and what they do is completely different," Wiesenthal notes. In the past, he says, "90 percent of their time was searching and delivering—that's what they did all day. Now, they do different things." Paper documents still flow in volume every day, but HIM professionals are spending much of their time scanning documents, cataloguing them for reference within the electronic system (a far more extensive process than might seem apparent at first, he notes), and managing the system.

Not surprisingly, the transition has had a major impact on the HIM work force at Kaiser-Colorado as well. The staff size went from 152 to 75; but, Smith notes, "We actually were able to find jobs for every single person," though many ended up transferring out of HIM and into other areas of the company. And those who remained in HIM, she says, have been enthusiastic and have adapted well to the change—one that, seen in hindsight, was inevitable.

Seismic Shifts and New Roles

The kinds of seismic shifts taking place at Kaiser-Colorado are beginning to appear everywhere in the US, as physician organizations, hospitals, and integrated health systems all move away from paper and toward automation to solve one of the healthcare industry's enduring problems—staggering piles of paper that only slow down the system and make clinicians' and patients lives more difficult.

The idea of going paperless is far from new. Some EMR systems are nearly 20 years old, if one counts their embryonic development through pilot projects in hospital departments, for example. On the other hand, true "paperlessness" doesn't seem to exist anywhere yet. Still, according to the HIMSS 2000 survey, 11 percent of hospitals and health systems in the US now report they have a fully operational CPR (computer-based patient record) in place, compared to only 2 percent in the 1999 survey.

Meanwhile, fully 25 percent of hospitals and health systems have developed a CPR implementation plan, and another 32 percent have begun to install CPR hardware and software. And this dramatic shift is affecting everyone involved in the healthcare delivery process, including HIM professionals.

What really is going on, as health systems struggle toward implementing EMR systems, and what does the trend hold for HIM professionals? Until recently, some industry experts were hesitant to discuss the implications of EMR development for HIM professionals, given widespread predictions of inevitable layoffs. But that reluctance to take on the employment issue is beginning to fade as the benefits of the transition are becoming more apparent. One expert who is comfortable with the discussion is Jane Metzger, a vice president in the Boston office of First Consulting Group, a leading healthcare information technology and strategy consulting firm.

"Years ago," Metzger recalls, "I heard expressed by medical records professionals a fear that their jobs were going to disappear; in fact, I believe the reverse is actually true. It's true," she says, "that very few places go totally paperless. What happens instead is that most organizations are looking to reduce their reliance on paper, and they want electronic data so they can do lots of exciting things with the medical record." Instead, apart from the very few organizations that approach paperlessness, Metzger says, the goal becomes a reworking of care delivery and health information processes toward greater efficiency.

And in fact that's where the new role of the HIM professional comes in, she notes. On one hand, Metzger says, some loss of traditional medical records positions is probably inevitable in some cases. But for those HIM professionals who remain, she says she is seeing the function "elevated to some degree with electronic records," particularly as physician offices traditionally had only localized paper records, not centralized office records. As at Kaiser-Colorado, she notes, electronic physician office records will require a level of management by HIM professionals that never even occurred before. In that area, Metzger says, HIM professionals can show their value within an electronically linked healthcare system.

In any case, as Kaiser's Wiesenthal notes, HIM professionals have two choices: they can either resist the change or lead it, but they can't prevent change from happening. He believes that database management, information search management, and tasks associated with facilitating error correction and managing security issues will be at the core of the new role of HIM professionals in the emerging world. Further, transcription and coding duties will continue and (at least in the case of coding) may expand to some extent. In that regard, as organizations of all kinds struggle through this transitional period with the medical record, Kaiser-Colorado's experience with its medical clinics network, though perhaps unusual in certain details, is broadly typical of the nationwide experience in this area.

Country Roads Become High-tech Roads

If Kaiser-Colorado found its old paper-based medical records system a hassle, the Roanoke, VA-based Carilion Health System, a multihospital, integrated system spread out across southeast Virginia, is a virtual poster child for the cause of medical

records automation. And though the Carilion system encompasses seven owned hospitals and several managed hospitals, the emphasis there, as at Kaiser-Colorado, has been on the outpatient EMR first, both because of the need for that innovation and because of the challenges still posed in the inpatient sector.

Speaking of the strong need for an EMR on the outpatient side, Greg Walton, the system's CIO, sums up by noting that "We're headquartered in Roanoke, and our territory goes north, east and west; you can drive eight hours and still be in our service area, which encompasses 100 patient care locations across 27 counties in Virginia."

In this regard, paperlessness is an even more dramatic need at Carilion, whose service area is even larger than that of Kaiser-Colorado. In fact, says Walton, "We already have seen benefits from the degree of paperlessness we've achieved to date. The classic benefit of paperlessness has to do with pharmacy, where a patient is moving from location to location"—seeing a primary care physician, then a specialist, then a pharmacist, for example—"and the need for electronic information and referrals is very strong. Clearly there are lots of reasons we're out deploying a paperless solution as fast as we can."

At Carilion, the electronic chart is established at a patient's first visit, and lab and pharmacy data are included in the chart as well. Perhaps unusually, the primary care group, chaired by a physician who has strongly advocated the EMR, has made it "basically a requirement that if you're staying with us, you'll use the EMR," Walton reports. Given that requirement (one that virtually all the physicians applauded), "we have guys that are doing things that are absolutely amazing," Walton reports. "People have gone to a structured record"—and, with that, the need for such services as transcription has plummeted.

Not surprisingly, at Carilion as at Kaiser-Colorado, the role of HIM professionals has changed dramatically. The entire health system, Walton notes, is organized around service lines, so the work of its HIM professionals has really come to transcend typical "departmental" responsibilities. In fact, Walton, says, the HIM professional at Carilion has really become an "enterprise-wide manager of the key data elements, regardless of whether they were being registered in the hospital or doctor's office." As a result, the HIM department, he says, is evolving into "the critical keeper of data elements regardless of where the patient is" with the responsibility of managing data and data elements throughout the system. It is, he says, turning HIM professionals there into "true enterprise players."

And with that new status comes new challenges. For example, patient registration is a different phenomenon when it takes place via preadmission for surgery, versus, say, admission to the ER for bleeding, versus registration for a routine physical at the doctor's office. Adapting the process to those diverse care settings, while making it easier for the patient and integrating the data the same time, is a challenge that falls heavily on the health system's HIM professionals, who are now busy doing things like proactively interpreting the "fuzzy logic" in Carilion's electronic master person index to match data and eliminate errors in the system.

In all this, he adds, a strong, increasingly interdependent relationship between the IT and HIM departments has been crucial to success. That will become even more true as the system moves toward an inpatient EMR in the next few years. For example, so far, the large emergency departments at the three largest hospitals in the system—Carilion Roanoke Memorial Hospital, Carilion Community Hospital, and Carilion New River Valley Medical Center—have been participating in the EMR rollout, with the EMR enabled by the scanning of existing and external paper documents.

The shift toward paperless happens in phases, of course, explains Carol F. Smith, RHIA, Carilion's director of HIM. "Our first endeavor in the hospitals is to get the three large emergency departments (EDs) onto the system via scanning of documents," she says. "Once we begin that rollout, we move toward paperlessness by creating those ED charts electronically and eliminating the need for paper storage. Meanwhile, the absence of a paper-filing process is itself a great benefit. Next, we'll be adding the outpatient diagnostic areas, and that will take a huge burden off us in terms of managing paper records." In the case of outpatient diagnostic charts, Smith adds, the body of the chart will be electronic, including all the radiology and laboratory reports.

Smith agrees with Walton's perceptions and says the change to the EMR been a major transition, but one that has been very successful thus far. It certainly has entailed a lot of changes, though, she's quick to add. On one hand, most HIM professionals at Carilion have kept their previous health information technician and specialist titles, but new job descriptions have been created as well—the position of team leader of the department's document imaging area, for example. In addition, weekend clerical staff have been trained to do scanning, and Carilion's HIM people are now coding online. Key elements in the department's work, Smith notes, now include accurate indexing and quality review of scans, as well as the scanning process itself.

In other words, even to date, the level of paper handling has already been drastically reduced, Smith says, and that transition will accelerate as different aspects of the system go paperless. At the same time, in addition to good computer training, Smith and Walton agree that designating a single point-of-contact person between HIM and IS has been a very effective strategy in reducing problems. As for the psychological transition for her HIM professionals, "It's been great," Smith reports, "in fact, they were champing at the bit—they were ready for something new." Within two months, she says, her team was up to speed in their new environment, with strong support from IS.

Learning Lessons in Half Measures

When it comes to inpatient hospital EMR installations, the staff at Stanford University Medical Center in Palo Alto, CA, have learned a number of lessons. The medical center had already laid the foundation for an EMR a few years ago, and then installed a clinical data repository late last year. Stanford is now also doing clinical results reporting via that system, and physician order entry will start at the beginning of next year. Meanwhile, physicians are viewing clinical data onscreen via electronically stored medical records information or are looking up scanned images and handwritten notes or forms, reports Russ Peckenpaugh, the organization's interim CIO.

With the gradual move into an EMR at the medical center, HIM professionals at Stanford are seeing their responsibilities change, as they have at Kaiser-Colorado and Carilion. The scanning and indexing of handwritten or paper documents currently is a major area of activity for HIM specialists there, though Peckenpaugh believes that electronic data management will eventually become more important over time. Clearly, though, any shift toward automation in an academic environment like this —Stanford Medical Center counts approximately 570 beds, making it very large as well as very academic—is by definition a major undertaking.

It's also required HIM professionals there to adapt to what everyone acknowledges is a transitional phase in EMR development. As Peckenpaugh explains, "If you come to our medical records room now, all you will see is space, as there's no longer a file room. On the other hand, we haven't implemented access to the scanned record yet on PCs; that's scheduled for this fall. So we end up printing the medical record on blue paper, give it to the doctors, and tell them not to write on that blue paper."

At the same time, about 60 to 70 percent of the information coming from patient visits and rounds at the hospital is still dictated into the organization's dictation system or even downloaded via the scanning of old-fashioned paper notes, which are later made available on screen, though this fall a Web-based product will allow Stanford physicians to actually go online and connect to such stored data.

"We made a mistake," concedes D'Arcy Myjer, director of HIM at Stanford. "We probably should have built electronic interfaces, so that the data moved directly into the system electronically. For various reasons, we didn't do it that way three or four years ago, so we're having to scan everything, which is very FTE-intensive."

Nonetheless, though the number of HIM FTEs has gone up to accommodate those scanning needs, Myjer says the number of FTEs will go down again "once we capture the electronic interfaces; so that's a lesson learned. When you're an early adapter of technology, you do things that others should learn from and avoid," he says. With that, he says, the number of HIM FTEs at Stanford will go down to 87.5, down from the current 120 and considerably lower than the peak of 160 reached several months ago.

At the same time, Myjer says, the process has become "very IT-sophisticated," adding that HIM professionals have made the transition to "information services providers as opposed to chart pullers or data collectors." In that regard, he says, "You become focused on how the customer uses the information, and so you're focused on how you can help the customer do their business and become an information services provider; you become more of a business." And, as at Carilion and Kaiser-Colorado, Myjer says that the partnership between IS and HIM at Stanford has been and will continue to be crucial to future success in his organization's EMR development.

Advice? Go with the Flow

Myjer, like Kaiser-Colorado's Linda Fischer Smith and Carilion's Carol Smith, agrees that the biggest challenges will really be cultural, organizational—even psychological. Getting HIM professionals to think in new ways, to rethink their jobs and careers,

will involve an ongoing shift in mindset that dwarfs the technical challenges—though training, education, communication, IS-HIM collaboration, and plain old good planning and implementation will all be crucial, they all agree. A dose of patience might help, too, says Linda Fischer Smith.

"We all learned to work very, very collaboratively with everyone involved" during the transition process at Kaiser-Colorado, she stresses. "You can't over-communicate, and employees want to know what the future is going to look like—even before we know what the future is going to look like!"she says.

Being straight with employees about possible layoffs and reassignments is vital, she urges (see "Tips for Moving into the Electronic World"). "And, quite frankly," she concedes, "service gets worse in the old system, which may in a way improve the transition, but it's always a very difficult transition period. And the more you can get people involved and recreate a sense of trust in the department and the process, the better off everyone will be." At Kaiser-Colorado, that has meant establishing a hotline for any physician who needs any kind of information from the old paper chart, with a guarantee that an HIM professional will pick up the call within 15 seconds and will fax something to the doctor within 15 minutes (a system, she notes, that is monitored and tracked).

Expect to see more transitions just like those taking place right now at Kaiser-Colorado, Carilion, and Stanford, says FCG's Metzger, with a particularly strong push in the outpatient/physician area, but with most transitions being somewhat fragmented, as at Stanford. "I think you'll see, through a combination of the rollout of some pretty comprehensive solutions, lots of rollouts of partial solutions," Metzger says. "And through those rollouts, I think you'll see much more rapid progress toward paperlessness on the outpatient side," while the inpatient EMR will see gradual development over time.

In all this, she says, "HIM people have an important role in making change." She urges HIM professionals to be leaders, not followers, in championing and leading change. Or, as Kaiser-Colorado's Linda Fischer Smith puts it, "I think the leaders in health information services need to be really enthusiastic and excited themselves about the future, because that is contagious. There's inevitably some mourning that goes on over the passing of the old process, and you need to allow people to do that. But I use as much change theory as I can in helping people to say goodbye to the old and say hello to the new."

It certainly beats a return to all those courier trucks—right?

Tips for Moving into the Electronic World

A broad consensus exists among health information management executives and information systems (IS) executives who are leading the transition to the electronic medical record (EMR)/computer-based patient record (CPR) at physician organizations, hospitals, and health systems nationwide.

Among the key pieces of advice offered by those working through the transition to the EMR/CPR, in terms of helping HIM departments and themselves move into the new electronic world, are these:

- **Embrace change, rather than resisting it.** The transition to electronic medical records is inevitable and accelerating. In fact, many of the changes will come on the outpatient side first, giving HIM professionals a broader range of responsibilities than before

- **Expect some layoffs and staff reductions, as the numbers of people needed to pull paper charts will decrease.** In many organizations, as much as 50 percent or more of the old paper-based medical records staff is being transitioned to electronic health information management or transferred to other positions within organizations (or, in some cases, laid off entirely). Yet what is already emerging is a new, upgraded cadre of true HIM professionals who are tracking and analyzing the flow of information, managing databases, and interacting with IS and other professionals across the entire enterprise

- **Create new partnerships.** Collaboration between IS and HIM departments and staffs is vital to the success of an EMR transition at every stage of the evolution. Organizations that can achieve partnership will find success, say experts, and those that can't will find the path much more difficult

- **Train, educate, and communicate.** These are key tools for HIM managers and executives to use in helping their staffs move into the new electronic world. The good news, those in the trenches say, is that most training experiences turn out to be positive and helpful and not incidentally help to create energy and enthusiasm within HIM staffs for the transition ahead

- **Make the process better.** Simply taking unworkable or dysfunctional paper-based medical records systems and automating them won't make them any more efficient, say those who've transitioned from paper to the electronic world. HIM professionals can be leaders in helping facilitate a transition to a better HIM system, through collaborative partnerships with IS professionals, clinicians, and others

- **Be patient.** Above all, leadership and patience will be required for the transition, those involved say. The broader, nationwide transition to EMR systems will be ongoing for the next several years. There are challenges and opportunities alike for HIM professionals in the transformation of health information management, and it's important for them to be proactive, not reactive, in helping to shape the new world in which they will live and work—along with everyone else

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