Revolution in Progress: How Technology Is Reshaping the Coding World

by Mark Hagland

As clinical coding technology advances, coding professionals' responsibilities and work environments are changing. Some coders are working from home, while others are taking on quality assurance roles. In all cases, a willingness to embrace change is a must.

Ask Pat Biesboer, RHIA, about the impact of advanced technology on the work lives of clinical coding professionals, and she'll offer first-hand experience. Biesboer, a senior project manager in corporate services at Allina Hospitals and Clinics in Minnesota, is overseeing a transition to home-based coding. Eight of the 11 Allina hospitals in the Twin Cities area are currently participating in the home coding program, which uses an ASP-based vendor and Allina's own coders. The service, which went live in March 2001, involves scanning and indexing paper charts and making them available to home-based coders through a secure Web site with a host of security protocols in place. At press time, 29 Allina coders—a third of the total across the eight participating hospitals—are now working from home.

"Our home-based coders have improved their productivity," Biesboer reports. "In terms of charts per hour, those are up 23 percent on average." That average covers a lot of territory: each facility has been recording a different level of productivity increase, and inpatient and outpatient averages differ. Still, increased productivity has clearly been one of the benefits of the transition. Cost savings have been another.

"Before we had home-based coding, some facilities were using in the hundreds of thousands of dollars every year on outsourcing," says Biesboer. "And we were not able to hire coders, and for that matter, didn't even have enough space if we were able to find them." In addition, Allina had established a special program with a local vocational college to educate and train coders to address the organization's coding professional shortage. Unfortunately, it wasn't meeting their needs: "We were ending up with inexperienced new graduates, not experienced ones," says Biesboer.

In short, she says, the ability to send coders home has increased productivity, lowered costs, and, not incidentally, improved the quality of Allina coders' work lives by eliminating long commutes and related hassles.

Roles Change as Technology Evolves

Allina's experience with home coding is being repeated across the country, and with enormous implications for the future, say industry experts.

"I'm seeing more remote coding within the industry in terms of HIM departments out there looking for solutions to help maintain their staffs in the face of a coder shortage," says Kertis Tomlins, RHIA, a senior IT manager at First Consulting Group, a national IT consulting firm. "Managers are giving their staffs the ability to work from home at their own hours, work off the Web, do their online coding, and use documents online," says the Boston-based Tomlins. "This is also leading to a boom in outsourcing."

There are even broader implications for some of the technology currently in development, though the innovations won't be implemented in most places for three to five years, Tomlins says. Among the innovations that are set to revolutionize clinical coding are natural language processing and autocoding technologies, which will involve more extensive physician participation in establishing clinical codes at the front end (often at the point of care) as physicians make notes in electronic medical records and care reports.

"There are some bugs that need to be worked out and there's a leap that needs to be taken within the healthcare industry from manual processing to a more technology-based process that starts out with physician dictation and natural language processing," Tomlins says. "A big piece of it is training physicians and moving them away from handwritten reports and dictation to where they're finalizing reports themselves. Rules engines [will be needed] that can pull out the actual ICD-9 and CPT codes and match those back to the compliance standards and regulations, and even down to the level of specific insurance payer."

But once those innovations are developed and implemented at patient care organizations, the whole process of coding—and the fundamental role of the coding professional—will change, he predicts.

At that point, Tomlins says, "The role of coders will become a quality assurance role, with coders doing edit checks and optimizing reimbursement." Like the role HIM professionals will play as medical records become computerized, there will be a need for fewer coders, but those who remain will be working at a higher level.

"There will be less of a role in terms of finding information to create code sets for patient billing, and [instead] doing more of a QA edit check," Tomlins says. "So it will be less time consuming for coders to work through their coding, because a lot of their work will have been pushed up front and tied to the physicians' dictation reports."

Is the Technology Ready?

The idea of physicians performing coding themselves or guided in assigning codes at the point of care may seem futuristic to both coding professionals and physicians. Will the technology be able to meet expectations?

Homer Warner, PhD, manager of business development and market research at 3M Health Information Systems, can help answer that question. Last year, Warner was asked to investigate the commercial viability of autocoding technologies.

"I found that in certain areas like radiology, these autocodes behave very well. Radiology is 95 percent dictation and transcription, and emergency medicine is about 50 percent dictation and transcription," he points out. Cardiology would be a good fit for autocoding technology as well, Warner says.

"But as you start to move away from these areas that are very simple to code—a radiology report, for example, may be just a page long—to an inpatient report with a chart and history and notes and labs, autocoding becomes more complicated. The vocabulary is much broader and the linking of documents is much more difficult," Warner says.

As a result, Warner suggests that autocoding technologies will emerge and develop in those specialties most suited to them and remain undeveloped in other medical specialties, especially those in which a lot of handwritten notes will remain the norm. He argues that productivity gains for both coding professionals and physicians could be seen using the right technologies in the right specialties. But, he adds, widespread adoption of such technologies will depend on the pace of EMR development, physicians' willingness to enter their own data, and the application of SNOMED across diagnostic coding.

Physicians Enter the Picture

Vendor organizations are busy trying to answer the call for advanced coding technologies. At Kansas City, MO-based Cerner Corporation, Mary Ellen Mahoney, the company's general manager for the digital EMR, says, "Within a number of our clinical applications, as a byproduct of collecting structured data within that tool, we can associate an ICD-9 or CPT code to it that can be brought forward into the actual HIM coding application. So, for example, within our surgical application, as physicians record some documentation, they can assign ICD-9 and CPT codes." And, Mahoney adds, the physician using the product can simply validate the ICD-9 and CPT codes already assigned, or choose to allow the decision to be made "downstream" by the coding professional.

The physician can create a suggested rule-derived code for the CPT code, adds David McCallie, Jr., MD, Cerner's vice-president for medical informatics. It's clear that tools like Cerner's will enable physicians to shorten and streamline the coding process by participating in initial coding decisions. None of Cerner's client patient care organizations are using this set of tools this way yet, but the potential is there for moving to that next phase, McCallie and Mahoney note.

Meanwhile, Susan Marsh, RHIT, CCS, a senior clinical analyst at Health Midwest, an integrated health system based in Kansas City, MO, says her organization is about to begin testing Cerner's coding solution, most likely beginning in the emergency department and same-day surgery. On the one hand, Marsh says, "I have some concern with the amount of time involved, whether the physicians will get enough training and will truly read through the coding choices and take time." But in areas like the emergency department and the outpatient lab, she says that autocoding tools could be introduced soon and to good purpose.

Inevitably, Marsh says, "Automation will winnow out some of the coders at the entry level, and leave the ones who are able to move up to the next level. It's like the transition that occurred with transcription services," she reflects. "When you had hospital-based transcriptionists, they were at all levels, but now that transcription is outsourced, you certainly can't expect an entry-level transcriptionist to be able to handle all those doctors with foreign accents and complex transcriptions."

Coders as Change Agents

Jacqueline Willett, RHIA, manager of coding and systems at the Regional Medical Center in Memphis, TN, sees new technologies and the outsourcing and home-basing of coders as inevitable. These advancements, combined with the increasing demands on organizations to achieve higher coding accuracy for optimal reimbursement, will require coding professionals to become more educated and skilled just to keep their jobs. Willett's 350-bed teaching hospital organization began outsourcing its coding last year and is pleased with that venture. "All of this—outsourcing, new demands for increased accuracy for reimbursement purposes—is taking some training and some work on our part," Willett says. "Now, the payers want some sort of diagnosis to validate the claims the doctors are doing, especially with Medicare. So they're becoming more fluent in the language of Medicare and payers." And technology's advance will have an equally strong impact on coding professionals, she says.

With these technological developments a seeming inevitability, how should coding professionals be positioning themselves in the next few years? "They need to be aware of these upcoming trends in technology," First Consulting Group's Tomlins urges. "I would recommend that they go and seek out information—educate themselves so that they can bring the technology and recommendations to their organizations, as opposed to the other way, so they can be at the forefront of the technology revolution. And they should think of ways to get the physicians on board, to get them trained, to get the technology accepted in the physician community, so that they get this implemented and change the way the physicians work." A tall order, certainly. But then, in the history of coding work, when has there been a period without significant industry and technological change?

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Experts: Embrace the Changes

Experts say that coding professionals should work to stay as current as possible regarding all the technology-driven changes taking place now in their field, to be able to anticipate and master change. Inevitably, there will be some major adjustments coders will have to make as technology changes their professional landscape. But, they say, better to know and to anticipate than to be taken unawares.

Here are some key pieces of advice from experts in the field, including HIM and coding managers, consultants, and vendor executives:

- **Read** and **learn** as much as possible about the new technologies being created and implemented
- **Understand** the implications of those technologies for how you and your colleagues will work
- **Realize** and **accept** that trends toward innovations like autocoding and upstream coding will inevitably mean lower volumes of work for current coding professionals and that those coding professionals who remain will see the level of their work rise to a higher level—toward editing and quality assurance-type coding management
- **Upgrade** and **enhance** your skills as much as possible to be able to move up to that higher level as technology changes and improves
- **Upgrade your knowledge** in areas like Medicare and Medicaid reimbursement and private insurer reimbursement

- **Learn** what kinds of supportive knowledge you'll need to have on hand as you work with physicians under changing technologies
- **Become part of the solution**. Learn about all the new technology options and become a knowledgeable adviser to your colleagues and a change agent in your organization

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