Coding Technology Today: AHIMA Survey Sheds Light on Coding's Progress toward Automation

by Beth Friedman, RHIT

In 1999 an AHIMA task force predicted coding's future using four scenarios based on advances in technology, management, the regulatory environment, and consumer awareness. These scenarios suggested that by 2010, the coder's role would include clinical nosology (classification of diseases), vocabularies, data analysis, and automated coding.[1]

Last year AHIMA revisited these predictions, this time surveying coders about the use of technology in their work. The goal was to evaluate whether the 1999 predictions were becoming reality. Following are the results, which provide insight into technology factors that affect the code assignment process today.

Technology in Coding Survey: 2005

The Technology in Coding Survey took place during AHIMA's 2005 Convention and Excellence in Coding seminar series, as part of the Coding Community Meeting in San Diego, CA. Coders nationwide reported their progress in three key technology areas: remote coding, electronic health records (EHRs), and computer-assisted coding (CAC). The survey also gathered data regarding coder vacancies, coding backlogs, work settings, computer skills, and general willingness to try new technologies.

Four hundred coders were surveyed as part of the study. Additional data from 100 HIM directors were gathered and collated separately by MedQuist, the survey's funder.

Today's Coders

Almost one-third of those surveyed are clinical coders (30 percent), with 47 percent reporting other job titles and functions including clinical data analyst and reimbursement coordinator. The majority of today's coders have been in the profession for more than five years, with 35 percent stating that they've been a coder for "too many years to count." Coders are primarily employed by acute care hospitals (49 percent), with another 47 percent employed in "other" environments such as long-term care, research and education, and consulting firms. The breadth and diversity of employment opportunities for clinical coders have never been so wide.

Current Coding Challenges

Of those participating in the survey, 82 percent reported difficulty finding qualified coders within their areas, with 61 percent reporting that their organizations are short staffed (unable to add more coding positions). Despite these results, the majority reported no coding backlog (64 percent), which is consistent with additional data collected from HIM directors.

The reason may be overtime--coders are working more extra hours than ever before. Nearly two-thirds of coders (65 percent) work overtime for their organizations, according to a recent survey by HCPro.[2] AHIMA's survey found that coders commonly fail to meet productivity goals because they are being pulled away to perform other duties or because they lack complete documentation.

Technology at Home

One coding technology that was not discussed in 1999 was remote coding; that is, coders working from remote locations, including their homes. The survey reports that 21 percent of coders work from home at least some of the time. Another 71 percent would like to work from home, but telecommuting is not currently available to them. Sixteen percent of the coders surveyed reported that their employers are currently evaluating remote coding technology.

Eleven percent of those surveyed use a system specifically designed for remote coding. Twenty percent of those who telecommute do so through remote access to their employer's existing EHR system.

Coding Technology Coming to the Fore

The task force's 1999 predictions for coding's future included rapid changes in technology, advances in standards development, a coding environment increasingly driven by cost, and increased demand for information and information quality. The task force was overly optimistic about the coming of ICD-10, for example, but its predictions on other trends are bearing out.

The prediction of rapid technological change is already coming true. Internet-based applications for healthcare, also called application service providers or hosted systems, have dramatically reduced the cost of technology and the time required for implementation. Small, rural hospitals and stand-alone physician practices that could not afford advanced technologies in the past now find these applications both affordable and practical. The formation of the Office of the National Coordinator for Health Information Technology and recent reports of increased IT spending (as much as $39.5 billion by 2008) bode well for widespread adoption of new technology tools in healthcare, including clinical coding.[1]

The demand for information and quality is also becoming reality. The task force predicted that by 2010 the relationship between doctors and patients would more closely resemble the relationship between suppliers and customers. With the proliferation of Web-based information, the realization of this prediction is readily apparent. In 2005 the RAND Corporation conducted a survey of 4,300 healthcare consumers, finding that 60 percent searched online for information to make treatment decisions.[2] Web sites are available that report on quality, outcomes, and costs for specific providers and organizations. Consumers are going online to choose their providers and purchase health insurance, and personal health records are used more widely. Certainly the age of consumerism in healthcare has begun.

Two of the 1999 predictions that are not yet fully realized involve standards and the use of algorithmic technologies that interpret coded data to help reduce healthcare's overall costs. Multiple and competing standards development organizations exist today, but collaboration and unification among them is extremely difficult. Take for example the delay in national adoption of ICD-10, predicted by the 1999 report to be in place "sometime after October 2000." The use of algorithmic technologies is a bit closer to reality.

In 2005 the Department of Health and Human Services commissioned two research projects that concluded that the use of new technologies, such as abnormal-pattern recognition using artificial neural networks and automated coding, may help to identify fraud. Ultimately, this would reduce healthcare costs. The research, conducted by AHIMA, is available in reports posted online at www.ahima.org/fore/programs/research.asp [web page no longer available].

Notes

1. Young, Jocelyn. "Technology Opportunities in the North American Healthcare Market," Datamonitor Research. As reported in *Healthcare IT News*, January 6, 2006. Available online at www.healthcareitnews.com/story.cms?id=4242
2. Scalise, Dagmara. "Building a Consumer-Directed Service Culture." *Hospitals and Health Networks*, December 2005: insert. Available online at www.hhnmag.com.

Electronic versus Paper: Hybrid Is In

The survey also set out to measure the use of EHRs in support of the coding process. Slightly fewer than one in five organizations has a fully functional EHR, according to the Healthcare Information and Management Systems Society.[3]

Twenty-three percent of coders participating in the survey reported that they code from a completely electronic record, while 31 percent code from a paper-based chart. The majority, or 46 percent, code from a hybrid record. The majority of HIM directors (52 percent) also report using a hybrid record to support the coding process.

These findings are consistent with other industry findings that the majority of healthcare organizations are in a transition phase from paper to electronic records. Coders, therefore, are also in transition. But perhaps the biggest transition lies in the use of automated coding technology to assist the coding process.

Attitudes toward CAC

In the past, the term "automated" coding described systems that used artificial intelligence to automatically assign codes. In a fully automated model, coding professionals only need to review exceptions that could not be processed accurately by software algorithms. Today human validation following automated code assignment is the norm rather than the exception, according to Rita Scichilone, MHSA, RHIA, CCS, CCS-P, director of coding products and services at AHIMA.

"The term computer-assisted coding is currently used to denote technology that automatically assigns codes from clinical documentation for a human (coding professional or clinician) to review, analyze, and use," Scichilone says. "The term CAC is used instead of automated coding, since technology has not yet approached a truly 'automated' process. In most CAC implementations used today, coders review and confirm code assignments in 100 percent of the cases."

AHIMA expects research to emerge in the next few years that will build on current technology to advance to computer-generated coding. Terminology debate aside, coders are beginning to use computer-assisted coding software in their everyday work.

According to AHIMA's survey, approximately 5 percent of coders already use computer-assisted coding systems. Thirty-three percent state they have seen a CAC system and understand how it works. Of the HIM directors, 60 percent are familiar with CAC. The industry is making progress.

Most interesting were the attitudes and concerns about CAC. Initially it was assumed that coders would have a negative reaction to automation. However, this was proven untrue in the survey. Denise McCreesh, RHIT, LGPN, a senior coder for MedQuist, explained that CAC is not about eliminating jobs, but about changing them. Her role has become more of an auditor rather than a researcher looking through documentation. McCreesh feels that the technology has elevated her role, not eliminated it.[4]

Concerns with Quality

Coders, in general, are only slightly concerned that jobs will be eliminated with the use of CAC. Just 7 percent reported that concern in the survey. More often, questions were raised about CAC quality and reliability. Results indicated that 29 percent of respondents are concerned that CAC systems would result in high productivity but poor quality, and 38 percent expressed concern that these systems were not yet proven. Software developers and vendors are trying hard to relieve this concern through published research. As more systems are implemented and used on a day-to-day basis, the technology engines that support CAC systems are becoming more accurate, reliable, and affordable.

Organizations who use CAC report high accuracy rates with some very common, predictable errors still appearing on occasion. Joan Davignon, CCS, a QA coding specialist, has been using a CAC system for four years. In her experience, CAC with the natural language processing engine is accurate about 85 percent of the time. If it misses things, they are things that only the human eye would see. For example, in a patient with multiple wounds, the system may not accurately code the size of each wound. Perhaps the dictation states that the patient has a 2-cm laceration and the patient also has a 3-x-5-cm abrasion. The system would probably calculate the laceration to 10 cm instead of a 2-cm laceration. But the system continues to get more accurate with these types of detailed codes with each update.

Sandy Leonard, CCS, CCS-P, is a senior coding consultant and quality assurance coordinator who uses CAC every day. She reports that CAC accuracy continues to improve. One of the problem areas she encounters is the assignment of E codes. There are also times when symptoms are coded along with a definitive diagnosis. For example, the system may code both

calculus of kidney (or ureter) and renal colic. These are some of the types of things coders have to correct in determining the final set of codes.

A Positive Outlook for Coding Technology

Finally, coders were asked about their eagerness to use new technology. These questions offered the most positive outlook for new coding professionals. When asked if they were open to trying new computer software that would make their jobs easier, 66 percent of coders were willing to give it a try. Combine that eagerness with improved computer skills (55 percent ranked themselves as very proficient) and the outlook for technology in coding is very bright.

Notes

1. Johns, Merida. "A Crystal Ball for Coding." *Journal of AHIMA* 71, no. 1 (2000): 26-33.
2. HCPro. *E-Coding News* 214, September 28, 2005. Available online at www.justcoding.com.
3. Healthcare Information and Management Systems Society. "2005 Leadership Survey." Available online at www.himss.org/2005survey/healthcareCIO_final.asp.
4. Friedman, Beth. "Real Life Computer-Assisted Coding: A Coder's View." *CodeWrite Community News*, October 2005. Available online in the FORE Library: HIM Body of Knowledge at www.ahima.org.

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Article citation:
Friedman, Beth. "Coding Technology Today: AHIMA Survey Sheds Light on Coding's Progress toward Automation" *Journal of AHIMA* 77, no.4 (April 2006): 66-68.