Physicians Cast Wary Eye at Computer-Assisted Coding

by Jim Bowman, MD, MSM, FACS, and Mary Stanfill, RHIA, CCS, CCS-P

An advanced type of e-HIM™ application, in late development, is a computer program that can automatically generate specific clinical codes from medical records variously termed computer-aided coding, computer-assisted coding, or computerized autocoding (CAC). CAC technology may be based on carefully structured codified input of clinical information or on sophisticated artificial intelligence software using natural language processing (NLP), which has the capability to search through free text, such as word-processed documents or electronic health records (EHRs), to recognize appropriate combinations of key clinical terms.

Is it likely that CAC technology, utilizing one of these methods, will be integrated into e-HIM applications in the physician's office? And if this happens, what will coders do? What should HIM professionals do now to prepare?

CAC technology may not be as far off as one might imagine. Many of the current iterations of CAC applications employ NLP technology that can be applied to free text in existing word-processed documents. Therefore, standards and wide-scale adoption of the EHR by the physician community is not necessary for CAC technology to be implemented. The 100-percent accuracy rate usually required of transaction-based automated e-HIM tools (such as e-prescriptions) is not applicable to CAC technology because the existing accuracy rate of human clinical coders is not 100 percent.

Admittedly, expectations are high for CAC technology to achieve, at minimum, a standard accuracy better than human coders. But that still leaves some wiggle room short of 100 percent for the industry to work with. Because the current coding process is extremely labor intensive for both physicians and the hospital industry and there is a recognized shortage of coding professionals, it is likely that the first commercial CAC applications will find wide acceptance in the marketplace. Large-scale commercial product sales distribution serves to keep unit production costs down, making it relatively more affordable and cost effective for even small business users such as medical group practices.

The advent of EHRs is likely to further advance the field of CAC technology. With the ease and use of fully operational EHR systems, at the point of care physicians will enter codified clinical information into template fields with the assistance of physician-friendly pull-down and pop-up menus. CAC technology can then extract the clinical information from these EHR fields and generate diagnostic and procedure codes for verification more easily than the current manual process of reviewing free-text narratives of clinic office visits and operative reports.

To look only slightly deeper into the crystal ball, it wouldn't be a stretch to expect most physicians to take on some coding assignment tasks themselves. The 80/20 rule would suggest that 80 percent of any individual physician's services and procedures could be captured by about 20 percent of clinical codes. For some primary care and office-based physicians, this might be 10 to 15 codes, and for some surgical specialties, this might be more like 50 codes.

Regardless, for a long time, most physicians have been quite familiar with the common codes within their individual repertoires. Primary care physicians often check off preliminary evaluation and management (E/M) codes at the time of the office visit or dictation, and similarly, surgeons typically carry around index cards to annotate specific operations (and often the CPT codes) to turn in at the office the next day.

Admittedly, there can be significant financial barriers to physician adoption of any new IT application (see "Physician Financial Barriers to Adoption of New Healthcare IT," below). Unease about computers can also be a barrier to early adoption of new technology. Although the majority of physicians are still of a generation that can be characterized as somewhat less than intimate with computers, more and more of the new physicians entering the work force are familiar with and adept at using computers. It is only natural to expect that they will want to capture such important clinical and billing information at the source if possible. Remember, most physicians in the current graduating class of 2004 were born in 1978, so the personal computer was likely a home fixture before they entered kindergarten.

Physician Financial Barriers to Adoption of New Healthcare IT

Physicians have numerous concerns about the cost of new e-HIM tools. Here are a few:

- Cost of acquisition
- Cost of associated hardware requirements
- Cost of implementation
- Cost of ongoing service, support, and maintenance
- Cost of periodic upgrades
- Cost of compliance
- Cost of lost efficiencies for physicians with poor typing skills
- Cost of incompatibility with other providers
- Cost of potential obsolescence

When will physicians adopt CAC? In a nutshell, when it's worth it. Two overriding business principles of medical office management are that time is money and that clean documentation begets clean coding, clean claims, and in turn, "clean money" (more and quicker). Nearly any timesaver carries some tangible monetary value for a physician practice, and efficient, accurate coding is probably the most underrated and possibly unrecognized source of time savings and increased revenue for physicians. CAC applications will find acceptance by the physician community when commercial product developers can make the business case that they generate a positive net return on investment compared with the manual system used today.

And when physicians adopt CAC technology, what will coders do? Less and more—less of the basic coding tasks that currently make up the bulk of their work day and more of the difficult, complex, ambiguous, and outlier cases that stump the computers. More of the oversight and review of CAC cases. More of the internal audit and quality control functions required to ensure integrity of the CAC application. More of the information management requirements of the medical group practice. More of the interaction and interfacing with internal and external staff, departments, and organizations with information requirements for clinical, quality, claims, regulatory, and research purposes. In short, more complex tasks with more responsibility.

What can HIM professionals do to prepare themselves and their physicians for CAC? A critical first step is to accept and embrace technological advances. Technology is advancing so rapidly today that change is inevitable. Be a change agent. Create building blocks, rather than roadblocks, to adopting useful technology. Also become familiar with CAC and NLP technology, including how it works and its advantages and limitations. A thorough understanding of the technology is critical to assist healthcare providers in using the technology appropriately and achieving optimal benefits. Coding professionals should gain coding expertise and critical thinking skills so that they are positioned to capitalize on the advantages offered by CAC technology. They should start now to prepare to take on the "more" described above.

Physicians, as a group, are by nature conservative when it comes to change. Most physicians are reluctant to adopt new, abrupt, or disruptive change without careful and studied evaluation and assessment. CAC technology is now rapidly advancing to the point where it will become part of the mainstream in the not-too-distant future. When that happens, coders' tasks will dramatically change. They will do less of the basic, mundane tasks that currently fill up their day and more of the complex, oversight tasks that they may have little time for today. This shift, resulting in increasing responsibility for coding professionals, is a wonderful opportunity. There appears to be ample time for coding professionals to prepare appropriately for the journey.

Watch for a practice brief on computer-assisted coding in the November/December 2004 issue of the *Journal of AHIMA*.

Resources for Further Information on CAC and NLP

AHIMA. "Natural Language Processing as a Means to Increase Productivity." Audio Seminar. May 13, 2004. Audio archive available for purchase at http://campus.ahima.org/audio/2004seminars.html.

The following articles are available in the online FORE Library: HIM Body of Knowledge at www.ahima.org:

Hagland, Mark. "Revolution in Progress: How Technology Is Reshaping the Coding World." *Journal of AHIMA* 73, no. 7 (2002): 32–35.

Schnitzer, Gregory L. "Natural Language Processing: A Coding Professional's Perspective." *Journal of AHIMA* 71, no. 9 (2000): 95–98.

Schnitzer, Gregory L., and Mary H. Stanfill. "Outwit, Outlast, Outcode: Surviving in the Autocoding Era." *Journal of AHIMA* 72, no. 9 (2001): 102–4.

Warner, Homer. "Can Natural Language Processing Aid Outpatient Coders?" *Journal of AHIMA* 71, no. 8 (2000): 78–81.

Warner, Homer. "Will Natural Language Processing Help Coders Anytime Soon?" AHIMA Convention Proceedings, October 2001.

Jim Bowman *(jimbowmanmd@yahoo.com) is a medical officer in the Chronic Care Policy Group of the Centers for Medicare and Medicaid Services.* ***Mary Stanfill*** *(mary.stanfill@ahima.org) is a coding practice manager at AHIMA.*

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