Outwit, Outlast, Outcode: Surviving in the Autocoding Era

by Gregory L. Schnitzer, RN, CPC, CPC-H, CCS-P, RCC, and Mary H. Stanfill, RHIA, CCS-P

Nearly two years ago, the AHIMA Coding Futures Task Force predicted that coders would eventually need to go beyond assignment of diagnostic and procedural codes.1 The task force was right-and that future is now for coders in certain specialties. Natural language processing (NLP), in which computational linguistic software technology "autocodes" medical services in specific specialties, is becoming more accurate and proficient in a wider variety of medical domains every day. In many facilities, NLP autocoding software has transformed the human coding professional's job. What does that mean for coding professionals in facilities where NLP is just around the corner? We'll take a look at how to survive in the autocoding arena-and what skills are necessary.

From Many to One

NLP software works by "reading" an electronic document, much like a word processing spellchecker reads a document, and locating certain key concepts and phrases-not just words. The software identifies many different phrasings of the same concept. For example, "gadolinium was used," "T1 sagittal scan with Gd," "views obtained using paramagnetic contrast material," and "gadolinium-enhanced images" would all be processed the same way by the software.

By reducing (or "normalizing") these concepts, different phrasings of the same concept are distilled into a single, common linguistic equation called a "canonical representation." Having harnessed the wide linguistic variation in medical documents into canonical representations, it is then possible to create a large database of representations and analyze them for patterns. By employing statistical algorithms, NLP can compare and code these similar expressions. As a result, NLP software functions as a statistically sophisticated predictor of proper coding and actually emulates the coding habits of the human coding professionals who participate in the software's development and improvement.

The advantages of such software are numerous: NLP software is hundreds of times faster than human coders and more objective and consistent. Such consistency makes any mistakes easier to identify and correct.

How Expert Coders Prevail

Recent research has demonstrated that autocoding systems hold the potential for increased coding speed and accuracy compared to unaided human coders.2 Studies of NLP autocoding products show improvement in coder productivity from 30 to 50 percent.3 Admittedly, autocoding systems have a long way to go before they can deal with the complexity of coding guidelines and the number of different report types in an inpatient setting. However, providers are already using NLP autocoding software successfully in specific healthcare settings and specialties, including emergency department, radiology (diagnostic and interventional), and cardiology coding.

Where NLP autocoding software is used, human coders are finding that much of the coding is now handled by the computer. In these situations, human coding staffs are being reduced. Typically, a few expert coders are retained while others are shifted to different functions or even dismissed. Julie Haskins, the director of managed services at San Diego Professional Services, Inc., a management service organization (MSO) that performs coding and billing functions for a number of radiology groups, implemented NLP autocoding software last year. She says automated coding has changed the shape of her business, freeing staff from more mundane, repetitive coding to tackle the more complex coding that used to pile up. Now coders can focus on submitting accurate information up front as well as following up on denied charges on the back end.

"I no longer worry about seeing reports sitting on a coder's desk because there was no time to investigate the correct coding of a difficult procedure," Haskin says. In an era when coding professionals are in such short supply, NLP software may

ultimately be as liberating to the human coder as commercial encoding software has been for the last decade.

Because NLP autocoding software is capable of performing some-but certainly not all-coding tasks, what will happen to human coding professionals? When a practice moves from seven full-time coders to just one coding expert, how can you ensure you'll stay on as that expert? Following are some traits and skills to develop to ensure you survive and thrive once NLP becomes a member of your coding team.

Perseverance

Career success is a marathon, not a sprint, and survival will depend on being able to endure and persevere. This may mean persevering through ever-increasing workloads, job-duty changes, and new regulations. A good-natured tenacity and the determination to do a job well are characteristics of the expert coder.

Adaptability

Cultivate your ability and tolerance for performing new and different tasks and taking on new challenges. If software can perform many coding tasks, the irreplaceable coder is the one who is prepared to address the remaining, more difficult tasks. Such adaptability may mean moving from reading reports and assigning codes to reviewing and analyzing coded reports for accuracy. The expert coder may audit and review codes and spend time educating on correct coding more often than actually assigning codes. This sort of flexibility might also mean becoming proficient at code sets for which software has not yet been developed, including:

- Current Dental Terminology, Third Edition (CDT-3)
- National Drug Codes (NDC)
- Systematized Nomenclature of Medicine (SNOMED) RT and CT
- Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)
- Alternative Billing Concepts (ABC) Codes [4]

Expertise

NLP autocoding software is most easily adapted in the medical domains that use the fewest codes-in short, those that are easiest to code. With the "easiest" coding performed by the computer, the survivors will be the coders who have mastered more difficult coding. Coders capable of only basic coding may find themselves replaced by a computer, whereas the expert coder who can wade through the most convoluted coding scenarios will be irreplaceable. Haskins noted that she expects that she will always need at least one coding expert on staff because of the complexities of code assignment, reimbursement systems, and compliance requirements.

Auditing Coding Quality

In an autocoding environment, the coding expert spends more time reviewing and auditing coded cases for validity than actually assigning codes. Some specific skills required to do this include:

- a working knowledge of statistics and valid sampling techniques
- a deep knowledge of coding guidelines and compliance requirements
- the ability to recognize coding discrepancies, anticipate their impact, and implement strategies to resolve them
- the ability to interpret audit results and recognize meaningful findings and trends

Communicating and Educating

With NLP, the coding expert fills the role of the in-house technical expert on coding and reimbursement issues and will be called on to explain the technicalities of coding and provide education on the clinical documentation needed to support code assignment. Specific skills needed include:

- the ability to clearly and concisely explain the rationale for code assignment
- the ability to simplify and clarify complex coding guidelines and contractual obligations
- the ability to teach, formally and informally, documentation requirements to physicians and other caregivers

Computer Literacy

In an autocoding environment, the expert coder is expected to understand the software that is performing the coding as well as the data that the software generates. The skills required include:

- an understanding of basic hardware and software components and their functionality
- a full understanding of the flow of information in automated health record systems
- an understanding of the autocoding software application
- the ability to generate informative, valuable reports and interpret this data

Autocoding systems have proven successful in specific medical domains, although they are probably a few years away from widespread application in the traditional coding environment. NLP software is a valuable coding tool that is here to stay. In the autocoding era, the surviving expert coders will be those with the forethought to develop the necessary skills to outwit, outlast, and outcode.

Notes

1. Johns, Merida. "A Crystal Ball for Coding." Journal of AHIMA 71, no. 1 (2000).

2. Morris, W.C. et al. "Assessing the Accuracy of an Automated Coding System in Emergency Medicine." Presented at the AMIA Annual Fall Symposium,

Los Angeles, CA, November 2000.

3. Warner Jr., Homer. "Good Isn't Enough." Health Management Technology 22, no. 6 (2001).

4. For information on ABC codes, see "Growing Trend for the New Millennium" by Sue Prophet, RHIA, CCS, in Journal of AHIMA 70, no. 5 (1999).

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Gregory Schnitzer *(gschnitzer@coderyte.com) is vice president of coding compliance at CodeRyte, Inc., in Bethesda, MD.* ***Mary Stanfill*** *(mary.stanfill@ahima.org) is a coding products and services practice manager at AHIMA.*

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