



# Computer Assisted Coding: Technology Offers New Solutions to Healthcare

By Gloryanne Bryant, RHIA, CCS, CCDS

## Executive Summary

Computer Assisted Coding (CAC) offers some very impressive benefits if you know what you are looking for and what CAC brings to the table. Many varieties of CAC technologies and applications exist in the marketplace for hospital HIM departments, physician offices and other settings in which the coding function is performed. It is important to identify your specific needs and be aware of what is available to meet the requirements of your particular setting.

For several years the American Health Information Management Association (AHIMA) has been studying and continues to study the benefits of this technology. AHIMA has defined CAC as the "... use of computer software that automatically generates a set of medical codes for review, validation and use, based upon clinical documentation provided by healthcare practitioners." This article will share some of the differences in CAC technology, CAC benefits, and provide some suggestions concerning why you should consider looking into CAC in the very near future.

Those who work in healthcare know that in order to convert the patient services provided into reimbursement, the encounter, visit and hospitalization must be coded. The coding can be either the International Classification of Diseases 9th Revision Clinical Modification (ICD-9-CM) diagnosis codes, Current Procedural Terminology (CPT) codes or a combination of both code sets. Also, the coded data suggests the quality of care rendered by the provider and drives severity of illness, risk of mortality data, research, contracting, and more. The importance of high quality coded data is paramount.

Equally important is the clinical documentation that the coding is based upon. The clinical documentation ultimately determines reimbursement. Payments today are under greater regulatory scrutiny. This requires that providers undertake proactive and defensive auditing and monitoring measures.

## The coding struggle

Hiring trained, skilled, and productive HIM coding experts is a challenge and this is compounded by the lack of available professionals. You can expect the shortage

of these skilled professionals to significantly increase with the implementation of ICD-10, which is currently scheduled for October 1, 2013. The coding process can be quite time consuming and expensive, with overtime and contract coding vendors needed to assist with coding backlogs to meet the demanding revenue cycle turnaround times. In addition, medical record documentation, in and of itself, is a challenge.

To obtain accurate code assignment, coders need knowledge of anatomy, physiology, disease processes, pharmacology and medical terminology, among other competencies. Software is available that helps the coding professional find information in conjunction with the ICD-9-CM coding book or without the coding book. Meanwhile, the coding process requires detailed, time consuming reading and interpretation of the documentation in the medical record. Handwritten medical records can have legibility issues which electronic health records largely address, but healthcare providers will still face a lack of trained coding professionals. CAC, therefore, becomes the perfect tool for narrowing the backlog gap and addressing other challenges in this area.

## CAC software

CAC is achieved by Natural Language Processing which is a type of artificial intelligence that allows the computer to decipher the clinical text to determine whether the potential for an ICD-9-CM or CPT code assignment exists.

The software uses programmed algorithms, edits and logic to interpret what it reads to produce the possible code or codes based on the translation. CAC can also provide a validation and an audit trail by highlighting where within the medical record the text that represents the code(s) resides.

CAC can also be achieved through structured input technology, which is the process of having a menu with clinical terms the provider can select. Structured input technology is often seen in the physician setting.

Some CAC technology also develops and emphasizes the actual content of the text and documents.

Improving the clinical documentation content can greatly affect assignment of the code(s). Overall, CAC works best with electronic medical record text versus handwritten documentation.

## CAC application

CAC can work on a concurrent basis at the time of coding, and this is the newest application of the software's capabilities. It can have a drastic impact on Clinical Documentation Improvement (CDI) programs, which also involves the detailed reading of the medical record.

The CAC technology can become part of the CDI staff's reviews. The CAC can then quickly locate the documentation in the medical record and identify possible query opportunities. Some CAC technology can highlight abnormal lab values for the CDI

staff. This offers new opportunities. Using CAC concurrently on an inpatient basis could potentially initiate coding and assign codes in a “real-time” environment.

Imagine a 12-day hospital stay. Think about the number of documents from the hospitalization (nursing notes, physician reports, etc.), and the coding process which requires reading of much of this documentation. Traditionally, the coding professional applies their knowledge and skill to interpret the correct assignment of ICD-9-CM and/or CPT codes.

How long do you think this will take? (10, 15, 20 minutes or longer?) Keep in mind that the complexity of the patient’s medical condition also affects the amount of time required. The computer can read the same medical record text and interpret a diagnosis, signs/symptoms, assign the ICD-9-CM codes, and be ready for validation in a matter of seconds—an enormous difference.

Currently computer coding accuracy is around 95-97 percent. The validation work of the professional coder can be expedited exponentially.

Also consider single radiology encounters where the volumes are great and the work can be very repetitive, whether coding the professional fee or the technical component. Here’s where CAC can really meet the needs of healthcare.

CAC automation can simplify this type of encounter and others, (e.g. pathology, lab, EKG outpatient encounters). A fair number of these encounters will involve diagnosis and procedure coding that is more on the routine side.

CAC experts say this technology is capable of a very impressive 95-98% accuracy. Even with a 5% validation needing to be

performed the impact on productivity is worth consideration. Most CAC technology also provides, or will provide, a visual link to the ICD-10 codes, thereby providing a bridge to the implementation curve and long-term learning.

CAC will provide CPT and HCPCS codes for outpatient encounters and for professional fee coding requirements. Modifier assignment is also available in CAC technology, as well as CCI (Correct Coding Initiative) edits, Local Coverage Determination, and National Coverage Determination information. Some CAC users report fewer denials of their claims.

#### Visit vendor websites such as:

- ProVation Medical
- A-Life Medical/Ingenix
- Dolbey
- CodeRyte
- Lynx Medical
- MedQuist
- 3M

This is not an all inclusive list of vendors, so be sure to do your research.

#### Other uses for CAC

Healthcare has additional pressures and concerns with the increase in regulatory auditing, including Recovery Audit Contractors. CAC produces an audit trail showing where text appears in the medical record that supports the specific code assignment. The audit trail also shows whether the notation appears in one location or multiple places within the medical record. This can drastically assist providers and institutions in defending their coded data and reimbursement. This is also an excellent tool for internal audit processes and monitoring.

I have had the pleasure of using CAC for retrospective auditing and it has not only saved audit time, but has been more efficient than the human auditor. CAC addresses both over- and under-coding. The return on investment could be a revelation and provide compliance assurance as well.

#### Summary

CAC technology is not a threat to HIM or the coding staff, but rather eliminates the time-consuming steps of reading and determining code(s) and allows coding



professionals to focus on the highest purpose of their skills and knowledge. Coding professionals become an expert ‘validator’ or auditor of CAC. The CAC technology also assists in providing education and enhancing the coders’ skills.

CAC can be used on a concurrent basis at the time of coding, and as a retrospective audit tool as well.

You will begin to gain greater knowledge and understanding about each of these new technology approaches to clinical documentation, coding and data quality. Also, read the AHIMA Practice Brief on this subject.

The ultimate benefits of CAC technology are to help the healthcare provider improve coding productivity and accuracy, and to diminish coding risk for the different patient settings. CAC technology can also be a link to ICD-10 and help with the learning curve. **NP**

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#### Resources:

AHIMA: *Delving into Computer-assisted Coding* (Practice Brief) 2004; ProVation Medical.com; A-Life Medical/Ingenix.com, Dolbey.com, CodeRyte.com; Lynx Medical.com; MedQuist.com; 3M.com

#### The benefits of CAC include:

- Improved productivity
- Improved accuracy
- Reduction in overtime for coding staff
- Reduction in external coding vendor costs
- Achieving Discharge Not Final Coded goals
- Improved coding related workflows
- Decrease in regulatory and compliance risks via audit trail
- Assist with ICD-10 transition