

# Computer-assisted coding: the secret weapon

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By Mark Morsch

**T**echnology has finally arrived that is radically changing the process of medical coding in health-information management. Computer-assisted coding (CAC) automatically generates medical codes directly from clinical documentation. With CAC technology, healthcare organizations can streamline their revenue-cycle processes while becoming more compliant with the increasingly complex payer and quality reporting requirements.

Electronic health records (EHR) produce a rich source of electronic documentation; however, these systems can be difficult to integrate into the coding process. CAC technology provides a bridge between the documentation in EHR and transcription systems and healthcare financial systems.

CAC natural-language processing (NLP) applications scrutinize and interpret unstructured clinicians' notes using specialized linguistic algorithms, extracting the clinical facts that support the assignment of codes. Structured input applications integrate the coding into the clinical documentation process, producing clinical documents with embedded codes. NLP applications typically can work with current clinical-documentation practices that produce unstructured text, such as dictation, speech recognition and transcription.

CAC is frequently deployed using the software-as-a-service (SaaS) model but also can be handled as a conventional client-server software installation. With SaaS deployment, local installation requirements are minimal. CAC products often include a number of different modules to provide a complete coding work-flow solution, including coding review, production monitoring, management reporting, coding automation and auditing.

Data interfaces are required to feed the clinical documentation into the CAC application and accept the coded data into the organization's billing system. Standard interface formats such as HL7 or XML can be used to export the clinical documents. With NLP-based systems, however, virtually any document format can be used.



Web services are also an option for some environments, particularly if an existing programming interface is available. The output of the CAC work flow is coded records, including the CPT and ICD-9 coding and other information needed to file a complete claim, such as modifiers, units, code linkage, patient demographics and payer demographics. For optimum work flow that does not require data entry, the coded data transfers directly from the CAC system into the billing system.

CAC does not eliminate the need for medical-coding professionals to be involved in the coding process. It can make them more productive and accurate. To review the codes, coders use an application that displays the clinical documentation side-by-side with the medical codes. Coders can review and modify the coding in the application, and validate it against local and national coverage guidelines in real time. Coding managers and administrators typically require separate training for the reporting and production-monitoring modules.

Today, CAC is most widely used in physician coding for outpatient services. Some of the medical specialties that currently use CAC include radiology, emergency medicine, pathology and cardiology. Hospital coding applications have also gained momentum during recent years.

CAC offers five benefits to those organizations that perform coding and billing functions:

**Productivity:** Productivity increases when the average amount of time to code a case decreases. An increase in productivity results due to the elimination or speeding up of particular manual tasks within the coding process, such as document sorting, storage and retrieval, duplicate identification, code lookup and selection, code ordering, or data entry.

**Accuracy:** Accuracy improves when the coding output better matches both official guidelines and payer reporting requirements. An improvement in accuracy can be observed through a decrease in denials, reduction in audit discrepancies, or finding lost charges that were previously under-coded. Increasing accuracy helps assure that an organization captures all of the charges that it is entitled to collect.

**Consistency:** Consistency in the coding process ensures that guidelines are applied similarly over time and across multiple coding resources. A high level of consistency instills confidence in the coding results, supporting accurate clinical and financial analysis. This is particularly important when employing coders with differing levels of skills and experience.

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**Transparency:** Transparency and traceability enhance the manageability of the coding process by providing evidence of both the work flow and thought

processes that went into the coding results. This may include links between the codes assigned and the portions of the patient records that support the codes, or an audit trail of all changes made to the coding or demographics.

**Compliance:** Compliance supports a proactive and auditable coding process, which strives to “get it right the first time” and reduce additional work time and re-billing. Improvements in compliance are a result of more-accurate and consistent coding, as well as transparency in the coding process. Together, these benefits reduce the preparation work for audits, while simultaneously improving audit outcomes.

There are five recommended strategies that can help guide healthcare technology professionals in the planning, evaluation and implementation of CAC solutions in their coding environment.

1. Find a solution that fits into the coding work flow. CAC applications should integrate with other clinical and administrative applications as seamlessly as possible.

2. Fully automate routine activities while assisting with more complex activities. To deliver the benefits of productivity, accuracy and consistency, CAC technology should be an intelligent assistant to the coder. Automating simple coding scenarios; identifying ambiguous or contradictory documentation; suggesting codes based on a thorough review of all documentation; eliminating repetitive data entry; and providing views across both structured and unstructured documentation will elevate the current coder role toward one of auditor or reviewer.
3. Demonstrate benefits for the coder and the administrator. To be accepted, all levels of the organization should realize the benefits and value of CAC. Coders should accept the application and be motivated to implement changes in the coding process. Administrators need evidence that applications will deliver quantifiable benefits and that these benefits will be measurable and reportable to senior executives.
4. Supply data that is meaningful and complete. CAC technology can work without significant changes to the clinician documentation work flow (for NLP), or may be integrated into the clinical documentation process (for structured input) or into a more near-real-time coding process (for concurrent coding). Regardless of the scenario, complete and timely clinical documentation is a prerequisite for accurate coding. CAC technology cannot make up for deficient or missing information. Similarly, CAC tools should provide management with a strong capability for measuring productivity, auditing results, monitoring performance and training coders.
5. Build trust. Vendors should deliver solutions that map to the requirements and work flow of the coding staff, while delivering the promised efficiency, accuracy and audit value that CAC offers. Coders should be able to trust the technology and utilize it as part of their daily work activity. Administrators should be able to trust that both vendors and coders can use this technology to deliver value.

As the technology of CAC progresses and ICD-10 gets closer to its 2013 implementation date, the health information-management and technology sectors should look forward to the revolutionary changes in coding work flow that will surface during the next few years. With the sea change that is expected to occur from this transition, CAC use will likely expand in the coming years.

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