# CAC Takes Coding Into the Future

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Technology is the segue to the future. It is the very thing that will transform the landscape of today's world into one with endless possibilities. In healthcare, that transformation is being accelerated by the transition to electronic health records (EHRs), which has helped providers to digitize and drive the organization with data every day. Technology is the catalyst to unlocking new opportunities, many of which will help push healthcare organizations to a more effective future. Companies that embrace technology will surpass their competitors and stay ahead in the marketplace. Meanwhile, companies that are content to wait will be left behind.

## Improving Coding

Given today's shift to value-based reimbursement methodologies, both clinical documentation improvement (CDI) and coding accuracy are more important than ever. These specialties are necessary for improving patient outcomes, ensuring continuity of care, and attaining appropriate reimbursement. The availability and quality of clinical documentation directly impacts which codes can be assigned. Additionally, the codes assigned for each patient encounter directly impact reimbursement—a sentiment often expressed in the coding mantra: "if it isn't documented, it didn't happen." That's why many healthcare organizations have sought to streamline their coding and CDI processes with technology through computer-assisted coding (CAC).

AHIMA defines 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."[1]

CAC technologies, designed to be a productivity tool, have come a long way since they first made their debut in the early 1990s. In more recent years, before CAC programs were broadly adopted in the mid-2000s, many organizations began to fear what was to come from the long-anticipated shift to ICD-10. Although the transition was still several years away—ICD-10-CM/PCS was implemented in 2015—health information management (HIM) professionals questioned how they were going to manage the new complexity of ICD-10. With over 75,000 additional ICD-10-CM codes and increased specificity requirements for ICD-10-PCS codes, healthcare organizations needed an approach that would consistently capture accurate codes without hindering productivity. For many, that approach was CAC.

## AI Meets Coding

Traditional CAC technologies utilize natural language processing (NLP) to gain insights from large amounts of plain text data extracted from the EHR. NLP is used to scan documents and provide code suggestions for coders to review and validate. The power of NLP lies in its ability to help coders quickly find key words or phrases and suggest affiliated codes within the documentation for more efficient coding.

Still, as a rules-based algorithm that is dependent on the context of the documentation, NLP has its limitations. If the rules don't accommodate the variances in the way the documentation is written—"left ankle fracture" vs. "the patient has a fracture of their left ankle"—NLP may suggest unspecified codes. In addition, clinical findings can be written across several sentences, paragraphs, and documents due to NLP's reliance on consistent patterns. When patterns change, the engine needs a human to program new rules.

Many HIM professionals caught on to the limitations of NLP and demanded more. They needed a tool comprehensive enough to improve accuracy, enhance efficiency, and redefine their current coding workflow so that it could be consolidated into a unified workspace.

As a result, CAC's evolution continued by taking NLP a few steps further. Now, sophisticated CAC technologies utilize artificial intelligence (AI) and machine learning to enable far more accurate code suggestions. Essentially, the AI analyzes the electronic documentation and uses what it has learned to apply coding rules and guidelines. The AI considers all written documentation within a patient record to build out codes. It can understand when it is appropriate to combine codes, how to comprehend negations, and more. The machine learning then learns code suggestion patterns from each action performed by a coder within CAC and will overlay what it has learned from those actions to consistently suggest accurate codes. The more data and information that is fed through CAC, the more it will learn, and the more accurate it will be for coders to review and validate.

These innovations are driving improved revenue cycle outcomes every day. But how else will CAC technology be leveraged to unlock new opportunities and applications of its data? While many answers have yet to emerge and will evolve over time, other opportunities have already come to the forefront.

## Better Workspace Organization

Many organizations are beginning to use CAC not only for coding, but also for CDI, quality, case management, auditing, management reporting, and more. It is important that CAC systems be tailored to address specific roles and workflows. As a result, the AI can be configured to automate workflows within the application

In other words, when AI is incorporated into the workflow organizations can ask such questions as: How does an organization prioritize which charts hit which coder's queue? Are these priorities based on payer, coder specialty, patient type, or other factors? What is AI's role in CDI? How do organizations prioritize which cases should be reviewed by a CDI specialist each day? Is this based on possible query opportunities that are generated from target reasons or events that occurred during the patient stay—perhaps patients with congestive heart failure lacking specificity or patients with clinical indicators of sepsis? These custom workflows can and should be configured, enhanced, and automated by AI to enable a streamlined and collaborative approach.

A unified, collaborative workspace also provides many benefits. Abstracting, querying, and other customary coder tasks can be performed within newer CAC technologies, eliminating the need to toggle between multiple systems. Because CDI is also commonly integrated within CAC, coders have the benefit of knowing what the CDI specialist did while the patient was present. In addition, coders and CDI specialists can communicate by leaving notes or bookmarks for each other or for other end users such as auditors or management. These features, in addition to those resulting from other innovative tools, go beyond the traditional functions of CAC. They have allowed end-users to significantly increase their productivity and to achieve greater revenue cycle outcomes.

Data-driven organizations can leverage CAC to gain new insights into their data—and determine areas for opportunity. In-depth reporting capabilities allow management to track and monitor productivity, query impact, query turnaround times and response rates, and monitor case mix index trends, just to name a few. Organizations also are looking to track and monitor hospital-acquired conditions, patient safety indicators, hospital readmissions within 30 days, and patients with current or previous hierarchal condition categories. The ability to extract these insights from CAC will help to paint a picture of an organization's current state, processes, outcomes, patient population, and other key factors that will allow them to determine where they need improvement.

## Conclusion

New industry demands will surface, further expanding future needs and uses for CAC. AI and machine learning in these technologies will continue to get smarter and will learn new mechanisms for problem-solving in ways previously unimaginable.

Organizations looking to position themselves for future success should seek CAC solutions from vendors who values artificial intelligence and machine learning, enabling them to provide more accurate code suggestions, logical workflows, and the ability to adapt to the ever-changing needs of the healthcare industry.

## Notes:

1. AHIMA e-HIM Work Group on Computer-Assisted Coding. "Delving into Computer-assisted Coding" (AHIMA Practice Brief). *Journal of AHIMA* 75, no.10 (Nov-Dec 2004): 48A-H.

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