Artificial Intelligence Helps Clinicians Tell the Complete Patient Story

AI-driven computer-assisted physician documentation (CAPD) improves patient records and can increase reimbursement

A patient with congestive heart failure is readmitted to the hospital a few weeks after being released. The patient's morbid obesity was not identified as an underlying condition during the initial hospital stay. Such an omission is common, as clinicians often focus keenly on the primary diagnosis.

Knowing the complete patient story, however, might have helped the healthcare organization (HCO) steer the patient clear of the unwanted readmission. In fact, a study conducted by the Medicare Payment Advisory Commission found that readmission rates of patients with heart failure dropped from 24.8% to 20.5% and readmission rates of patients who experienced heart attacks dropped from 19.7% to 15.5% when overall health conditions were considered.[1]

"Morbid obesity might better explain why the patient had to be readmitted. It's a risk factor that the patient has and if that can be included in the record, then we can better tell the patient story," said Adrienne Younger, AVP, Clinical Documentation Integrity (CDI), Ardent Health Services.

Averting readmissions not only results in improved patient experiences, but also could reduce costs. Consider the following: Congestive heart failure has the highest 30-day rehospitalization rate among medical and surgical conditions, accounting for up to 26.9% of all readmissions.[2] And these readmissions – many of which might be preventable – contribute significantly to the cost of this disease, which is substantial; annual expenditures run at about $363 billion per year in the U.S.[3]

Producing more complete patient records

The challenge is to document and code all secondary diagnoses, chronic conditions and comorbidities while still focusing on the primary clinical problem. Manually doing so often turns into an

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exercise in frustration. Indeed, requiring physicians to consider every secondary diagnosis or relying on nurses to review charts to identify the full range of potential diagnoses is likely to contribute to the burnout that staff are already experiencing in this era of limited human resources.[4] See the article, "Leveraging AI to relieve physician stress in turbulent times."

"At Ardent, that's been a real challenge – to try to figure out how we can make sure we have a system in place that can capture these secondary diagnoses. And we have been looking for a way to ensure physicians understand the importance of these diagnoses, which were not a priority in the past," Younger said. "We realized that we had to find a way to help the physicians identify the full range of secondary diagnoses as part of their normal daily routine."

Fortunately, a workflow-integrated, artificial intelligence (AI)-driven computer-assisted physician documentation (CAPD) system can efficiently analyze relevant notes to tell the complete patient story, enabling physicians to arrive at a comprehensive view of patient acuity, identify undocumented diagnoses and better capture major complications or comorbidities.

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In addition to reducing readmissions, documenting the complete patient story using AI-driven CAPD can help HCOs:

- Improve workflow efficiency
- Keep the clinical team informed
- Reduce queries from coding colleagues
- Ensure documentation integrity
- Enhance performance on clinical outcome indicators
- Provide thoughtful resource allocation for operational resilience

Understanding how AI-driven CAPD can produce these benefits can help HCOs move forward with strategic implementations of the technology.

Improving workflow efficiency

CDI departments have implemented processes to identify query opportunities for better documentation while the patient is in the bed. However, most departments have not employed CDI personnel 24/7/365 to cover all cases and all payers. CAPD technology exists within the workflow the physician is already using while meeting with the patient and can be the technological safety net for capturing the documentation accuracy/opportunity in times of increased census, staff shortages or disruptions.

"With existing CDI programs, the physician gets an additional message, and they have to open that message and then try to remember the patient details to try and answer the question. That's all a lot of rework that takes a lot of time they don't have," said Anthony F. Oliva, DO, Vice President and Chief Medical Officer, Healthcare Division, Nuance Communications.

AI-driven CAPD can decrease the number of unwanted, after-the-fact queries by continually analyzing all relevant patient documents in near real-time to construct a comprehensive view of patient acuity and present undiagnosed or secondary conditions at the point of care. In fact, after implementing such a system at Halifax, a health system in Florida, retrospective severity queries to physicians declined 63%.[5]

"That's a different level of cognitive burden," Oliva noted. "For example, if a hospitalist is caring for 16 patients and is asked questions about what went on with one of the patients a couple of days ago, that's tough. They might have to go back to the chart or just take a deep breath and think if anything about the patient jumps out at them." With AI-driven CAPD systems in place, physicians can include all diagnoses in the medical record while they are already there thinking about the patient.

Keeping the clinical team informed

A physician treated a patient with pneumonia and swallowing difficulties. Typically, the patient chart would most likely only include the word "pneumonia" for the first 24 to 36 hours. With AI-driven CAPD, however, the fact that this was a post-CVA patient who underwent a swallow study that was positive and was placed on an alternate broad-spectrum antibiotic would

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be identified in the record by the AI – this would allow the technology to provide guidance in near real-time for likely "aspiration pneumonia," while they are documenting on that patient, and they could enter that diagnosis in normal workflow. As a result, "[All clinical staff] would see 'aspiration pneumonia' in the chart sooner. So the HCO gains 36 hours of all clinical staff knowing that this patient might be at higher risk for complications," Oliva noted.

Reducing queries from coding colleagues

"When physicians are writing clinical information into the record, they are describing the patient. They think clinically, and we want them thinking clinically. I don't want a doctor coming into the room, taking care of my mom, thinking about ICD-10 codes," Oliva said. The AI-driven CAPD technology is built to provide guidance as to what information needs to be in the documentation while the patient is receiving care and enable it to be properly coded and withstand audit scrutiny down the road. The physician can continue to take care of the patient and let the technology focus on the documentation at the same time.

Advanced AI provides the guidance that enables physicians to identify diagnoses and document care in a manner that leads to the most appropriate reimbursement.

Ensuring documentation integrity

CDI programs have been in place for many HCOs for more than a decade. As such, HCOs experienced significant improvements years ago – and are now hitting a wall.

"All of the low-hanging fruit has been taken out," Oliva observed. "When you look at case mix index, and CC/MCC [complications or comorbidities and major complications or comorbidities] capture improvement due to CDI across the nation, you see that there had been a very strong improvement for about 10 years, but for the last two to three years, the improvements started to level off. That makes the job of clinical documentation specialists more difficult and time consuming, as they must look at more cases for opportunities that are becoming more challenging to identify, while maintaining current performance."

AI-enabled CAPD, however, can re-energize stagnant CDI programs by empowering physicians to fine-tune documentation and identify incremental improvements by capturing those opportunities in near real-time. This allows CDI staff to stop querying on more rudimentary information that taxes the memories of the providers and instead use their own clinical knowledge to focus on more complex cases. When combined with the AI technology also available to the CDI staff, the productivity of the entire care team is improved.

Enhancing performance on clinical outcome indicators

With AI-driven CAPD, you can show the disease burden of the patient by capturing the impactful diagnoses that drive the performance in clinical outcomes and improve value-based purchasing indicators.

"Getting all of those secondary diagnoses and really showing the disease burden and risk level of the patient allows you to compare favorably in your clinical performance to others," Oliva said. "If your organization starts to slide back on value-based models just because everybody else is moving forward, AI-driven CAPD can help by making it possible to document all of those additional secondary diagnoses you may be missing that add severity and risk to your clinical outcome measurements."

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Because a more accurate picture of the patient's illness level is documented, the care delivered will qualify for increased reimbursement under value-based contracts. "So scores go up, overall performance goes up and, therefore, outcome indicators related to value-based purchasing improves," Oliva noted.

For example, after surgery for a hip fracture, a patient's hemoglobin levels drop significantly because of the fracture and maybe concurrent use of anticoagulants. An AI-driven CAPD system can immediately prompt the orthopedic surgeon to code the anemia as a secondary condition – acute blood loss anemia – to the hip fracture. This captures a significant comorbid condition; increases the risk of mortality, complications, length of stay, cost and readmission; and avoids an erroneous complication code.

After implementing an AI-driven CAPD system at Ardent, severity of illness and risk of mortality scores shifted from the extreme level three to four by 41% and 49%, respectively. The adjusted patient acuity also provided visibility to other chronic conditions that can affect subsequent patient care and quality measures.

Providing thoughtful resource allocation for operational resilience

AI-driven CAPD empowers HCOs to handle clinical documentation without automatically having to add human resources to the task.

"Staff is expensive and they're valuable and difficult to find. So if an HCO can put in some AI and be thoughtful about when to add nurses to the CDI team, that's a win, not just for the CFO from a financial standpoint, but it's also a win for nursing from a clinical standpoint because they won't lose people to CDI from direct patient care," Oliva said.

With all these results rolling in, HCOs such as Ardent are apt to rely more on AI now and in the future. "We have developed a trust with AI. … And that really allows us to look at how we can put this tool in other areas, maybe even areas where we don't necessarily have a strong CDI presence," Younger concluded. "We really want to expand our footprint into the outpatient arena. Having established a good comfort level with using AI-driven CAPD will help us achieve this."

To learn more about Nuance Communications, visit nuance.com/healthcare.

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