Improving Healthcare Data Quality Using Computer-Assisted Coding

At a time of fiscal constraints, coder shortages and demands for more accurate and timely information, hospitals continue to investigate ways to leverage technology to improve the quality of their data. With more organizations moving towards a fully electronic medical record (EMR), hospitals are beginning to profit from digital information by automating the coding process.

How computer-assisted coding (CAC) is helping the healthcare industry

Even with a robust team, coders struggle with shorter turn-around times, incomplete physician documentation and increased reporting demands. With stringent productivity standards and a proliferation of complex patient documentation, it is easy to miss codes or not capture conditions at the greatest level of specificity. This can affect the quality of the data used for planning, funding, research and patient outcome metrics.

Hospitals are realizing that there is a **proven return on investment with technology that can assist in the coding process and ensure a high level of accuracy**. This is where computer-assisted coding (CAC) comes in. CAC software, based on natural language programming (NLP), can

① **Improve the coding process** ② **Reduce costs** ③ **Raise healthcare quality**

By processing text directly with computer applications, an organization can leverage the wealth of available patient information in clinical documentation, and automate the coding process.

There is a need to demystify NLP — also known as computations linguistics or text mining — and improve expectations for it, because today's healthcare organizations can clearly benefit from this powerful tool.

How NLP works

The NLP engine analyzes and **interprets text from multiple documentation sources created during a patient's hospital stay** — including the Discharge Summary, History & Physical, Emergency Department Report and Operating Room Report— and assists the coder to assess the clinical picture.

NLP can **identify and annotate diagnoses and procedures in patient documentation, link diagnosis and intervention codes, and ensure that conditions are not overlooked by coders when they review the documents.** This frees coders from the non-coding tasks of organizing documents and searching for relevant information, which consumes much of their time. Algorithms and models allow the software to start with existing sources of knowledge, analyze new data, and improve its own capabilities: in short, the more an NLP platform is used, the smarter it gets.

The software **enables complete and accurate code selection and guides the coder through the levels of choices, ensuring all inclusions, exclusions and the code** — also directives are incorporated. The software does not replace the coder's expertise, but enhances it, by recognizing key words and phrases that lead to coding suggestions. The system annotates each document for possible diagnoses and procedures, and prompts them to move as far as possible through the software's clinical pathways. Taking it a step further, NLP can also facilitate the critical process of clinical documentation improvement. It all leads to improved productivity and accuracy in the coders' output.

Integrating CAC into the health information management (HIM) department

3M initially piloted the Canadian version of its Computer-Assisted Coding at The Ottawa Hospital (TOH). The CAC software was integrated seamlessly into TOH's abstracting system. While CAC is not a tough sell to any health information management (HIM) department in the current environment, there are a few issues to consider.

The most important consideration is the level of EMR adoption within the organization. Hospital administrators are often worried that their patient charts are still too paper based. It is true: the more electronic the health record, the more an organization can leverage the NLP technology. However, much of the documentation used for coding purposes is transcribed or available in digital format.

The next consideration is managing change within the department and ensuring that coders embrace the new technology. Staff should see the tool as an enabler rather than a threat. The software won't change the way the coders code—it enhances their efficiency by streamlining their workflow. It can increase coder satisfaction by allowing them to use more of their analytical skills. At the same time, it aids accurate, complete and compliant coding, which helps improve the quality and timeliness of the data.

Coding accuracy is critical; in healthcare, coding is the standard description of a patient's clinical care. In a landscape of fiscal constraint and evidence-based management, accurate and complete data can help the hospital ensure it receives optimal funding and truly reflects the quality of care provided. CAC can help coders to achieve this level of accuracy and efficiency.

3M Health Information Systems

3M Health Information Systems works with providers, payers, and government agencies to anticipate and navigate a changing healthcare landscape. 3M provides healthcare data aggregation, analysis, and strategic services that help clients move from volume- to value-based health care, resulting in millions of dollars in savings, improved provider performance, and higher quality care. 3M's innovative software is designed to raise the bar for computer-assisted coding, clinical documentation improvement, performance monitoring, quality outcomes reporting, and terminology management.

Visit **3M.ca/HIS** to learn more about CAC.

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