



# HOW ARTIFICIAL INTELLIGENCE CAN COUNTER PHYSICIAN TECHNOLOGICAL BURNOUT



## EXECUTIVE SUMMARY

Physicians today face increased pressure to produce more accurate, complete and compliant clinical documentation while simultaneously maintaining their focus on patient care and satisfaction.

Burnout, defined as physical and emotional exhaustion due to prolonged stress, has become increasingly prevalent among U.S. physicians. Nearly 50 percent of physicians reported frequent or constant feelings of professional burnout in the past year, according to a 2016 survey by Merritt Hawkins. Physicians who experienced burnout attributed their job dissatisfaction to two major sources: EHR data entry and increased clerical requirements under ICD-10.

Recent government policies like The Medicare Access and Children's Health Insurance Program Reauthorization Act (MACRA) of 2015 have aggravated some physicians' administrative anxiety. MACRA introduces the Merit-based Incentive Payment System, (MIPS) which uses insurance claims data to grade physicians on quality of care, resource use, Meaningful Use of EHRs and clinical practice improvement. The legislation aims to help physicians adopt digital healthcare technology, and provide support in physicians' transition to value-based payment models. In doing so, it has underscored the importance of clinical documentation.



"Once the final [patient] bill is established and sent out, that becomes what the rest of the world sees about the care you provided for that patient," Anthony Oliva, MD, vice president and CMO at Nuance, said during a discussion at Becker's Hospital Review's CEO + CFO Roundtable. Government and commercial payers then use ICD-10 codes included in the bill to determine physician reimbursement and clinical quality scores, the latter of which CMS plans to make public, Dr. Oliva said. This means a physician's professional success largely depends on what information he or she enters in the EHR.

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**"Once the final [patient] bill is established..."**

Anthony Oliva, MD, vice president and CMO at Nuance

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Fortunately, artificial intelligence, including clinical language technology and advances in speech recognition, can positively support physicians' workloads and improve their overall job satisfaction by alleviating administrative burdens.



“ **click  
fatigue** ”

## CLINICIAN BLUES

Today, clinicians complete a majority of administrative tasks on an EHR or other electronic system. Physicians spend, on average, 50 percent of their work day entering data into EHRs and completing clerical work, nearly twice as much as the 27 percent of work hours spent interacting with patients, according to a 2016 study in *Annals of Internal Medicine*.

Physicians attribute additional time in front of the EHR, in part, to inefficient data entry processes that make clinical documentation tedious and time consuming. EHR interfaces that require physicians to click multiple times to navigate a single medical record have given rise to a condition known as "click fatigue." Click fatigue is directly correlated to the number of mouse clicks the provider must make to use their EHR and related solutions. More clicks correspond to longer time spent on data entry. Internal medicine residents spent about five hours a day entering data for 10 patient records, according to a 2016 study in *Journal of Graduate Medical Education*.

Excessive hours of EHR box-checking and data entry have taken a toll on U.S. physicians. Providers who use EHRs and computerized physician order entry report lower levels of job satisfaction and higher rates of burnout compared to their counterparts who still use paper, according to a 2016 Mayo Clinic Proceedings study.

The introduction of EHRs into patient-physician encounters has contributed to dissatisfaction among both parties. Increased data entry requirements infringe upon physician-patient time, which is central to medicine and a primary reason



many clinicians choose to practice. Physicians report that 37 percent of their time is spent documenting in the EHR and completing desk work during patient visits. The Annals of Internal Medicine reports that patient satisfaction decreases as a result. This is alarming as patient dissatisfaction may influence certain health outcomes, such as medical adherence and continuity of care.

Physician burnout puts patients' wellbeing at risk. Nearly 50 percent of physicians believe overwork, stress and fatigue among their colleagues significantly contributes to medical errors, according to a 2014 study in The New England Journal of Medicine. And the problem continues to grow. The number of physicians who reported experiencing symptoms of burnout rose 10 percent between 2011 and 2014, Mayo Clinic Proceedings found.

Hospitals must address the process inefficiencies that create clerical overload. Relieving administrative burden through automated data intelligence is a strategic priority for hospitals seeking to address physician and patient dissatisfaction and improve clinical retention.

## RECOGNIZING INEFFICIENCIES IN THE CLINICAL DOCUMENTATION LIFECYCLE

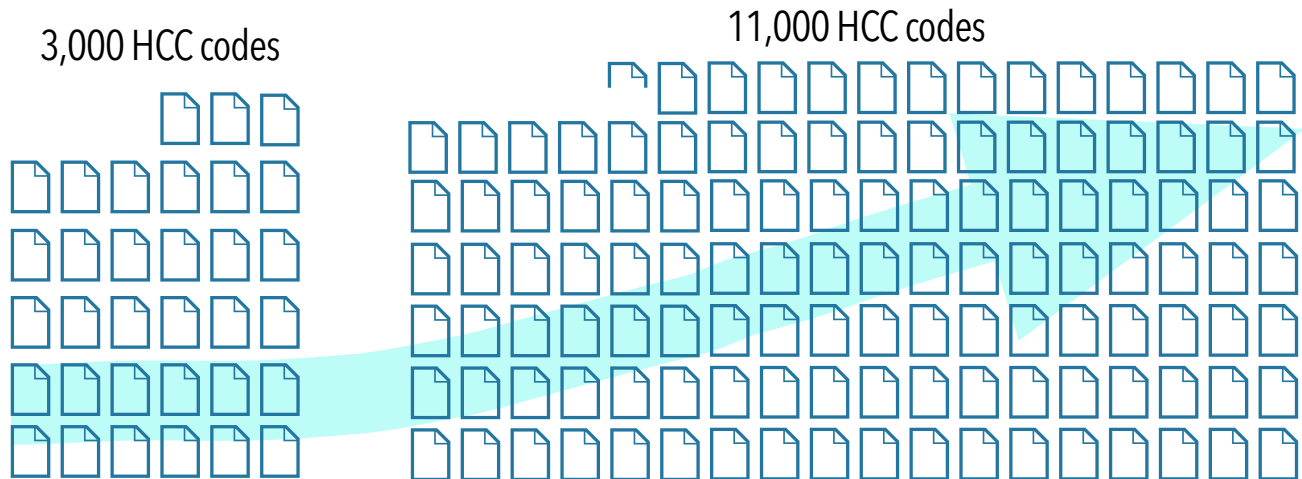
ICD-10 has changed how and what physicians document during patient encounters. To achieve full reimbursement from payers in value-based care, clinical coding should capture the complexity of the patient's condition – the number and severity of comorbidities, the relationships between conditions and the results of treatments and interventions.

Clinicians unfamiliar with ICD-10 coding standards can have difficulty writing a complete, high-quality clinical note. "We as physicians live in an isolated world that is very clinically focused," Dr. Oliva told Becker's Hospital Review. "We use clinical terminology – we don't speak in ICD-10 codes, and if we did we'd look at each other with blank faces, because codes don't convey the clinical picture."

Clinicians may think they are doing an excellent job with clinical documentation by writing thorough notes, but often, their notes fail to meet heightened standards. When this is the case, clinicians face a number of financial and clinical setbacks.

For example, CMS and HHS expanded hierarchical condition categories (HCC) to determine reimbursement to ACOs and other al-

## Growing HCC Codes in Transition to ICD-10



ternative payment models. HCC data applies risk-adjustment scores to health plan beneficiaries based on demographic data and diagnoses reflected in ICD-10 codes. The number of HCC codes grew from 3,000 to more than 11,000 codes in the transition to ICD-10.

Hospitals use clinical documentation improvement programs to ensure each pa-

pletes his or her note. This retrospective practice can introduce additional transcription costs and drain hospital resources and physicians' patience. More than 80 percent of physicians said it is disruptive and time consuming when queries for information occur after they entered the note or after the patient is discharged, according to a 2014 survey from Nuance.



**"When I first started working with CDI specialists, they put stickies on the paper medical chart..."**

Reid Coleman, MD, CMIO for evidence-based medicine at Nuance

"When I first started working with CDI specialists, they put stickies on the paper medical chart – 'Please answer this question,'" Reid Coleman, MD, CMIO for evidence-based medicine at Nuance, said during a presentation sponsored by Becker's Healthcare.

tient's clinical story is complete and accurate so it seamlessly integrates with the downstream coding process. Traditional CDI occurs through follow-up queries by coding specialists after the physician com-

He joked about the more disruptive nature of CDI today. "When we moved to [EHR] they tried to put the stickies on my forehead, which I found highly objectionable."

## ARTIFICIAL INTELLIGENCE PROMOTES CLINICIAN ENGAGEMENT

Artificial Intelligence (AI) technology deployed in the clinical setting helps reduce clinician frustration and supports quality patient care. AI software uses sophisticated analytics and data abstraction to help businesses better manage large quantities of information. In healthcare, AI software employs data management tools to help clinicians use extensive EHR data to inform patient care in real time. It does this by analyzing the patient medical note in progress, as well as every EHR entry concerning that patient, to identify gaps in information. Physicians' administrative burden is significantly improved when documentation is complete and compliant from the start and the need for rework is eliminated.

## CLINICAL LANGUAGE TECHNOLOGY

AI software comes in different categories. Speech recognition and natural language processing technology convert live dictation into digital text and extract meaning from those words in real time. Properly implemented, physicians can capture patient encounters without the rigidity and limitations of EHR templates.

Speech-enabled software promotes professional satisfaction among clinicians by

aligning EHR data entry with physicians' natural workflow. Physicians develop personal preferences as to how they communicate and talk with patients. Dictation-based documentation at the point of care builds on dictation-based training physicians receive in medical school. Instead of looking down at a screen to input data, they can focus on the patient and record more thorough patient observations in a way that feels natural.

Speech-recognition tools can also promote process improvement among physicians by making data entry more efficient. Physicians can use voice commands to skip over repetitive tasks and log information faster than they can type. Hospitals that implemented natural language software saw reduced documentation time and more complete patient narratives, according to a 2014 KLAS report.

## COMPUTER-ASSISTED PHYSICIAN DOCUMENTATION

While efficiency gains are important, the greatest priority is the accuracy of the diagnostic data identified by intelligence technology. Better data helps providers adhere to evidence-based medicine, analyze gaps in care and discover disparities in appropriate use and cost.

Different than dictation tools, computer-assisted physician documentation (CAPD) is an AI solution designed to help physi-

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– Paul Mihalakakos, MD,  
anesthesiologist and president  
of medical staff at Aurora Medical  
Center in Twin Rivers, Wis

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cians capture the complete patient narrative by suggesting documentation improvements. Similar conceptually to "spell check," the software uses natural language processing to analyze physician documentation and advises physicians on ways to improve specificity of the patient's medical condition and address diagnoses that are not properly documented. By providing feedback in real time, CAPD software helps physicians document in a way that enables coders to fully capture the complexity, severity and quality of medical care in ICD-10 terminology. When CAPD software is implemented effectively, physicians can realize substantial gains in clinical quality scores, continuity of patient care and reimbursement rates.

"CAPD would help our physicians tremendously because right now we have coders rounding with our physicians, in the background," said Paul Mihalakakos, MD, an anesthesiologist and president of medical staff at Aurora Medical Center in Twin Rivers, Wis. Reducing disruptions inherent to the traditional CDI process can boost physician morale and improve clinical communication between providers.

CAPD output is composed in a readable note – important not only for the medical record and coding teams, but also for working with multiple caregivers. By highlighting only the relevant information, CAPD solutions prevent "note bloat," where superfluous or irrelevant documentation obscures key information, making the record difficult and time consuming for other physicians, nurses or coders to read.

"I see clinical documentation technology as a vehicle to improve channels of communication between caregivers to make sure everyone is on the same page," the COO of a Chicago-based hospital system said during the roundtable discussion.

## IMPROVED CLINICAL QUALITY SCORES

As consumers gain awareness of physician-rating websites, providers are paying more attention to individual quality scores. Public reporting organizations like CMS' Five-Star Quality Rating System, CareChex® and Healthgrades® use billing data in part to determine quality rankings among hospitals and physicians.

Poor documentation practices can deflate physician quality scores. That means lower quality ratings may not accurately reflect the quality of care administered.

"The first place I look when I see an underperforming physician is at their documentation," said Dr. Oliva during the roundtable discussion. "I always make the presumption the care is good until proven otherwise, because the outcome is so impacted by the clinical doc-

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**"I always make the presumption the care is good until proven otherwise because..."**

Anthony F. Oliva, DO, MMM, FACPE, Vice  
President and Chief Medical Officer

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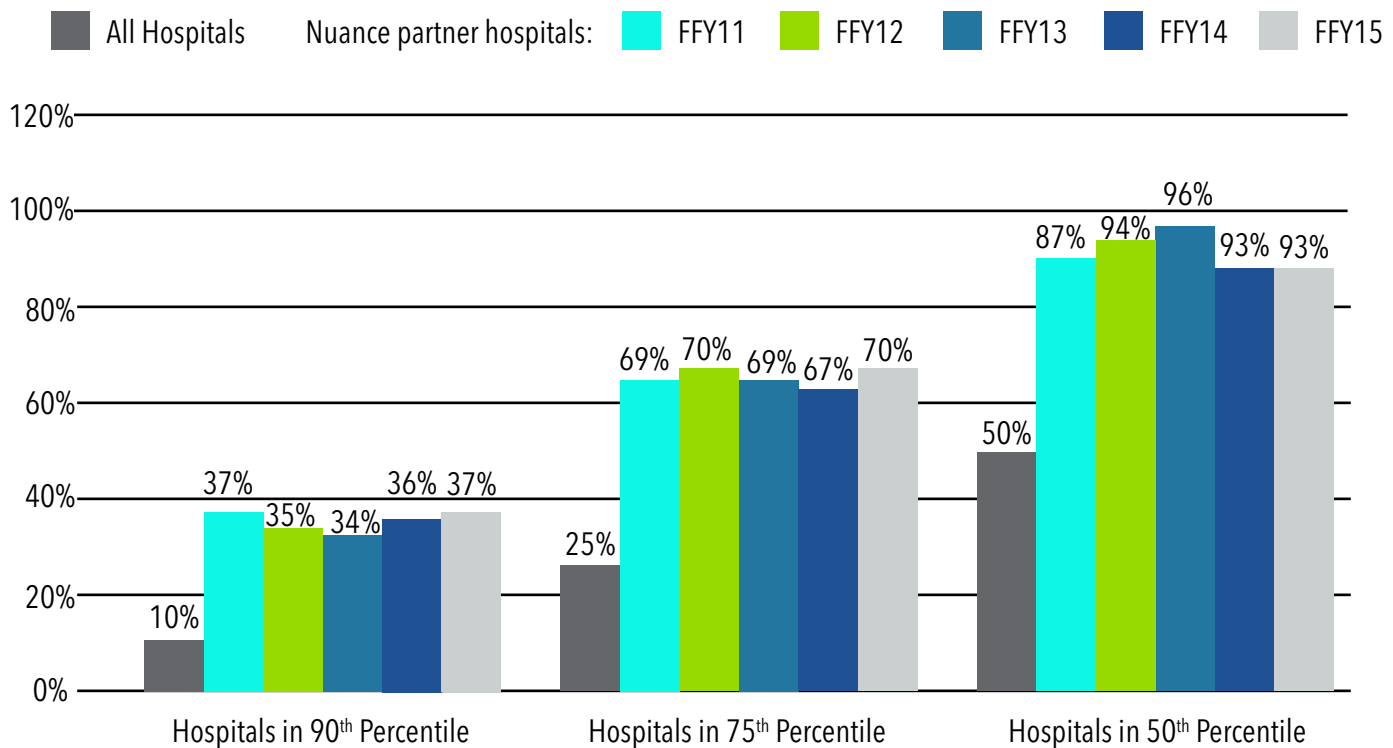
umentation." Some physicians fall short of quality standards not because of their care or treatment decisions, but because they are poor at EHR data entry. Poor quality scores may also reflect unspecific documentation that didn't accurately capture medical acuity or treatment in a codeable way under ICD-10.

Documentation methodologies that more accurately capture severity can reduce variability in a physician's observed mortality metrics and patient outcomes. "Comprehensive, clear clinical documentation of patient care can actually improve physicians' baseline performance, which helps physicians more accurately stack up against their peers and regional competitors on quality comparison," Dr. Oliva said.



## 5 Year Mortality Ratings

Nuance CDI client facilities outperform the expected distribution of the database at all percentiles



2016 study conducted by Nuance and Quantros evaluating the quality performance of hospitals using the Nuance Clinical Documentation Improvement program against other U.S. hospitals. See [here](#) for the full study.

## CONCLUSION

Emerging artificial intelligence solutions can support clinical decision-making to improve physician quality and performance. Natural language processing programs infused with clinically based guidance engage physicians and support CDI specialists and coders, all while easing the administrative burden on clinicians. Advancements in areas like computer assisted physician documentation – either front-end solutions or those integrated with a hospital's EHR – provide physicians and hospitals with powerful tools to drive timeliness, accuracy and clinical quality across the enterprise.

"Technology should be simple and do work for physicians – not the other way around," Dr. Coleman said. "Through a more natural approach to creating clinically accurate information, everyone wins – the physician, the institution and most importantly, the patient."

## ABOUT NUANCE:

Nuance provides a more natural and insightful approach to clinical documentation, freeing clinicians to spend more time caring for their patients. Nuance healthcare solutions capture and communicate more than 300 million patient stories each year helping more than 500,000 clinicians in 10,000 healthcare organizations globally. Nuance's award-winning clinical speech recognition, medical transcription, CDI, coding, quality and diagnostic imaging solutions provide a more complete and accurate view of patient care, which drives meaningful clinical and financial outcomes. For more information, visit [www.nuance.com/healthcare](http://www.nuance.com/healthcare) or call 1-877-805-5902.



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