

Healthcare AI, Ambient clinical intelligence

What is ambient clinical intelligence—and how is it transforming healthcare?

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With a growing physician shortage, increasing burnout, and declining patient satisfaction, a dramatic change is needed to make healthcare more efficient and effective, and bring back the joy of practicing medicine. AI-driven ambient clinical intelligence (ACI) promises to help by revolutionizing patient and provider experiences with clinical documentation that writes itself. Discover how ACI is strengthening patient-provider relationships, reducing burnout, and improving care outcomes—and see what's next for this remarkable technology that's transforming healthcare.

What is ambient clinical intelligence?

For decades, researchers have been working toward a vision of ambient intelligence, finding ways to harness cloud, advanced AI, and the Internet of Things to create more intelligent spaces that help people live and work more safely, efficiently, and sustainably. Perhaps the most important application of ambient intelligence is in healthcare, where [AI-driven ambient clinical intelligence is transforming experiences](#) for providers and their patients.

Ambient clinical intelligence (ACI) uses advanced, voice-enabled AI to automatically document patient

encounters during a natural, free-flowing conversation between the physician, patients, and their families. It enables physicians to give the patient their full attention during the visit while ACI technology creates complete, accurate clinical notes directly in the EHR for the clinician to review and sign.

Why was ambient clinical intelligence created?

With ACI, [clinical documentation is created automatically](#) at the point of care helping to solve many of the most pressing challenges in healthcare.

Clinician burnout is a major problem for healthcare organizations and patients. In [Medscape's 2021 physician survey](#), 42% of physicians reported feeling burned out, citing “too many bureaucratic tasks” and “spending too many hours at work” as the main causes. Providers often spend hours of their day documenting patient care—and the administrative burden often stretches into their own time, preventing them from switching off after a long day and spending time with their families.

When almost half of physicians are experiencing burnout, we're unlikely to see much movement on the [shortage of physicians](#), with the Association of American Medical Colleges projecting [a shortfall of nearly 122,000 physicians in the US by 2032](#). And of course, as the physician shortage increases, so does the pressure on those who remain, exacerbating the burnout problem.

All of this has a direct impact on the patient experience, as stressed, overworked clinicians can often be (or appear to be) rushed and distracted. That can lead to errors with potentially catastrophic consequences, but it also erodes the relationship of trust between physicians and patients who feel they're not being listened to or treated as individuals. Once the patient-physician relationship begins to break down, disillusioned patients are less likely to engage with their care, adhere to care plans, and follow preventive healthcare advice—increasing the likelihood of adverse outcomes.

However, by using ACI solutions to remove much of the documentation burden, healthcare organizations can [reduce burnout](#), retain existing staff, and attract new talent, while improving patient relationships and outcomes.

But perhaps most importantly, ACI can free physicians from the shackles of clerical duties and bring back the joy of practicing medicine.

How is ambient clinical intelligence transforming healthcare?

Nobody went to medical school so they could spend their days entering data into an EHR. They went to medical school to embark on a rewarding career, helping people improve their health and their lives.

ACI technology ensures the primary focus of each visit is the patient and their story, not notetaking or documentation. That strengthens the patient-physician relationship and increases patient satisfaction, engagement, and retention. It brings providers back to what attracted them to medicine in the first place. And it removes the heart-sinking feeling of getting to the end of clinic time and seeing hours of documentation tasks ahead.

For example, since implementing Nuance's ACI solution, the Dragon Ambient eXperience (DAX), [University of Michigan Health-West has seen patient satisfaction rates rise to 98%](#), with most saying their visits have felt more personal and that their physician has been more focused on them. Physicians spend less time looking at computer screens, documenting care, and working after hours. With Nuance DAX, they can focus on delivering higher-quality care to more patients—without burning out.

The most exciting thing about ambient clinical intelligence is that improving patient-physician encounters is just the beginning. Research is already well underway into [using ACI to spot indicators of depression, anxiety, and social determinants of health](#) during patient-physician conversations.

The [potential applications for ACI](#) are almost limitless, but one thing is certain: this technology will change the experience of care for physicians and patients, and help both groups lead happier, healthier lives.

Tags: [Burnout](#), [Ambient clinical intelligence](#), [Dragon Ambient eXperience](#)

More Information

Discover ACI

Learn more about the impact of clinical documentation that writes itself with the Dragon Ambient eXperience.

[Learn more](#)



About Kenneth Harper

Kenneth Harper is the Vice President and General Manager of Nuance's Healthcare Virtual Assistants and Ambient Clinical Intelligence business. Kenn has been working in the conversational AI industry for 15+ years, helping to shape virtual assistant solutions across mobile phones, TV's, cars, wearables, robotics, and most recently healthcare systems. Kenneth leads Nuance's Healthcare Virtual Assistant business, which leverages an advanced suite of technologies combined with purpose-built hardware to streamline interactions with the EHR and creation of clinical documentation, allowing physicians to remain 100% focused on the patient without technology getting in the way. Kenn holds a B.S. in human factors engineering from Cornell University and a M.S. in human factors from Bentley University.



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