

Healthcare AI, Ambient clinical intelligence

# The impact of technological advancements in healthcare

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Advancements in technology have improved healthcare for all, especially for medical documentation. While advancements in these technologies have taken awhile, recent developments have propelled the industry forward. The power of conversational AI, ambient AI and now generative AI is enabling new functionality that's furthering the mission of improved patient care and clinician-patient experiences.

I've often thought that advancements in technology are like raising children. When you're in it day-to-day, child development seems to move slowly, and you don't notice all the changes. But when you look back, you realize how quickly the time went and how fast they advanced through each childhood development stage.

Advancements in medical documentation technology are kind of like that. The technology has advanced significantly [and transformed the workflow](#) but it's been in phases over a long period of time.

Medical documentation began without any technology. Clinicians took pen to paper to document patient care and stored patient charts in closets. Charts were often illegible, they got lost, the quality of the documentation was highly variable, and sharing them with other clinicians outside of the practice was difficult.

Then came transcription, which began as a manual process where medical stenographers converted shorthand into medical documentation, which then evolved into typed notes on typewriters and then on computers. Today, instead of converting written notes into medical documentation, transcriptionists are converting the audio of the patient encounter, which is captured by any number of recording devices (and has evolved over the years), to speech, which relies on Natural Language Processing, a technology pioneered by Nuance. However, medical documentation created by transcription can take too long to get back and is often incomplete.

Building on the foundation of transcription, is front-end speech. Using a cell phone or a microphone that integrates with a clinical workstation and a computer, a clinician simply dictates patient encounters directly into the electronic medical record, speeding up medical documentation creation significantly. With Nuance's [front-end speech solution, Dragon Medical One](#), clinicians can pre- and post-chart at any time and perform common tasks such as signing the note, navigating the EHR and placing orders – all with just voice.

The latest technological advancement in medical documentation is [AI-driven ambient clinical intelligence \(ACI\)](#). ACI captures the patient encounter via a mobile application and automatically converts it into medical documentation for review and signature in the EHR. Nuance's ACI solution, [Dragon Ambient eXperience](#), was born three years ago and is used by thousands of physicians in over 30 specialties nationwide. It has already won the Silver Stevie award in the healthcare technology category and was [ranked #1 for improving clinician experience](#) in KLAS's top 20 emerging solutions. Most importantly, it's transforming medical documentation and delivering significant results. It's saving clinicians seven minutes on average per encounter. And that time savings is giving clinicians back time in their day and freeing them from documenting care during or after patient visits. In a recent Nuance survey<sup>[i]</sup>, 79% of clinicians stated that they have better work-life balance and a 70% reduction in feelings of burnout and fatigue due to DAX. And because DAX is enabling clinicians to fully focus on patients and capture their complete story automatically, 85% of patients whose physicians use DAX say their clinician is more personable and focused compared to their previous visit.

Together, Dragon Medical One and DAX can be used for all charting needs – with just your voice. Want to review a patient's history and results, sign a note, or place an order? [Use Dragon Medical One](#). Want to capture the patient conversation ambiently and document care automatically? [Use DAX](#). These solutions surround care teams with an AI-powered ecosystem of support that increases efficiency and documentation quality, while enhancing the quality of care and delivering a better patient-clinician experience.

This is just the beginning of the benefits that AI-driven technology is bringing to healthcare. The potential for generative AI to further automate and simplify clinicians' tasks is enormous – particularly when combined with proven conversational and ambient AI in a seamless, workflow-integrated manner. And while it may have seemed like it took a while to get here when in development, looking back, the advancement in medical documentation technology has been fast and transformative.

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[i] Based on Nuance's survey of over 1,000 clinician survey responses, conducted Feb 2023, US only.

**Tags:** [Burnout](#), [Dragon Medical One](#), [Dragon Ambient eXperience](#), [Future of healthcare](#), [Patient experience](#), [Physician documentation](#)



### 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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