What's next

Ambient Clinical Intelligence, Healthcare, Healthcare AI

What is "cognitive load"—and how can we help clinicians manage it?

Mounting cognitive load—caused by too much information, poorly optimized systems, and growing administrative burdens—is exacerbating your risk of burnout and preventing you from truly engaging with patients. We explore the psychology involved and recommend how you reduce the impact of your cognitive load, so you can refocus on patient care.

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Cognitive load is a psychological theory that deals with how the human brain uses its working memory, how our ability to process information is influenced by the number of tasks we're engaged in, and how well that flow is managed. When we encounter massive amounts of information, our short-term memory—which aids in learning and decision-making—can get overloaded, which can prevent us from using and storing that information effectively.

Cognitive load affects us all, but it's only in recent years that scientists and researchers have focused their attention on how it affects clinicians and, in turn, the way they approach patient care. The amount of information and number of tasks clinicians need to process and manage is rising, especially as clinics increase their reliance on centralized digital healthcare systems. And that means clinicians' cognitive load is growing—to the point of becoming a burden that's contributing to significant feelings of burnout for clinicians.

Extraneous information and tasks contribute to the cognitive load—and burnout

There are three types of cognitive load:

- Intrinsic—related to the complexity of the task (like thinking about all the steps required to schedule a follow-up)
- Extraneous—how much working memory is needed to store the information required for the task, and how much is available (remembering who the patient is, they're preferred days and times, and so on)
- Germane—how information is committed to long-term memory (if the follow-up booking isn't completed right way, clinicians must store all the information in their memory for later)

Extraneous load is the component that affects a clinician's workload the most. Even the simplest task—such as requesting a follow-up appointment—can be over-complicated by awkward processes and too much information, especially if the clinician is juggling other responsibilities at the same time.

Working in an EHR, for example, clinicians are presented with massive amounts of patient data. And while this is useful for an accurate, long-term view of a patient's health, if the information isn't relevant or well-organized, it can add to the clinician's extraneous load.

Unmanageable cognitive burdens put you and your patients at risk

Cognitive burden is one of the leading contributors to burnout, which 98% of clinicians in our study with HIMSS reported experiencing during their career. Our respondents said that heavy workloads, documentation and administration responsibilities, and inefficient processes—all major components of their cognitive load and burden—exacerbated their feelings of burnout. And when the load becomes unmanageable, risks can spiral.

When our working memory reaches capacity, our brain starts "load shedding." In an ideal situation, the long-term memory takes some of the burden, storing important information for later retrieval—or we reduce the amount of incoming information, making the load easier to manage.

However, if our working memory is overburdened, load shedding isn't always that controlled; we can forget or overlook important pieces of data without realizing it. Overworked clinicians may miss small but important details about a patient's condition, especially when they're quickly switching between patient records to keep to a demanding appointment schedule.

The American Medical Association reports that over 87% of individual medical errors can be attributed to cognitive overload. So, on top of the risk to clinicians' wellbeing, there's a risk to patient outcomes too. That means managing this burden is paramount for patient safety.

Manage cognitive burden by reducing documentation workloads

As a key contributor to burnout, documentation and administration responsibilities are a strategic place to start when considering how to reduce your cognitive burden. While you can't eliminate them completely, you can remove some of the distractions you face outside of patient consultations.

For example, many clinicians often spend a lot of time moving between different programs, reporting processes, and communication practices—which can make it difficult to find a rhythm of working, especially if you work across different clinics or departments. By standardizing the tools and approaches used across your health system, you can decrease the time needed to learn them, and free up time to focus on patient care.

Technologies like ambient clinical intelligence (ACI), powered by AI-driven voice, address the volume of documentation you face outside of patient consultations. With the right solutions you can reduce the time it takes to complete essential documentation and remove the burden of remembering all the minute details of the patient conversation—freeing up time and cognitive cycles for you to use your expertise where it's needed most.

The Dragon Ambient eXperience (DAX), a pioneering ACI solution, removes the burden of documentation, allowing you to put all your focus on the patient without the need to look at a computer screen during a consultation. This means less information to process and fewer systems to navigate, and less information to remember, reducing your cognitive load to help you regain the capacity you need to deliver high-quality care.

Another way you can save time is by streamlining the way data is presented in your EHR. EHRs have enormous amounts of useful patient information, but they're also home to data you don't need for diagnosis, such as insurance details. Optimizing the EHR to display just the medical information during consultations and reducing the volume of notifications can help you cut out the noise and concentrate during patient consultations.

Champion solutions that help reduce cognitive load

As healthcare technologies become more sophisticated, we can't lose sight of the human connection that allows you to work with your patients to find the right diagnosis and treatment path. By focusing on technologies that are designed to facilitate your interaction with patients, you can reduce your cognitive load, alleviate burnout, and refocus on ensuring your patients get the right support.

Tags: Clinician Burnout, Dragon Ambient eXperience, Dragon Medical One, Future of Healthcare, Patient Safety

More Information

	Explore ACI Discover clinical documentation that writes itself, using ambient clinical intelligence to accurately record patient information at the point of care. 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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