AI-POWERED AMBIENT INTELLIGENCE

Reducing clinician burnout, improving physician satisfaction and enhancing patient care

American Hospital Association™

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The COVID-19 pandemic's crushing impact on well-being and mental health has further exacerbated the burnout crisis among clinicians. This additional strain has made administrative burdens and lack of time for patient-centered care — existing contributors to burnout and dissatisfaction — worse. Artificial intelligence (AI) technologies can help alleviate clinical documentation burdens by adding time for face-to-face patient care and converting time-consuming, labor-intensive, and often inefficient tasks and functions into actionable information to produce better outcomes.

This executive dialogue examines how AI and ambient intelligence can, without the need for mouse and keyboard, automatically document care and place it directly into the electronic health record (EHR), allowing clinicians to spend more time with patients and alleviating administrative requirements. It also explores current barriers to AI and ambient technology adoption and how organizations can achieve clinician support and buy-in.

KEY FINDINGS

1 Health care executives are looking at AI and technology solutions to **minimize the documentation burden in the EHR** and improve its accuracy. With health care staffing shortages, previous alternatives of using and training nurses, in-person-scribes and virtual scribes for clinical documentation are no longer sustainable.

2 Providers are constantly **adjusting to new regulations and quality measures** that vary by payer. Some health systems are automating processes and workflows and looking at how to reframe the workflow and everybody's role in it — trying to minimize clicks and time-consuming steps.

3 **Ambient clinical intelligence and listening systems** free the clinician from typing on the computer and recapture the focus on the patient-clinician interaction and relationship that was altered with the EHR. Patient satisfaction scores reflect that the physician is listening and talking to them.

4 To **increase provider satisfaction and efficiency**, clinicians want an ambient clinical intelligence solution that efficiently documents patient encounters at the point of care, communicates with team members, helps with inbox messages and assists with differential diagnoses.
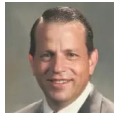
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MODERATOR *(Elisa Arespacochaga, American Hospital Association):* **How large of a problem is clinician burnout in your organization and how are you addressing those challenges particularly related to documentation across your clinical team?**

JARED PELO *(Nuance Healthcare):* I was a medical director at a small 40-bed hospital in Virginia and was watching my partners suffer. I launched a startup in 2014 that was one of the first virtual scribing companies. Our vision was always artificial intelligence (AI) and automation. In 2017, we became part of Nuance, an AI company. It's been exciting to see Nuance take a vision from some doctors in rural Virginia to 'We're going to change health care and make it so that doctors don't have to worry about documentation anymore.' I'm excited to hear from all of you about the challenges you are experiencing and the solutions you have tried or are considering.

ALBERT ESPARSEN *(Gerald Champion Regional Medical Center):* We have 75 providers in our group. As our physician panels grow larger, we've moved toward adding nurse practitioners into our provider clinics to try to absorb some of that growth. Then, our nurse practitioners are getting just as busy as our providers. We brought scribes into our clinics to try to minimize some of the documentation burden. And contrary to what we've always been told, 'The EHR is here to help you,' it really didn't work out as planned because the EHR added another burden onto an already busy practice. For a time, scribes were a good answer, but now we can't get enough scribes. Then we went to the virtual scribes and that worked out for a time, but now the company we use is having trouble finding virtual scribes. I still think scribes are a good solution so that our providers do not have to deal with the cumbersome EHR. We have to have a better solution and that's the next piece that we're looking for.

ANDREW LANCASTER *(Gerald Champion Regional Medical Center):* My biggest burnout is with prior authorizations, the burden of documenting quality, which you may do during the visit and having to hire more staff with a smaller recruitment pool to navigate a relatively complicated system. I'm an endocrinologist and I need to have a diabetic eye exam in the chart once a year. But having that physical document in my EHR, which I have to get from another office, is a huge burden.

When we were looking at Nuance, I thought how awesome it would be if during the conversation with my patient about where they had their last diabetic eye exam, an intelligent system automatically goes to get the documentation. Asking my staff, 'Where's the diabetic eye exam?' wears you out after a while.

APRIL WEINBERGER *(Marcus Daly Memorial Hospital):* We embraced teammates care in rural Montana, which was a bit of a challenge, and used nurses as scribes. The relationship building that you get out of that and the knowledge about the patient is really high. I'm in family medicine, and I think that has been one of the pros, but I've been finding that they burn out at the same rate that the doctors did doing the same job.

It just shifted the burnout. In our community, I can't get nurses now. That model was not going to be sustainable for us in the long run from a documentation standpoint. Getting clinicians to transcribe something that is a complete document in a 15-minute appointment is painful and hard and distracts from other caregiving responsibilities.

RACHELLE SCHULTZ *(Winona Health):* The documentation is out of control with the number of regulations and quality measures you have to meet. Every payer has different quality measures, and they're all a one-off of something else. There's no way for any provider or staff person to remember all of these iterations. We've worked on, and automated, a number of the processes and workflows — how things go through and built in the documentation time to the visits so there are longer visits. The burden of having to be data collectors,

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who's using it and to what end, is the part that isn't really getting addressed.

When I hear doctors saying, 'I've got to figure out how to pull drop-down charts and figure out this diagnosis and CPT coding,' I don't think it's a good use of professionals' time.

We're also looking at how we can use the team model — more roles to do certain pieces of work. That includes the patient in pre-visit planning by having them know that they're actually part of the data collection and filling things out more completely. We're trying to reframe the workflow and everybody's role in it.

MODERATOR: I remember seeing an early demonstration by an emergency physician at an AMA meeting where he pulled up his EHR and took us through his experience of having to document care for someone who is the middle car in a three-car pileup. 'Well, I looked up car accident, but it's under motor vehicle accident. So then I had to go back here ... .' It took him 20 minutes to find all the right pieces, which wasn't very useful.

AARON GRIGG *(Grande Ronde Hospital):* I would add that it's not just the documentation. If I could just dictate the whole visit into my computer and it would parse all that out for me, it would be so much quicker. But it's the fact that you have to dictate, and then mouse, and then type, and then dictate, and then get all the buttons pushed to get all of the regulatory measures filled out. As I work with our hospital information technology team, we try to minimize clicks as these new regulations come out.

CHRISTINA TUOMI *(South Peninsula Hospital):* I'm a family physician and I do OK documenting during

my clinic day. I have all my templates. But when I'm done with my day, my inbox is full of labs, patient requests and questions, and documents to be completed or signed off on. When I'm done with my clinic day, I still have a full work day sitting at my computer.

We're trying to step up that team model and hire more nurses who can help filter through that, but then it just becomes a burden on somebody else.

GRIGG: The new Admission, Discharge and Transfer regulation requires those messages to be sent out and has doubled some of the in-basket messages of our specialists. The idea was for you to get those messages if you're on their care team, and that fell to the providers to manage whether they were on that patient's care team. It's just another thing that you have to manage. It was a good idea, but at what point does that stop being my burden?

For example, when I was a primary care provider, I get all those emergency department visits. Is it my responsibility to double-check the ED's dose of amoxicillin for the patient? Where does my responsibility end on those in-basket messages?

SCHULTZ: Along with technology and texting, there are also changing expectations from the patient population. 'Could you just do this for me without it being a visit?' If some of that changed into a visit, it might change the patients' expectations. There are some boundaries that have to be set. The provider thinks they're done with their day, and then they've got 50 more patient requests.

DEEPAK PRABHAKAR *(Shepard Pratt):* We are trying to figure out a mechanism where the data flow meets the expectations of the primary care providers or

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other disciplines that talk to each other. For example, we just put pharmacy orders and lab results in the clinical interface, but somebody still needs to go back and connect that data point to the clinician, and that takes some time.

MODERATOR: It sounds like some of you are already using various technologies. I'd like to hear more about your experience and what you've learned about bringing technology in.

BASHAR NASER *(Gerald Champion Regional Medical Center):* We centralized some of the registration and intake process and that helped. Two years ago, we started using a product called Phreesia to automate the patient intake process and screenings. We can just send the patients a link or a text on their smartphones and they can pre-register before they come to the clinic, so that expedited the process. It allowed us to be more efficient and also helped with upfront co-pays.

We added virtual access with Athena Health. A lot of patients in rural America don't have access to transportation, their rides didn't show up for the day or they live an hour away and can't come.

Finally, one thing we're working on that will help to reduce physician burnout is remote patient-monitoring devices. We have patients whose hypertension and diabetes numbers are a bit out of line, but whom they monitor and talk to. For patients whose vital stats are way out of the normal range, the physician can be notified and an appointment set up to avoid a visit to the emergency department and hospitalization.

SCHULTZ: There are many new technologies coming out that take a process and automate it. We started with Phreesia also; it has more functionality

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> Winona Health

than just check-in and we're looking at how to use it for pre-visit planning.

We have an ACO for the Medicaid population and the Medicare population, and over the last three years, we have gone into shared savings with our largest commercial payer. All those arrangements are predicated on quality measures. Last year, our payer funded a platform for us that takes all the claims data and runs them through this platform with definitions for the quality metrics and comes up with a list of the patients with care gaps and opportunities. When we targeted those patients, our quality scores went up.

We have to think differently. Applications like this are all just emerging. We had to teach that company some things so they could improve the platform. That's the nice thing about these companies; they fix things fast and they get better.

We have a virtual platform for doing asynchronous visits; at the end of the visit it's already teed up the note. The provider does not have to do the note because it's based on the algorithm and the information the patient put in. The note is there, and the doc signs off. It's about two minutes of work from the provider side. We asked, 'Can you do that in the regular clinic?' It's more complicated in the clinic setting, but let's explore it. I think we have to partner more with some of these emerging technologies to make things easier.

We put in revenue cycle bots that can run 24/7/365. It's an automated process. We take some of these routine processes that the bot can just run over and over again and it takes all that work off of people. Because, honestly, nobody wants to do this work.

We've got four bots running in the business

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office for cash posting, claims status inquiries and denials. The bots take a manual process and automate it — going out to payer sites, running a check and sending the status back to the EHR to trigger a workflow.

NASER: If we can just unload some of the tasks, because even the business office staff is hard to find. There's a shortage everywhere. AI can allow the staff to focus on those that need more documentation. It's almost that 80/20 rule — 80% of the claims will go through with no problem, they're going to get paid, but the 20% that insurance can hold are going to require more documentation.

MODERATOR: Several of you mentioned you're using either virtual assistants, scribes or other ways to simplify clinical documentation and reduce the amount of time clinicians spend on administrative tasks. How's that been accepted from the physician or clinician's perspective as well as the patient perspective?

WEINBERGER: It's great. When I can keep my system going with a couple of nurses, we're in a flow because I have them all trained. It takes me six months to train them to scribe. My life opens up. My time with my patients is more meaningful. Patients start to see that nurse as part of my care team and they don't mind having the extra person in the room. It's just not sustainable because of the nursing shortage. It's great to not have that sort of burden. I can take my messages all day long, because I'm not documenting and have the time to do that.

I feel as though my problem-solving skills are much better when I can focus on the patient, when I can address their problems in the moment, instead of closing all the care gaps myself, and making sure

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that I write exactly what they're saying, and get all the details in my note. It's really important that we keep working to eliminate the distractions and recapture the focus on the patient that we have lost with the EHR.

ESPARSEN: When we look at our patient satisfaction scores every month, one of the complaints of patients is, 'They're always typing on their computer. The doctor's not paying attention to me anymore.' Whenever we've used scribes, initially, patients were a little concerned about having a third person in the room, but with time, they've become comfortable. With virtual scribes, they become even more comfortable interacting with physicians. Our patient satisfaction scores have gone up, because, 'Now, my doc talks to me.' So we've returned to that patient-physician interaction and relationship. That has done a lot for our patient satisfaction scores.

PRABHAKAR: An in-house solution for us is utilizing patient-reported outcome measures in outpatient and urgent care. If you're asking patients or providers to spend a lot of time in open-ended data collection, it takes away from their experience and goes more into typing and just data-entry functions. We have found a good balance where there is just enough information that's clinically meaningful. Then we integrated the notes into the EHR automatically. This led to more of an opportunity for the clinician and the patient to have a direct one-on-one conversation, rather than being distracted.

GRIGG: We've used e-scribes. Not all of our providers have them. The two biggest drawbacks that I have seen are when they stop or they finish their time. They're usually pre-med students or someone who's already in the career trajectory. You'll have

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them for six to 18 months. As the CMIO, I work closely with training providers to make sure we're getting all the data in the correct spots. I can't train just the provider; I also have to train the scribes. The software isn't as intuitive as it should be.

I want to refocus on making the documentation less burdensome. How can we remove some of the regulations and make it less complex? It's great that bots can do this, but why do we need those bots in the first place?

MODERATOR: Rachelle, you mentioned that you're doing many things that are entirely automated. What are some of the opportunities with automation that once you get to a point where everyone understands how it works, you don't have to train the next person?

SCHULTZ: If we have a dependency on a person, or one way of doing things, we're always at risk. We have to break down the work and figure out what can be automated. Our challenge is finding the tools and technology and then figuring out the workflow design to get us to a state of operating that's sustainable. So much of what I see in terms of workflows and processes can be automated.

NASER: We're always open to technology, although health care tends to be behind when it comes to technology. Even though we have electronic records, we still have a lot of paper and records. Not all the technology companies are willing to open their systems to interface with each other. Lately, a lot of our EHR partners are warning us that they're short-staffed. When we try to do an integration so that two systems start talking to each other, it's a six-month wait before they even start having that dialogue.

We have two EHR systems — one for the hospital and one for the clinics. Patients have to go into two separate portals, where they're using a password to sign, to get their results. They want to know why they can't just sign up in one portal. With cyberattacks occurring all the time, the large EHR systems won't allow their systems to talk to each other.

MODERATOR: How can we harness some of this technology to make an impact on care delivery?

LANCASTER: I would like something that helps me through a differential diagnosis pathway, based on some of the complaints that are being heard. So if someone comes in with fatigue, I'd like to see an AI solution that verifies the TSH had been checked 12 times in the last six years. The CBC checked out OK, but the hematocrit was elevated, prompting a screen for iron. The likelihood of hemochromatosis causing their fatigue is 8%, which is higher than any of the other things listed.

PRABHAKAR: The sole purpose of documenting is to serve people. If the patient-doctor interaction can be captured using AI and made available for whomever needs it for the patient to get the care they need, that would be an advance. AI needs to be more than a tool for deciding what goes into which text box and direct more focus on medical decision-making.

GRIGG: There's also a way that EHRs could automate some of the processes for which we actually have to click a button. For example, if I scroll through the past medical history, I've reviewed it. Why do I have to click a button saying that I reviewed it? I would also refer you to look at the AMIA 25x5 document, reducing clinical documentation burden and optimizing the EHR.

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NASER: The goal has always been for the physician to spend quality time with the patient. The science is moving fast. Everybody's looking to implement the technology to help the medical staff to give better care, faster and reduce errors.

MODERATOR: With the increasing cognitive load, being able to provide information just in time can improve performance. Nobody keeps everything in their heads anymore. Jared, do you have any comments?

PELO: So many great things were said here. I'll just take it back to that doctor-patient relationship. I don't think it's just physicians who want that relationship to be great. Everybody who goes into health care, we all feel a responsibility to take care of this population with whom we're entrusted.

Some of the things that stick out is the ability to have some AI intelligence with us all the time, working. Many of us have implemented solutions that are people-driven. They fix a problem for a short period of time; it's perfect when everybody's trained up, but then they leave — they go to medical school, nursing school, they burn out.

Five years from now, nobody will practice medicine without AI. It will be doing your documentation, communicating between team members and honing in on a diagnosis as more patient data is collected.

We are at the tipping point. It reminds me of when Netflix stopped sending DVDs and shifted to streaming. And then more and more companies started streaming and many people dropped cable as a result.

When you train the AI assistant, it's going to work with you for the next 30 years of your practice. It will get smarter and do more and more for you.

Our goal is to be back by our patients' bedside making eye contact. And when patients make those nonverbal cues, we actually see them because we're not staring at the computer.

One of the outcomes we've seen already is closing care gaps. We get reports from health systems that they're closing care gaps and that their quality scores are going up. I think it's because physicians have time to pay more attention to patients. We also hear that coding is more accurate with better documentation.