

dear residents

Harnessing Artificial Intelligence Wisely

August 24, 2025

Dear Residents,

I continue to be astounded by the changing paradigms in medical education. I began medical school in 1980. Textbooks were our primary source of information, journals were on paper, and literature searches were laborious. We relied on in-person lectures on blackboards with the occasional overhead projector-style instruction. I began residency in the US in 1988, and only one hospital (St. Joseph in Downtown Houston) offered electronic lab results that we could access on a few designated computers. It was during my fellowship that the personal computer became available, and I had my first AOL e-mail account. When I arrived at the Dallas VA in 1995 as a junior faculty member, while there were paper charts, the VA CPRS system (Disk Operating System or DOS) was already in use. In a few years, CPRS GUI (Graphical User Interface) became available and was quickly adopted in the early 2000s. UTSW launched Epic in 2004, which I employed in the rheumatology clinic. Soon afterwards, Parkland launched Epic as well. The radiology file-room went away, and PACS (Picture Archiving and Communication System) took over.

Today, electronic health records, the Internet, email, and various apps and enhancements are ubiquitous. Your generation has only experienced medical care through these interfaces. Now there is a new player, artificial intelligence, and it is already becoming a disruptive force. After watching from the sidelines, I've begun to experiment with it. Like you, I've migrated away from UpToDate to Open Evidence. I've also used ChatGPT to write Excel formulas and use its help for queries that would otherwise take much longer. Like you, I am aware that it can "hallucinate" and make mistakes. I resist using ChatGPT for these messages because I worry that it won't reflect my true "tone", but I do check a sentence here and there to convey my thoughts more accurately.

The NEJM has now released its next [article](#) on medical education and this one covers the impact and use of large language models in medical education. It reminds us that the rapid rise of artificial intelligence (AI) is reshaping how clinicians learn, reason, and make decisions. Large language models can generate differential diagnoses and management plans, but they also come with real risks. The challenge is to use them within a thoughtful framework that strengthens our critical thinking skills rather than replace them altogether. We've always joked about our "peripheral brain" those pocket notebooks and cheat sheets we carried around. What we don't want is for AI to stop being peripheral and start becoming our only brain!

You are already familiar with EHR templates and the seductive "copy forward" function. It creates efficiency and permits you not to miss a problem you are following. Others reading your notes probably do what I do, check to see what's new and what is copied. You've also probably noticed the AI hospital

course summary that can be turned on in Parkland Epic - it is surprisingly accurate. I don't think anyone is yet using large language models to write notes, but that may be coming soon - a place to enter your thoughts briefly and convert it into a cohesive clinical reasoning narrative. Perhaps you are entering some of the key elements (deidentified) in Open Evidence and making sure that you aren't missing a diagnosis.

These tools can be remarkably fast and persuasive, but they come with real risks. If we rely on them too much, we can lose skills we've already built ("deskilling"), miss out on developing essential ones ("never-skilling"), or even reinforce bad habits if the AI is wrong ("mis-skilling"). What really matters is how we use AI. The key is to treat these moments as opportunities to pause, think critically, and ask: Does this make sense? How do I know? What else should I check? In other words, AI can support our reasoning, but it should never replace it. Some will say these are just the worries of a luddite like me, stubbornly holding on to a world that's already slipping away. They may be right. But at the very least, we'll need to step back and study what AI is actually doing, instead of just guessing at its impact.

It seems to me that AI is increasingly being used in medical care, yet too often without the guiding structure of faculty oversight. This will be the next challenge in medical education - learners like you, fully raised in the digital age - are going to be much more facile and adept with technology, leaving the faculty struggling to keep up. Perhaps ACGME will add a new milestone (they have one for digital health) to encompass the use of AI in medical education. One paradigm suggested in this [article](#) is the DEFT-AI approach - Diagnosis, Evidence, Feedback, Teaching, and AI engagement as shown in the figure below:

DEFT-AI
to promote critical
thinking during
AI use

Educator

Learner

Diagnosis, Discussion, and Discourse	The educator asks for a description of the learner's specific use of AI.
What specific AI did you use?	I used the free version of ChatGPT on my phone.
How did you use AI in this process?	I just typed in, "What is the differential diagnosis for wheezing?"
What prompts did you enter in the app?	I asked it for the best diagnostic test and treatment strategy.
Evidence	The educator asks for an evaluation of the learner's evidence-based use of AI
How did you verify the AI-generated outputs?	Hmm. I didn't. The answers seemed reasonable to me.
Is the AI that you used shown to be accurate and safe?	Yes. I keep seeing social media posts about how great it is at making diagnoses.
Feedback	The educator asks the learner to reflect on growth opportunities in the use of AI.
How do you evaluate your own use of AI in this case?	I think I've become quite familiar at using ChatGPT. I use it all the time now.
How can you improve your use of AI?	I can't wait for an AI that can interpret ECGs and chest radiographs. I should verify the AI outputs next time.
Teaching	The educator provides focused teaching points based on findings from the conversation and recommends whether, when, and how to use AI safely moving forward. Use AI tools that are known to be effective. Look for peer-reviewed evidence of their accuracy and safety. Our institution may have adapted and validated a similar model on the basis of high-quality data. Prompting a chatbot is critical to generate valuable and accurate outputs. Think of it as talking with a consultant: provide enough specific information about the Who (the intended role of the AI and your role), the Where (description of the context), and the What (your goal and specific task or question). Always ask the AI to explain its reasoning, which improves its answers and lets you assess how it is thinking and how much to trust it. One prompt is not enough: have a conversation and give it feedback. Just like I did with you, you can also ask it to engage in self-reflection and look for errors. AI is always prone to error and bias: always verify and trust. Make sure to check its answers against your knowledge, trusted sources of medical information, like publications from the NEJM Group, and your trusted peers, like me.
Recommendation for AI engagement	The educator provides learner-specific recommendations for the safe use of AI. Keep practicing using AI to inform your reasoning rather than replace it. AI outputs are your preliminary inputs, just like a preliminary radiology report or automated ECG interpretation: verify, then trust. Know when you can rely on it (cyborg) and when you need to confirm the outputs (centaur).

A combination of excitement and trepidation fills me with both hope and caution as we move into new ways of learning and teaching. What has become increasingly clear to me is the need to further strengthen and close the circle of learning. When I entered medical school, learning was largely passive, we accepted knowledge without question, relying on our revered teachers and textbooks. Over the years, I've come to embrace the vision articulated by Dr. David Hillis, who led our Internal Medicine Residency until 2007. He was ahead of his time in recognizing that learning in our program must be bidirectional. His insight has proven prescient, as we now find ourselves in an era of genuine co-production of learning, where the learner is sometimes better equipped than the teacher. We still have the familiar anchors - the textbook, the trusted journal article, the well-crafted clinical guideline - but now we face a new and powerful accelerator in the form of artificial intelligence. Harnessing its benefits while guarding against its risks will be the next great challenge, and opportunity, in medical education.

Warm regards,

Dino