ClinicalKey AI

White Paper

Empowering residents and early-career clinicians with AI:

A path to enhanced decision-making

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Empowering residents and early-career clinicians with AI: A path to enhanced decision-making

Generative AI has the potential to transform healthcare by reducing administrative burden and improving workflow efficiency. From creating faster documentation to supporting clinical decision-making within evidence-based frameworks, the possibilities are expansive.

With this increased use of AI in healthcare, careful oversight is important to ensure medical students and residents preserve core clinical reasoning and critical thinking skills so they can deliver exceptional care throughout their career, especially when it comes to utilizing generative AI to support clinical decision-making.

In a roundtable hosted by the Society of Hospital Medicine (SHM) and sponsored by Elsevier, participants shared insights, use cases and strategies for the responsible use of generative AI to assist residents and early-career clinicians in decision-making. Participants — consisting of program directors and associate program directors for internal medicine and pediatric hospital medicine residency programs — generally agreed that while caution must be used when adopting AI technology, there are many opportunities to advance medical education and clinical practice with thoughtful approaches to implementation. This roundtable generated key insights that can be helpful to other residency leaders integrating AI into their programs.

Support foundational skills before using AI

AI should complement — not replace — the development of critical clinical skills. It's imperative to ensure learners are first grounded in clinical essentials, such as history-taking, physical examinations, and diagnostic reasoning before using AI tools.

For an associate program director from a large urban academic institute in the West, this means observing how medical students and residents use AI tools for specific patient examples and providing guidance on how and where learners can improve their delivery of care and foundational skills.

"We, in our debrief, had a really great discussion about how these tools are really wonderful and they're very powerful, but that if you don't actually understand the clinical basis of both diagnosis as well as management that [AI tools are] going to really steer you in the wrong direction," the associate program director said.

Policies and governance can help to reinforce the importance of developmental and foundational skills with the expectation that AI serves as an adjunct. Although one program director from a medium urban academic institution in the Midwest is on the team creating policies for generative AI use at the GME level, they recognize it comes with challenges as people seek to have AI appropriate for clinical use.

> *"The capacity and the vigor and ethics with which we use AI is going to be tremendously beneficial to our patients. But we can't take our own brains out of it. Because we will be doing a massive disservice in the process."*
>
> **— Associate program director from a large urban academic institution in the Northeast**

Maximize learning outcomes alongside AI tools

AI can narrow the gap of uncertainty in practicing evidence-based medicine, but learners need guidance to interpret its outputs critically. Structured educational exercises can teach the use of AI to refine diagnostic reasoning.

"The key is making sure you've got leadership and supervision in that you are building and having them use their own skills before they're using the AI skills and only relying on that as a crutch," a program director from a medium urban academic institution in the Midwest said.

This program director recommends an exercise that requires learners to build a differential with details from a case or two each week and ask AI to generate a differential using the same case details. By comparing the outputs, it could help learners notice what they may be missing, using the AI response as a learning tool.

Faculty can also role-model how AI can be integrated into the learning process while highlighting its limitations, prompting learners to evaluate and critique its recommendations. An associate program director from a large urban academic institute in the West shared they design clinical reasoning cases around AI where they intentionally seek an incorrect AI-generated response. For learners, it may be difficult to determine if the AI response is appropriate for their particular case. This encourages learners to determine if the AI response is right for their patient and evaluate the evidence for the case.

"Really demonstrating to [learners] what the potential pitfalls are [is valuable] so that they develop the same skepticism that I think we all just have naturally having been around, but that they don't quite have yet, given that they're just so very trusting of technology in general and what it can do for them," an associate program director from a large urban academic institute in the West said. "[It's] another great example of where we say, 'hey, if that's what you had done … this patient would not have had a good outcome if that's the thing that you had chosen. And let's talk about that and let's reflect on it and think about how we would do it differently in the future'."

> *"Ideally, we would still be learning how to take care of people the way we currently do so we build those fundamental skills but have a tool that really gets us to the crux of the evidence and narrowing our uncertainty in our day-to-day life."*
>
> **— Program director from a medium urban academic institution in the Midwest**

Engage students and residents as critical stakeholders

Early-career clinicians can play a critical role in evaluating and adopting AI tools within their institutions, thanks to their familiarity with technology and digital-first approaches. Panelists recognized the drive and desire from learners to be a part of the bigger conversation around how their institutions incorporate AI into their learning.

Residency leaders can include learners in discussions about adopting and modifying AI tools, addressing potential concerns around appropriate use of AI tools that can be leveraged responsibly for healthcare, advising on how to protect health information, and articulating potential risks.

"The task really for anyone in leadership and education is to catch up with this generation that's 20-30 years younger than us to be able to participate in those discussions in the same meaningful way that they are coming to the table," an associate program director from a large urban academic institution in the Northeast said.

Leverage AI to enhance efficiency and patient care

Generative AI tools can streamline administrative tasks, allowing clinicians to spend more time at the bedside with patients, students and residents.

One institution uses AI to support personalized feedback and evaluation across learning levels. An associate program director from a large urban academic center in the Northeast shared how colleagues at another institution leverage an AI model that analyzes patients' notes and history submitted by learners across the levels and provides a summary of potential deficits in both the medical knowledge and clinical reasoning, along with cited evidence.

"By the end of the week, I would have AI-generated feedback from their notes for almost seven days in a row. And this gives me some very tangible information when I'm sitting down for that feedback conversation. So, this is just one small way we're hoping to incorporate [AI]," the program director said.

Resident leaders can explore opportunities for harnessing AI tools to enhance efficiency so clinicians can focus on delivering evidence-based care and building patient relationships.

> *"I have to teach my students and residents to retain their ability to think broadly and incorporate a vast number of data points to arrive to some sort of a conclusion and not solely lean on AI, but use AI, verify the AI insight by using their own clinical judgment."*
>
> **— Associate program director from a large urban academic institution in the Northeast**

Balance AI with clinical comprehension

The integration of AI into residency training isn't just an opportunity; it's a necessity as the future of medicine unfolds. However, success depends on how thoughtfully and strategically your program embraces these technologies. While there is no one-size-fits-all approach, there are actionable strategies that program leaders can explore to help ensure AI tools enhance medical education, clinical training and patient care.

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