Responsible Use of Artificial Intelligence in Graduate Medical Education: Preparing Residents and Fellows for an AI-Enabled Future

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APPD Educational Technology Learning Community

Outline

- Introduction - 10min
- Presentation - 30min
- Discussion - 20min



Disclosure Statement

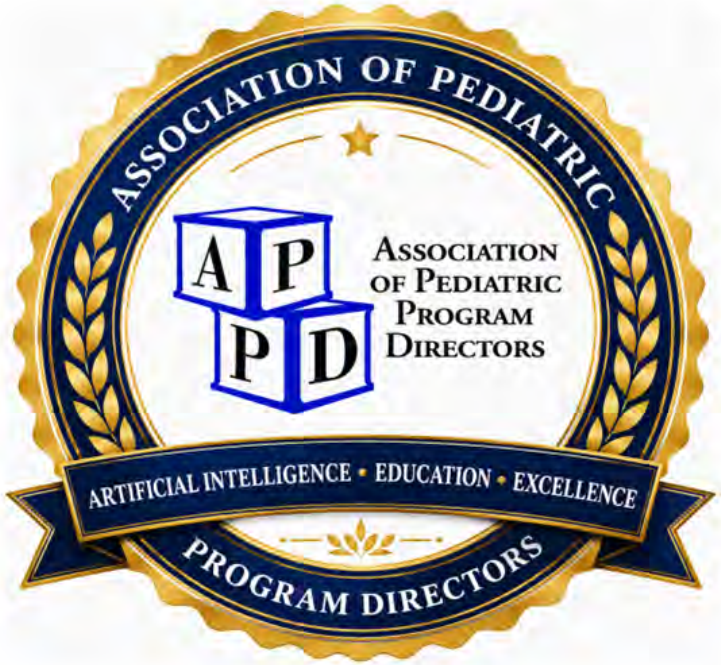
- No financial disclosures relevant to this educational activity

AI Disclosure Statement

- AI tools were used in a supportive role only to construct the content of the presentation
- AI-assisted content has been carefully reviewed by the presenters and edited as necessary

Coming January 2027
APPD AI Certificate Program

Association of Pediatric Program Directors



10 Week Program (January – March)

Topics Include:

- Fundamentals of AI
- Assessment
- Education, Curriculum, and Simulation
- Ethical, Legal, Environmental Considerations
- Marketing and Communication
- Program Evaluation and Requirements
- Recruitment
- Remediation and Coaching
- Research and Scholarship

Details + Sign Up Coming Early December!

Program Limited to 50 Participants



Microsoft

Learning Objectives

- Describe literature supporting the benefits of AI tools for residents in the clinical setting, and also gaps in the literature
- Examine potential concerns for residents using AI tools during training
- Learn how to create a workgroup to address AI for residents
- Create institutional modules and policies to ensure that residents use AI properly
- Discuss lessons learned and pitfalls regarding AI for residents

AI Tools for Residents in the Clinical Setting

Association of Pediatric Program Directors

PROMISING EARLY EVIDENCE

- Early studies suggest that ambient AI scribes may reduce resident documentation burden and cognitive load while producing notes of comparable quality.[1,2,5]
- Effects on actual time per note are not consistently demonstrated or effectively studied.[1,2,5]
- Not yet definitive evidence

IMPORTANT LIMITATIONS

- Evidence remains limited to small pilots, qualitative studies, commentaries, and reviews.[1,3,4,5]
- Few controlled studies have focused specifically on residents.[1]
- Concerns remain regarding accuracy, accountability, patient consent, bias, overreliance, and preservation of clinical reasoning.[1,3,4]
- No resident-specific guidance has been established by a major medical or specialty organization.[1]

THE MAJOR GAP

- Most published literature focuses on ambient AI scribes.[1–5]
- Far less is known about how residents use medical AI tools, such as OpenEvidence, or public generative AI tools, such as ChatGPT and Copilot, for clinical reasoning, point-of-care questions, patient communication, and documentation.

Bottom Line: The question is no longer whether residents are using AI, but how GME should prepare them to use it safely, transparently, and without compromising clinical reasoning

Longitudinal DAX Asynchronous Curriculum (October–July)

The DAX Copilot Curriculum features a comprehensive asynchronous learning pathway for PGY1 Family Medicine Residents, spanning from October to July. This curriculum is designed to build documentation skills, DAX awareness, editing capabilities, and insight into the limitations of AI-assisted documentation.

Residents complete monthly modules, each focusing on a specific aspect of clinical documentation and DAX use. Activities are self-paced and overseen by the chief, with progress tracked to ensure accountability and timely completion through attestation forms.

Month	Topic	Format	Completion Requirement
October 2026	Intro to DAX & Documentation Expectations	• DAX Video (56 min) • Ambient Documentation - QSG (supplemental and reference) • Ambient Documentation - FAQ (supplemental and reference)	Complete by October 31 • Intro to DAX video Attestation Form
November 2026	SOAP Note Excellence	• SOAP Notes & Presentations • SOAP Notes Overview • Integrating AI Scribes into Medical Education: Guardrails for Preserving Clinical Reasoning	Complete by November 30 • SOAP Notes Video & Article Attestation Form • After reviewing the assigned materials, share one key takeaway about SOAP note documentation, particularly how clinical reasoning can be preserved when using DAX Copilot. (1–2 sentences)

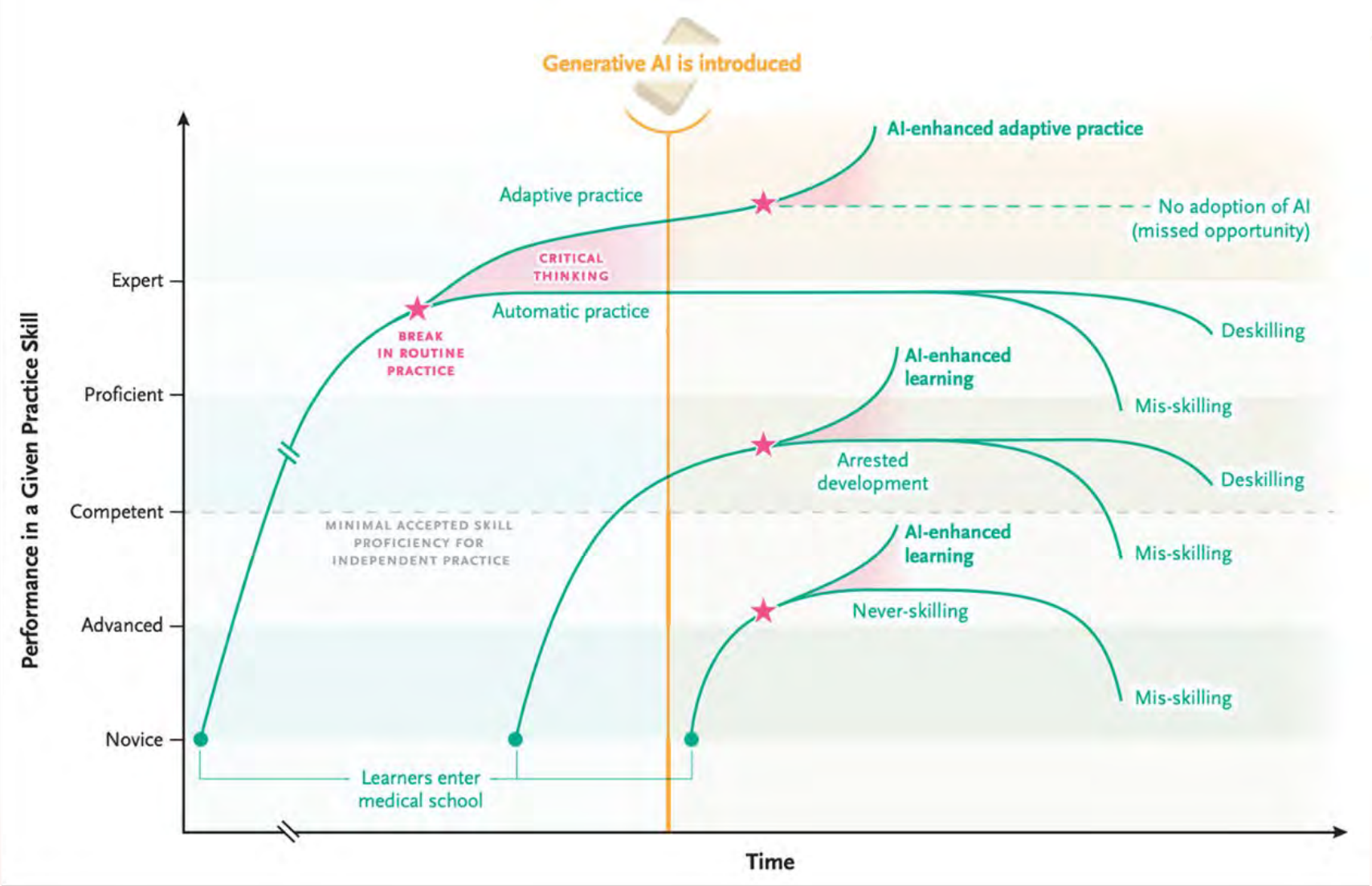
December 2026	Speaking for DAX (Verbal Structure)	• Best Practices when using DAX Co-Pilot for Epic • Ambient Documentation - QSG (supplemental and reference)	Complete by December 31 • Best Practices Attestation Form • Submit 2 example phrases you could use during a patient encounter to help DAX accurately capture your clinical assessment, reasoning, and management plan.
January 2027	Get to Know DAX Co-Pilot	Watch: Get to Know DAX Co-Pilot Read: Ambient Documentation - QSG (supplemental and reference) Ambient Documentation - FAQ (supplemental and reference)	Complete by January 31 • Get to Know DAX Co-Pilot Attestation Form
February 2027	Clinical Reasoning & Documentation	Read these articles: • Writing is Thinking • Documentation as Composing • You can use Co-Pilot to summarize this for you and read the important sections (know how to use AI to help you but still know what it is doing)	Complete by February 28 • Clinical Reasoning & Documentation Attestation Form • Submit 3-5 sentences about the following: After reading these articles, what's one specific thing you plan to do differently in your documentation to better convey your clinical

March 2027	Customizing DAX Output	Watch the following: Customizing Dax Output	Complete by March 31 • Customizing DAX Output Attestation Form • Review your DAX documentation preferences and make at least one adjustment to improve the organization, clarity, or usefulness of your generated notes. No written submission required.
April 2027	DAX Condition & Management Documentation	Watch the following: DAX Condition & Managment Documentation As you review this module, focus on how your verbal communication during the encounter can help DAX accurately document not only your diagnoses and management plans, but also the clinical reasoning supporting those decisions.	Complete by April 30 • DAX Condition Management Attestation Form

May 2027	Inclusive Language & Bias in Notes	Read the following: Physician Use of Stigmatizing Language in Patient Medical Records.pdf	Complete by May 31 • Inclusive Language & Bias in Notes Attestation Form Review a recent DAX note from one of your visits, answer the question and submit them here. • Does the note capture your *diagnostic reasoning* accurately? • If not, what bias or gap might the software have amplified or omitted?
June 2027	Self-Assessment	Read the following (particularly the Revised-IDEA tool on page 3 of article) Revised_IDEA_Score.pdf	Complete by June 30 • Self-Assessment Attestation Form Submit a Revised-IDEA score for one of your DAX generated note & one note written completely by yourself here
July 2027	Privilege Policy & Final Prep		Sign attestation

Potential concerns regarding skilling

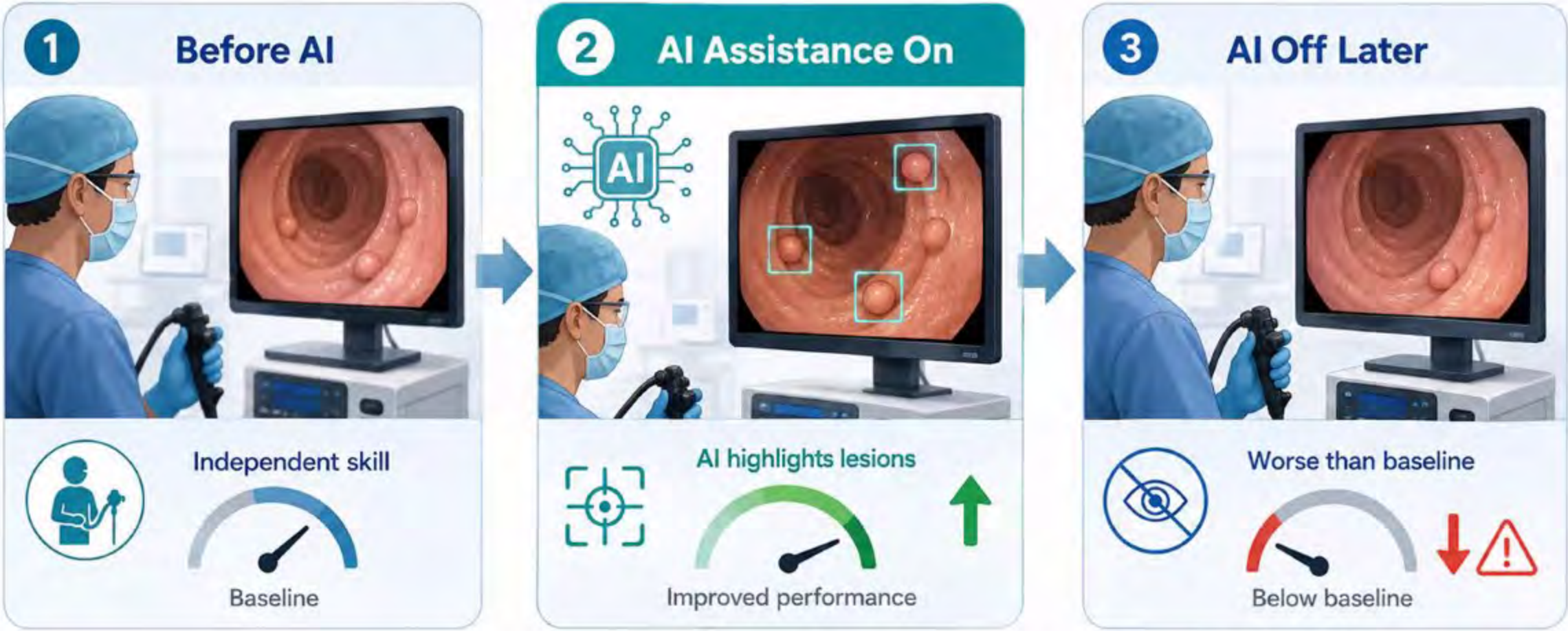




Reference: Abdulnour RE et al. NEJM 2025. Aug 21;393(8):786-797

Risk of AI Deskilling

Example: AI-assisted colonoscopy polyp detection



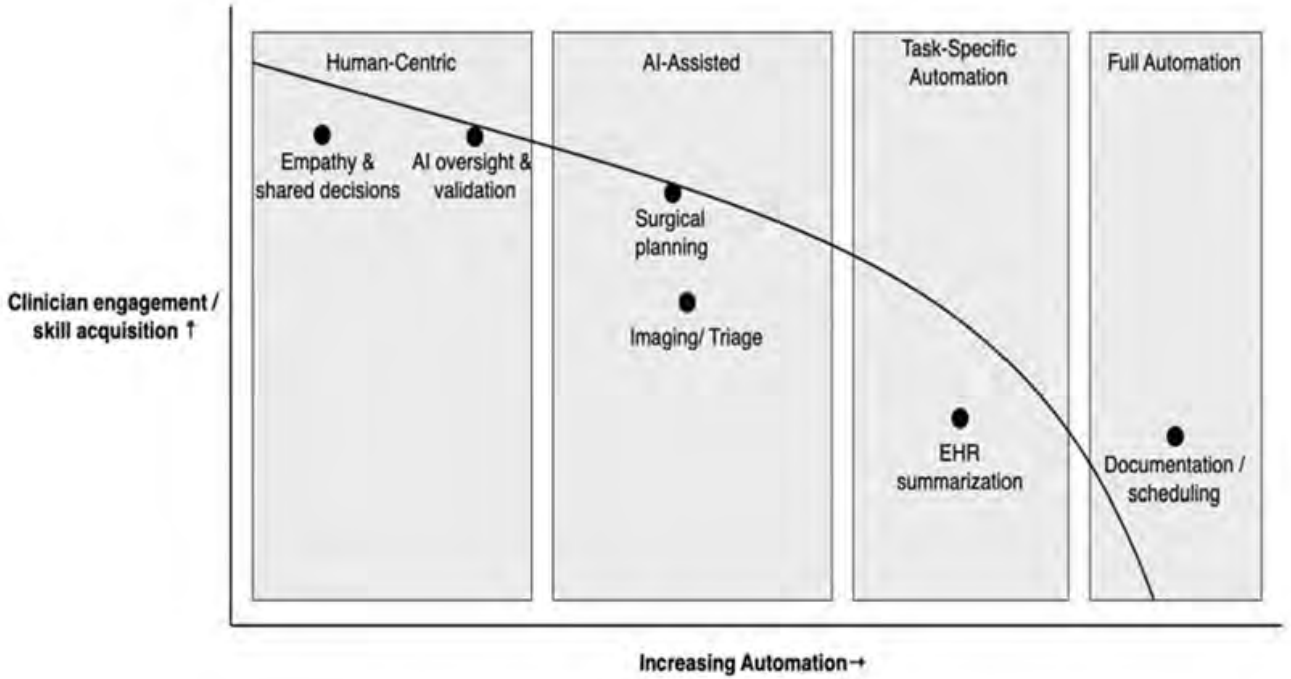
Is AI ruining our skills? Early results are in—and they're not good

Reliance on artificial-intelligence tools degrades the abilities of physicians and software engineers, studies show

BY MARIANA LENHARD & NATURE MAGAZINE

Endoscopist deskilling risk after exposure to artificial intelligence in colonoscopy: a multicentre, observational study

Krzysztof Budzyń, Marcin Romańczyk, Diana Kitala, Paweł Kołodziej, Marek Bugajski, Hans O Adami, Johannes Blom, Marek Buszkiewicz, Natalie Halvorsen, Cesare Hassan, Tomasz Romańczyk, Øyvind Holme, Krzysztof Jonas, Shivra Fielding, Mehraj Kunar, Maria Pellise, Nastazja Pilonis, Michał Filip Kamiński, Mette Kalager, Michael Bretthauer, Yuichi Mori



BOX 2 Task Dissection Framework: 5 Questions

1. What is this task teaching?
2. What exactly would the AI offload?
3. For this trainee at this stage, is that offloading helpful or harmful?
4. What new learning opportunity might AI create?
5. How will supervisors still see the trainee's thinking?

Examples of "Human-First" Cognitive Tasks Across Residency Programs

Residency	Example: "Human-First" Cognitive Task	How AI Might Be Used *After* Resident Attempts
Anesthesiology	Create initial anesthetic plan and risk stratification for a high-risk surgical patient	Use AI to review guideline-based risk scores or alternative strategies
Emergency medicine	Form rapid initial synthesis ("sick vs not sick"), working diagnosis, and disposition plan based on limited data	Use AI to uncover additional diagnoses or red flags after resident commits to plan
Family medicine	Prioritize problems and set a visit agenda for a complex primary care encounter	Use AI to identify preventive-care gaps or evidence-based opportunities
General surgery	Decide how to adjust intraoperative plan in response to unexpected findings	Use AI postoperatively to review similar cases or guidelines during the debrief
Internal medicine	Construct initial problem representation and prioritized differential for a complex presentation	Use AI to check for missed diagnoses or relevant guidelines
Obstetrics and gynecology	Form initial labor plan with competing maternal-fetal risks	Use AI to compare plan with institutional protocols or evidence summaries
Orthopedic surgery	Classify fracture and outline initial operative vs nonoperative plan for patient with comorbidities	Use AI to explore alternative classification schemes or management pathways
Pediatrics	Integrate developmental history, examination, and family situation into an assessment for behavioral or learning concerns	Use AI to suggest key questions or alternative diagnoses the resident may have missed
Psychiatry	Develop diagnostic formulation and risk assessment after a new patient interview and collateral information	Use AI to review structured risk tools and alternative diagnoses

Oettl. From de-skilling to up-skilling: How artificial intelligence will augment the modern physician. JOE 2026

Preiksaitis. Supervising Resident AI Use Without Losing the Learning. JGME 2026

AAMC Competencies

https://www.aamc.org/about-us/medical-education/cbme/publication/ai-competencies-across-learning-continuum

Domain I: AI Knowledge for Practice
Domain II: AI-Assisted Patient Care and Clinical Reasoning
Domain III: Communicating About AI and Interprofessional Collaboration
Domain IV: Professionalism and Ethics
Domain V: Practice-Based AI Learning and Improvement
Domain VI: Systems-Based AI Practice

Principles for Resident Use of AI

- Think First, AI Second
- Protect core physician skills (critical thinking, appraisal, etc.)
- Humans must verify the information
  - Higher risk uses => higher level of scrutiny
- Encourage open disclosure of AI use



Educational Uses

- Develop Educational Materials
- Learn: Develop study tools (e.g., outlines, flashcards, practice quizzes)
- Generate explanations at different levels of complexity.
- Explore different perspectives on an issue with legitimate citations from peer reviewed/expert sources.
- Support reflective practice and communication rehearsal (e.g., giving virtual patient bad news with annotated feedback on strengths and opportunities to learn)

Clinical Uses

- Ambient listening
- Patient communication
- Decision support

Scholarship Uses

- Draft outlines, improve grammar and clarity
- Draft plain-language summaries
- Format tables
- Draft cover letters
- Create mock peer-review questions

- A scholar who cannot independently evaluate a search strategy, model output, or statistical test is deferring to the tool, not supervising it.

Responsible AI in GME: Quick Guide

PEOPLE LEARN HEAL TOGETHER

THINK FIRST, AI SECOND.

Use AI to extend human capability, never to replace clinical reasoning, accountability, or trust.

ALWAYS

- **Form your own assessment** and plan first.
- **Use an approved tool** for the intended task.
- **Protect** PHI, learner data, research data, and confidential content.
- **Verify** facts, doses, criteria, claims, citations, and policies.
- **Review, edit, contextualize,** and own the final output.
- **Disclose** material AI assistance when it shapes content, analysis, or judgment.

NEVER

- **Let** AI perform first-pass clinical reasoning.
- **Treat** fluent output as accurate, complete, or authoritative.
- **Upload** sensitive information to a public or non-approved tool.
- Use AI to independently rank, score, promote, remediate, or discipline learners.
- Sign AI-generated documentation without full review.
- **Invent** data or citations, or delegate scholarly interpretation to AI.

ASK

- Is this tool **approved** for this exact use case?
- Have I done the developmental thinking myself?
- Could this information identify a patient or learner?
- What **trusted source** will I use to verify the answer?
- Does this require disclosure, supervision, IRB, Privacy, Compliance, or Data Governance review?
- Would I confidently defend the final work and my process?

SAFE USE SEQUENCE

1. THINK
2. CHECK
3. USE
4. VERIFY
5. OWN + DISCLOSE

WHEN IN DOUBT, PAUSE AND ASK.

Use the stricter applicable standard. Consult your supervisor or the appropriate GME, Privacy, Compliance, IRB/RDS, or Data Governance resource before proceeding.

Based on Advocate Health GME Guidance for Ethical Artificial Intelligence Use in Medical Education.

Full GME guidance | Approved tools: AI Hub | FAIR AI principles

ADVOCATE HEALTH GRADUATE MEDICAL EDUCATION

BETTER PHYSICIANS BRIGHTER TOMORROWS

ASSOCIATION OF PEDIATRIC PROGRAM DIRECTORS

Our journey so far

VCU GME Artificial Intelligence for Housestaff Task Force

Creating an AI for Residents Workgroup

- Who houses the workgroup?
  - E.g. Department of Pediatrics – can create policies specific to your department
  - E.g. Institutional GME – will have more collaboration and incorporate perspectives from other specialties
- Possible members: PD / APDs, VCEs, Department Chairs, DIO, Associate DIOs, Program Coordinators, Residents / Fellows, Physician Informaticists

AI for Residents Workgroup

- Name
- Purpose / Mission
- Scope / domain
- Authority (e.g. will IT listen to us?)
- Deliverables

Education - Curricula

- AI Educational Curricula are still in their infancy
- UME / Medical schools should drive this
  - Medical students should be aware of AI tools before they start their clinical years
  - Appropriate use of AI tools should apply to all specialties
  - Residencies may not have time to include an AI curriculum



Education - Modules

- Asynchronous
- Keep it short and to the point
- Make sure the module aligns with your institutional AI policy
- Make the module general enough to stay relevant to the rapidly changing AI landscape
- Discuss public AI tools vs medical AI tools vs institutional / EMR-based AI tools
- Revise the module regularly

Policies

- Make sure your policy aligns with your institutional AI policy
- AI tool use will differ depending on specialty, setting, rotation, etc; consider making a broad policy, and then optional program-level addendums
- Revise the policy regularly



Lessons learned

- Creating a workgroup
  - There is considerable interest in this area – leverage it to create your workgroup
  - Multidisciplinary involvement is key. Multiple specialties, multiple roles, different levels of AI literacy
- IT may not understand medical education and therefore give trainees access to clinical AI tools indiscriminately
- The C-suite may get involved if they see AI as a way to improve billing / reimbursement
- Need an informaticist that understands the physician side (e.g. a physician informaticist) – if this person is an educator, even better

Physician Informaticist

- Physician Informaticist Involvement
  - Bridge between clinical/educational side and IT side
  - Explain potential IT solutions for restricting AI access - some groups of AI tools may be all or nothing access
  - Explain different AI tools to the workgroup - particularly new tools to help facilitate housestaff access decisions
  - Liaison with IT to make sure workgroup's requests are technically feasible and not resource consuming

Discussion

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