PENNSYLVANIA MEDICAL SOCIETY HOUSE OF DELEGATES

Beyond Easy Answers:
AI, Clinical Expertise, and the Future of Physician-Led Care

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Accreditation Council for Continuing Medical Education
learn well

Who here uses AI professionally most days?

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AI has moved from novelty to clinical infrastructure

Physicians reporting professional use of AI

- 2023: 38%
- 2024: 66%
- 2026: 81%

Most common uses:

- Summarizing research 39%
- Drafting care plans: 30%
- Chart summaries and notes: 28%
- Patient messages: 19%
- Assisting diagnosis: 17%

AI moving from documenting care → recommending care → initiating care

- Ambient listening → clinical record
- Evidence search → clinical decisions
- Patient communication → direct interaction
- Prior authorization → automated workflows
- Recommendations & draft orders → clinical action

American Medical Association. *Physician Survey on Augmented Intelligence*. 2026.

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TODAY'S EMPHASIS

Physician as cognitive professional

- AI is already transforming information retrieval, reasoning, communication, documentation, and decision support.
- Psychomotor expertise (procedures, surgery, bedside examination, robotics-enabled care) will follow a different trajectory.







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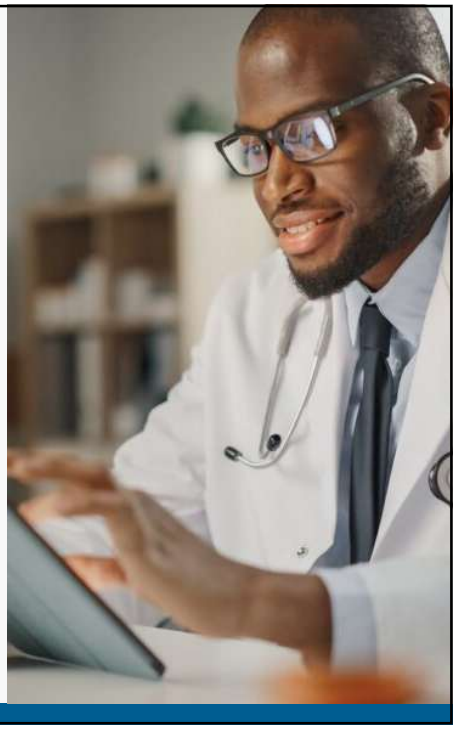
AI is making answers effortless

- ✓Any question
- ✓Almost anywhere.
- ✓Almost instantly.

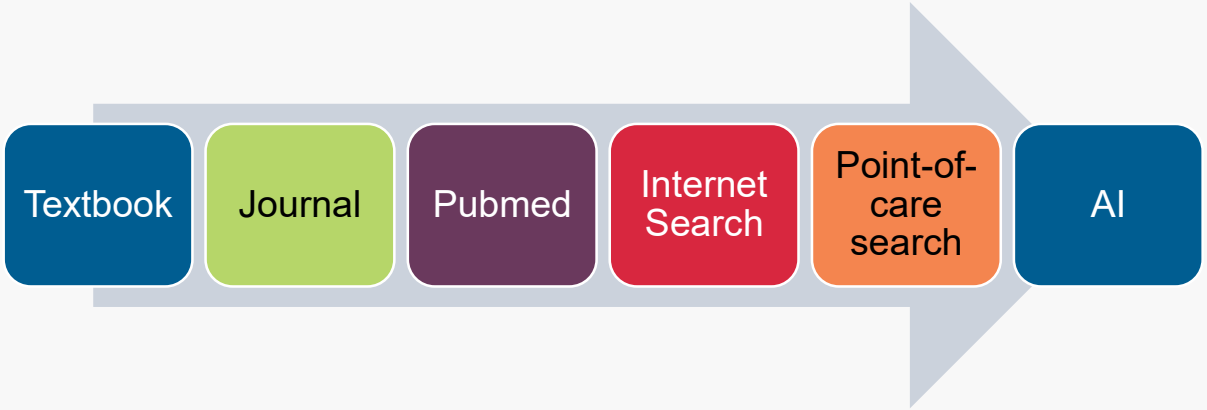
- ✓AI can retrieve, synthesize, explain, compare, translate, and summarize at extraordinary speed.

- ✓For busy clinicians, this is not a toy; it's a real change in access to contextual medical knowledge when you need it most

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AI continues a long migration toward point-of-care answers



AI does not just retrieve. It synthesizes, ranks, explains, and increasingly recommends.

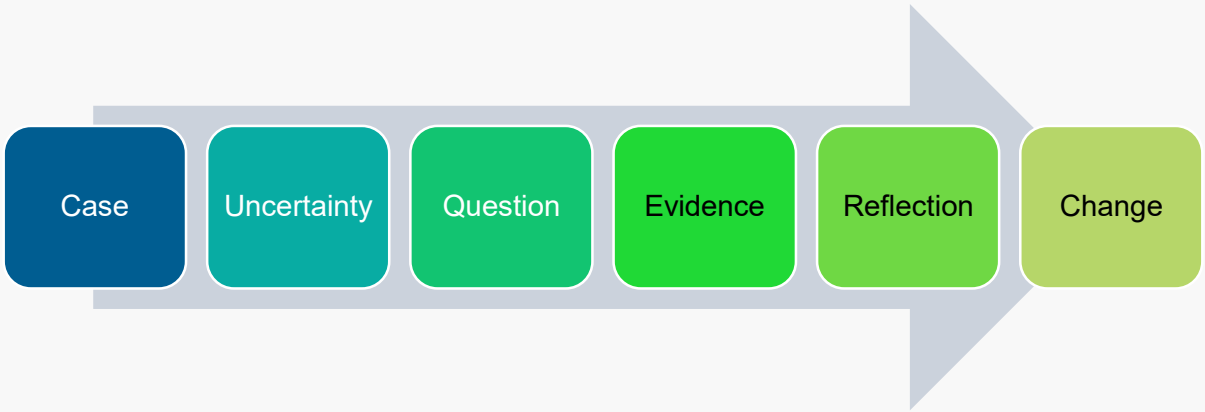
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Medicine has always been a learning profession

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Physicians Learn from Cases, Uncertainty, and Reflection



Mastery emerges from repeated cycles of noticing, retrieving, applying receiving feedback, and adapting

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Information retrieval ≠ Learning

Information Retrieval
- Find the answer
- Reduce uncertainty now
- Support this decision
- May end when the answer appears

Learning
- Build usable memory
- Change future reasoning
- Transfer to the next case
- Requires active work

Both matter… but they're different cognitive activities

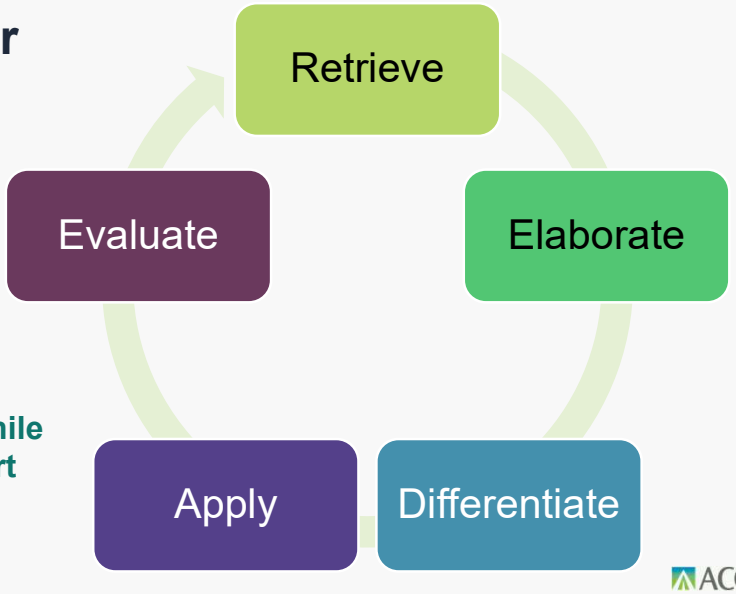
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Easy information does not readily translate into durable expertise

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Turning an answer into expertise is work



Remove useless friction while preserving cognitive effort

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Some friction should disappear. Some effort should remain

Eliminate

- Finding the guideline
- Locating the article
- Summarizing background
- Formatting information
- CME certificates

Keep

- Trying to remember
- Framing the question
- Comparing alternatives
- Explaining why
- Testing assumptions
- Digital records

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Learning more professionally with AI tools

Learning move	Example prompt
Commit before seeing the answer	"Ask me to commit to my diagnosis and plan before you show me yours."
Challenge my reasoning	"Critique my assessment. What am I missing, overvaluing, or assuming?"
Make me discriminate	"Give me two similar cases that need different management. Make me identify the feature that changes the decision."
Test transfer	"Change one important variable in the case and ask me whether my plan should change and why."
Force retrieval	"At the end, ask me to explain the key principles back from memory, then correct what I missed."
Create a learning journey	"Teach me through progressively harder cases, one question at a time, adapting to my answers."

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AI can create more deliberate practice than ever possible before

Adaptive Cases

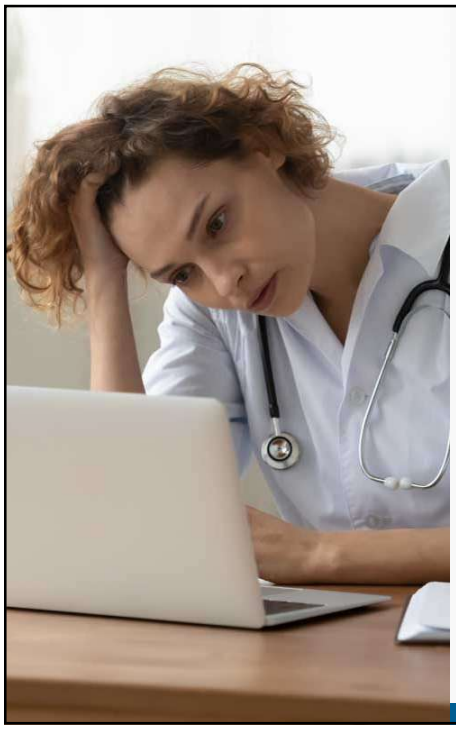
Simulated patients

Immediate feedback

Repeated practice at your edge of competence



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The most dangerous failures are typically plausible

Wrong
Factually incorrect

Incomplete
Missing the exception

Unsupported
Citation or evidence mismatch

Overconfident
Uncertainty hidden

Misframed
Wrong premise

Biased
Distorted emphasis

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Influence becomes more powerful as it becomes less visible

VISIBLE INFLUENCE



"Use this product."

Source and intent are obvious.

SUBTLER INFLUENCE



"Think about this diagnosis."

Influence shifts what becomes salient.

INVISIBLE INFLUENCE

"Recommended action."

Whose recommendation?
Optimized for what?

Who is shaping the recommendation and what are they optimizing for?

Pharma | Health system | Payor

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What to ask …

THE ANSWER
- Accurate?
- Complete?
- Evidence supported?
- Uncertainty visible?

THE SYSTEM
- Who built it?
- What data shape it?
- What objectives are encoded?

MY DATA
- Is PHI permitted?
- Is the conversation retained?
- Is it used for training?
- Is my identity or behavior commercialized?

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What autonomy are we comfortable with?

Retinal screening
AI evaluates image and produces report

Ambient ordering
AI drafts prescriptions and imaging orders for signature

Patient Messaging
AI responds to routine queries

ED triage
AI deprioritizes low-acuity patients

Hypertension control
AI adjusts doses of medication directly

Closed-loop Insulin
Therapy continuously adjusted according to an AI engine

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Physician supervision isn‘t necessarily better...

Diagnostic reasoning

- GPT-4 alone: 92%
  vs.
- Physicians + GPT-4: 76%

Meta-analysis of human–AI teams

When AI was the stronger performer, human–AI collaboration performed worse than AI alone.

When AI already outperforms humans on a task, adding a human can sometimes reduce performance.

Emanuel EJ, Baker-Butler A, Khosla N, Khosla V. *Will Autonomous AI Exceed AI-Aided Physicians as the Best Medical Care?* JAMA. 2026;336(11):915-918. Vaccaro M, Almaatouq A, Malone T. *When combinations of humans and AI are useful: a systematic review and meta-analysis.* Nat Hum Behav. 2024;8(12):2293-2303.

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AI can increasingly:

- ✓ gather the history
- ✓ generate the differential
- ✓ select tests
- ✓ interpret results
- ✓ recommend treatment
- ✓ draft documentation
- ✓ communicate with patients
- ✓ adjust therapy

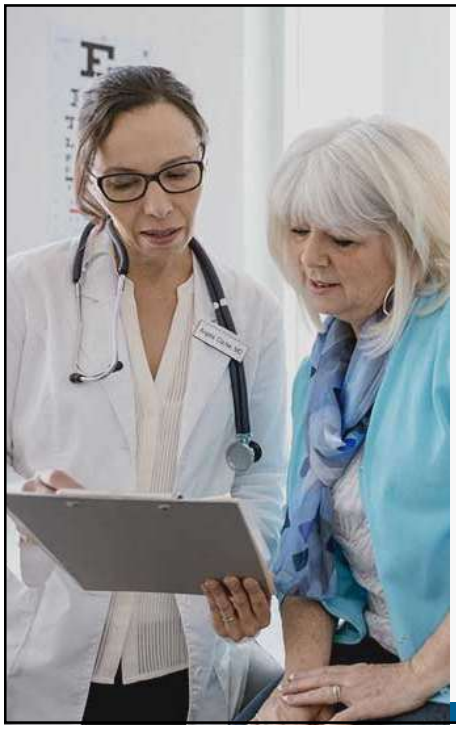
What exactly is the physician for?

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If AI can do all of this, what is the physician for?

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Human connection is essential, but it cannot be our only answer

"*Physicians provide empathy and human connection*."

True. But is that enough to justify the extraordinary cost of and investment required to create a physician?

If we want to explain the distinctive value of a physician, I think we need to be more ambitious than context and connection.

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Our future value may center on three key capabilities

JUDGMENT

When evidence is incomplete, conflicting, or doesn't fit the patient.

Determine what matters when there is no single correct algorithmic answer.

ACCOUNTABILITY

Understand and own consequential decisions.

Responsibility must mean more than approving an AI-generated action.

STEWARDSHIP

Govern the systems increasingly participating in care.

Decide what should be delegated, what requires oversight, and whose interests the system serves.

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Expertise must evolve

Traditional Emphasis

- acquire knowledge
- remember facts
- retrieve information
- perform cognitive tasks
- enter orders
- communicate clearly

Emerging Emphasis

- interpret uncertainty
- interrogate evidence
- nurture trust
- detect hidden assumptions
- integrate context and values
- know when the machine is wrong
- govern increasingly autonomous systems

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Why expertise still matters: you cannot supervise intelligence from ignorance

- ✓ you need enough internal knowledge to recognize implausibility
- ✓ you need causal models to interrogate recommendations
- ✓ you need memory to reason under pressure
- ✓ you need domain knowledge to know what the AI failed to ask

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AI may eventually reveal our learning needs before we recognize them ourselves

- Questions I repeatedly ask
- Errors I repeatedly make
- Decisions that take me longer
- Knowledge that decays
- Areas where my explanations remain superficial
- **Questions I never think to ask**



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When AI becomes excellent at several parts of your work, what capabilities will you need to strengthen?

- Build relationships
- Learn deliberately
- Interrogate recommendations
- Detect influence
- Exercise judgment
- Steward systems



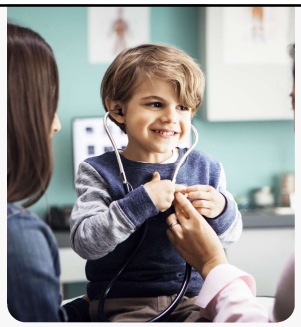
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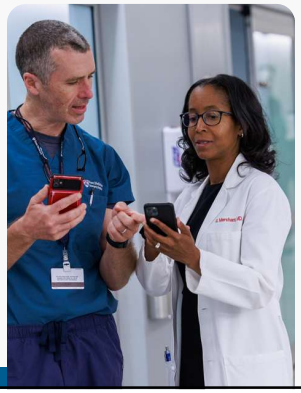
Beyond easy answers…

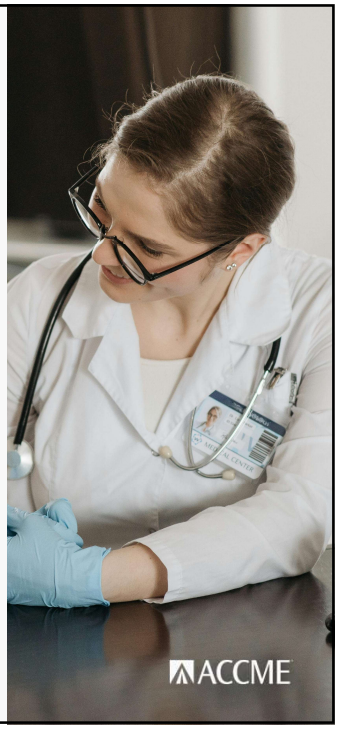
The challenge is not preserving everything physicians currently do. It is deciding what patients and society still need from us and building those capabilities now.

✓ JUDGEMENT
✓ ACCOUNTABILITY
✓ STEWARDSHIP

This is a bigger role, not a smaller one
Less value from memorizing what machines can retrieve or operating systems.
More value from judgment, trust, responsibility, and system stewardship.







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Thank you PAMED!

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