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INSIGHTS

Becoming AI-Ready as a Health Professional: From Using Tools to Exercising Professional Judgment in an AI-Augmented World

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Abstract

Generative artificial intelligence (GenAI) is becoming increasingly prevalent in health professions education, clinical practice, and research. However, regular or sophisticated usage of AI tools does not indicate professional readiness. Being AI-ready as a health professional entail understanding how to incorporate GenAI into daily tasks in ways that improve judgment, maintain responsibility, and safeguard patients. This insight provides practical suggestions for medical students, clinicians, and clinical educators on how to become AI-ready in real-world settings, with a focus on resource-constrained scenarios like Cambodia. The emphasis is on professional habits, daily processes, and ethical protections, rather than technical detail or abstract theory. The priority lies in human-in-the-loop practice, verification discipline, contextual awareness, and professional accountability. The key point is clear: GenAI can improve clarity and efficiency only if accountability is totally human.

Introduction: Why AI Readiness Matters in Healthcare

Generative AI is no longer a hypothetical technique in healthcare. Medical students already use it to aid in learning, practitioners use it to take notes or clarify reasoning, and researchers use it to improve their writing and conceptual organizing. The important question now is not whether GenAI should be utilized, but how it should be used safely and professionally.

Healthcare is distinct from many other fields because errors have immediate and physical implications for actual people. Clinical decisions influence diagnosis, treatment, trust, and patient safety. As a result, GenAI use in healthcare necessitates greater discipline, judgment, and ethical application than many other professional uses (World Health Organization [WHO], 2021). Fluency, confidence, or output speed do not imply safety or accuracy.

These issues are exacerbated in Cambodia and other low- and middle-income countries (LMICs). Health workers frequently face large patient numbers, limited diagnostic and treatment resources, several languages of documentation, and uneven access to senior supervision. Under such circumstances, GenAI may appear appealing as a quick fix for reasoning, documentation, or explanation. However, without defined limitations and controlled use, it can quietly introduce hazardous assumptions, automation bias, and misguided confidence, especially when outputs represent resource-rich health systems that do not correspond to local realities.

AI readiness should therefore be viewed as a professional competency rather than a technological one. It is consistent with long-held ideals of medical professionalism, including accountability, critical judgment, ethical conduct, and patient-centered care (UNESCO, 2021). Being AI-ready ultimately means keeping professional judgment in an AI-augmented environment.

What It Means to Be AI-Ready

Being AI-ready is not about frequent use, complex prompting, or relying on advanced features. It does not mean surrendering critical thinking to a system that generates fluent responses. Instead, an AI-ready health professional uses GenAI thoughtfully, safely, and transparently, with a clear understanding of its benefits and limitations.

In education, clinical care, and research, AI preparedness entails the ability to define defined roles for GenAI, ensure that AI use matches the nature and risk of activities, thoroughly check outputs, comprehend outputs in light of local context, and maintain full ethical and professional accountability. This framework is congruent with UNESCO's human-centered approach to AI, which prioritizes human oversight, critical judgment, and accountability over substitution or automation (UNESCO, 2021, 2023a, 2023b).

Importantly, AI preparedness is not a static goal. It, like clinical thinking and communication abilities, improves with practice, reflection, and correction. As tools and circumstances change, so does professional judgment about how and when to utilize them.

From Knowledge to Habit: How AI Readiness Develops in Practice

AI preparedness is not achieved with a single training session or institutional policy. It evolves through daily behaviors, which shape how professionals interact with GenAI over time. These practices influence whether artificial intelligence strengthens or erodes professional judgment.

One distinguishing characteristic of AI-ready professionals is that they think first before resorting to GenAI. Rather than starting with a prompt, they use their own thinking. They analyze what they already know, what is uncertain, and what type of assistance might help them think more clearly rather than making decisions for them. This behavior prevents cognitive offloading, where we unintentionally hand over our critical thinking to the machine. By staying engaged, professionals ensure they are not quietly letting the AI take over the reasoning process. In clinical care, this entails conducting an initial assessment and differential diagnosis before applying GenAI to look for

omissions or alternative explanations. In learning, this is attempting to convey a subject before seeking feedback or clarification from GenAI. In research, it refers to formulating ideas or interpretations before requesting refinement. Using GenAI before independent critical thinking raises the risk of over-trust and impairs professional judgment (Ang, 2025).

A second defining characteristic is the capacity to tailor GenAI use to the nature and danger of the assignment. AI-ready professionals are open about why they are now using GenAI. They recognize that tasks like brainstorming, language editing, or note structuring are relatively low risk, whereas activities such as clinical reasoning, research claims, or policy advice carry significantly higher stakes. This awareness influences how GenAI is used. For low-risk tasks, exploratory use may be appropriate. Higher-risk tasks necessitate longer reasoning, explicit assumptions, and more thorough verification. For example, utilizing GenAI to simplify discharge instructions for a patient with little health literacy may be appropriate if the clinician examines and adjusts the material prior to transmission. It is not appropriate to use GenAI to prescribe drug dosages or make emergency management choices. AI readiness is defined by the alignment of task, mode, and risk, rather than convenience or speed (Schubert et al., 2024).

A third defining habit is to view verification as a professional reflex rather than a discretionary final step. AI-ready professionals constantly question outputs, asking if they make clinical sense, what assumptions they are based on, and whether they would defend the conclusion without mentioning AI. High-risk outputs are verified against reliable references, guidelines, or senior consultation. Fluent language is never considered evidence of correctness. This tendency is especially important in Cambodia, where GenAI systems frequently assume access to advanced investigations, specialist services, or drugs that are not readily available locally. Without deliberate filtering, such assumptions can result in unsuitable or dangerous suggestions (Almyranti et al., 2024).

AI Readiness Across Professional Roles

Although essential ideas are common, AI readiness varies by professional function. For medical students and trainees, AI preparedness is deeply linked to learning to learn. AI-ready students utilize GenAI to produce questions rather than answers, to exercise reasoning rather than avoid it, and to receive feedback on their thinking rather than final conclusions. Most importantly, even in the absence of AI, people can explain and defend their thinking. GenAI promotes learning only when cognition is active and visible (Ang, 2025).

For clinicians, AI preparedness is demonstrated by cautious boundary setup. AI-ready clinicians utilize GenAI to help them reflect, communicate more effectively, and decrease administrative strain, but not to replace diagnosis, decision-making, or professional judgment. They do not attribute judgments to AI and do not provide AI outputs to patients directly. Responsibility must be visible, explicit, and human in order to sustain trust in clinical partnerships (WHO, 2021).

For clinical teachers, AI readiness means modeling safe and disciplined use. Rather than prohibiting or disregarding GenAI, AI-ready instructors show how to utilize technology wisely, how to validate results, and how to communicate constraints. They assist learners in developing professional norms for AI use that reflect norms for prescribing, investigation interpretation, and ethical conduct (National Academies of Sciences, Engineering, and Medicine [NASEM], 2023).

Context Matters: AI Readiness in Cambodia

One of the most important findings of the new TPACK model is that professional competence cannot be divorced from context (Petko et al., 2025). This understanding is critical to AI readiness in healthcare.

GenAI systems are mostly taught on data from high-income areas. Without specific contextual framing, they may offer tests that are not available, make incorrect assumptions about illness occurrence, disregard cost restrictions, or use terminology that is not appropriate for local culture or health literacy. These mismatches are contextual failures, not technical flaws.

AI-ready professionals make context explicit while using GenAI and actively filter results based on local expertise. They recognize that safe AI use necessitates localization and judgment, not mindless adoption. In Cambodia, this may entail explicitly identifying budget restrictions, adjusting language for Khmer-speaking patients, or rejecting recommendations that are inconsistent with local practice or regulation.

Ethical Responsibility and Professional Accountability

An AI system cannot be held accountable for ethical behavior. Regardless matter how GenAI is utilized, health professionals are still responsible for patient safety, privacy, information accuracy, professional behavior, and decision outcomes.

GenAI systems cannot accept responsibility, explain themselves to patients, or respond to regulatory organizations. Therefore, transparency about AI use is a core professional habit, rather than a sign of technical dependency. To meet international standards for ethical governance (UNESCO, 2021; WHO, 2021), health professionals must move beyond simple disclosure and adopt a disciplined "Human-in-the-Loop" workflow.

The Disclosure Standard

True transparency requires a clear trail of how information was handled. This includes:

- Prompt Log Disclosure: Maintaining a record of the specific instructions given to the AI to ensure the logic can be verified.
- Model-Mode-Task Reflection: Briefly explaining why a specific model was chosen and how its output was evaluated for accuracy.

Tiers of Use and Ethical Boundaries

To safeguard academic integrity and professional judgment, this insight adopts a tiered framework adapted from the AI Assessment Scale (Perkins et al., 2024). By categorizing AI use into four distinct levels, professionals can clearly distinguish between supportive assistance and the risks of unauthorized delegation. At this level of practice, only Tier 1 and Tier 2 are permitted, and both must be accompanied by Reflective Journaling to document the user's critical thinking.

- Tier 1 (Grammar & Polish): Using GenAI for grammar editing and improving sentence flow.
- Tier 2 (Brainstorming & Structure): Utilizing AI for ideation, outlining, or organizing complex notes.
- Tier 3 (AI Claims & Generation): Relying on AI to generate research claims or original content. (Prohibited)
- Tier 4 (Direct Copy-Paste): Automated output without human verification or editing. (Strictly Prohibited)

By documenting this process in a reflective journal, the professional ensures that GenAI remains a tool for enhancement rather than a replacement for clinical reasoning. This disciplined approach ensures that the human remains the ultimate authority, accountable for every decision and documentation produced. This attitude is compatible with international recommendations that

emphasizes human oversight, responsibility, and ethical governance of AI in healthcare (UNESCO, 2021; WHO, 2021).

Learning to accept responsibility for AI-assisted work is an important part of developing a professional identity for students and early-career employees. AI preparation is thus as much about ethics and judgment as it is about technological ability.

Conclusion: AI Readiness Is About Judgment, Not Tools

Becoming AI-ready does not imply mastering platforms, prompts, or features. It's about preserving professional judgment in an AI-rich environment. AI-ready health professionals utilize GenAI with purposeful intent, verify consistently, interpret outputs in light of local context, and hold themselves completely accountable for outcomes.

This discipline is especially important in Cambodia and other situations where trust, adaptation, and human judgment are necessary for providing quality care. GenAI can help with learning, research, and clinical practice, but only if humans maintain full control.

Call to Action

Readers are encouraged to approach GenAI use with thought rather than enthusiasm. Starting small, defining defined roles for AI, making verification a habit, and modeling responsible use for others are all realistic steps towards AI readiness. This preparedness is not acquired once; rather, it is developed daily via reflective use, ethical awareness, and unflinching commitment to patients and learners.

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Annex: Self-Assessment Checklist

Am I an AI-Ready Healthcare Professional?

Purpose

This checklist helps health professionals reflect on whether their use of generative AI (GenAI) strengthens professional judgment, preserves accountability, and protects patients. It is not a test of technical skill but of professional readiness.

How to use it

- Read each statement honestly.
- Rate yourself using the scale below.
- Focus on patterns, not perfection.
- Revisit periodically as your practice evolves.

Rating scale

- 0 = Not yet / Rarely
- 1 = Sometimes
- 2 = Consistently

A. Professional Judgment First

Statement	0	1	2
I think through a problem myself before using GenAI	☐	☐	☐
I can explain my reasoning without referring to AI	☐	☐	☐
I use GenAI to support thinking, not replace it	☐	☐	☐
I remain comfortable making decisions without AI access	☐	☐	☐

Reflection prompt:

Do I still “own” my thinking, or do I wait for AI to think first?

B. Task–Risk Alignment

Statement	0	1	2
I am clear *why* I am using GenAI for a specific task	☐	☐	☐
I distinguish low-risk tasks (e.g., drafting, language editing) from high-risk ones (e.g., clinical decisions) (4 Tiers reflection)	☐	☐	☐
I avoid using GenAI for diagnosis, dosing, or critical decisions	☐	☐	☐
I slow down and apply stronger judgment for higher-risk tasks	☐	☐	☐

Reflection prompt:

Would I still use AI the same way if patient safety were directly at stake?

C. Verification as a Habit

Statement	0	1	2
I routinely check AI outputs for accuracy and plausibility	☐	☐	☐
I never assume fluent language means correct content	☐	☐	☐
I cross-check important outputs with guidelines or trusted references	☐	☐	☐
I would defend my decision even if asked not to mention AI	☐	☐	☐

Reflection prompt:

If this output were wrong, would I catch it?

D. Contextual Awareness (Local Reality)

Statement	0	1	2

I explicitly consider local resources and constraints when using AI	☐	☐	☐
I filter out recommendations that do not fit my setting	☐	☐	☐
I adapt language to patients' culture and health literacy	☐	☐	☐
I do not assume AI outputs reflect Cambodian practice	☐	☐	☐

Reflection prompt:

Does this make sense *here (Cambodia)*, not just in theory?

E. Ethical Responsibility & Accountability

Statement	0	1	2
I accept full responsibility for AI-assisted work	☐	☐	☐
I do not attribute decisions to AI	☐	☐	☐
I protect patient privacy when using GenAI	☐	☐	☐
I am transparent about AI use when appropriate (AI Disclosure and Reflective Journaling)	☐	☐	☐

Reflection prompt:

If harm occurred, would accountability be clear and human?

F. Role-Specific Practice

For Learners

- ☐ I use GenAI to generate questions, not shortcut answers.
- ☐ I can explain concepts without AI assistance.

- ☐ AI use strengthens, not weakens, my learning

For Clinicians

- ☐ I use AI mainly for reflection, communication, or documentation.
- ☐ I do not present AI outputs directly to patients.
- ☐ Clinical responsibility remains explicit and personal.

For Educators

- ☐ I model safe and disciplined AI use.
- ☐ I teach verification, not just prompting.
- ☐ I help learners articulate AI limitations.

Overall Self-Judgment

- Mostly 0–1: *Early stage:* Focus on thinking first, limiting high-risk use, and building verification habits.
- Mostly 1–2: *Developing AI readiness*: Strengthen consistency and contextual filtering.
- Mostly 2: *AI-ready professional:* Continue reflective practice and model responsible use for others.

Key Reminder

AI readiness is not about being advanced with tools. It is about being disciplined with judgment.

This checklist is meant to be revisited, not passed once and forgotten.

** Edited with ChatGPT for clarity; all views expressed are solely those of the author.*

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