

Medical AI: Are Osler's Principles Lost in Translation?

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William Osler never saw an algorithm. He died in 1919, a century before "artificial intelligence" entered the clinical vocabulary. And yet no figure in the history of medicine is better equipped to tell us what we are about to lose.¹ Osler's central achievement was a discipline of the mind: the conviction that the practice of medicine must rest on direct observation of the patient and on the relationship between patient and physician. We argue that this discipline is now under direct threat, and that artificial intelligence is poised to accelerate its erosion rather than reverse it — unless we act deliberately to stop it.

Clarifying what AI can do — and will not do in the foreseeable future

Artificial intelligence can go extraordinarily far in the medical process — synthesizing literature at a scale no human can match, flagging patterns in imaging and pathology that trained eyes miss, drafting notes, triaging risk, generating differential diagnoses, and suggesting therapeutic options in seconds. None of this is in serious dispute anymore, and clinicians who dismiss it outright are being unrealistic.

On the other hand, it is illusory to imagine that AI will, in the foreseeable future, replace clinical observation and the personal relationship between doctor and patient. This needs to be said plainly, not hedged. Diagnosis by pattern-matching on data is not the same as sitting at the bedside of anxious patients, watching how they behave, picking up on what they leave unsaid, and actually building the trust that makes adherence possible. Whatever level of performance AI models will achieve in the future, they will remain trained on the past, and no model can substitute for what happens, uniquely, in the present, between two people. Anyone who believes otherwise has not understood what medicine actually is.

A Trend Already Underway — and Poised to Worsen

Losing the lessons learned at the bedside is not a hypothetical risk, nor is it a new one. Studies among internal medicine trainees have documented a clear decline in direct time with patients for well over a decade,² and the trend is still underway today in several disciplines. For example, in hematologic malignancies, where AI-based tools are being rapidly adopted to guide diagnosis, prognosis, and treatment decisions,³ physicians increasingly spend more time in offices in front of computer screens — reviewing algorithmic outputs, multiomic profiles, and risk calculators — often making therapeutic decisions before they examine the patient, so that the consultation risks becoming a confirmation of a decision already made elsewhere, rather than the encounter from which the decision should emerge.

Artificial intelligence, deployed carelessly, will most likely deepen this pattern rather than correct it. Every incentive currently pushes in that direction: institutions will reward the efficiency of deciding early, physicians will gravitate toward the workflow that is faster and less cognitively taxing, and the tools themselves are easiest to deploy on data that are already structured and available before the visit. Left to market and workflow pressures alone, AI will not restore the clinical encounter — it will finish hollowing it out. This is the central danger.

Osler's principles are the countermeasure

This is precisely why Osler's teaching should not be treated as an outdated precept, but as the specific countermeasure this moment requires. We argue that it should be urgently reintroduced as a structural component of clinical education, integrated into, not appended to, the technical curriculum.

Three Oslerian principles should anchor that effort:

"Listen to the patient; he is telling you the diagnosis." What the physician personally learns at the patient's bedside should always come first — a principle physicians in subspecialty training are especially at risk of losing, as AI often becomes the only input they consult before reaching a conclusion. AI output should inform that conclusion but not replace it.

"Medicine is learned by the bedside and not in the classroom." Osler's most consequential reform was moving medical education out of the lecture hall and to the patient's side. A century later, the direction of travel has reversed: trainees now often learn to interpret data before they learn to examine a patient. That sequence needs to be corrected, with protected, unhurried bedside time built into training and explicitly shielded from the pressure to consult the algorithm first.

"Imperturbability." Osler used this word to describe the level-headed, steady judgment a physician needs when facing clinical uncertainty. Applied to the output of AI, the same discipline must hold: neither adopting it blindly, nor dismissing it out of hand, but checking it as rigorously as any other clinical evidence.

Concluding remarks

Discussions on "AI and the future of medicine" too often lead to wishful thinking that is very unlikely to be implemented. Instead, they should lead to concrete proposals, such as treating the clinical encounter as a parameter to be measured in academic medical centers. That means auditing whether AI tools are actually shortening or lengthening — as they should — the time physicians spend at the patient's bedside.

Indeed, William Osler would have welcomed the advent of AI in medicine, but he would have insisted that every AI tool be held to a single non-negotiable question: does it bring the physician closer to the patient, or does it interpose itself between them? On present evidence, in disciplines already reorganized around screens and algorithms, AI is failing that test.⁴ The remedy is not to slow the technology down. It is to speed up, urgently, the reintroduction of Osler's principles into the training of every physician who will use it.

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