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Letter to the Editor

Artificial Intelligence in Respiratory Medicine: Epistemic Authority, Trust and Responsibility in Practice and in Training

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DEAR EDITOR,

We read with interest the review by Karan and Elbek[1], which surveys artificial intelligence (AI) across medicine and calls for ethical and regulatory frameworks. Such frameworks are enacted in two places at once: at the bedside, and in training.

One example lies close to respiratory practice.[1] When 120 pulmonologists interpreted 50 pulmonary function cases, their pattern recognition matched American Thoracic Society (ATS)/European Respiratory Society (ERS) guidelines in 74.4% and their diagnoses were correct in 44.6%; task-specific, rule-based software matched the patterns in 100%-unsurprisingly, since it encodes those guidelines-but diagnosed correctly in 82%.[2] In that dataset the software was reliable where rules were explicit, yet fallible where judgment began. Generative models encode no such rule set, and their fluency carries no comparable warrant. Beyond accuracy, our concern is with the justification of reliance on AI and with clinical responsibility.

A framework one of us has proposed rests on three pillars: *epistemic authority* (where a model's authority ends), *calibrated trust* (reliance proportioned to demonstrated reliability, not fluency), and an *architecture of responsibility* assigned before deployment.[3] It presumes a user able to recognize error-an assumption weakest in training. Surveys of medical students report widespread use alongside limited confidence in appraising output;[4,5] learners consult these tools about what they do not yet understand, so those likeliest to rely on them may be least able to catch mistakes.

It terms the resulting hazard an *epistemic placebo*: the unearned reassurance of confident prose.[3] A model's reading of a flow-volume loop arrives in the cadence of a competent report and reads exactly as a correct interpretation does-whether or not it is right.

Three measures follow, in clinic and classroom alike. First, classify tasks by risk: by consequence for the patient in practice, and by *formative risk* in teaching, because asking a model to produce the differential removes the very reasoning the exercise is meant to develop. Second, treat trust calibration as a trainable, examinable skill; automation bias is documented among experienced clinicians,[6] and there is no evidence that learners, who have less clinical experience to draw on, are any less prone to it. Tracings carrying seeded AI errors, checked against the 2022 ERS/ATS technical standard,[7] make the placebo an object of study. Third, assign responsibility explicitly-including our own: when teachers use AI without declaring it, yet penalize learners for doing so, the inconsistency itself becomes the lesson, and it is learned more thoroughly than anything taught in a session on professionalism.[8]

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Regulation governs systems; education forms those who use them. Clinicians trained to critically appraise their sources and take responsibility for outcomes will utilize these tools rather than be led by them.

Footnotes

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