2025, Volume 57, Issue 6, 1-2, e-ISSN 1938-3800

Family Medicine

LETTER TO THE EDITOR

The Diagnostic Blind Spot in Early Medical Education

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HOW TO CITE: Jerjes W. The Diagnostic Blind Spot in Early Medical Education. *Fam Med.* 2025;57(6):1-2.
doi: 10.22454/FamMed.2025.135278

PUBLISHED: 20 May 2025

TO THE EDITOR:

The recent study by Roper et al[1] that examined the clinical questions raised by the first-year medical students within primary care settings raises an interesting lacuna within medical training: the relative lack of diagnostic questions compared to the treatment-related ones. While 84% of the questions raised by the students pertained to the issues of treatment and prevention, 2.2% pertained to the issues of diagnosis. This division raises some important issues about the early clinical exposure of medical students and whether it prepares them to address the complexity of undifferentiated presentation within primary care settings.

The family doctor will typically be the one to evaluate patients with the undifferentiated presentation, which varies from nonspecific abdominal pain to tiredness all the time. Such presentations obligate the physician to generate extensive differential diagnoses and employ clinical reasoning before the option to treat. But if students are presented mostly with patients that already have the diagnosis made, then the exposure to this essential part of primary care will be missing. Early medical training has the potential to perpetuate narrow, treatment-focused thinking instead of the diagnostic expertise that frontline primary care physicians require.[2]

The PICO (Patient, Intervention, Comparison, Outcome) framework that students use to frame clinical questions can be biased toward questions focused on interventions. While it is helpful for evaluating treatments, PICO is less suited for formulating diagnostic queries that require attention to disease probability, test characteristics, and patient context.[3]

To address this issue, the use of frameworks such as the PROBE (Problem, Representation, Observation, Best evidence, Explanation) model can help refocus learners on diagnostic reasoning. Although the PROBE model is an original framework developed by the author, it has not yet been published in the peer-reviewed literature. It draws conceptually on core elements from the diagnostic reasoning literature, including problem representation,[4] structured data gathering and observation,[5] and integration of best evidence[6] and explanation.[7] These principles support learners in moving beyond treatment pathways toward deeper diagnostic exploration, particularly in the context of undifferentiated presentations.

Students' core placements are typically within settings where the focus is the care of chronic conditions rather than acute diagnostic problems. Compared to walk-in clinics or urgent care settings, where patients typically present new, uninvestigated complaints, continuity primary care typically involves the care of ongoing problems. The placement setting perhaps explains why students are predominantly interested in therapeutic decision-making rather than diagnostic questioning.[8] Another possibility to tackle this issue is to broaden the types of primary care placements to include exposure to out-of-hours general practitioner work, urgent care clinics, or telemedicine sessions where the presentation of undiagnosed problems are more frequent.

Another explanation lies within the broader issue of test overuse and overdiagnosis in medicine. More recent programs such as Choosing Wisely have emphasized the need for trainees to avoid unnecessary tests and interventions.[9] While this is valuable learning, it has the unintended side effect of discouraging early learners from learning about diagnostic uncertainty, encouraging instead the use of established pathways to therapy over the use of investigative reasoning.[10] Teaching learners to deal with diagnostic uncertainty rather than simply avoiding excessive testing should be included within early medical training.

The hierarchical nature of medical training comes into play. The preclerkship students will be less likely to be confident in formulating differential hypotheses and will see them

as being beyond their competence.[11] Instead, they will likely be attracted to more tangible and actionable treatment questions. Early learners can be encouraged to complete hypothetical differential diagnosis exercises, use clinical decision support tools, and experience structured pathways to help them gain confidence handling uncertainty.

This balance can be achieved through a change in both the process of educating students and the process of assessing them. Diagnostic thinking must be given priority within early clinical years within medical programs and included within both formative and summative assessments. Case discussions, objective structured clinical examinations, and reflective exercises within a framework can encourage students to think through uncertainty within diagnosis. Making students think verbally and explain themselves verbally during patient contacts can be a valuable method to gain an understanding regarding their developing clinical expertise and their preparedness to deal with the complexities within primary care that lie beyond the mere making of treatment decisions.

Comprehension of the undifferentiated presentation lies at the center of primary care. If medical students are inadequately exposed to the complexity of diagnosis during the early years of training, then clinical uncertainty and decision-making will be difficult to manage for them during the latter years. Reshaping the early primary care exposure will enable future clinicians to acquire an equilibrium skill set that consists of diagnosis, management, and patient-centered decision-making.

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