Remediation for Learners Struggling with Diagnostic Reasoning

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Learning Objectives

Describe the prevalence of clinical reasoning struggles among medical learners, including common signs and patterns

Propose a domain-specific approach for coaching clinical reasoning

Employ techniques aimed at enhancing learner self-awareness and insight, fostering a collaborative and supportive process

Clinical Reasoning Deficits

- University of Colorado
  - 25-30% of residents, 40-45% of medical students referred to a remediation program
- University of Pennsylvania
  - 40-45% of learners referred to a combined UME-GME remediation program
- University of Virginia
  - 34% of residents referred to a GME remediation program; 40% of clerkship/post-clerkship students

Guerrasio J, et al. JGIM 2014; K Warburton JGME 2017 and 2020; Parsons JGME 2024

Identification

- Assessment is difficult; often focuses on recall of facts and direct observation is limited
- “Needs to read more” is a sign something is wrong, but it may not be knowledge
- Self-assessment is unreliable
- Process versus outcome

Bennion LD et al. Perspect Med Ed 2019; Eva et al. Adv Health Sci Educ Theory Pract 2004; Davis et al. JAMA 2006

What does a clinical reasoning deficit look like?

Can't tell a story

Orders too many tests

Doesn't appreciate urgency

Presentations miss important details

Disorganized

Poor signouts

Inefficient

Indecisive

Always behind

Limited differential

Premature closure

Misses the big picture

Anchors

Can't see the forest for the trees

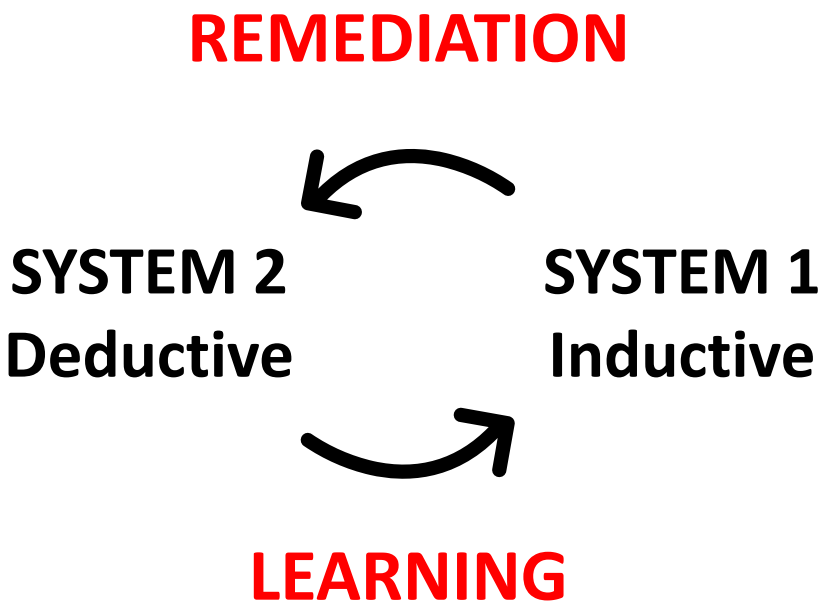
Doesn't know what questions to ask

Overwhelmed

Parsons AS, et al. JGME. 2024 Aug;16(4):469-474; Audétat MC et al. Med Teach 2013

Clinical Reasoning Conundrum

"Experienced clinicians often use rapid unconscious cognitive reasoning processes and find it difficult to slow down and explain how they are thinking."

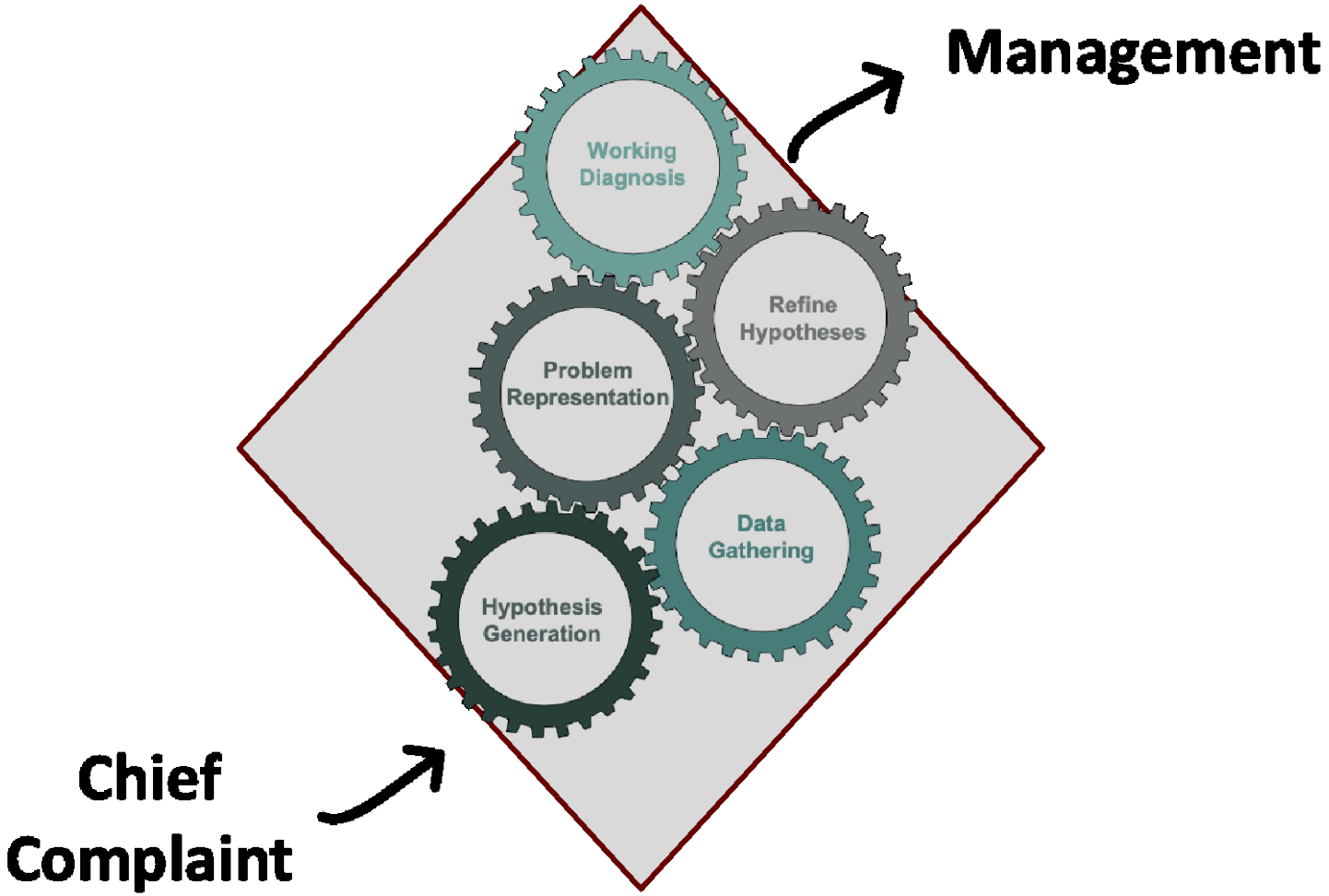


Croskerry P Acad Med 2009

Remediation Program Structure

Parsons AS, et al. JGME. 2024 Aug;16(4):469-474.

Diagnose the Deficit



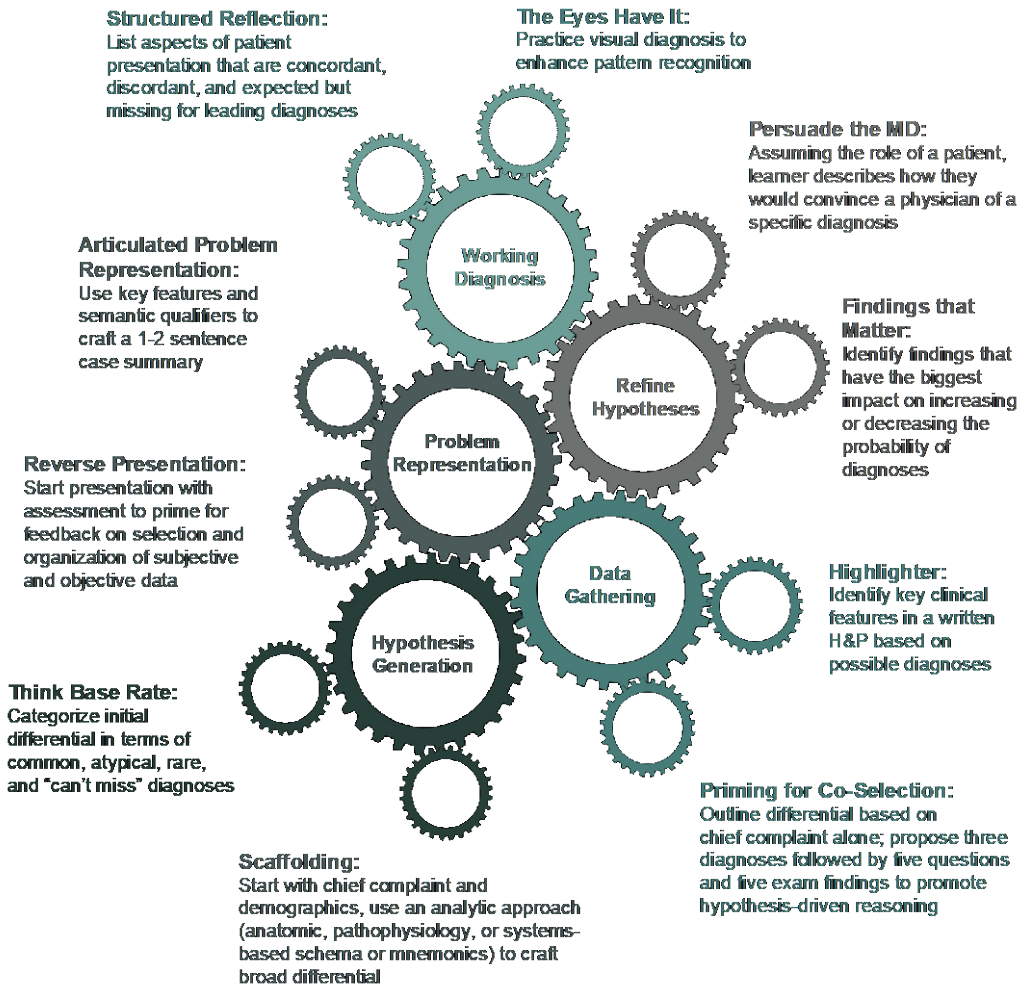
Audétat MC et al. Med Teach 2013; Parsons A, Rencic J et al. Acad Med 2020 and JGME. 2024 Aug;16(4):469-474

Case-based SRL Microanalysis

Durning SJ et al. Acad Med 2011; Parsons AS, et al. JGME. 2024 Aug;16(4):469-474.

Cased-Based Coaching

- Design a strategy targeted to the deficit(s)
- Promote:
  - Knowledge organization
  - Schema formation
- Early hypothesis generation; hypothetico-deductive → improved pattern recognition



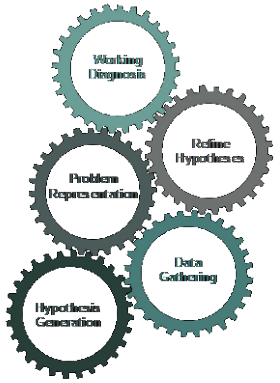
Parsons A, et al. Acad Med 2020; Chapter 9, Remediation in Medical Education: A Mid-Course Correction [2nd ed. 2023]; Parsons AS, et al. JGME. 2024 Aug;16(4):469-474.

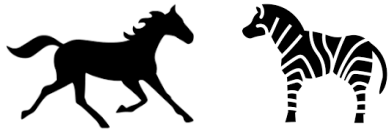
Clues: Hypothesis Generation Deficit

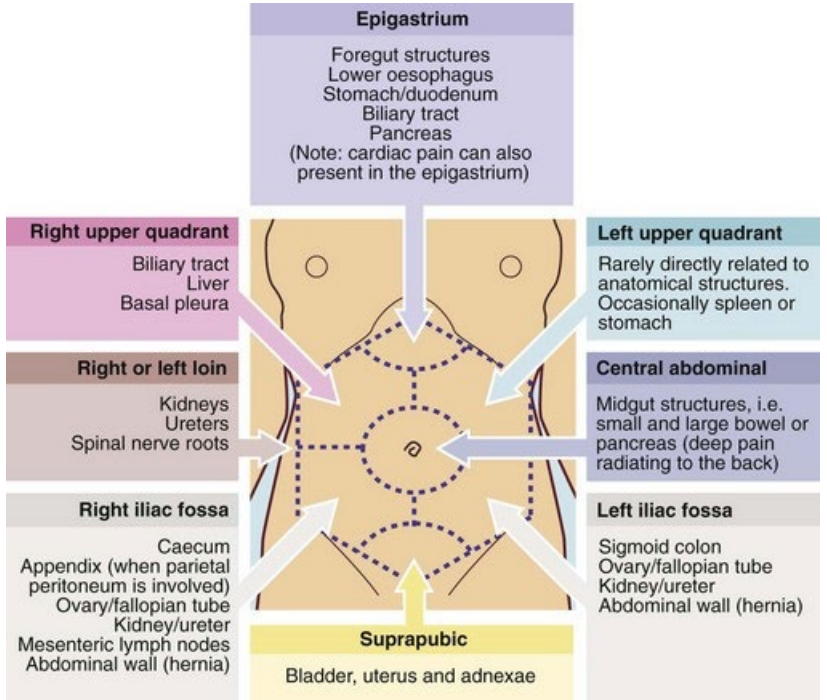
- Limited differential diagnosis based on chief complaint and initial data
- Fails to ask defining or discriminating features EARLY in the encounter
- Differential diagnoses begin and remain overly narrow
- Overly reliant on previous experience, recent cases, or diagnostic momentum
- Fails to consider common diagnoses
- Struggles to justify why a question was asked or exam maneuver was performed

Audétat MC et al. Med Teach 2013; ACGME Remediation Toolkit 2023; Parsons A, et al. Acad Med 2020; Chapter 9, Remediation in Medical Education: A Mid-Course Correction [2nd ed. 2023]

Early Hypothesis Generation



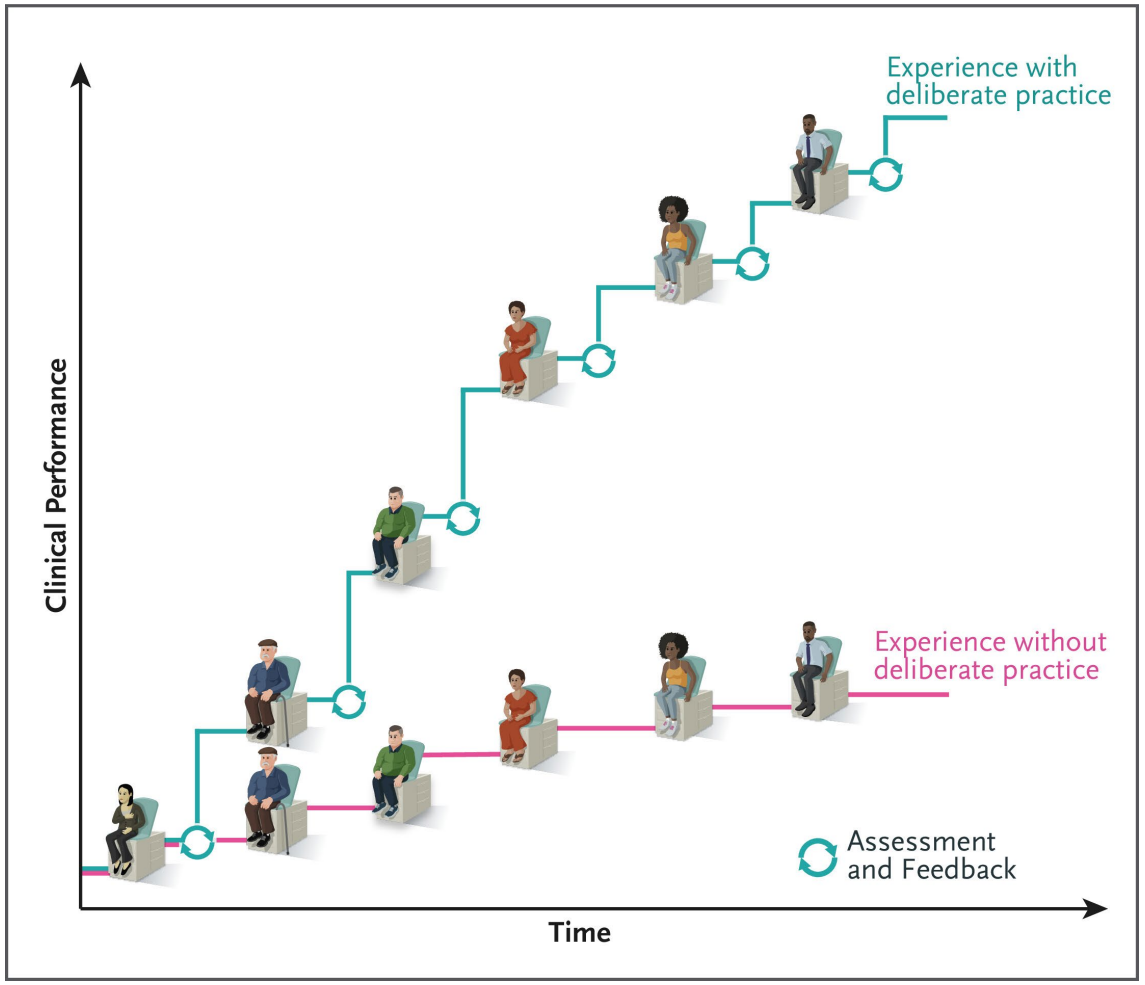
- Consideration of potential hypotheses prior to detailed information gathering improves diagnostic accuracy
- Use frameworks to scaffold
  - Base-rate 
  - Anatomical framework
  - Pathophysiology (causal reasoning)
  - Organ Systems



Kostopoulou et al, 2015; Bowen and ten Cate: Prerequisites for Learning Clinical Reasoning 2018; Text: Symptoms to Diagnosis

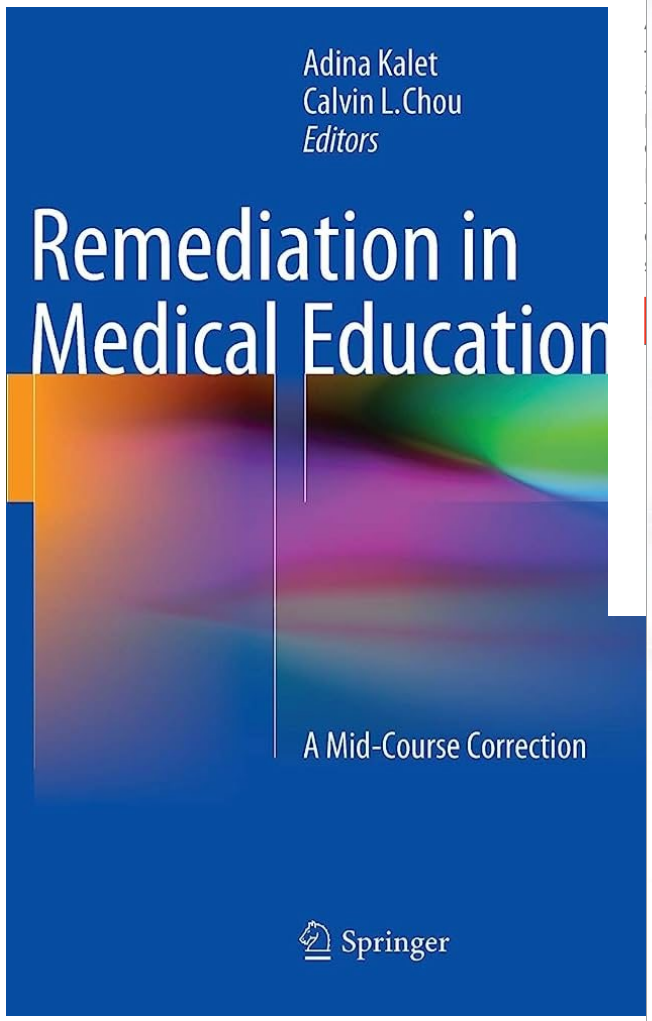
Deliberate Practice

- Simulated environment
- Case repetition + variability
- Time-intensive (direct 9.1 hrs)
- Authentic clinical environment
- Context specificity and diagnostic reasoning “out in the world”



McGaghie WC et al. Chest 2009 and Acad Med 2011; RE Abdulnour et al. J Rencic NEJM 2022; Parsons AS, et al. JGME. 2024 Aug;16(4):469-474.

Thank you…


Adina Kalet
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A Mid-Course Correction
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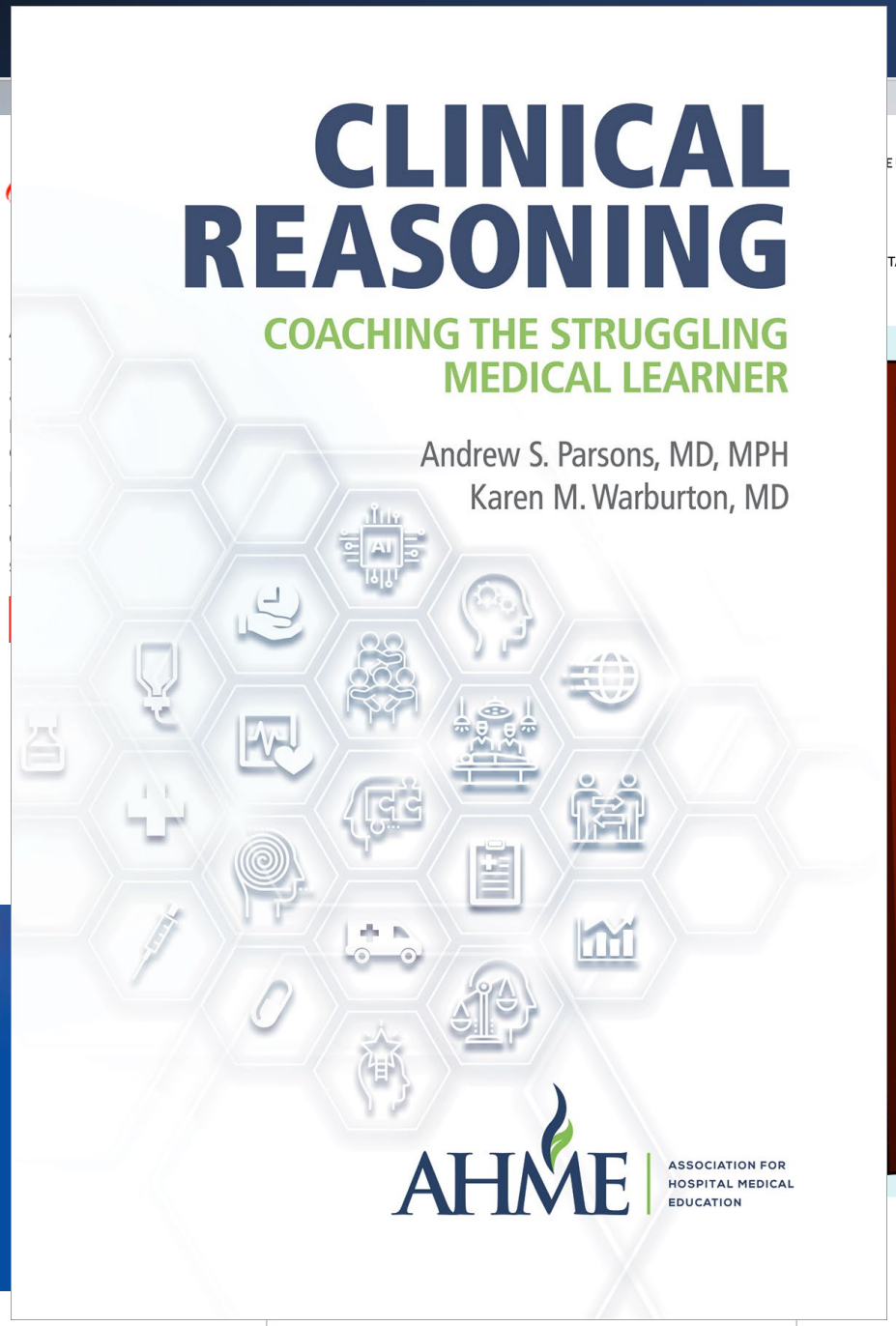
CLINICAL REASONING
COACHING THE STRUGGLING MEDICAL LEARNER
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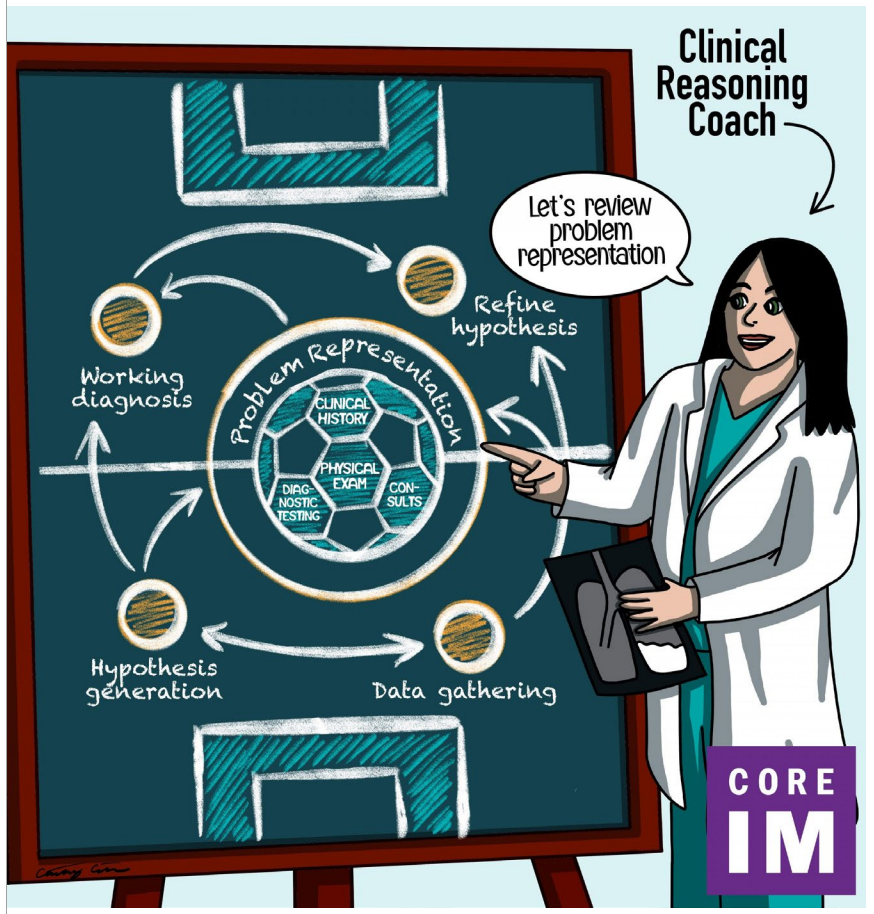
Clinical Reasoning Coach
Let's review problem representation
Refine hypothesis
Working diagnosis
Problem Representation
CLINICAL HISTORY
PHYSICAL EXAM
DIAG-NOSTIC TESTING
CON-SULTS
Hypothesis generation
Data gathering
CORE IM