






# Management Reasoning: A Toolbox for Educators

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Recent clinical reasoning literature has called for further exploration of management reasoning, the decision-making task about testing, treatment, follow-up visits, and allocation of limited resources.<sup>1</sup> In this AM Last Page, we use an educational case to highlight five strategies for teaching management reasoning.

**Educational case:** A student in clinic presents a 45-year-old patient experiencing a mild headache for 2 days.

Concept	Definition and Teaching Strategy	Teaching Example
 <p><b>MANAGEMENT SCRIPT</b></p>	<p><b>Definition:</b> Possible interventions considered by a clinician for a health care problem.<sup>2</sup></p> <p><b>Strategy:</b> Provide a template with categories for different types of potential interventions.<sup>2</sup></p>	<p>→ “From our typical menu of management options—labs, imaging, procedures, consultations, medications, or monitoring—what do you want to do for this patient’s headache?”</p>
 <p><b>THRESHOLD</b></p>	<p><b>Definition:</b> Probability of a disease when a test’s or treatment’s benefits and harms are equal.<sup>3</sup></p> <p><b>Strategy:</b> Ask what factors contribute to the learner’s testing and treatment thresholds.<sup>4</sup></p>	<p>→ “You mentioned a concern about a brain tumor. Do you think the probability of a tumor is high enough to order brain imaging? Why or why not?”</p>
 <p><b>SHARED DECISION MAKING</b></p>	<p><b>Definition:</b> Engaging the patient and other stakeholders in the decision process.<sup>1</sup></p> <p><b>Strategy:</b> Collaborate with patients and the health care team to determine the optimal intervention(s).</p>	<p>→ “The patient seemed concerned about medication side effects. How might that affect what you prescribe them for pain relief?”</p>
 <p><b>HIGH-VALUE CARE</b></p>	<p><b>Definition:</b> Choosing interventions with emphasis on quality, service, and cost.<sup>2</sup></p> <p><b>Strategy:</b> Ask whether a test will change management and encourage the use of evidence-based guidelines.</p>	<p>→ “If you think a caffeine withdrawal headache is most likely, would additional blood work change management of the patient’s headache? The patient might benefit most from a headache diary.”</p>
 <p><b>UNCERTAINTY</b></p>	<p><b>Definition:</b> State of limited knowledge often related to probability, complexity, and ambiguity.<sup>5</sup></p> <p><b>Strategy:</b> Encourage appropriate tolerance of uncertainty and discuss its effect on clinical reasoning.<sup>5</sup></p>	<p>→ “I know there is not a clear diagnosis, but I’m comfortable because we have an appropriate workup planned. How do you want to explain our plan to the patient?”</p>

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**References:**

- Cook DA, Durning SJ, Sherbino J, Gruppen LD. Management reasoning: Implications for health professions educators and a research agenda. *Acad Med.* 2019;94:1310–1316.
- Parsons AS, Wijesekera TP, Rencic J. The management script: A practical tool for teaching management reasoning. *Acad Med.* 2020;95:1179–1185.
- Pauker SG, Kassirer JP. The threshold approach to clinical decision making. *N Engl J Med.* 1980;302:1109–1117.
- Abdoler EA, O’Brien BC, Schwartz BS. Following the script: An exploratory study of the therapeutic reasoning underlying physicians’ choice of antimicrobial. *Acad Med.* 2020;95:1238–1247.
- Gheihman G, Johnson M, Simpkin AL. Twelve tips for thriving in the face of clinical uncertainty. *Med Teach.* 2020;42:493–499.

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