

Diagnostic Dilemmas and Medical Mysteries: *Critical Thinking*

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Disclosures

The authors of this
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Objectives

- ▶ Demonstrate how to apply critical thinking to novel situations and new information
- ▶ Discuss the importance of critical thinking in recognizing and addressing clinical challenges
- ▶ Compare and contrast System 1 (fast) and System 2 (slow) thinking
- ▶ Describe the impact of prior knowledge, experience, and bias on the process of critical thinking

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Structure of the Session

- ▶ Interactive
- ▶ Cases presented by physicians
- ▶ Led by medical students
- ▶ Audience provide assistance and critical thinking guidance
- ▶ Discussion revolves around three key questions

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Critical Thinking and Penn State Hershey Education

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Critical Thinking Questions

- ▶ What is critical thinking?
- ▶ How do we apply it?
- ▶ How do we assess our success in applying?

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What is Critical Thinking?

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing synthesizing, and for evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

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National Council for Excellence in Critical Thinking, 1987



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How Do We Apply It?

- ▶ “Fast” and “slow” thinking processes
- ▶ Bias
- ▶ Prioritization

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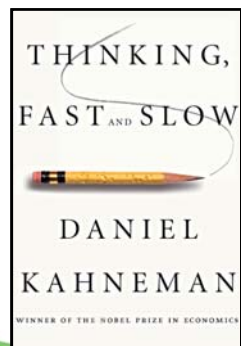
System 1 vs. System 2 Thinking

System 1 Thinking

- ▶ Fast
- ▶ Pattern Recognition
- ▶ Intuitive
- ▶ Automatic

System 2 Thinking

- ▶ Slow
- ▶ Analysis
- ▶ Effortful
- ▶ Voluntary



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Biases

- ▶ Anchoring bias
- ▶ Availability bias
- ▶ Confirmation bias
- ▶ Conservation bias
- ▶ Clustering bias
- ▶ Outcome bias
- ▶ Overconfidence



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Prioritizations

- ▶ Occam's Razor vs. Hickam's Dictum
- ▶ Risk to Patient:
Perceived vs. Actual
- ▶ Urgency:
Front Burner vs. Back Burner



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How do we assess our success in applying to a case?

- ▶ History and Physical Exam
- ▶ Context
- ▶ Differential Diagnosis
- ▶ Plan



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How do we assess our success in applying to a case?

History and Physical Exam

- ▶ Content and process
- ▶ Maximize accuracy and completeness



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How do we assess our success in applying to a case?

Context

- ▶ Patient agenda
- ▶ Social context
- ▶ Social determinates of health



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How do we assess our success in applying to a case?

Differential Diagnosis

- ▶ Comprehensive
- ▶ Prioritized



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How do we assess our success in applying to a case?

Plan

- ▶ Targeted
- ▶ Step-Wise
- ▶ Considering cost and adverse effects



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Three Key Questions

- ▶ What do you know?
- ▶ What don't you know?
- ▶ What may be a false assumption?



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CASE 1



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Three Key Questions

- ▶ What do you know?
- ▶ What don't you know?
- ▶ What may be a false assumption?



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CASE 2



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Three Key Questions

- ▶ What do you know?
- ▶ What don't you know?
- ▶ What may be a false assumption?



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Summary

- ▶ Critical thinking is an indispensable tool for recognizing and addressing different clinical challenges.
- ▶ Critical thinking includes System 1 and System 2 thinking, and physicians should know when to utilize one versus the other.
- ▶ Prior knowledge, experiences, and biases can either bolster or hinder the process of critical thinking.
- ▶ It is important to be aware of these factors to ensure the adequate application of critical thinking and reasoning when it comes to patient care.



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Thank You!



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