

CBL tutor resource: What is Clinical Decision Making?

What is Clinical Reasoning and Decision Making?

- Steps and processes involved in how clinicians make decisions about finding out what is going on with their patients (diagnosis) and finding solutions (treatment) for their patients' problems (Fig 1)
- the **cognitive and non-cognitive** process by which a health care professional **consciously and unconsciously** interacts with the **patient and environment** to **collect and interpret** patient data, weigh **benefits and risks** of actions, and understand **patient preferences** to determine a **working diagnostic and therapeutic** management plan whose purpose is to **improve patient well-being**" (Trowbridge, Rencic and Durning)

Figure 1. Steps in Clinical Reasoning and Clinical Decision Making

PATIENT COMPLAINT → HISTORY	Problem representation	PHYSICAL EXAM	PROBLEM REPRESENTATION	SCHEMA AND ILLNESS SCRIPTS	CDM GRID	Labs and tests	Problem Representation
• Determine which questions to ask • What is your schema for CC? • Ask questions (history)	• Summary	• Use patient history to guide most relevant part of exam • May need to go back and get more history based on exam	• Summary	• Use problem representation to activate schema and illness script comparison	• Based on problem representation, schema, scripts • "Working diagnosis" for each problem • Some problems are inter-related - one unifying diagnosis	• Based on pre-test probabilities • Use Grid to determine tests needed and why • May need to get more • History and exam based on lab/test results	• Modify GRID • "Working Diagnosis"

Why is it important to teach Clinical Reasoning and Decision Making (CDM)?

- Makes implicit thought processes of experienced/expert clinicians explicit for early learners
- Provides language and tools for learners to engage in knowledge organization and knowledge application
- Provides language and tools for everyone to engage in meta-cognition and reflection about causes of medical error (systems based, as well as cognitive errors)
- Helps promote life-long learning through deliberate practice

What is a Problem Representation?

- Summary statement
- Epidemiology (age, gender identification)
- Risk factors (exposures, PMHx/Social/Family/Meds)
- Key clinical findings (from history and exam) that help differentiate disease from other diseases
- Temporal pattern
- Semantic modifiers (adjectives like acute vs. chronic, unilateral vs. bilateral, pleuritic vs. exertional)

What is a Schema?

- A cognitive tool that allows clinicians to systematically approach a problem by providing an organizing scaffold
- Best if students and clinicians build their own schema
- But can reference resources such as <https://clinicalproblemsolving.com/>
- No schema is perfect

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What is Illness Script?

- Template for a disease or syndrome
- Epidemiology and risk factors = WHO
- Pathophysiology = HOW
- Time course = WHEN
- Clinical presentation (key features) = WHAT
- Early learners follow typical scripts for disease, but build scripts over time through experience and reading, where they will see atypical scripts for common diseases and scripts for less common diseases

What is the CDM GRID (Fig 2)?

- Allows students to build prioritized differential diagnosis (most likely, other common but less likely, and can't miss diagnoses)
- CDM grid completed using problem representations to activate schema and scripts for different diagnose
- Students compare problem representation with scripts for different diseases – identify what is concordant and discordant between patient and typical disease presentations

Figure 2. CDM Grid

Order of likelihood	Diagnosis/hypothesis	Supporting aspects	Opposing/refuting aspects what is there that should not be there, what is not there that should be there
1			
2			
3			
Possible Critical Dx			