Teaching, Assessing, and Remediating Clinical Reasoning

CGEA Workshop 2010

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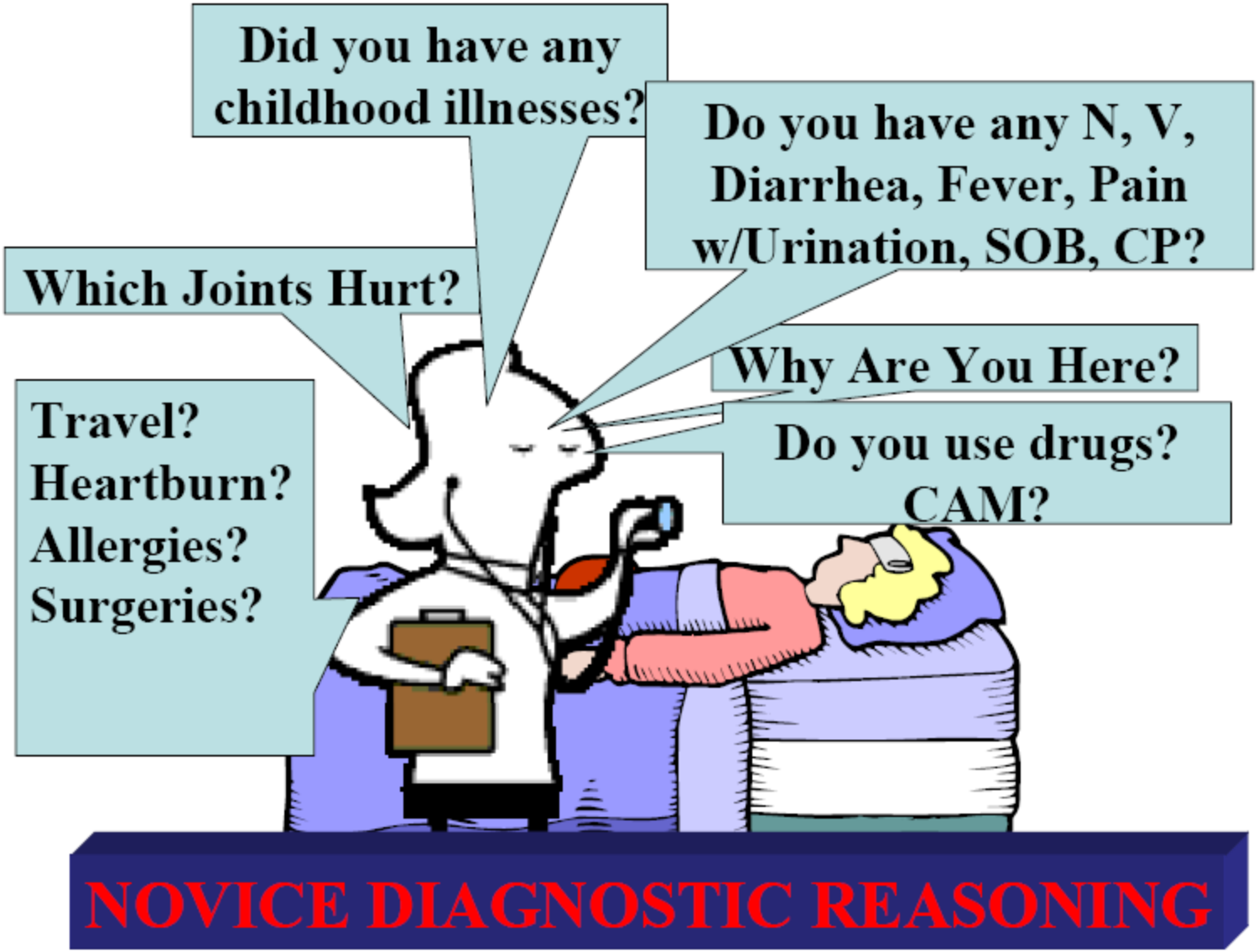
Traditional Clinical Learning

Case Presentation:
Chief complaint
HPI
PE
Labs

Diagnosis out


Did you have any childhood illnesses?
Do you have any N, V, Diarrhea, Fever, Pain w/Urination, SOB, CP?
Which Joints Hurt?
Why Are You Here?
Travel? Heartburn? Allergies? Surgeries?
Do you use drugs? CAM?
NOVICE DIAGNOSTIC REASONING

Knowledge Organization

- The development of sophisticated problem solving skills involves not only an increase in the number of facts but a change in the way those facts are stored and used.

Georges Bordage, MD PhD

Hypothesis Testing

- Driven by chief complaint only, i.e. single symptom or finding driven
- Success dependent on initial DDX
- Limitations:
  - Long lists
  - Many improbable diagnoses included
  - Does not prioritize facts

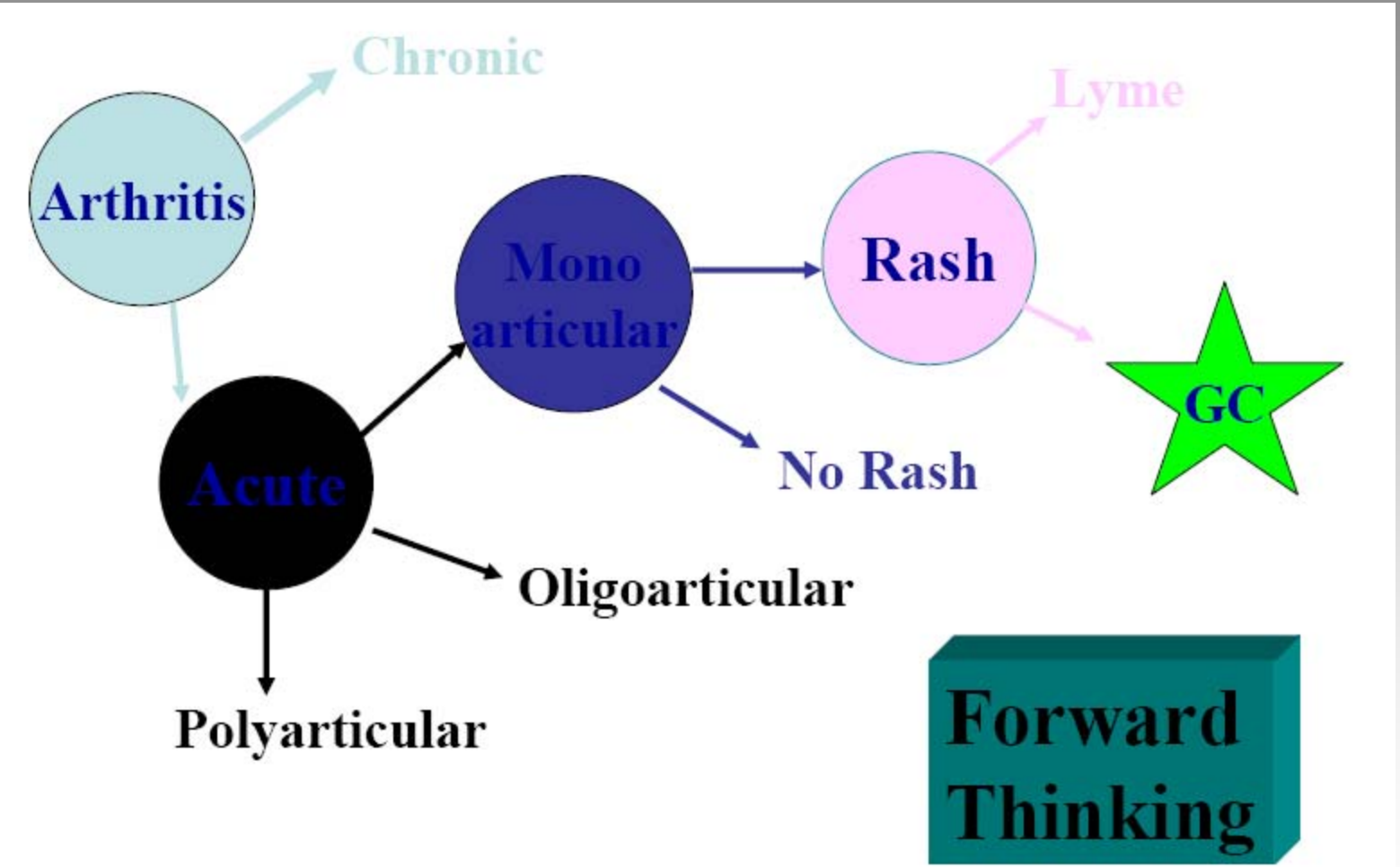
Forward Thinking

- SYNDROME driven
  - Data gathering: define the syndrome
- More Efficient/Less data
  - each step excludes multiple diagnoses
- Key Skills Needed:

Processing of Symptoms

Compare and Contrast Mentality

Memory Framework for Forward Thinking



Pattern Recognition

- Disease driven
- Skills Required:

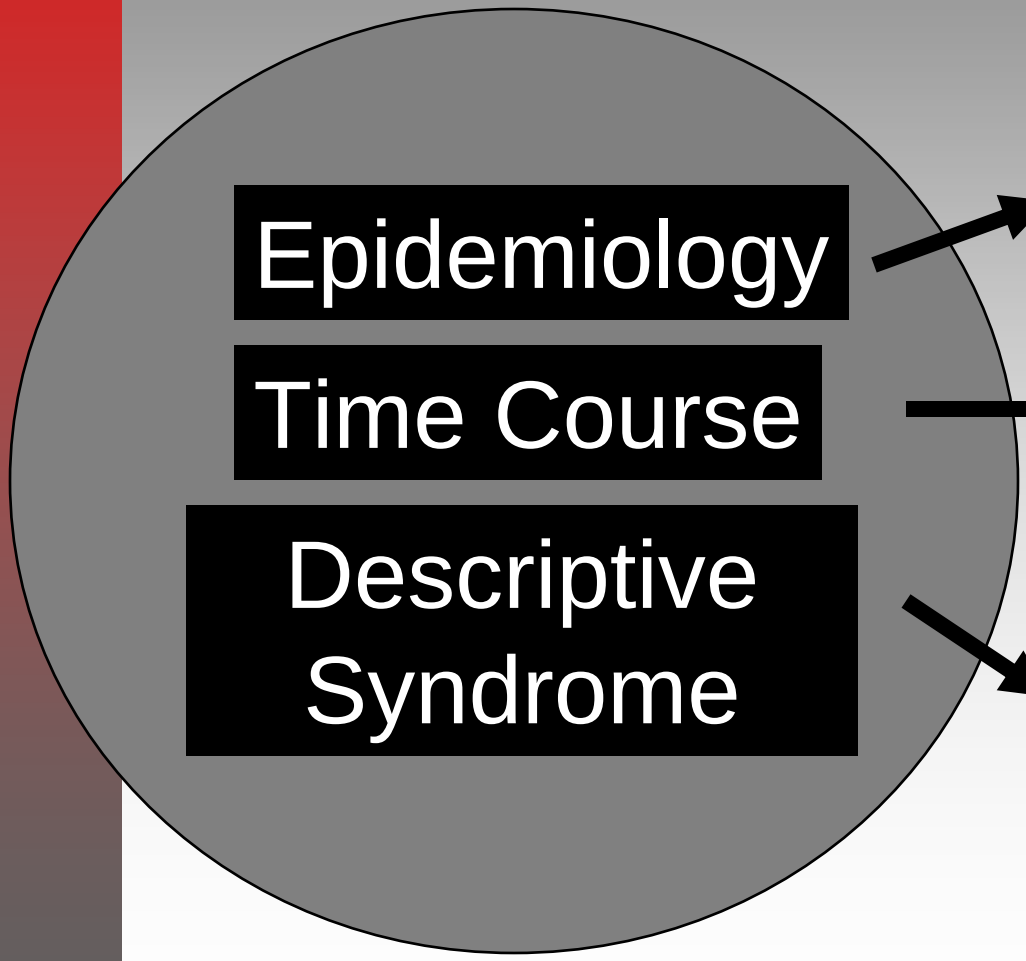
Processing

Compare and Contrast Mentality

Illness Scripts

..refined by Experience

Illness Scripts

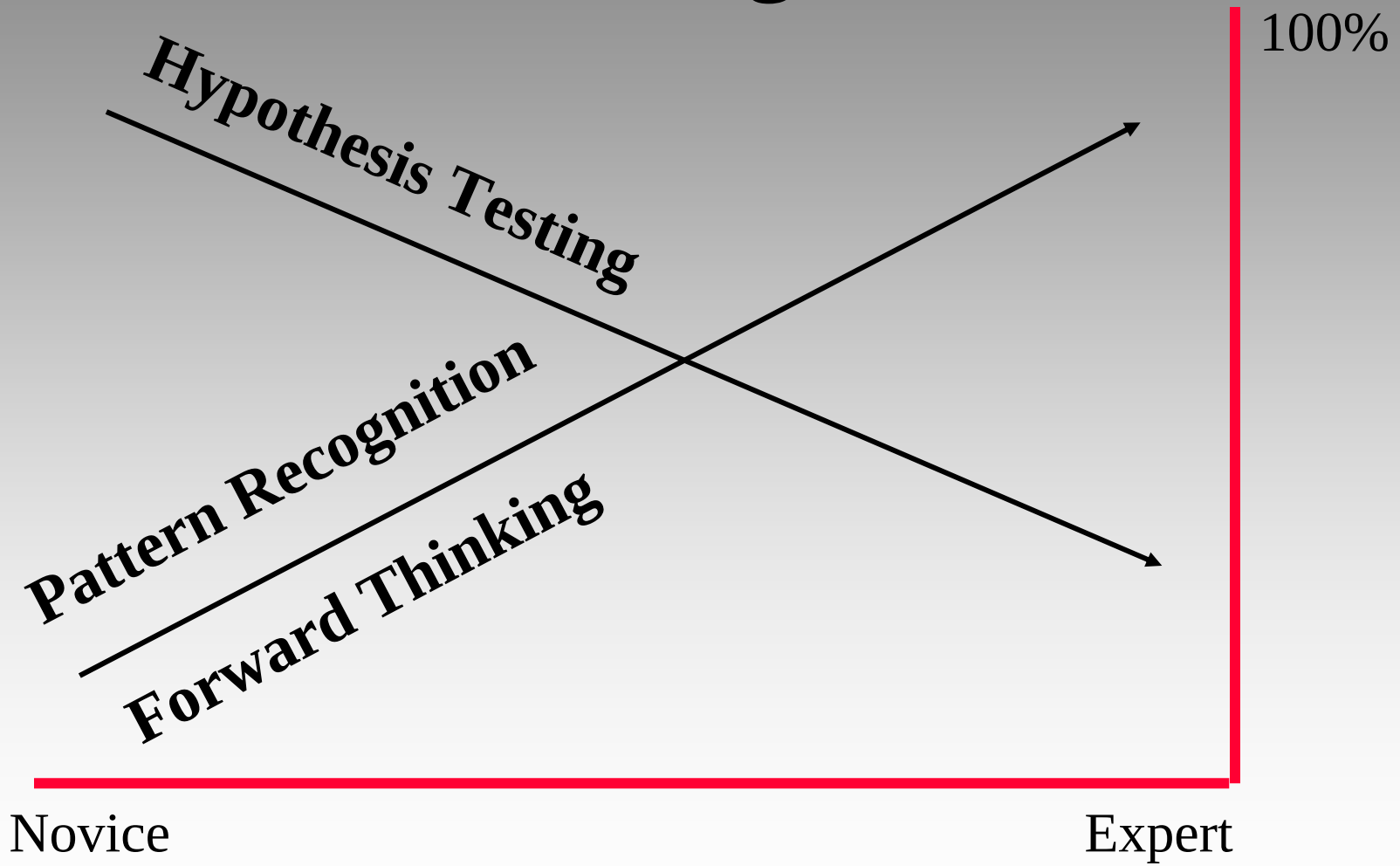


Who gets it

How dz presents with respect to time

Clinical manifestations at time of presentation

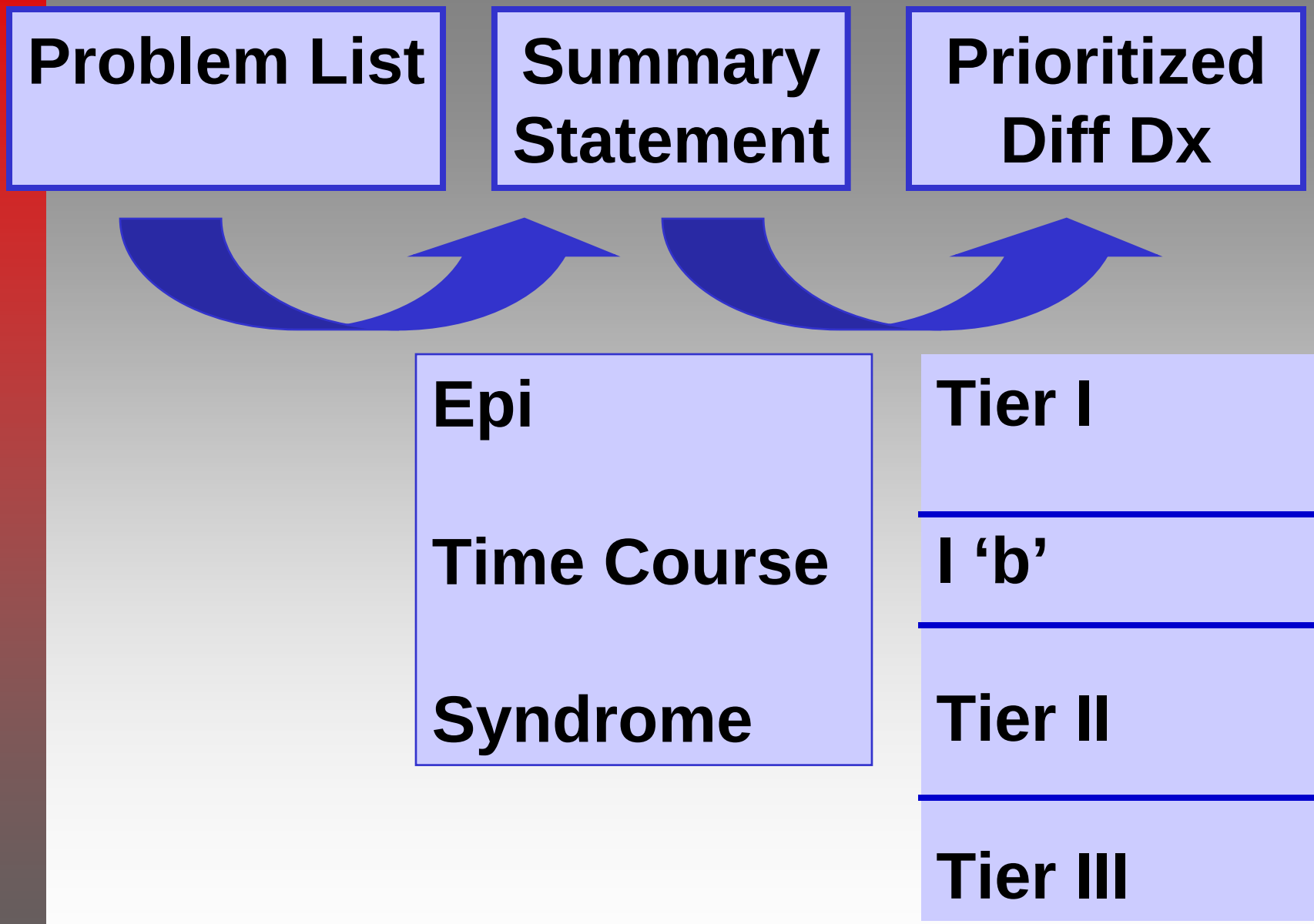
Problem Solving Maturation



How does this help us?

Data in

Diagnosis out


Problem List
Summary Statement
Prioritized Diff Dx
Epi
Time Course
Syndrome
Tier I
I 'b'
Tier II
Tier III

Step I: Problem list

- List all abnormalities
- Process and reduce by
  - Combining redundant items
  - Identifying “due to’s”
  - Removing nonspecific items
  - List unrelated “other problems” at end
- Put in order of priority

Step II: Summarize

- *Epidemiology:*
  - Select only those demographic/past history items relevant to the chief complaint
- *Temporal Pattern*:
  - Acute/Chronic; Progressive/Stable; Episodic; Biphasic…..
- *Syndrome statement:*
  - Processed and prioritized problems

Step III: Differential

- List diseases under consideration (DDX)
- ID **Classic ILLNESS SCRIPT** of each
  - Assesses factual knowledge
- Which **fits** the Patient's illness script?
  - Assesses clinical judgment
  - Encourages auto correction
  - Demystifies pretest probability

Disease
Pathology/pathophysiology

Assessing Clinical Reasoning: The IDEA Method

Elizabeth Baker MD, MHPE

Rush Medical College

Structural Semantics

- Georges Bordage
- Diagnostic accuracy
- Categories:
  - Reduced
  - Dispersed
  - Elaborated
  - Compiled

Prototypes and Semantic Qualifiers
Bordage, Med Ed 2007

- “According to structural semantics, knowledge is given meaning through networks of relationships represented by dichotomous abstract qualifiers.”
- “Successful diagnosticians use semantic qualifiers more frequently and in more diversified sets in their discourses than diagnosticians who are less successful.”

Elaborated discourse

- Semantic richness
- Extended discourses
- Ex: Chest pain= “acute” (vs chronic) “constant” (vs intermittent) “sharp” (vs dull)

IDEA Method

- Interpretive summary
- Differential diagnosis
- Explanation of reasoning
- Alternative diagnoses with explanation of reasoning

RIME

Pangaro/USUHS

- Reporter-reliably gather, organize and communicate information
- Interpreter-create and justify diagnostic hypotheses
- Manager-take responsibility for all aspects of patient care
- Educator-educate others

IDEA Evaluation Tool

- CC, HPI and PE → Reporting skills
- IDEA assessment → Diagnostic reasoning skills
- Plan → Decision making skills

Diagnostic Reasoning Skills

- Early: reasoning not explained OR errors in reasoning noted
- Good: commits to at least 1 pertinent diagnosis and explains reasoning
- Excellent: includes complete, pertinent DDx and explains reasoning

Explains reasoning

- Epidemiology and key features of each diagnosis defined
- Compared to patient
- Elements that don’t fit are included and explained

Remediating Deficiencies in Clinical Reasoning

Cynthia H. Ledford, MD

Ohio State University College of Medicine

Diagnose the Learner

- Reporting/Data Collection problem
- Diagnostic Reasoning problem
- Decision making problem

Challenge of articulation and documentation

No more sloppy SOP notes!

- **S**ubjective (Hx)
- **O**bjective (PE, labs, xr)
- **A**ssessment
- **P**lan

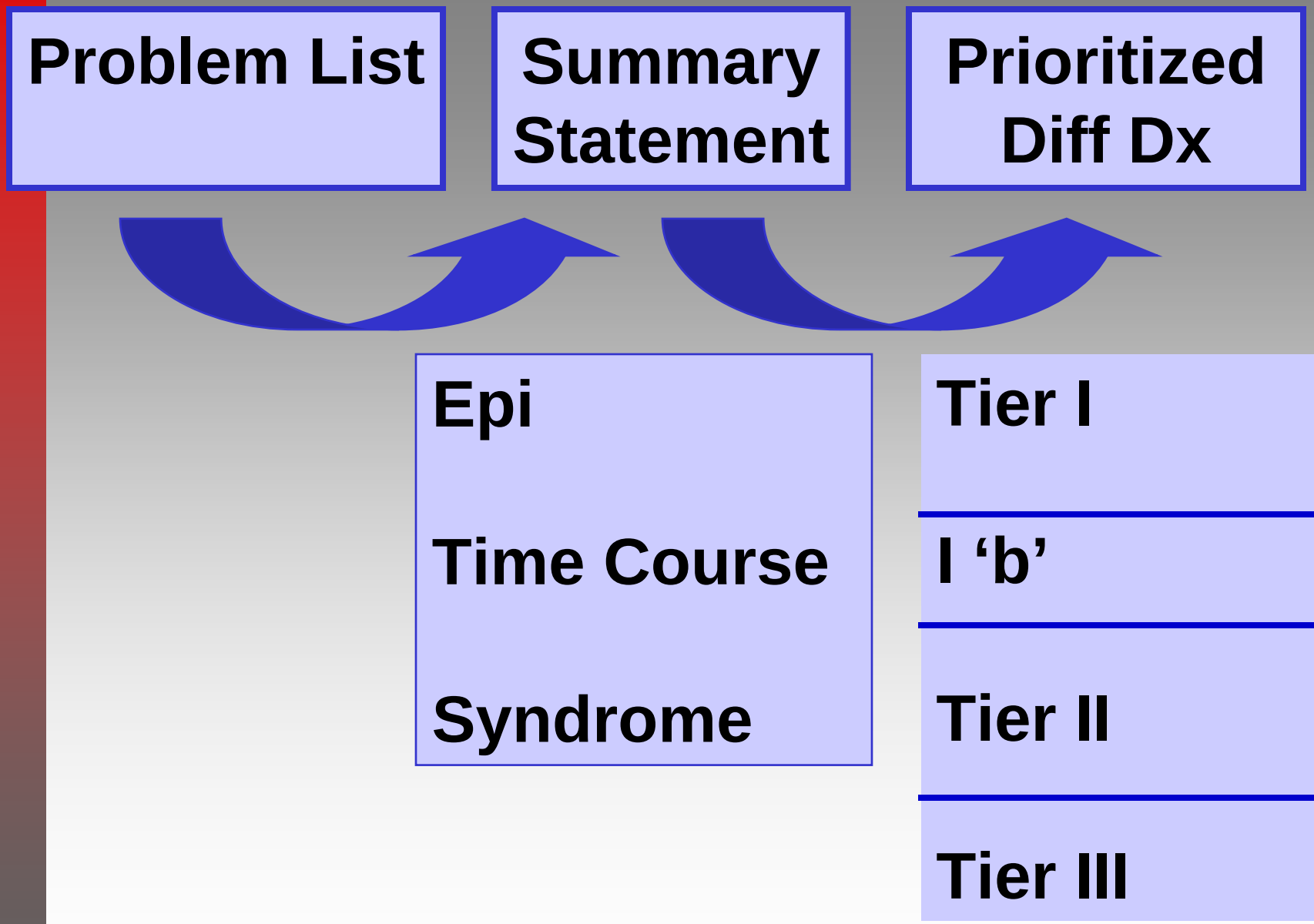
A: Tell me your IDEAs

Beyond CC

Include full statement of processed syndrome/illness script

Articulate Ddx + likelihood

WHY?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Diagnose the Learner

- Reporting/Data Collection problem
- Diagnostic Reasoning problem
  - Problem Identification & Prioritization
  - Synthesis to Summary statement
  - Matching to Differential
- Decision making problem

Common problems and their solutions

- Insufficient medical knowledge
- Reduced logic
  - Premature closure
- Dispersed
  - Too many problems (not synthesized)
  - Too broad a differential (lack of fit)
  - ‘Can’t see the forest for the trees’
- Non sequitur
  - Leaps of logic, illogic

Problem	Solution
Lack of knowledge or knowledge organization	Review with compare and contrast
Reduced logic or premature closure	Attention to problem list & processing to summary
Dispersed	Attention to synthesis & compare/contrast
Non sequitur	Clear articulation of assessment, explanation of reasoning