

Teaching of Tomorrow November 18, 2017

Using Deliberate Practice To Teach Problem Solving

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 University of
Massachusetts
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Where we're headed

Clinical Reasoning

Deliberate
Practice

Just-in-Time
Teaching

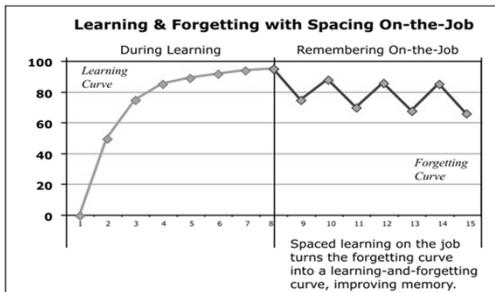
WHEN do you begin to think?



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What is lost?

- Opportunity to practice recalling DDX



What is lost?

- Opportunity to practice recalling DDX
- Poor selection of questions and PE
- Inefficient problem-solving

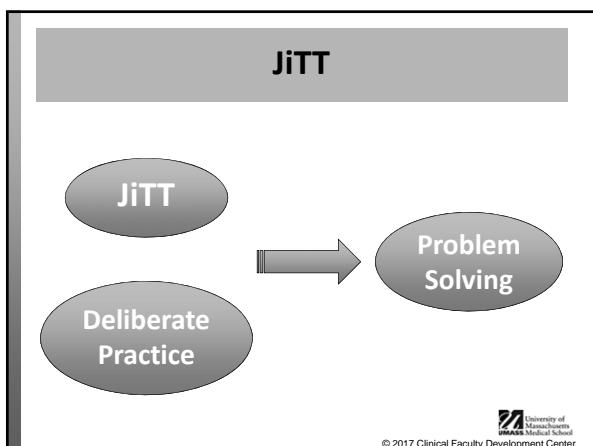
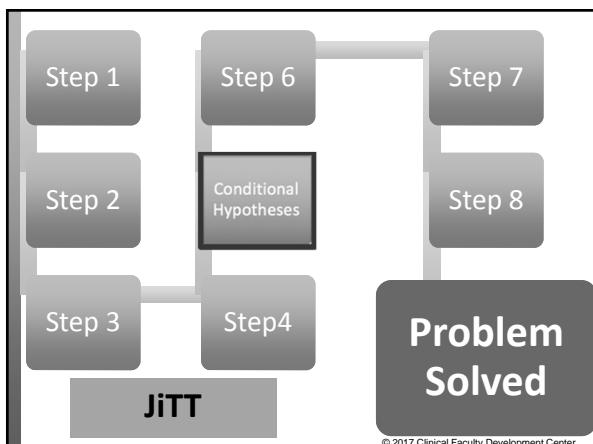
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Practice Makes Perfect?

- Practice makes perfect
- Practice makes permanent
- Only perfect practice makes perfect

John Pelley



Objectives

1. List, describe, and then teach:
3 Problem-Solving “micro-modules”
2. Utilize strategies to:

Teach CPS *at the point of care*



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Your Experiences

- Your students' problem-solving pitfalls?



Key Elements of the Clinical Diagnostic Reasoning Process

Judith Bowen, MD
NEJM 2006; 355:2217-2225

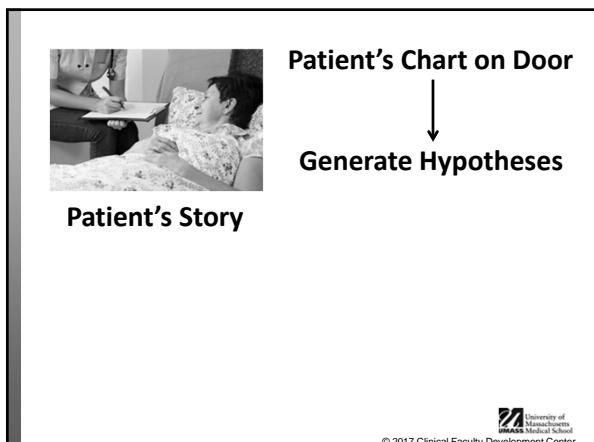
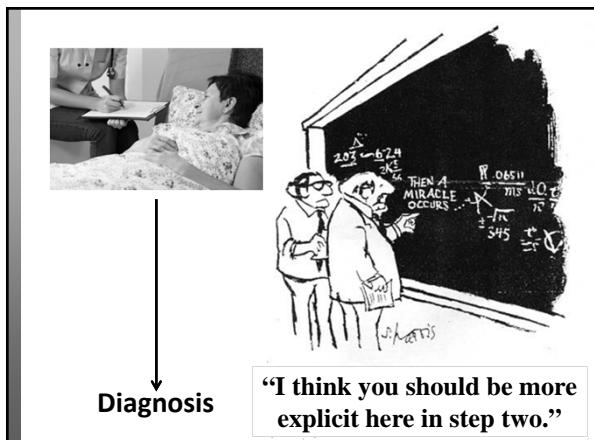


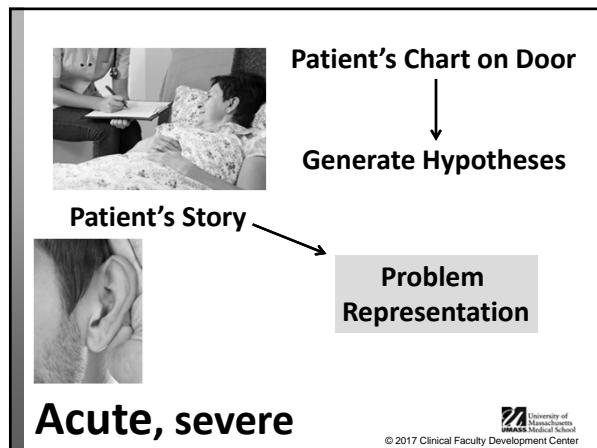
Key Elements of the Clinical Diagnostic Reasoning Process

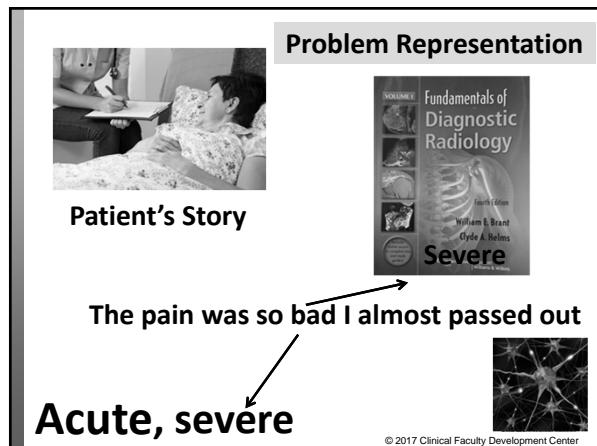
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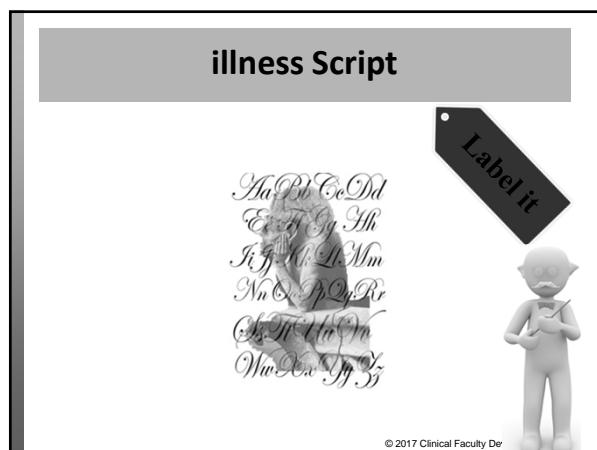


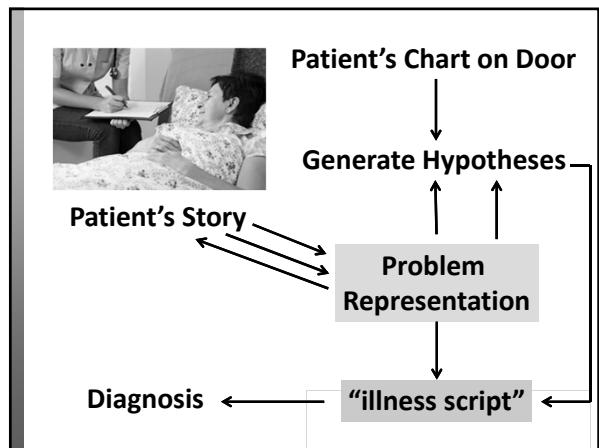
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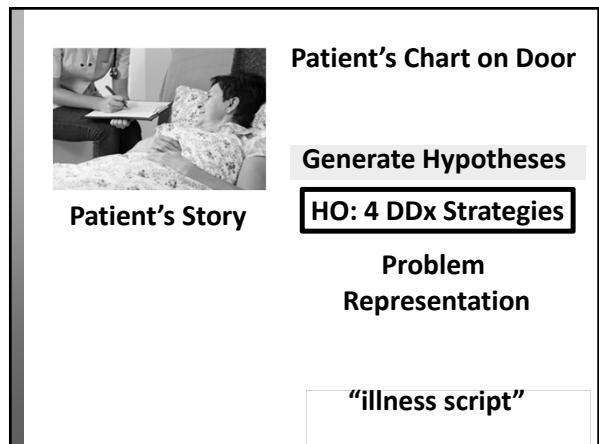


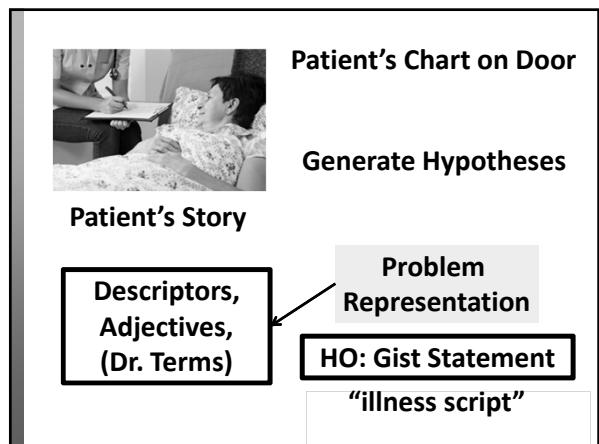


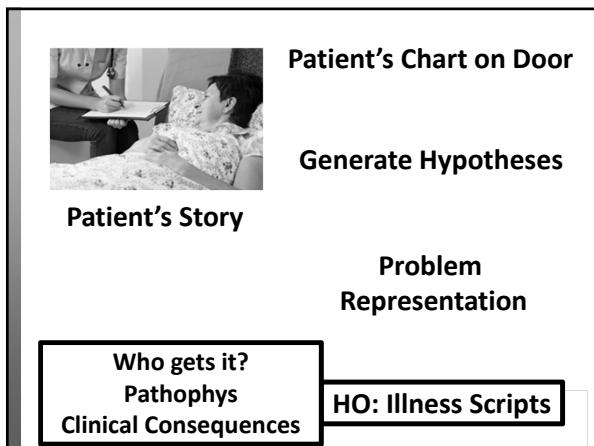


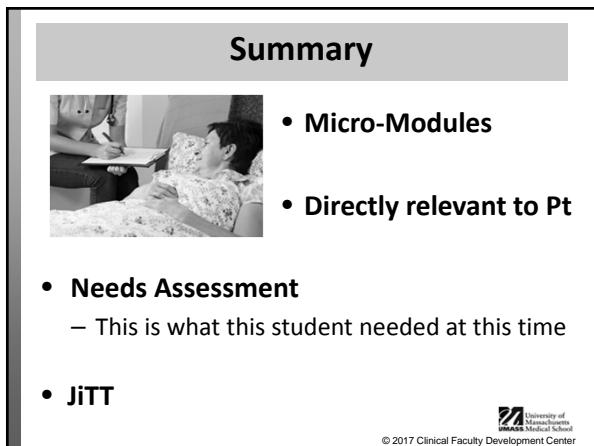














Illness Script - Gout

- **Epidemiology:**

- 30 – 60 yo; male; Alcohol/red meats/diuretics

- **Pathophysiology:**

- Abnl Uric acid metabolism → precipitation of crystals in joint → Inflammation

- **Clinical Consequences:**

- Hx: Acute, recurrent, severe, mono-articular, classically 1st MPJ.

- PE: Red, hot, swollen, tender



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Illness Script - Arthritis

	Gout	Septic Arthritis	Lyme	RA
Epidem				
Pathophys				
Hx:	You are trying to <i>distinguish</i> between these conditions			
PE:				

Illness Script - Arthritis

	Gout	Septic Arthritis	Lyme	RA
Epidem	Wine, red meat		Tick bite	Auto-immune
Pathophys				
Hx:	Recurr Severe Noctrn	Not Recurr Severe Const	Not Severe	Insidious
PE:	Usually single	Single unless GC		Symmetric

Illness Script PEARLS

1. Look for signs and symptoms that are sensitive and/or specific

Not all signs and symptoms are created equal!



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Illness Script Compare Sources

Source 1: Cholecystitis

Prolonged (> 4-6 hrs), Steady, severe, RUQ or epigastric pain, fever, guarding, + Murphy, and leukocytosis.

Source 2: Cholecystitis

May reveal fever, Murphy sign (specific/not sensitive), often with guarding or rebound, typically leukocytosis



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Illness Script Compare Sources

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Singer: 36/40 NO fever



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Illness Script Compare Sources

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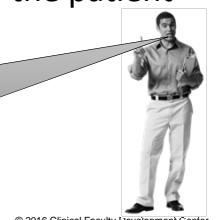
May reveal fever, Murphy sign (specific/not sensitive), often with guarding or rebound, typically leukocytosis

UTD: Murphy 48% sensitive

Illness Script PEARLS

1. Look for signs and symptoms that are sensitive and/or specific
2. “Paint a picture” of the patient

Appendicitis:
Fever, RLQ pain, N/V,
guarding and rebound



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Let's solve some problems

36 yo African Man with Intractable Vomiting

- What strategies are used in our own CPS?
- How would you teach this? 



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Case Cont'd: Problem List

- Who **teaches** students to write a problem list?
- Who wrote a problem list for our case?



Problem List

1. Vomiting
2. Weight loss
3. Prolonged QTc
4. Dehydration



Elaborated Problem List

1. **Severe, Chronic** (1 month), **non-bloody, non-bilious** Vomiting
2. **Significant** (20 lb - cachectic) **unintentional** weight loss **predating** the vomiting
3. Prolonged QTc
4. Dehydration

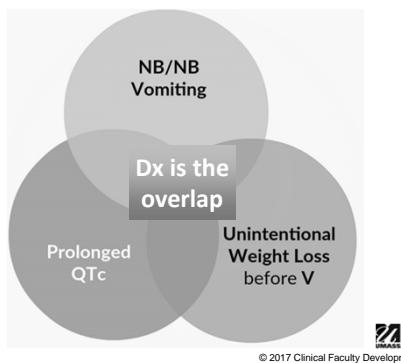


Case: Generate DDx for each Problem

1. Severe, chronic, NB/NB **Vomiting**
2. Significant unintentional **Weight Loss** preceding vomiting
3. Prolonged QTc



Case: DDx - Venn



JiTT Q's for this Case

- What JiTT questions do you want to ask?
- What does this case trigger in terms of what you might want to teach to a:
 - Pre-clinical student
 - 3rd or 4th year med student
 - Resident



Review

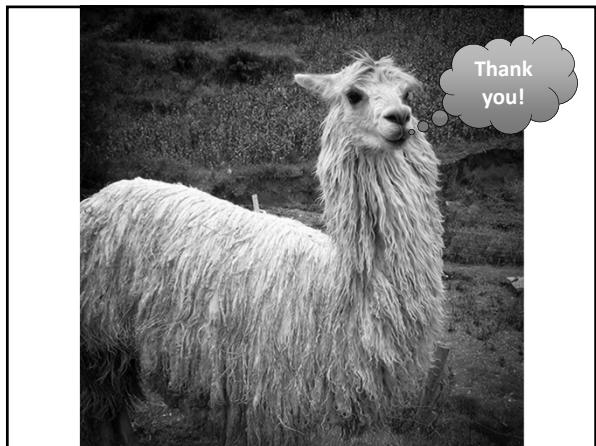
- What would you like to try that is new from this session?



Summary: Micromodules

- Generate conditional hypotheses
- Differential Diagnosis Strategies
- Problem Representations
- Illness Scripts
- Problem Lists





Thank
you!