

# ***Promoting Self-Efficacy and Metacognition HANDOUT***

## **Background**

As part of practice-based learning, US residents required to continuously self-assess and use self-directed learning to improve patient care.

## **Definitions**

**Self-Efficacy:** A personal *belief* in one's capacity to organize and execute a course of action

**Metacognition:** Thinking about one's own thinking processes.

- *Example in medicine:* Physician trainee unaware of knowledge gap, may not be able to:
  - examine practice patterns
  - Evaluate past mistakes
  - Prevent errors due to cognitive biases
  - Set knowledge/skill learning objectives

## **How can we enhance self-efficacy and metacognitive skills?**

### **Self-Efficacy**

- Set trainees up for 'small wins'
  - Clear, specific, task-related goals
- Provide feedback
  - Honest, explicit
  - Encourages continued movement in right direction
- Provide mastery experiences
  - Focus on particular area

### **Metacognitive Skills**

- Self-assessment
  - Before, during, or after experience (see reverse for example)
- Self-Monitoring
  - "Ask yourself 'why?' at least 5 times when confronted with a problem"
- Cognitive Control
  - Aims to reduce overconfidence and pre-existing biases
  - Learner generates counterfactual/disconfirming evidence for their conclusions

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## **Sample Question Card to Guide Self-Questioning**

### **“What Do You Need to Know?”**

Use this format to quickly self-assess your knowledge of important, common issues for your patients. This can improve your understanding about what is going on with your patients and will allow you to be a better advocate on their behalf. You will also have done much of the reading for your written analyses for the Preceptor and will have started to separate important from less important information.

### **“What Do You Need to Know?”—About a Disease or Syndrome**

#### **I. Definition**

- Can you explain to another what the label means? What it includes/excludes?
- Diagnosis: Complete diagnosis, classification (Is there a further classification or “staging”?) How is the diagnosis made?
- Pathophysiology (non-negotiable information, you must know this)

#### **II. Clinical Picture**

- Symptoms, signs, lab (How does each reflect pathophysiology?)
- Who is at risk for this disease? How common is it? Can it be prevented?
- How do age, gender, race, and ethnicity affect prevalence and presentation?
- Differential diagnosis (What else can look like this?)
- Natural history (What happens, if you do nothing, in most patients?)
- Complications (What’s the worst, in how many patients?)
- Effect of work and family

#### **III. Treatment (also see “About a Specific Therapy”)**

- Options for treatment: (Does treatment alter the pathophysiology? Mechanisms)
- Treated history - Is there a standard therapy? How good is it compared with natural history? What should be followed?
- Safety (How “bad” is therapy, risk, costs, and pitfalls?); alternate therapies?

### **“What Do You Need to Know?”—About a Specific Therapy**

1. How does it work? (affecting the anatomy or physiology; if a drug, pharmacology; what are the indications?)
2. How good is it? (efficacy [short-term, long-term]; Are there relapses? How good is the evidence?)
3. How bad is it? (risks, side effects, costs, contraindications); alternatives?

### **“What Do You Need to Know?”—About a Test**

1. How does it work? (How does it address the physiology or anatomy? How will we use the result?)
2. How good is it? (sensitivity, specificity, reproducibility, predictive value)
3. How bad is it? (risk of the procedure, costs, financial, and otherwise)
4. What are the alternatives?

*Reference:* Colbert et al. Teaching metacognitive skills: helping your physician trainees in the quest to 'know what they don't know'. *Am J Med.* 2015 Mar;128(3):318-24