

Diagnostic Decision Making: Time to Take Two Steps Back

*The UPMC Clinical Center for Medical Decision Making
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The key to making accurate and efficient diagnostic decisions is to systematically ask yourself, and your patient, good questions.

The most accurate and cost efficient diagnostic test is a careful history, personally obtained, with a focused physical examination.

Medications: In every patient encounter, always know the medications. Always ask yourself:

- “What medications is the patient on?”
- “What medications are they actually taking/getting?”
- “What indicated medications are they not on?” **
- “What medications are they on that they should not be on?”

Then in making diagnostic decisions that are not automatic:

**STOP, TAKE TWO STEPS BACK, AND BRIEFLY ASK YOURSELF
FIVE SPECIFIC QUESTIONS:**

1: What am I observing? Describe it. Name it, if possible.

- **Use of semantic qualifiers.** (Facilitates pattern recognition)
- **Summary statement:** One or no more than two sentences. (Problem representation.)

2: Physiology / Pathophysiology: Causal reasoning

2A: How do I explain the findings in terms of physiology?

2B: How do I explain the physiology in terms of pathophysiology?
(Avoid context errors.)

Observation: BUN 75 / Creatinine 2.2

Physiology: Pre-renal, intrinsic renal, or post-renal azotemia

Pathophysiology: Volume depletion, decreased colloid oncotic forces, myocardial dysfunction, valvular heart disease, pericardial disease, GI or retroperitoneal bleeding, acute tubular necrosis, bladder outlet obstruction.

3: What is my diagnosis? Use of illness scripts.

- **Is all the information concordant, or is there discordant information?** (Diagnostic verification; diagnostic coherence and adequacy, avoid search satisficing.)
- **What is the estimated prevalence of the disease?** (Probabilistic reasoning; avoid base rate neglect.)

4: What is my differential diagnosis? What else could it be?

- **Always consider the alternatives.** (Cognitive forcing function to avoid premature closure, representativeness restraint, anchoring, availability, confirmation, framing or overconfidence biases. Consider use of decision support tools.)

5: Diagnostic Testing: (Hypothesis refinement, diagnostic verification.)

5A: What tests do I need to order, if any?

- **What specific question am I asking with the test?**
- **Do I need to know the answer?**
 - Will it affect my diagnosis? (post-test hypothesis refinement)
 - Will it affect patient management or patient outcome?
- **Do I already know the answer?**
- **Is this the right time to ask the question?**

5B: Will the test answer the question?

- **What is the sensitivity and specificity of the test?**
- **What is the pretest probability of the disease?** (Pretest and conditional probabilities, likelihood ratios.)
- **What is the error rate of the test?** (Post-test probability) **

5C: Are any alternative tests more appropriate?

- **What are the risks of the test in general and in this specific patient in particular?**
 - Can anything be done to reduce the risks?
 - Do the benefits justify the risks?
- **What is the cost of the test?**