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| Difficulty directing data gathering, identifying clues, and generating hypotheses | • Interview and PE are conducted in a rigid way that is stereotypical and unconnected to the patient’s complaint  
• Oral presentation (OP) is disorganized, too long, and fails to bring out key features  
• Learner has difficulty formulating an assessment and a justified differential diagnosis (DDx)  
• Case summary doesn’t use semantic qualifiers (i.e. acute vs chronic, sharp vs dull)  
• Written documentation contains irrelevant details, is disorganized, and lacks key features that serve to justify the leading or exclude alternative (especially serious) hypotheses  
• Differential diagnosis is too limited | • Unfamiliar with hypothetico-deductive model  
• Inexperience / insecurity  
• Lack of knowledge  
• Semantic transformation problem  
• Cognitive biases: availability, representativeness | • Foster systematic, early generation and testing of hypotheses: Based on these demographics and a chief complaint of CP, what are you thinking of?  
• Early DDx formation strategy based on organ systems / pathophysiology  
• Verbalize and demonstrate clinical reasoning as it relates to the H & P: When I hear [symptom], I think of [diagnoses] because… This makes me ask about X and perform PE Y.  
• Later DDx expansion using mnemonics: VINDICATE (Vascular, Infection, Neoplasm, Drugs, Inflammatory / Idiopathic, Congenital, Autoimmune, Trauma, Endocrine / metabolic  
• Illustrate semantic transformation: From what you’re describing, this is a case of sudden onset, severe, colicky L flank pain that sounds most consistent with kidney stone. Pyelonephritis is more gradual in onset, constant, bilateral, and associated with fever. |
## Premature closure - actively fixates on a single feature of the case, or passively fails to generate alternative hypotheses

- During the interview, the learner only seeks data that confirms the hypothesis and fails to notice / explore cues that could lead to other hypotheses.
- During the OP the learner does not elaborate on alternative hypotheses and might not even report information what could have led to other hypotheses (NB: the OP may appear well organized and logical, which can lead the supervisor astray).
- Written documentation lacks data to exclude other hypotheses (relevant negatives), no information is included that could cast doubt on the leading hypothesis, and no DDx is provided.
- The learner believes the patient will spontaneously volunteer all the important symptoms without the need for specific inquiry.
- Lack of knowledge
- Cognitive biases: confirmation, anchoring, overconfidence

### Remediation Strategies

- Foster the systematic generation of a DDx: The differential typically starts with the leading diagnosis, followed by a prioritized DDx. It is critical that learners justify the most likely diagnosis and a few key alternative diagnoses with positive and negative data.
- Make a DDx table with key features for comparison (i.e. in a patient with purpura, compare the time course, PE, and labs for HSP, ITP, TTP, and leukemia).
- Practice highlighting discriminating features.
- Expand the learner’s knowledge base by asking them to read up on several causes of X, and compare and contrast their presentations (this fosters the development of illness scripts). It is important to read about similar / overlapping diagnoses at the same time as this helps lay down cross-referencing. Review their findings together.

### Clinical Reasoning Difficulty

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<td>Inability to prioritize and focus on the most important features of the case</td>
<td>In the interview, the learner fails to identify which concern is the chief concern or spends far too much time exploring minor points. Encounter may not &quot;go well&quot; due to communication problems, leading to patient dissatisfaction.</td>
<td>Influence of factors linked to the patient (psychosocial issues, personality), the context, and the student (experience / values &amp; prejudices, counter-transference)</td>
<td>Role model the reasoning involved in prioritizing. Explain why this issue is the most important one.</td>
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| | The teacher gets lost in what the learner is saying because the OP is not well synthesized. The conclusions, DDx, and management plan don’t align with the teacher’s expectations. The teacher feels the need to go back and see the patient to obtain a clearer picture of the case. | Lack of knowledge | Reason through the assessment. Justify the ddx with the student: Start with refining the interpretive summary.

Have the student commit to a leading diagnosis and explain why this is #1.

Share the remaining items on the DDx.

Explain why these diagnoses are less likely. |
| | Documentation lacks synthesis. The details | Cognitive biases: representativeness, anchoring, psych | Elicit the factors that led the student to prioritize a particular way. Encourage reflection on how other factors might influence their decision-making. |
| |  |  | Compare common and can’t miss diagnoses – make a list of both common and can’t miss etiologies for the chief concern |
### Difficulty synthesizing data and “seeing the big picture” - unable to make connections and integrate data

- During the interview, the learner leaves little room for patient specificities: The investigative and treatment plan become unrealistic when patient factors taken into account.
- In the case discussion, the learner doesn’t present the case comprehensively - lacks biopsychosocial complexity: The learner may have a stereotypical or simplistic view of the situation.
- The record lacks longitudinal perspective: Notes fail to convey who the patient is, and don’t mention patient’s status / perceptions.
- Learner cannot form a clear interpretive summary of the case using key features and semantic qualifiers.

### Lack of clinical experience; failure to appreciate importance of psychosocial factors

- Lack of interest, insensitive, or too sensitive
- Difficulty dealing with uncertainty
- Poor grasp of patient-centered care

### Summarize the case in 1-2 sentences using semantic qualifiers.

- Try A-SOAP instead of SOAP: This type of presentation begins with the assessment, then the learner presents the full SOAP (i.e. MJ is a 19yo with fever and cough who likely has pneumonia) SOAP) This primes the preceptor to give feedback on the order.

### Step back: Looking at the patient’s whole story and past / social history, how might you interpret what is happening today?

- Prompt the learner to think about connections between different aspects of the clinical situation: How does the patient’s personality, values, context, history, etc... affect the diagnosis and management plan? Does problem X have an impact on the management of problem Y? In what way?

### Ask the student to draw a concept map of the clinical situation and discuss it.
| Difficulty elaborating a management plan | The management plan is stereotypical, vague, ambiguous, too short or too long, or inappropriate considering the situation: The learner does not adjust the management plan as the case evolves (i.e. as new data becomes available in the form of labs / imaging, consultations or response to treatment): The management plan is limited to one step at a time, and doesn’t anticipate findings and next steps: Doesn’t take into account the patient perspective or psychosocial aspects of care: The oral presentation lacks integration and synthesis: The DDx and management plan are not well justified: Cost / resources, and the urgency of problems are not taken into account: Lack of consistency between the diagnostic reasoning and the management plan (i.e. the learner mentioned pulmonary embolism on the differential, but fails to describe how they will rule it in / out: | Inadequate integration and synthesis: Difficulty integrating new cues into the reasoning process as the case evolves: Difficulty integrating the patient’s perspective: Lacks appreciation of biopsychosocial model: Lack of knowledge: Cognitive bias: outcome | After having the learner explain how they arrived at their management plan, demonstrate and explain your clinical reasoning – explain why you favor plan X considering all pieces of information: Prompt student to conclude and settle on a plan: Ask what they are looking for with the proposed tests and what impact the results will have on their main hypothesis: Offer possible test results or outcomes to help the student develop a sequential management plan: Focus on specifics of patient’s situation that may require departure from norms: Explain how these specifics should modulate application of clinical guidelines: Ask the learner to read up on different investigative and management options available and compare and contrast their advantages and disadvantages (i.e. rapid rule out with 4 hour troponin versus serial cardiac enzymes): |

Adapted from: