Making the Invisible Visible
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Case 1: July Intern on inpatient medicine service
You are on a busy inpatient medicine wards service in the beginning of the academic year. The intern presents a new patient that he just admitted from the Emergency Department (ED). You’ve looked through the patient’s chart and are concerned about a possible pulmonary embolus (PE) given the combination of sinus tachycardia, dyspnea, pleuritic chest pain, and low-grade temperature without a change in the patient’s cough/sputum production, or clear triggers for a COPD exacerbation. Since PE is a 'can't miss' diagnosis (with high morbidity/mortality), you want to be sure it has been considered.

After presenting the H&P, the intern’s assessment and plan (A&P) is as follows:

"Ms. Goldman is a 64yo woman with COPD on 2L home O2 with acute on chronic shortness of breath, tachycardia, low grade fevers, and pleuritic chest pain. I’m most concerned for community acquired pneumonia and think we should continue the antibiotics they started in the ED. A COPD flair is also possible, so we should consider starting some prednisone as well, especially if she’s not improving by tomorrow on her antibiotics. I always like to keep new onset heart failure in the back of my mind, but I think that’s probably less likely at this point."

1. What’s working well with the reasoning here? What reasoning skills is this intern demonstrating, what can you reinforce? In other words, what should he ‘keep doing’?

2. Identify the learner’s challenge(s). What do you suspect may be his problem(s) in thinking through this case? Where could he improve?

3. Understand/clarify the problem. What questions could you ask to better understand where he struggled?

4. Coach. How would you help this intern improve his reasoning skills in preparation for his next patient?
**Case 2: Third year medical student on GI consult service**

You have been working with an MS3 for the past week on an inpatient GI consult service. You ask him to see a new consult patient whom you believe may have gallstone pancreatitis given the information you have heard so far, which includes a prior history of symptomatic gallstones, LFT (liver function test) abnormalities, and current symptoms including severe abdominal pain radiating to the back, nausea and vomiting, and hypotension. As this diagnosis can be life threatening and requires rapid, aggressive care, and could necessitate an urgent intervention if he were found to have on-going retained stones, you want to be sure to consider this diagnosis early. After presenting his History and Physical (H&P), the student closes his oral presentation with the following assessment and plan (A/P):

“In summary, Mr. Smith is a 62yo man with multiple medical problems including COPD, hypertension, hypercholesterolemia, prostate cancer, diabetes, coronary artery disease, plus some depression, and a history of gallstones. He has had some abdominal pain, fatigue, and generalized weakness, nausea and vomiting, low grade fevers, tachycardia, and hypotension.

Really, he could have a lot of different things. I’m worried that given his lack of follow-up, his prostate cancer may have advanced and could now be causing systemic problems due to metastatic disease. But, of course with abdominal pain in someone with diabetes, we should also be thinking about an MI. We should get a CT of his chest and abdomen, check an EKG and send some cardiac enzymes. Plus, I think he’s a bit dry, so I wrote him for a liter of normal saline.”

1. **What’s working well with the reasoning here?** What reasoning skills is this student demonstrating; what can you reinforce? In other words, what should the student ‘keep doing?’

2. **Identify the learner’s challenge(s).** What do you suspect may be his problem(s) in thinking through this case?

3. **Understand/clarify the problem.** What questions could you ask to better understand where he struggled?
4. **Coach.** How would you help this student improve his reasoning skills in preparation for his next patient?
Case 3: End-of-the-year intern on inpatient medicine service

You have been working with an end-of-the-year intern for the past two weeks on inpatient medicine. Today, she is presenting a new patient, and after giving you her H&P, her Assessment and Plan (A&P) is as follows:

“Mr. Gabriel is a 72yo man with stage IV lung adenocarcinoma, chronic obstructive urinary retention with an indwelling foley catheter complicated by multiple ICU admissions for urosepsis presenting with subacute fevers and abdominal pain, now with hypotension and acute kidney injury.

This is another episode of urosepsis given Mr. Gabriel’s chronic indwelling foley and prior history. I’ve started empiric antibiotics based on prior urine culture sensitivities as well as early goal directed therapy with aggressive IVF, and we’ll await culture results and tailor his antibiotics as needed. He is still hypotensive despite two liters of IV fluids, so we’re admitting him to the ICU and starting a central line for monitoring.”

On your own review of the patient’s labs before rounds, you’ve noticed that Mr. Gabriel has significant hyponatremia, hyperkalemia and hypoglycemia—in fact, these abnormalities have also been present on his labs in the past. His temperature has actually been in the 99 range, rather than a true fever as reported. Given these findings, you are concerned about adrenal insufficiency as a potential cause for his presentation, or at least a complicating factor (and potentially an underlying factor in his multiple prior ICU admissions).

1. What’s working well with the reasoning here? What reasoning skills is this intern demonstrating; what can you reinforce? In other words, what should she ‘keep doing’?

2. Identify the learner’s challenge(s). What do you suspect may be this intern’s problem(s) in thinking through this case?

3. Understand/clarify the problem. What questions could you ask to better understand where she struggled?
4. **Coach.** How would you help this intern improve her reasoning skills in preparation for her next patient and her role as an R2?
Case 4: Intern in the Emergency Department
You send your intern to see a patient you are concerned may have croup. The triage nurse told you that he noted high-pitched inspiratory noises (stridor) on exam and increased work of breathing. With a child of this age with this clinical picture, you always also consider a foreign body (FB) ingestion, which would be dangerous to miss. The child should get dexamethasone, racemic epinephrine, and a stat decubitus CXR (in order to rule out a FB).

In general, this patient’s stridor and respiratory distress should suggest an upper airway pathology, which should lead the intern to consider etiologies such as croup, bacterial tracheitis (given the severe respiratory distress) or foreign body.

After giving you her H&P, your intern’s assessment and plan (A/P) is as follows:

“In summary, Adam is a 1yo boy with history of neonatal jaundice and a family history of asthma now presenting with a few days of congestion and one day of fever. He has been vomiting occasionally after he coughs, and he’s had a decreased appetite. His mom also has noticed a rash that comes and goes when he has a fever. When I examined him he didn’t have much of a rash, but he had copious congestion, some pretty noisy breathing that is really noticeable when he cries, good air movement in his lungs, and suprasternal and subcostal retractions.

As far as what I’m thinking about, he has a strong family history of asthma and this noisy breathing, so asthma’s on the top of my differential. With the fever, I’m considering whether he might have a bacterial pneumonia. I’ve never seen a rash come with bacterial pneumonia, but I’ve seen it with viruses, which makes me wonder if he could have something like a viral bronchiolitis. With the vomiting after coughing I also want to consider pertussis.

I’d like to start with a CXR and some albuterol and see how he responds. If I see an infiltrate on the CXR, I’d want to start to treat him for a bacterial pneumonia just in case.”

1. What’s working well with the reasoning here? What reasoning skills is this intern demonstrating; what can you reinforce? In other words, what should she ‘keep doing?’

2. Identify the learner’s challenge(s). What do you suspect may be this intern’s problem(s) in thinking through this case?
3. Understand/clarify the problem. What questions could you ask to better understand where she struggled?

4. Coach. How would you help this intern improve her reasoning skills in preparation for her next patient?
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Take-Homes & Commitments:

Something useful I learned during today’s workshop:

Next time I am coaching a trainee in diagnostic reasoning, I will try (SMART goal – specific, measurable, attainable, realistic, time-bound): (Also consider how you will hold yourself accountable; who can you ask for feedback, etc.)