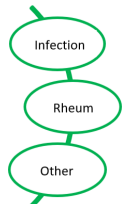


Teaching Fast and Slow: A Framework and Toolkit for Clinical Reasoning Development on the Wards

Learners with Deficit #1: Data Acquisition and Problem Representation

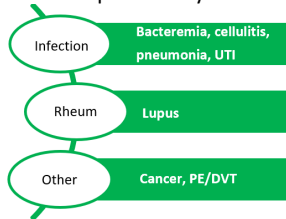
Step 1: Ask trainee to come up with a general/broad differential based on the patient's chief complaint

Chief Complaint: 50 yo man w/ fevers

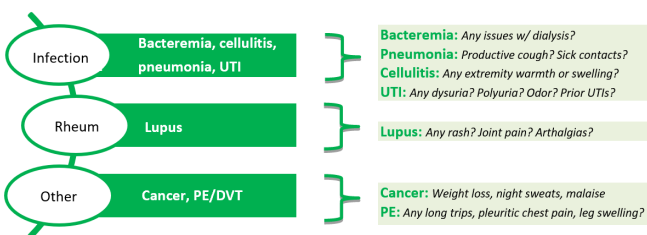


Step 2: Ask trainee to refine differential based on receiving additional basic information about patient

Chief Complaint: 50 yo man w/ ESRD on HD here with fevers x 5 days, malaise x 8 days and cough 3 weeks ago



Step 3: Ask trainee to come up with questions to ask patient based on the differential they generated



Step 4: Trainee can now ask the patient targeted questions based on the above framework

Learners with Deficit #2: Problem Representation

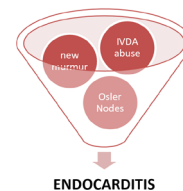
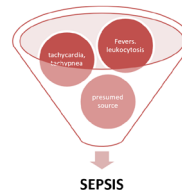
Initial Summary Statement: 50 yo man w/ COPD, DM, HTN, ESRD on MWF HD and GERD here w/ fevers, malaise, leukocytosis, tachypnea and pulmonary infiltrates on CXR likely 2/2 pneumonia

Step 1: Ask trainee to circle or list the MOST pertinent items in each major section (HPI, physical exam, data)

PROBLEM	HPI	EXAM	DATA
Fevers? Malaise? help trainee refine their problem if needed	<ul style="list-style-type: none"> ESRD Fevers x 5 days; Malaise x 8 days Nonproductive cough Joint pain?* 	<ul style="list-style-type: none"> T 102; HR 110; RR 22 Lungs: Clear CV: Systolic murmur Skin: Osler Nodes* 	<ul style="list-style-type: none"> WBC 22,000 CXR: Infiltrates Creatinine 3.0**

Step 2: Ask trainee to draw connections between the items they highlighted

- If the trainee is having trouble identifying the most important information, prompt them
- If the trainee misses important information, prompt them or tell them*
- If a trainee identifies irrelevant information, ask them to defend why they think it's relevant**
- Explain to trainees the use of **semantic qualifiers**



Step 3: Ask trainee to revise their summary statement to reflect the connections they have created

- Revised Summary Statement: 50 yo man w/ a h/o IVDA and ESRD (on HD via AVF) who presented with **subacute onset fevers** and found to have **severe sepsis**, a **new holosystolic murmur**, **inflammatory oligoarthritis** and Osler's nodes on exam

Teaching Fast and Slow: A Framework and Toolkit for Clinical Reasoning Development on the Wards

Learners with Deficit #3: Illness Script Selection, Diagnosis and Treatment

Step 1: Ask trainee to identify the primary problem:

- You should make sure the trainee has an excellent summary statement and problem representation (see prior page) first

Step 2: Ask trainee to list differential diagnosis for the problem:

dDx for Sepsis	Supporting Evidence	Refuting Evidence	Rank	Additional Info?
Pneumonia				
AVF infection				
Endocarditis				
Lupus				

Step 3: Ask trainee to list supporting and refuting factors based on the history, exam and data for each item on the differential

dDx for Sepsis	Supporting Evidence	Refuting Evidence	Rank	Additional Info?
Pneumonia	+Cough +Multiple infiltrates on CXR	Cough is nonproductive No sick contacts		
AVF infection	+ESRD w/ an AVF	AVF site not tender or red No issues using AVF; good thrill		
Endocarditis	+Fever; +murmur +Osler's nodes; +IVDA			
Lupus	+Malaise, joint pain	No rashes, photophobia		

Step 4: Ask trainee to rank each item on the differential based on the supporting/refuting evidence.

- Ask the trainee how the patient's information compares to the illness script they have for each disease listed (i.e. how does what the student knows about pneumonia compare to the patient's presentation)

dDx for Sepsis	Supporting Evidence	Refuting Evidence	Rank	Additional Info?
Pneumonia	+Cough +Multiple infiltrates on CXR	Cough is nonproductive No sick contacts	2	
AVF infection	+ESRD w/ an AVF	AVF site not tender or red No issues using AVF; good thrill	3	
Endocarditis	+Fever; +murmur +Osler's nodes; +IVDA		1	
Lupus	+Malaise, joint pain	No rashes, photophobia	4	

Step 5: Ask trainee to list additional information to help them confirm their diagnosis

- This may require asking the trainee to go back to the bedside to ask the patient any additional questions or evaluate for possible physical exam findings they may have missed earlier that would be needed to help them increase their pre-test probability for a specific diagnosis
- Can include the labs and data needed to help the trainee increase or decrease their pre-test probability

dDx for Sepsis	Supporting Evidence	Refuting Evidence	Rank	Additional Info?
Endocarditis	+Fever; +murmur +Osler's nodes; +IVDA		1	Blood cultures? TTE? Ask radiology to re-read CXR?
Pneumonia	+Cough +Multiple infiltrates on CXR	Cough is nonproductive No sick contacts	2	Sputum cultures?
AVF infection	+ESRD w/ an AVF	AVF site not tender or red No issues using AVF; good thrill	3	Blood cultures?
Lupus	+Malaise, joint pain	No rashes, photosensitivity	4	

Learners with Deficit #3: Illness Script Selection, Diagnosis and Treatment

4-Step Clinical Reasoning Checklist

- Summarize the patient in 1 – 2 sentences
- Pick your pivotal element (main problem)
- Gut diagnosis?
- 5 W's

- Why?*
- What else could it be?*
- What are my 'can't miss' diagnoses?*
- What's my working/revised diagnosis?*
- What's the pre-test probability for my diagnosis? If low or moderate:*
 - What doesn't fit?*
 - What else could it be?*
 - What additional info do I need?*