OBJECTIVES

1. **Clinical Reasoning:** Interpret and organize simple clinical data provided creating a problem list
2. **Clinical Reasoning:** Create a basic differential diagnosis for the patient presenting with shortness of breath
3. **Communication:** Describe how to collecting Patient Perspective & Impact
4. **Communication:** Characterize the patient's body language (using a video recording of SP case)
5. **SDH:** Describe the barriers to getting medications (advocate)
6. **SDH:** Another doctoring type objective we can fit in here

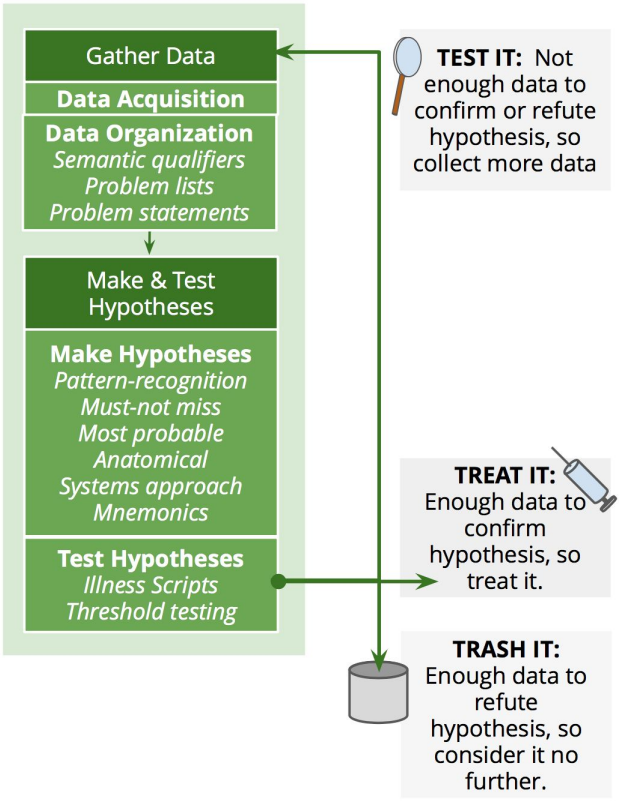
INTRODUCTION

In this session we will be exploring the clinical reasoning process. Using the case below, we'll go through each of the steps of the framework. I know it's the first week of medical school and you feel like you don't know anything, but you'd be surprised what you already do know. Use what knowledge you already have or can find on the Internet (yes, go ahead and use any site you want for this exercise).

ONLINE RESOURCES

- Video: Introduction to Clinical Reasoning
- Video: Clinical Reasoning Example 01
- Read: Chapter 1 in Symptom to Diagnosis*

** You must be on Rush's intranet to read this! It's on Clinical Key. Log in using your VDI if accessing from off campus.*



INITIAL DATA

The initial data given to you by your nurse includes the patient's presenting complaint and vital signs. Since this is a paper case, we'll just be giving you the data. Later on, you'll be responsible for collecting it yourself.

STEP 1: Acquire Data

A 34 year-old female presents to your clinic with the complaint of feeling short of breath.

- Blood pressure =108/68
- Heart rate = 88
- Respiratory rate = 24
- Temperature = 97.8°F
- Oxygen saturation by pulse oximetry = 92%

The next step is to interpret and organize the information you have. How would you interpret

this initial data and what would you put in your initial problem list.

STEP 2: Interpret & Organize - Write a Problem List

Though we haven't yet learned any of the diseases that can make you short of breath, try your best to make a list of potential diagnoses that can explain this young woman's symptoms. You can organize this by what is most probable and what is deadly if missed.

- What's most probable?
- What's deadly if missed?
- What in the chest can cause shortness of breath?
- What outside the chest can cause shortness of breath?

Try finding a "differential diagnosis for shortness of breath" on the Internet. Pick any of those diagnoses you may recognize.

STEP 3: Make A DDx

Given what information you've collected and organized thus far, are any of the diagnoses on your differential consistent with that data (ruled-in)? Are any refuted by that data (ruled-out)? For which of these do you need more information? What sort of information would you want?

STEP 4: Threshold testing

HISTORY

Now it is time to collect more data and the next data source we typically use is the history. The history is information which we ask the patient. Given your differential diagnosis you made in the last step, what questions would you want to ask your patient.

STEP 1: Acquire Data - what questions would you ask your patient?

Here's the data from the history.

HISTORY

A 34 year-old female who developed shortness of breath:

- **Onset**: 3 days ago
- **Provoke/Palliative**: made worse with activity and better with rest
- **Quality**: can't get air in
- **Region/Radiation**: seems to be from her chest, shortness of breath doesn't radiate
- **Severity**: it has been worsening over the past 3 days
- **Timing**: initially it was intermittent, now it is constant

You also ask some diagnosis-specific questions based on your differential:

- Asthma: no prior history of asthma and she doesn't think she is wheezing
- Pneumonia: she hasn't checked to see if she's had any fever but she has been coughing
- Heart attack: she has no chest pain and no family history of early heart disease
- Blood clots: she is on birth control pills but has not had a prior blood clot

Given this historical data, it's time to organize it. We would normally use **semantic qualifiers** (medical terms that are paired opposites), but since we don't know those yet, feel free to describe it as you wish.

STEP 2: Interpret & Organize - Write a Problem List Using Descriptive Terms

Given this list of problems, would you add anything else to your differential diagnosis? Go ahead and Google it, if you'd like. I won't tell anyone.

STEP 3: Make A DDx

Now that you have a list of diseases you're considering, which one do you think is most likely? Do any of them meet your rule-in threshold (treat it) or rule-out threshold (trash it)? Just make your best guess, you'll learn how to do this prioritization of your differential diagnoses as you move through the curriculum.

STEP 4: Threshold testing

PHYSICAL EXAM

Now it is time to collect more information, but this time by examining the patient.

Given your differential diagnosis you made in the last step, what things do you think you would look for on physical exam? You don't have to be correct, just make something up. This is just to get your thought processes moving.

STEP 1: Acquire Data - what would you want to check on your patient's examination?

Since we cannot actually perform a physical with a paper case, here's what you would have found.

PHYSICAL EXAM

GENERAL APPEARANCE: in no distress
HEAD, EARS, EYES, NOSE & THROAT: unremarkable
HEART & VASCULAR: normal heart sounds and rate
LUNGS: normal air movement except a crackling noise on the right side
ABDOMEN: soft to the touch and non-tender
EXTREMITIES: no abnormalities
NEUROLOGICAL: no abnormalities
MENTAL STATUS: no abnormalities

Given this physical exam, what would you add to your problem list? Try to use descriptive adjectives.

STEP 2: Interpret & Organize - Write a Problem List Using Descriptive Terms

Given your new list of problems, would you add anything else to your differential diagnosis?

STEP 3: Make A DDx

Given your problem list, which of these diagnoses do you think might match with what you found on exam?

STEP 4: Threshold testing

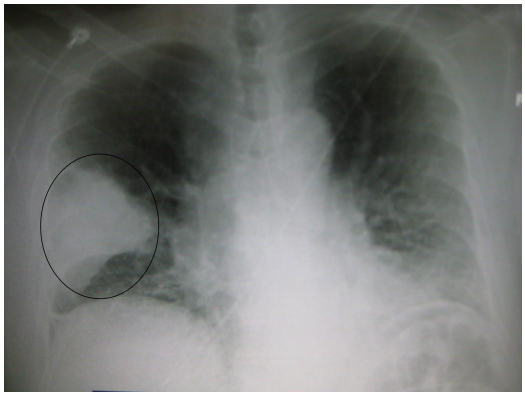
ADDITIONAL TESTING

Finally we move on to testing. This will usually include blood and body fluid tests in the laboratory, imaging via x-rays, ultrasound or computed-tomography, and various procedures like biopsies or obtaining an electrocardiogram (EKG).

Given your last differential diagnosis, what additional information would you want to collect?

STEP 1: Acquire Data - what additional testing can you think of to order?

Below you see an x-ray which you ordered. X-rays move easily through air and appear black. X-rays are blocked by fluid, tissue and bones. You can see the ribs (bones), and heart in the middle (full of fluid). On the patient's right (left side of picture) a fluid collection within the lungs is circled. This is pus caused by infection in the lungs.



What would you add to your problem list?

STEP 2: Interpret & Organize - Write a Problem List Using Descriptive Terms

Given your new list of problems, would you add anything else to your differential diagnosis?

STEP 3: Make A DDx

Given your problem list, which of these diagnoses do you think might match with what you found on exam? Do any of them meet your rule-in (treat it) or rule-out (trash it) thresholds?

STEP 4: Threshold testing

This represents a very abbreviated approach to clinical reasoning, but all the steps were there. You were able to approach a patient as a doctor would. In subsequent lessons, we'll go into more detail for each part.

Thanks, feel free to email me with any questions. -
Rahul