From Problem Lists to Illness Scripts

A New Strategy to Learn and Teach Professional Thinking in Small Groups

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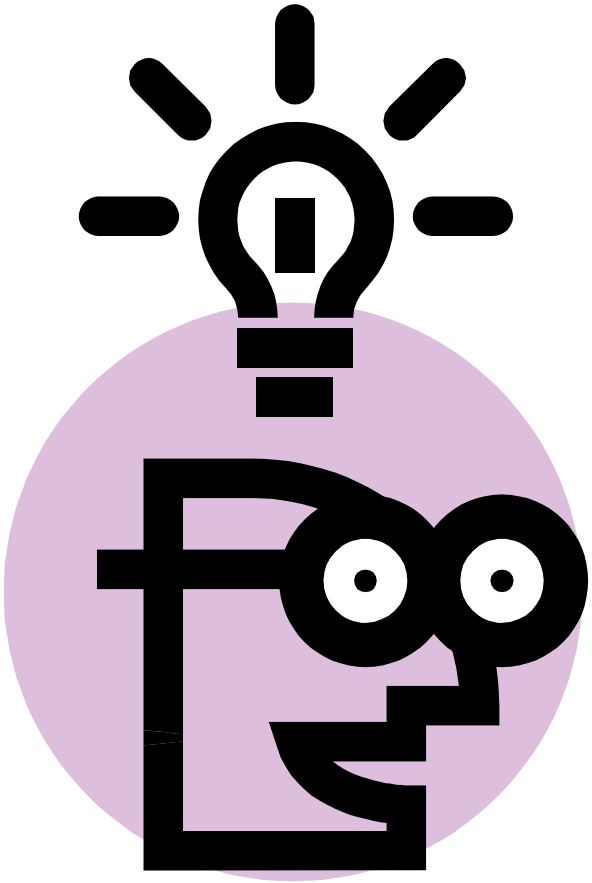
Exercises and Examples



Processing

Synopsis: Processing is the mechanism by which a patient's words describing his/her symptoms are converted into uniformly descriptive medical terminology.

The value of processing is three fold:

1. It facilitates recall of information learned in the medical format. We learn the differential of dyspnea, not about shortness of breath.
2. Simple descriptive processing involves using descriptors that are binary and oppositional. It thus helps us narrow the differential diagnosis playing field and consider a smaller number of diagnoses. It is part of the process by which forward thinking occurs. By necessity, processing forces us to identify which information is important and which is not. (acute vs. chronic diarrhea for example.)
3. Summative Processing occurs when the processed descriptive terms are combined to identify a syndrome. This allows us to decrease the number of signs and symptoms of which we must keep track. Processing the symptom complex of blood per rectum, fever, abdominal pain and tenesmus to dysentery allows us to focus our attention on the syndrome of dysentery and prevents us from focusing inappropriately on one of the components of the syndrome.

DESCRIPTIVE	SUMMATIVE
Time course Temporal pattern Epidemiology Qualitative Descriptor	Common Med Syndrome Thematic Summary

EXERCISE I: PROCESSING

1. Process the lay symptoms described below into more "medical" terminology
2. Identify what type of processing is involved:

LAY SYMPTOM/SIGN	PROCESSED SYMPTOM/SIGN	DESCRIPTIVE/SUMMATIVE/BOTH
Diarrhea for 1 week		
Fever, Headache and Stiff neck that developed over 6 hours		
Shortness of breath that comes and goes, lasting 30 minutes each time		
Patient with AIDS and CD4 count = 22 (epidemiology)		
Patient with Htn, DM, CVAs, PVD, S/P AAA (epidemiology)		
Patient with Multiple Myeloma (epidemiology)		
Stomach pain that comes and goes and is crampy in nature		
Chest discomfort that is more like a pressure, brought on by exercise		

LAY SYMPTOM/SIGN	PROCESSED SYMPTOM/SIGN	DESCRIPTIVE/SUMMATIVE/BOTH
No periods for 3 months		
Normal strength but wobbly walking		
Brief fainting spell		
Hypotension, Tachycardia, Fever, leukocytosis and coma.		
Acute onset right arm and leg weakness and numbness		
Confusion, disorientation, waxing and waning level of consciousness		
S3, hypotension, tachycardia, rales, edema and confusion		
Headache, fever, CSF lymphocytosis with negative gram stain, cultures		

ILLNESS SCRIPTS

Key Points:

1. Illness scripts are classic disease representations. Once the classics have been learned, the exceptions to the rule can be learned.
2. Illness scripts can be clinical (fever and rash) or lab based (obstructive jaundice)
3. Ideally, you should structure the illness script the way you will build a patient's syndrome (i.e. the processed problem list): epidemiology (who gets it?), temporal course/pattern, and key features of the disease.
4. Try to compare and contrast different illness scripts that can cause the same syndrome (ie present the same way)
5. Whenever possible, emphasize KEY FEATURES: those features which help you distinguish between diseases capable of producing the same syndrome.

EXERCISE II: Construct Illness Scripts for the following Disease Triads

I. Syndrome: Hemoptysis and Dyspnea

Disease	Goodpasture's Syndrome	Wegener's Granulomatosis	Lung Cancer
Epidemiology			
Temporal Course			
Syndrome Description			

II. Syndrome: Right Upper Quadrant Pain

Disease	Ascending Cholangitis	Cholecystitis	Acute Hepatitis B
Epidemiology			
Temporal Course			
Syndrome Description			

III. Syndrome: Confusion

Disease	Delirium	Dementia	Depression
Epidemiology			
Temporal Course			
Syndrome Description			

IV. Syndrome: Acute Fever and Stiff Neck

Disease	HSV-2 Meningitis	Herpes Encephalitis	Bacterial Meningitis
Epidemiology			
Temporal Course			
Syndrome Description			

V. Syndrome: Acute Chest Pain

Disease	Angina	Pulmonary Embolus	Spontaneous Pneumothorax
Epidemiology			
Temporal Course			
Syndrome Description			

SMALL GROUP TEACHING USING ILLNESS SCRIPTS

Four Step Process:

I. Develop a simple problem list

II. Guide the residents in processing the list both descriptively and summatively.

Guiding the syndrome statement construction:

- First, eliminate all nonspecific symptoms which are unlikely to have diagnostic specificity (e.g. fatigue, malaise)
- Second, condense redundant symptoms (palpitations and tachycardia; fever and T = 103)
- Third, identify and condense "due to's" and refocus on the cause as the diagnostic puzzle of choice (e.g., if the patient complains of pleuritic chest pain and the exam shows a pericardial rub, the ddx should not focus on chest pain any longer but should focus on pericarditis.)
- Last, combine all processed and linked descriptors into a sentence: fever, pericarditis and arthritis
- Left out symptoms/signs : those that aren't relevant to the patient's presentation but are still important are carried forward as secondary problems

III. Prioritize the differential diagnosis list by illness script comparisons.

Remember: test and treat for Tier I and I b before all others

IV. Lastly, identify learning points based on outcome of the above process

e.g.

Unknown illness scripts:	factual knowledge review, textbooks
Sensitivity/Specificity of s/s:	EBM review of diagnostic test characteristics
Difficulty prioritizing:	compare and contrast learning, key features assignment

CC: 59 yo African American Woman with Shortness of Breath

1 month ago, she noted several spells of shortness of breath and a dry cough. The spells would come on abruptly and then would abate after about 30 minutes. She noted a mild dry cough and some mild right sided chest pain which was described as constant and a dull ache. She was seen in an ED where she was given an albuterol inhaler for asthma. She noted no improvement. The following week she had a severe episode of shortness of breath at work without provocation. It lasted about 45 minutes and then went away spontaneously. She was seen by her primary care provider who thought the symptoms were compatible with panic attacks and advised her to stop caffeine and smoking and to try stress reduction. Over the past one week, her shortness of breath has been constant to the point where any activity leaves her gasping for breath. She denies orthopnea or pnd but does note that she is more comfortable lying on her left side. She continues to have an irritating dry cough and mild right sided chest discomfort that does not increase with breathing.
She admits to a 30 lb unintentional weight loss over the past month. She notes pain in both calves after walking about 1 block, relieved by rest.
She denies fevers, chills, night sweats, hemoptysis and purulent sputum.
She has had no recent travel, sick contacts or exposure to pets or toxins.
She denies joint aches and pains, skin rash, or loss of hair.

PMHX: Htn x 6 years **Meds:**Zestril 20 mg po q day; HCTZ 25 mg po q day
SHX: 30 pk years cigarettes; no IDU; Manages a McDonalds
Allergies: NKDA

PE: 130/76 HR 110 RR 28 Temp 98.9 Pulse Ox 99% on Room Air
Mildly dyspneic at rest, is able to complete full sentences without pausing.
HEENT: normal **Neck**: right supraclavicular firm node, about 1 cm in diameter
Lungs: dullness to percussion about ¾ of the way up on the right. Decreased breath sounds, decreased tactile fremitus in the same area. No egophony, wheezes or rubs noted. Left lung field is clear with normal breath sounds.
Cor: Normal JVP. Normal PMI. Normal Heart sounds with no extra sounds noted, diminished DP pulses bilat., no bruits
Abdomen: normal, no HSM **Extremities**:no clubbing, cyanosis or edema, loss of hair distal shins
Neuro: normal. **Joints**: normal **Skin and hair**: normal

<table>
<tr><th>Simple Problem List</th><th>Processed Problem List</th><th>Prioritized DDX</th></tr>
<tr><td rowspan="4">59 yo African American Woman
SOB x 4 weeks
Dry cough
Right chest pain, dull
Asthma
Panic attacks
30 lb weight loss
ambulatory leg pain
Hypertension
Smoker
Tachycardia
Tachypnea
Dyspnea at rest
Right supraclavicular node
Dullness to percussion right lung
Decreased bs right lung
Decreased tactile fremitus right lung
Decreased pulses in both dp
Loss of hair distal shins</td><td>Epidemiology</td><td>Tier I</td></tr>
<tr><td>Time Course</td><td>Tier IB</td></tr>
<tr><td rowspan="2">Syndrome Description</td><td>Tier II</td></tr>
<tr><td>Tier III</td></tr>
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Lists of Diagnoses Offered by the Learner:

- Sarcoidosis
- COPD
- Acute Pulmonary Embolism
- Community Acquired Pneumonia
- Atypical Pneumonia
- Malignant Pleural Effusion
- Tuberculosis
- Lupus Serositis
- Congestive Heart Failure
- Pneumoconiosis
- LAM (lymphangiomyomatosis)

Simple Problem List	Processed Problem List	Prioritized DDX
	Epidemiology	**Tier I**
	Time Course	**Tier IB**
	Syndrome Description	**Tier II**
		Tier III