SIMULATION IN CLINICAL MEDICINE
HISTORY TAKING

HITEC

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Roll Number:______________________________________

Group:____

Batch: ____

Photograph

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INDEX

CURRICULUM OF
SIMULATION IN CLINICAL MEDICINE
HISTORY TAKING

1. CLINICAL SKILLS COVERED

1.1. History taking.
1.2. Drawing an illness graph.
1.3. Making a list of differential diagnoses based on symptoms.
1.4. Choosing a most likely diagnosis based on symptoms.

2. ROLEPLAY AS A METHOD OF CLINICAL SIMULATION

2.1. The students' group will be divided into subgroups of two students each.
2.2. Each subgroup will have a student acting as a doctor and another as a patient or patient's attendant.
2.3. The role-as-doctor will have a battery and a sequence of questions to ask the role-as-patient.
2.4. The role-as-patient will have a patient scenario to answer the questions.

3. MODES OF INSTRUCTION TRANSFER (MIT)

3.1. Short group discussion: to prime the student of relevant knowledge.
3.2. Video presentation to show clinical skills: https://www.youtube.com/watch?v=gsjKcQUsQY8
3.3. Simulation: to have hands-on training.

4. ASSESSMENT

4.1. Formative assessment during simulation and PBL.
4.2. Summative assessment through OSCE

PRE-SIMULATION TUTORIAL
HISTORY TAKING

1. ETIOLOGICAL CLASSIFICATION OF DISEASES

1.1 Hereditary-familial conditions:	Wilson's disease and Obesity
1.2 Physical and chemical injuries:	RTA and Burns
1.3 Vascular Occlusion or rupture diseases:	MI, PE, and stroke
1.4 Infectious diseases:	Corona, Pneumonia, TB, intestinal worms
1.5 Immunological diseases:	Allergies, SLE, and Multiple sclerosis
1.6 Neoplastic diseases:	Carcinoma of the lung and sarcoma of bone
1.7 Degenerative disorders:	Alzheimer's disease, CMP, IPF
1.8 Drug reactions:	Idiosyncratic and dose-dependent
1.9 Psychiatric disorders:	Depression and Schizophrenia
1.10 Malingering:	Money matters and leave

2. TWELVE COMMON SYMPTOMS WITH DISEASES FOCUSED

2.1 Chest Pain:	Angina and MI
2.2 Breathlessness:	COPD, Cardiac failure
2.3 Cough:	TB
2.4 Fever:	Malaria, Typhoid, Abscess
2.5 Weight loss:	TB, Carcinoma of the lung, Celiac disease
2.6 Abdominal Pain:	Acid peptic disease
2.7 Diarrhea:	Dysentery, Irritable bowel syndrome
2.8 Headache:	Migraine and Depression
2.9 Right-sided weakness:	Stroke
2.10 Lower limb weakness:	Polymyositis, GBS, and Transverse myelitis
2.11 Frequent micturition:	Diabetes, UTI
2.12 Joint pain:	Rheumatoid arthritis

3. INTRODUCTION OF 10 COMMON DISEASES IN MEDICINE:

(To give a brief account of each disease with emphasis on pathophysiology)

3.1 Anemia
3.2 Cirrhosis
3.3 Myocardial Infarction (MI)
3.4 Chronic Obstructive Pulmonary Disease (COPD)
3.5 Ischemic stroke
3.6 Malaria
3.7 Typhoid
3.8 Rheumatoid arthritis
3.9 Diabetes Mellitus (DM)
3.10 Hypertension.

4. STEPS OF HISTORY TAKING

4.1 INTRODUCE YOURSELF AND BUILD A RAPPORT (WIPP):

W = Wash hands
I = Introduce yourself
P = Permission asked
P = Position yourself and your patient appropriately

4.2 INTRODUCTION OF THE PATIENT:

a. Name, age, sex, residence, and occupation.
b. The known disease(s) the patient is suffering from e.g., DM, HBP, and others.

4.3 PRESENTING CHIEF COMPLAINT AND OTHER ASSOCIATED COMPLAINTS:

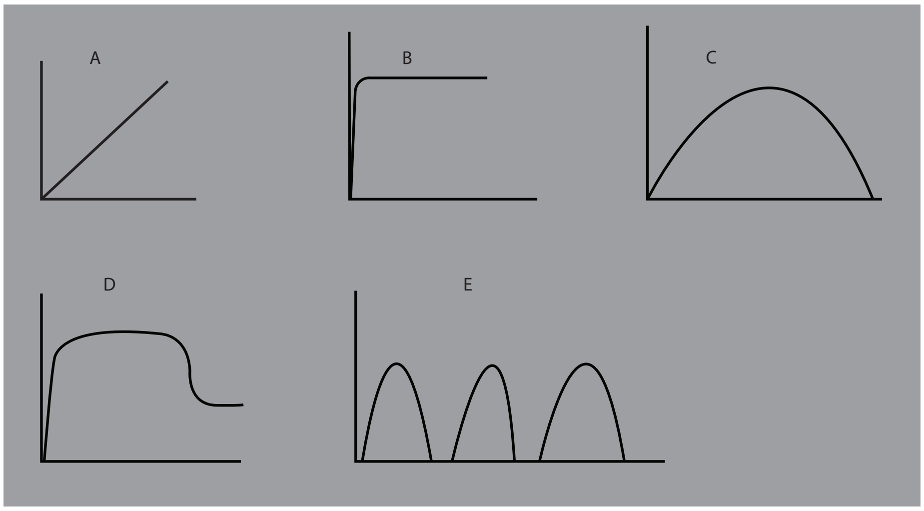
a. Ask an open-ended question to elicit patient ideas, concerns, and expectations:
   What brought you to the hospital today?
   (Aap ko haspatal kiyun ana para?)

4.4 HISTORY OF PRESENT ILLNESS:

a. Use mnemonic SOCRATES for pain and other symptoms:
   S = Site, O = Onset and duration, C = Character, R = Radiation, A = Associated symptoms, T = Timing, E = Exacerbating, relieving, and precipitating factors, and S = severity
b. Details of current illness and previous episodes.
c. Current treatment, drug history (Dose, route, compliance, Over-The-Counter, Recreational, IV, sensitivity), and menstrual history.
d. The extent of functional disability in the activities of daily living (ADL).

4.5 DRAW AN ILLNESS GRAPH OF A CHIEF SYMPTOM:

a. It will show the duration (x-axis), severity (y-axis), onset, and progression of the illness.
b. The examples of the illness graphs include:
   i. Progressive disease (carcinoma and degenerative disorder)
   ii. Acute episode of a disease (MI and stroke)
   iii. Monophasic illness with complete recovery (Typhoid, Malaria, and meningitis)
   iv. Acute disease with residual damage (Corona, MI, and stroke)
   v. Episodic illness (Flue, migraine, and epilepsy)



ILLNESS GRAPH: A graph of chief symptoms showing duration (x-axis), severity (y-axis), onset, and progression of the illnes.
A: Progressive, B: Acute episode, C: Monophasic illness with complete recovery,
D: Acute illnes with residual damage, and E: Episodic illness

4.6 PAST HISTORY:

a. Use mnemonic MJ THREADS Ca
   M = MI, J = Jaundice, T = TB, H = HBP, R = Rheumatic fever and RA, E = Epilepsy,
   A = Asthma, D = DM, S = Stroke, and Ca = Cancer
b. Risk Factors for MI, Stroke, and Dementia (Smoking, Cholesterol, DM, HBP, FH, IHD)

4.7 SOCIAL AND PERSONAL HISTORY:

a. Alcohol (units/week) and Cigarette pack-years (packs of twenty per day x years)
b. Bowel habits, food choices, analgesic use, immunization, and travel history.
c. Marital status, education, and employment (exposure).
d. House situation, care and support, household income, daily activity, and pets.

4.8 FAMILY HISTORY:

a. Sibs deceased <65 years of age and CVS risk factors in the family.
b. Hereditary conditions and infectious diseases.

4.9 SYSTEMS REVIEW:

a. **Gastrointestinal:** nausea, vomiting, diarrhea, hematemesis, burning pain, colicky pain, black stool, and hematochezia.
b. **Liver:** yellow eyes and right upper abdomen pain.
c. **Cardiovascular:** chest pain, palpitation, breathlessness on lying down or on exertion.
d. **Respiratory:** Cough, breathlessness, blue discoloration, hemoptysis.
e. **Neurological:** Altered consciousness, headache, facial pain, fits, dizziness, visual loss, hearing loss, one-sided weakness, lower limb weakness, incontinence.
f. **Locomotor:** joint pain, joint swelling, single joint vs multiple joint complaints, small vs large joint complaints, and morning stiffness.
g. **Urinary system:** burning micturition, smoky urine, retention of urine, and incontinence of urine.
h. **Skin:** a rash – discoloration (macule), raised (papule), or pus-filled (pustule).
i. **Swelling:** any swelling (e.g., of the thyroid, salivary gland, or lymph node)

5. MAKING A LIST OF DIFFERENTIAL DIAGNOSES BASED ON SYMPTOMS

5.1 use the etiological classification of diseases described above to choose the diseases.
5.2 Considering the evolution of symptoms and progression of illness as shown in the illness graph choose diseases compatible with it.
5.3 Consider the pathophysiology of diseases correlating with the evolution of the symptoms.

6. MAKING THE MOST LIKELY DIAGNOSIS

6.1 Among the list of differential diagnoses choose one disease most compatible with the clinical history of the patient.

7. A VIDEO ON HISTORY TAKING

7.1 Video presentation: https://www.youtube.com/watch?v=gsjKcQUsQY8

8. ROLEPLAY AND PEER ASSESSMENT:

8.1 ROLEPLAY AND PRE-BRIEFING:

a. A pair of students: one as a role-as-doctor and another as a role-as-patient.
b. Pre-briefing for role-doctor: to give an outline of the history taking and the chief complaint.
c. Pre-briefing for role-patient: to give an outline of the patient's scenario.
d. Time for history taking is 10 minutes.

8.2 PEER ASSESSMENT:

a. Time for peer assessment 5 minutes.
b. Record the formative assessment in the RoPPA table.
c. Give feedback.

9. FORMATIVE ASSESSMENT TABLE RoPPA (ROLEPLAY AND PEER ASSESSMENT)

Activity: History taking of a patient who has a predefined chief symptom

Roleplay: One student act as a role-as-doctor and another as a role-as-patient.

Assessment and comments: by a role-as-patient for a role-as-doctor.

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	**Introduction with the patient and obtaining consent**		
2	**Personal data of the patient and any chronic illness.**		
3	**Presenting complaints, identifying the chief complaint.**		
4	**History of present illness using mnemonic SOCRATES**		
5	**Past, social, personal, and family history**		
6	**Draw an illness graph showing onset, progression, duration, and severity.**		
7	**Make a differential diagnosis list and the most likely diagnosis**		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

10. SUMMATIVE ASSESSMENT USING OSCE

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	OSCE-1	OSCE-2	OSCE-3	OSCE-4	OSCE-5
1	Introduction with the patient and obtaining consent					
2	Personal data of the patient and any chronic illness.					
3	Presenting complaints, identifying the chief complaint.					
4	History of present illness using mnemonic SOCRATES					
5	Past, social, personal, and family history					
6	Draw an illness graph showing onset, progression, duration, and severity.					
7	Make a differential diagnosis list and the most likely diagnosis					

Date:

Name & Signature of the Assessor-1:

Name & Signature of the Assessor-2:

Name & Signature of the Assessor-3:

Name & Signature of the Assessor-4:

Name & Signature of the Assessor-5:

SIMULATION IN CLINICAL MEDICINE ON HISTORY TAKING

1. ROLEPLAY CASE: CHEST PAIN IN A 57-YEAR-OLD MAN

1.1. CASE SCENARIO:

[For Y3-MBBS, case derived from the case: Nikhil Aggarwal, Subothini Selvendran, Vassilios Vassiliou. Oxford Medical Case Reports, Volume 2016, Issue 4, April 2016, Pages 62–65, https://doi.org/10.1093/omcr/omw008. Published: 14 April 2016. Creative Commons CC-BY-NC]

A 57-year-old male lorry driver presented to his local emergency department with a 20-minute episode of chest pain and sweating. The chest pain was central, radiating to the left arm and crushing in nature. The pain settled promptly following an antiplatelet (300 mg aspirin) tablet orally and cardiac vasodilator (800 mcg glyceryl trinitrate) spray sublingually administered by a nurse. He smoked 20 cigarettes daily (38 pack years) but was not aware of any other cardiovascular risk factors. The nurse found his BP raised.

The doctor on call read his recorded ECG, advised some investigations, and detained him in the emergency room for observation.

About 30 minutes later the patient's chest pain returned with greater intensity whilst waiting in the emergency department. Now, he described the pain as though “an elephant is sitting on his chest”.

After reading the second record of ECG, the doctors took him to the Cath lab for emergency management. He recovered and was discharged from the hospital. He was also advised to come back after one week for cardiac rehabilitation. He had come back one week later for rehabilitation.

1.2. QUESTIONS ON THE ABOVE SCENARIO:

a. What are the differential diagnoses when the patient presented to ER and was detained after the initial treatment?
b. What is the most likely diagnosis after the patient was taken to the Cath lab?

1.3. CAUSES OF CHEST PAIN

PAIN DUE TO SUPERFICIAL LESION DUE TO INFLAMMATION
Herpes zoster
Postherpetic neuralgia
Phlebitis of the subcutaneous anterior thoracic veins.

CENTRAL CHEST PAIN DUE TO HEART, LUNG, AND OTHER ORIGINS
<u>Heart:</u> angina, STEMI, Non-STEMI and pericarditis.
<u>Lung:</u> pulmonary embolism, pulmonary hypertension, tracheitis and Mycoplasma pneumonia.
<u>GIT:</u> esophageal spasm, esophagitis, peptic ulcer, pancreatitis, cholecystitis, and splenic infarction.
<u>Musculoskeletal:</u> thoracic spondylitis, Tietze's disease with inflammation of costal cartilage, epidemic pleurodynia due to Coxsackie virus, Trichinosis
<u>Other:</u> acute anxiety

LATERAL CHEST PAIN DUE TO LUNG AND OTHER ORIGIN
Pleurisy (pneumonia, TB)
Spontaneous pneumothorax
Splenic infarction
Spinal disease and radiculopathy
Dissecting aneurysm of the thoracic aorta
Lung cancer

Discussion:

Pain due to inflammation of the superficial tissues of the chest wall will have obvious features of inflammation. It is important to remember, however, that the inflammation may have spread from a deeper lesion such as empyema. Post-herpetic neuralgia has a nerve distribution.

The most important cause of central chest pain is myocardial ischemia. The diagnosis of angina turns, in the great majority of cases, on an accurate history. The anginal pain is typically symmetrical in the chest in the region of the sternum or slightly to the left; radiating towards the axillae and down the inner side of the arms with the left side being involved more often than the right. Radiation to the epigastrium, the side of the neck, jaw, and tongue also occurs. The pain is described as 'tight', 'gripping', or 'like indigestion', or the patient may deny the pain and describe only a feeling of pressure or tightness. The patient may adopt a revealing gesture of putting a clenched fist on the sternum. A pain described as 'stabbing' is probably not angina. And, certainly, a pain that comes in sharp jabs, lasting for a few seconds only, is not angina. A pain provoked by effort/stress (exercise or emotions) and relieved by rest is angina. A pain starting after exercise is not angina.

The pain of pericarditis is localized but similar to MI. The severity is mild to very severe. It is usually ‘stabbing’ or ‘like a knife’ in character.

Pulmonary embolism also causes anterior chest pain. It is usually associated with the postoperative period, bedridden condition, low cardiac output state, oral contraceptive pills, and pregnancy.

Pain in the epigastrium is usually due to acid peptic disease exaggerated or relieved with meals. That radiating to the back is caused by pancreatitis.

Lateral chest pain is related to neuromuscular structures, ribs, or pleural in origin but an aneurysm of the thoracic aorta irritating a nerve also presents as lateral chest pain.

1.4. INSTRUCTIONS FOR ROLEPLAY SIMULATION:

a. Make a subgroup of two students: one as a role-as-doctor and another as a role-as-patient.
b. The role-as-doctor follows the steps of history taking.
c. The role-patient follows the case scenario as a patient/attendant of a patient.
d. Time allocated for history taking is 10 minutes.
e. The role-as-patient is to carry out a formative assessment of the role-as-doctor at the end of the session.
f. The time allocated for formative assessment is 5 minutes.

1.5. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	**Introduction with the patient and obtaining consent**		
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3	**Presenting complaints, identifying the chief complaint.**		
4	**History of present illness using mnemonic SOCRATES**		
5	**Past, social, personal, and family history**		
6	**Draw an illness graph showing onset, progression, duration, and severity.**		
7	**Make a differential diagnosis list and the most likely diagnosis**		

Time spent:

Date: **Name & Signature of the student (role-as doctor):**

Name & Signature of the assessor (role-as-patient):

2. ROLEPLAY CASE:
BREATHLESSNESS IN A 29-YEAR-OLD WOMAN

2.1. CASE SCENARIO:

[An extract from a clinical vignette at https://westjem.com/cpc -em/29-year-old-woman-with-dyspnea.html]

A 29-year-old female presented to the ER with a chief complaint of worsening dyspnea over the prior three weeks. Her shortness of breath was exacerbated by exertion and lying down. It was also worse at night. Over the same time, she developed a dry, raspy, non-productive cough, bilateral leg swelling, and chest tightness. She denied any fevers, chest or abdominal pain, recent travel, or viral illness. She had no medical problems or past surgical history. Her only home medication was ibuprofen and she had no known drug allergies. She denied any family history of sudden death, myocardial infarction, or heart failure. She denied tobacco or illicit drug use. She had been employed in a tannery (leather factory) at Kasur for the past three years and had recently increased her work hours.

As a lifesaving emergency measure, O2 was given and pneumothorax was excluded. The patient felt better. On further evaluation it was diagnosed that she was suffering from cardiomyopathy.

2.2. CAUSES OF BREATHLESSNESS (DYSPNEA)

CARDIOVASCULAR
- Pericarditis
- Cardiomyopathy
- Myocarditis
- Valvular heart disease
- Pulmonary embolism

PULMONARY
- Laryngitis
- COPD
- Asthma
- Pneumothorax

NEUROMUSCULAR
- Brainstem stroke
- Guillain Bare syndrome
- Myasthenia gravis

METABOLIC & TOXIC
- Anemia
- DM
- Thyrotoxicosis
- Metabolic acidosis e.g., kidney disease
- Salicylates
- Betablockers
- Heavy metals (Pb, As, Hg, Cd, Zn, Cu, Fe)

PSYCHOGENIC
- Anxiety

2.3. ASSESSMENT OF DYSPNEA:

	New York Heart Association functional classification of heart failure
CLASS	PATIENT'S SYMPTOMS
I	More than ordinary physical activity causes dyspnea.
II	Ordinary physical activity causes dyspnea.
III	Less than ordinary activity causes dyspnea but comfortable at rest.
IV	Unable to carry on any physical activity without dyspnea.

2.4. INSTRUCTIONS FOR ROLEPLAY SIMULATION:

a. Make a subgroup of two students: one as a role-as-doctor and another as a role-as-patient.
b. The role-as-doctor follows the steps of history taking.
c. The role-as-patient follows the case scenario as a patient/attendant of a patient.
d. Time allocated for history taking is 10 minutes.
e. The role-as-patient is to carry out a formative assessment of the role-as-doctor at the end of the session.
f. The time allocated for formative assessment is 5 minutes.

2.5. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	**Introduction with the patient and obtaining consent**		
2	**Personal data of the patient and any chronic illness.**		
3	**Presenting complaints, identifying the chief complaint.**		
4	**History of present illness using mnemonic SOCRATES**		
5	**Past, social, personal, and family history**		
6	**Draw an illness graph showing onset, progression, duration, and severity.**		
7	**Make a differential diagnosis list and the most likely diagnosis**		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

3. ROLEPLAY CASE:
ACUTE COUGH (< 3 WEEKS)
IN A 21-YEAR-OLD MAN

3.1. CASE SCENARIO:

[Source: https://pharmaceutical-journal.com/article/ld/case-based-learning-cough]

A 21-year-old man presents to OPD with a cough that has been bothering him for two days. The cough is dry in nature with no sputum. But he is coughing frequently and it is keeping him up at night with a mild headache. He does not have vomiting. He is currently a student, a non-smoker, and non-alcoholic. He has no history of diabetes and has not taken any medicines or over-the-counter (OTC) treatments.

The patient is most likely to have an upper respiratory infection. The patient is given symptomatic treatment and antibiotics. He is advised to take rest, plenty of fluids, and avoid exercise. He is also advised to visit the OPD if symptoms do not subside or a productive cough starts. He recovers in a weak time.

3.2 QUESTIONS TO BE ASKED FOR THE HISTORY OF ACUTE COUGH

COUGH CHARACTERSTICS

When did the cough start?
Is the cough dry or productive (i.e., producing phlegm)?
If the cough is productive, what color is the phlegm?
Is there a pattern to the cough or does it have any triggers?

PATENT'S MEDICAL HISTORY

How are you feeling (e.g., are you experiencing a fever, a runny nose, or malaise)?
Do you have any relevant medical conditions?
Are you taking any medicines?
Have you tried any over-the-counter (OTC) treatments?

OCCUPATIONAL AND SOCIAL HSITORY

What do you do for a living?
Do you have any pets?
Have there been any changes to your lifestyle recently?
Do/did you smoke? Type of tobacco, packs per day, duration of smoke?
Do you take alcohol? Units of alcohol per week?
Do you smoke or take any recreational drugs?

3.3. CAUSES OF COUGH BASED ON DURATION:

Acute cough (<3 weeks): differential diagnosis Upper respiratory tract infection • Common cold, sinusitis Lower respiratory tract infection • Pneumonia, bronchitis, exacerbation of COPD • Irritation—inhalation of bronchial irritant, e.g., smoke or fumes
Chronic cough (>3 weeks): differential diagnosis and clues COPD—smoking history Asthma—wheeze, relief with bronchodilators Gastro-esophageal reflux—occurs when lying down, burning chest pain Upper airway cough syndrome —history of rhinitis, postnasal drip, sinus headache and congestion Bronchiectasis—chronic, very productive ACE inhibitor medication—drug history Carcinoma of the lung—smoking, hemoptysis Cardiac failure—dyspnea, PND Psychogenic—variable, prolonged symptoms, usually mild

Source: Talley NJ and O'Connor S, ed. Clinical examination: a systematic guide to physical diagnosis. 6th ed. Elsevier 2010.

3.4. CAUSES OF COUGH BASED ON CHARACTER:

Origin	**Character**	**Causes**
Naso-pharynx/larynx	Throat clearing, chronic	Postnasal drip, acid reflux
Larynx	Barking, painful, acute, or persistent	Laryngitis, pertussis (whooping cough), croup
Trachea	Acute, painful	Tracheitis
Bronchi	Intermittent, sometimes productive, worse at night	Asthma
	Worse in morning	Chronic obstructive pulmonary disease (COPD)
	With blood	Bronchial malignancy
Lung parenchyma	Dry then productive	Pneumonia
	Chronic, very productive	Bronchiectasis
	Productive, with blood	Tuberculosis
	Irritating and dry, persistent	Interstitial lung disease
	Worse on lying down, sometimes with frothy sputum	Pulmonary edema
ACE inhibitors	Dry, scratchy, persistent	Medication-induced

Source: Talley NJ and O'Connor S, ed. Clinical examination: a systematic guide to physical diagnosis. 6th ed. Elsevier 2010.

3.5. DRY VS. PRODUCTIVE COUGH

DRY COUGH
- Asthma
- Environmental irritants
- ACE inhibitors.

PRODUCTIVE COUGH
(>30 ml sputum/24 h)
- Post-nasal drip syndrome
- Gastroesophageal reflux disease (GERD)
- COPD
- Infections: viral or bacterial
  (Associated fever, runny nose, and malaise)

[Source: https://pharmaceutical-journal.com/article/ld/case-based-learning-cough]

3.6. IDENTIFYING RED FLAGS FOR SERIOUS CONDITIONS:

[Source: https://pharmaceutical-journal.com/article/ld/case-based-learning-cough]

a. High-risk patients: smoker or immunocompromised (chemotherapy or diabetes, and older patients.
b. Cough: quickly gets worse (unable to stop coughing), or persistent (>3 weeks)
c. Sputum: abundant, containing blood, or red colored.
d. Associated symptoms: Pain (heartburn or localized chest pain), Fever & sweats, considerable breathlessness, unexplained weight loss, or swollen glands.
e. Associated signs: RR > 30 b/min, Tachycardia > 130/min, SBP < 90 mmHg, DBP < 60 mmHg, or Oxygen sat < 92%.

3.7. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
3	Presenting complaints, identifying the chief complaint.		
4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

4. ROLEPLAY CASE: CHRONIC COUGH (> 3 WEEKS) IN A 42-YEAR-OLD WOMAN

4.1. CASE SCENARIO:

[Source: https://pharmaceutical-journal.com/article/ld/case-based-learning-cough]

A 42-year-old woman presents to the OPD with an ongoing cough that is causing her problems. The patient answers the questions and explains that she is an office worker, has been smoking 20 cigarettes per day since the age of 15 years, and has had a cough for the past three months.

She has not wanted to bother her GP as the cough is persistent throughout the whole day and is dry in nature. She has been having pain in her ribs, but she feels this is only owing to her coughing constantly. She has noticed recently that she has been feeling more breathless and is unable to walk up the hill to her house without stopping as she did previously. She has also noticed that, in the past couple of weeks, there have been red blood spots on her tissue when she coughs.

The patient has a chronic cough with several red-flag symptoms (i.e., hemoptysis, pain, and shortness of breath). The presence of several red flag symptoms could indicate underlying conditions such as lung cancer and should be referred urgently to a respiratory specialist for further investigation. Chronic cough is most prevalent in middle-aged women, especially those who have a significant smoking history as the smoking effects are cumulative.

4.2. QUESTIONS TO BE ASKED FOR THE HISTORY OF CHRONIC COUGH

COUGH CHARACTERISTICS

How long have you been experiencing the cough?
How did the cough start? Was its onset gradual or sudden?
Is there pain associated with the cough?
Is the cough dry or productive (producing phlegm)?
(Ongoing dry cough is a red flag);
If there is phlegm, what color is it?
(Hemoptysis is a red flag);
Is there variation in the cough (i.e., better or worse at night)?
Is there anything that exacerbates the cough?

PATIENT MEDICAL HISTORY

How are you feeling?
(e.g., are you experiencing a fever, a runny nose or malaise?)
Do you have any medical conditions?
Are you currently taking any medicines?
Have you tried any over-the-counter (OTC) treatments?
Have you been treated for a recent infection?
Have you had the flu jab this year?

OCCUPATIONAL AND SOCIAL HISTORY

What do you do for a living?
Do you have any pets?
Do you Smoke (presently or in the past)?
What type of tobacco do/did you smoke?
How many do/did you smoke a day?
How long have you smoked for/did you smoke for?
(a pack = 20 cigarettes; pack-years = pack per day x years)
Do you take alcohol or recreational drugs?
How many units of alcohol do you consume during a week?
Do you smoke or take any illicit substances?

QUALITY OF LIFE

Does the cough affect your quality of life?
Are you able to complete daily tasks (e.g., walking upstairs) as you had done prior to the cough start?

4.3. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
3	Presenting complaints, identifying the chief complaint.		
4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

5. ROLEPLAY CASE:
ACUTE FEVER IN A 40-YEAR-OLD MAN

5.1. CASE SCENARIO:

A 40-year-old male without a significant past medical history presented to the emergency room (ER) because of fever, myalgias, and body aches for the past 4 days. He was all right 4 days back when in the morning, he noticed a dull headache all over the head, and in the evening, he had additional body aches and muscle pains. At that time, he recorded a temperature of 100°F. The next day, he woke up with shivering and chills needing to take two blankets despite the spring weather. After about two hours the shivering reduced but he developed a high-grade fever of 104°F. In another hour or so, he had profuse sweating and the fever subsided to 97°F. For fever and body ache he took tablets of Panadol and remained better on the third day. But on the fourth day, he again had shivering, high-grade fever, and sweating and presented to the ER.

He denied cough, dysuria, diarrhea, convulsions, sick contact, allergies, or intake of any medication. However, he recently returned from a village near Sukkur 7 days before the start of his illness.

On examination, he was lethargic, having a temperature of 97°F, and without any other significant finding.

He was admitted and his blood tests were carried out to make a diagnosis. He was successfully treated and discharged within a few days.

5.2. HIGH-GRADE FEVER

A temperature of 103°F (39.4°C) is called high-grade fever and 106°F (41.1°C) is called hyperpyrexia.

Causes of high-grade fever in adults include:

c. Viral infections
d. Bacterial infections
e. Immunological conditions e.g., Rheumatoid arthritis
f. Malignant disease
g. Heat stroke

5.3. TYPES OF FEVER

Type	Character	Examples
Continued	Does not remit	Typhoid fever, typhus, drug fever, malignant hyperthermia
Intermittent	Temperature falls to normal each day	Pyogenic infections, lymphomas, miliary tuberculosis
Remittent	Daily fluctuations >2°C, the temperature does not return to normal	Not characteristic of any particular disease
Relapsing	Temperature returns to normal for days before rising again	Malaria:
		Tertian—3-day pattern, fever peaks every other day (*Plasmodium vivax, P. ovale*); Quartan—4-day pattern, fever peaks every 3rd day (*P. malariae*)
		Lymphoma:
		Pel-Ebstein-fever of Hodgkin's disease (very rare)
		Pyogenic infection

Source: Talley NJ and O'Connor S, ed. Clinical examination: a systematic guide to physical diagnosis. 6th ed. Elsevier 2010.

5.4. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	**Introduction with the patient and obtaining consent**		
2	**Personal data of the patient and any chronic illness.**		
3	**Presenting complaints, identifying the chief complaint.**		
4	**History of present illness using mnemonic SOCRATES**		
5	**Past, social, personal, and family history**		
6	**Draw an illness graph showing onset, progression, duration, and severity.**		
7	**Make a differential diagnosis list and the most likely diagnosis**		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

6. ROLEPLAY CASE: PROLONGED FEVER (>3 w) AND HEADACHE IN A 13-YEAR-OLD GIRL

6.1. CASE SCENARIO:

[Bhate T, Kollmann TR, and Hadad K. A nine-year-old girl with prolonged fever and headache. Pediatrics & Child Health 2014; 19(4): 177–8, https://doi.org/10.1093/pch/19.4.177a]

A previously healthy 13-year-old girl presented with a four-week history of fevers, vomiting, headache, and abdominal pain. She was first seen in a community hospital following a 24 h history of fever followed by headache, emesis, and a generalized erythematous, macular rash. Petechiae were not noted. A diagnosis of viral gastroenteritis was made. The rash subsided quickly but the remainder of her symptoms persisted.

Ten days later, she presented again to the same hospital with daily fevers, daily episodes of emesis, and debilitating headaches. Her urine culture was positive for Escherichia coli. She was discharged on an antibiotic for 5 days; however, her symptoms failed to resolve.

She was subsequently referred and admitted to a tertiary care center. A review of her history revealed daily fevers accompanied by severe nausea and emesis, along with severe headaches without photophobia. There was no history of recent travel or ill contacts. She denied night sweats, neck stiffness, or joint pain. Her records indicated a 5 kg weight loss over four weeks.
Physical examination was unremarkable. On further investigation, she was diagnosed to have pyelonephritis. She was treated accordingly, recovered, and discharged.

6.2. CAUSES OF PROLONGED FEVER

IMMUNOLOGICAL CONDITIONS

Rheumatic fever, RA, SLE, Sarcoidosis, ulcerative colitis, and Crohn's disease

ALLERGIES AND SKIN CONDITIONS

anaphylactoid purpura, dermatitis, pemphigus, and bullous pemphigoid

BLOOD DISEASES

Aplastic anemia
Leukemia

MALIGNANCIES

Lymphoma
Carcinoma
Sarcoma

DRUG REACTIONS

Sulpha drugs and other antibiotics

FICTITIOUS FEVER

Malingering

SPECIFIC FEVERS OF INFECTIONS OR INFESTATIONS

<u>Viral</u> e.g., infectious mononucleosis
<u>Pyogenic</u> e.g., staphylococcus, streptococcus, meningococcus, and gonococcus
<u>Localized abscesses</u> in the nose, ear, sinuses, chest, GIT, liver, urogenital, and bones
<u>Salmonella</u> e.g., typhoid fever
<u>Brucella</u> e.g., B. abortus and B. melitensis
<u>Spirochetes</u> e.g., syphilis, Relapsing fever, and Rat-bite fever
<u>Mycobacterium</u> e.g., M. tuberculosis
<u>Fungus</u> e.g., coccidioidomycosis
<u>Rickettsia</u> e.g., Q fever and Rocky Mountain spotted fever
<u>Chlamydia</u>
<u>Psittacosis</u>
<u>Parasites</u> e.g., malaria, trypanosomiasis, and Kala-azar

6.3. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
3	Presenting complaints, identifying the chief complaint.		
4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

7. ROLEPLAY CASE: UNINTENTIONAL WEIGHT LOSS IN A 55-YEAR-OLD MAN

7.1. CASE SCENARIO:

[Source: https://accessmedicine.mhmedical.com/content.aspx?bookid=2715&sectionid=249062304]

CHIEF COMPLAINT

A 55-year-old man, complains of weight loss. He reports that he has tried for years to lose weight (unsuccessfully) but that recently he has lost more and more weight without effort. He was initially pleased but recently has become concerned. He reports that he has lost 12 kg in the last 6 months (from 83 to 71 kg).

The patient reports no diarrhea, large foul-smelling stools, or difficult-to-flush stools. He reports that he previously moved his bowels once a day but lately only once every other day. He attributes this to his decreased appetite and decreased oral intake.

The patient notes that he has a decreased appetite and feels full quickly after starting to eat. His past medical history is unremarkable as he has been well except for mild osteoarthritis of the knee. On psychosocial history, he reports that he has not felt down, depressed, or hopeless during the past month nor has he been bothered by a lack of interest in activities. He denies any changes at home and has no trouble obtaining food. He has never used tobacco and drinks 2 beers about once a month.

On review of systems, there are no fevers, night sweats, swollen lymph nodes, muscle aches, headaches, shortness of breath, cough, heat intolerance, palpitations, or tremulousness. There are also no GI symptoms of oral pain, dysphagia, odynophagia, melena, hematochezia, abdominal pain, or jaundice.

His medications include 600 mg of ibuprofen 2–3 times a day for mild osteoarthritis of his left knee.

On examination, he did not have abnormal findings. His routine investigations were normal. But upper GI endoscopy revealed that he had gastric ulcer and H. pylori infection. With treatment, after 3 months, he improved clinically and regained his baseline weight.

7.2. SYMPTOM-BASED STEPS TO EVALUATE WEGHT LOSS

STEP 1
To verify the weight loss.
This is verified in the history.

STEP 2
To determine the presence of symptoms of malabsorption
(Diarrhea or abnormal-looking stools)

STEP 3
To determine reduced caloric intake or increased caloric expenditure.

STEP 4
To follow a systematic approach to find a clue for the cause of weight loss.

Discussion:

He has decreased appetite. He does not have difficulty obtaining food. His symptoms do not suggest hyperthyroidism or depression. His dyspepsia symptoms of postprandial fullness & early satiation and use of NSAID suggest acid peptic disease. The second possibility is gastric cancer. His bowel habit is altered but he does not have lower GI symptoms (abdominal pain, diarrhea, hematochezia) to suggest colon cancer or inflammatory bowel disease. There is no past significant history except knee joint arthritis. Apart from NSAID, there is no drug history (prescription, over-the-counter, herbal) suggesting anorexia. He is not a smoker and takes limited alcohol.

The above analysis led to the decision of upper GI endoscopy and further management.

7.3. CERTAIN DEFINITIONS RELATED TO WEIGHT LOSS:

a. Unintentional weight loss: 5% weight loss within the preceding 6-12 months.
b. Cachexia: it is a syndrome of weight loss characterized by decreased muscle mass in the presence of metabolic effects of an illness.
c. Malnutrition: unintentional weight loss of 5% in 3 months or 10% in an indefinite time as a component of one set of diagnostic criteria.

7.4. UNINTENTIONAL VS. INTENTIONAL WEGHT LOSS

INTENTIONAL WEIGHT LOSS
Healthy dieting
Eating disorder e.g., anorexia nervosa and bulimia nervosa

UNINTENTIONAL WEIGHT LOSS
(Cachexia of chronic disease)
Malignancy, e.g., lung, liver, stomach
Psychiatric diseases, e.g., depression
Chronic inflammation or infectious disease
Metabolic disorders, e.g., DM

7.5. APPETITE AND ETIOLOGY OF WEIGHT LOSS:

a. Appetite maintained:
   (1) DM
   (2) Hyperthyroidism
   (3) Malabsorption
   (4) Phaeochromocytoma
   (5) Malnutrition
b. Appetite suppressed:
   (1) Depression
   (2) Malignancy
   (3) Severe cardiac, respiratory, or g ut failure
   (4) Tuberculosis, HIV
   (5) Drug side effects (e.g., antibiotics, SSRI, antidiabetics) or drug abuse (e.g., alcohol and opioids)

7.6. WARNING SIGNS OF UNINTENTIONAL WEIGHT LOSS:

a. Fever and night sweat
b. Bone pain
c. Shortness of breath, cough, and coughing up blood
d. Excessive thirst and increased urination
e. Headache, jaw pain when chewing, and/or new vision disturbances (for example, double vision, blurred vision, or blind spots) in a person over 50

7.7. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
3	Presenting complaints, identifying the chief complaint.		
4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

8. ROLEPLAY CASE:
ABDOMINAL PAIN IN A 22-YEAR-OLD MAN

8.1. CASE SCENARIO:

[Source: https://accessmedicine.mhmedical.com/content.aspx?bookid=2715&sectionid=249057775]

A 22-year-old man complains of diffuse abdominal pain. He felt well until the onset of pain several hours ago. He reports that the pain is a pressure-like sensation in the mid-upper abdomen, which is not particularly severe. He had never had this symptom before. He reports no fever, nausea, vomiting, or diarrhea. His appetite is diminished, and he has not had a bowel movement since the onset of the pain. He reports no history of urinary symptoms such as frequency, dysuria, or hematuria. His past medical history is unremarkable.

The patient reports no history of NSAID, aspirin, or alcohol ingestion. He has no known gallstones and no prior history of abdominal surgery. He reports that he is passing flatus and denies vomiting.

On reassessment after one hour, the patient complains that the pain is now more severe at the right lower part of the abdomen.

After clinical examination and investigations (blood, ultrasound, and CT abdomen), he is diagnosed to have appendicitis. He is treated accordingly and recovered.

8.2. SYMPTOM-BASED STEPS FOR THE DIAGNOSIS OF ABDOMINAL PAIN

STEP 1

1. **Identify the location of the pain in one of the 9 abdominal quadrants.**
2. **Identify the differential diagnosis in that quadrant (see text below for the list of D/D).**

STEP 2

1. **Narrow down the D/D considering the time course of the pain: first episode of acute pain, recurrent acute pain, subacute/chronic pain (see the chart below for the list of D/D).**
2. **Some of the first episodes do not recur because the patient is either operated or die of complications.**

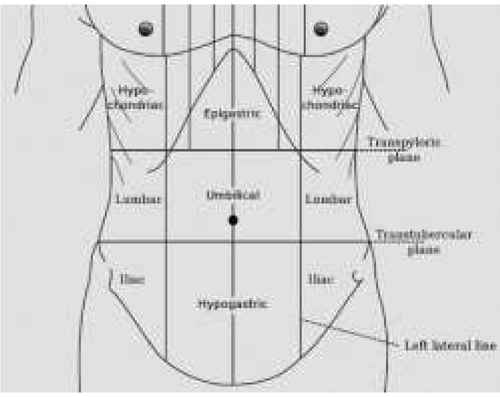
STEP 3

1. **Consider historical points of aggravating/relieving factors, quality of pain, radiation of pain, associated symptoms, and prior surgeries.**
2. **Pulmonary and cardiac history for referred abdominal pain.**
3. **In female sexual and menstrual histories.**
4. **Alcohol consumption and over-the-counter medications.**
5. **History of DM**

FINAL STEP

Remember that following are the common causes of acute abdominal pain:

1. **Appendicitis**
2. **Peptic ulcer**
3. **Pancreatitis**
4. **Bowel obstruction**
5. **Diabetes**



8.3. CAUSES OF ABDOMINAL PAIN BASED ON ABDOMINAL LOCATION:

a. **Right hypochondriac:** Hepatitis, Hepatic abscess, Cholecystitis, Cholangitis, Gallstones
b. **Epigastrium:** MI, Acid peptic disease, GERD, gastritis, gastric perforation, pancreatitis
c. **Left hypochondriac:** Pancreatitis, splenic infarct/rupture/abscess
d. **Right lumbar:** kidney stones, pyelonephritis, colitis
e. **Umbilical:** ruptured AA Aneurysm, mesenteric ischemia, small bowel obstruction, gastroenteritis, appendicitis (in early stage).
f. **Left lumbar:** kidney stones, pyelonephritis, colitis
g. **Right iliac fossa:** Appendicitis, colitis, ovarian torsion/cyst
h. **Hypogastrium:** Cystitis, PID, ectopic pregnancy
i. **Left iliac fossa:** Diverticulitis, colitis, ovarian torsion/cyst

8.4. CAUSES OF ACUTE ABDOMINAL PAIN BASED ON TIME COURSE

FIRST EPISODE OF ACUTE PAIN

Vascular – aortic aneurysm, mesenteric ischemia, ischemic colitis
Cardiac – MI
Inflammation – Cholecystitis, cholangitis, pancreatitis, gastroenteritis, peritonitis, appendicitis, diverticulitis, and PID
Obstruction – Biliary, small bowel, or large bowel obstruction; ovarian torsion
Other – DKA, ectopic pregnancy, nephrolithiasis, splenic rupture

RECURRENT EPISODES OF ACUTE PAIN

Cholecystitis or biliary stones
Pancreatitis
Diverticulitis
Nephrolithiasis
PID
Small and large bowel obstruction
DKA

SUBACUTE OR CHRONIC PAIN

Acid peptic disease
Hepatitis
Mesenteric ischemia
Inflammatory bowel disease
Irritable bowel syndrome

8.5. CAUSES OF ABDOMINAL PAIN WITH HYPOTENSION :

a. **Intra-abdominal hemorrhage:** AA Aneurysm, ectopic pregnancy, Splenic rupture
b. **Sepsis:** ischemia, infection, perforation, obstruction, nephrolithiasis
c. **Miscellaneous:** MI, DKA, Addison's disease

8.6. CAUSES OF ABDOMINAL PAIN WITH DISTENTION:

a. **Free air:** Appendicitis, Bowel infarction, Diverticulitis, Gastric perforation
b. **Luminal air:** small and large bowel obstruction
c. **Ascites:** Pancreatitis, spontaneous bacterial peritonitis
d. **Hemorrhage:** AA Aneurysm, ectopic pregnancy, ruptured spleen

8.7. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
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6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

9. ROLEPLAY CASE: DIARRHEA IN A 25-YEAR-OLD WOMAN

9.1. CASE SCENARIO:

[Source: Seth Sweetser. Evaluating the Patient with Diarrhea: A Case -Based Approach. Mayo Clin Proc. 2012 Jun; 87(6): 596–602.]

A 25-year-old Asian woman presents with intermittent diarrhea, abdominal bloating, and excess flatus for the past 5 years. Several times per week she experiences mild cramping abdominal pain that is followed by explosive watery bowel movements with a large amount of flatus. She denies blood in stool, fever, severe abdominal pain, weight loss, anorexia, or fecal incontinence. She has not observed oil droplets in toilet water or difficult to flush stool. She has not traveled internationally or taken any antibiotics. She takes no medications.

QUESTIONS:

a. How will you apply Simplified 5-step Approach to diarrhea (see description below)
b. Explain pathophysiology of the diarrhea if the patient associates her diarrhea to one of the dairy products, the stool PH of 5, and osmotic gap more than 50.

9.2. DEFINITION OF DIARRHEA:

a. Diarrhea is defined as the passage of three or more loose stools in 24 hours, or
b. Defecation more frequent than what is normal for an individual.
c. Passage of loose stools greater than 200 g or 200 ml per 24 hours.
d. Diarrhea is a symptom or sign of multiple diseases.

9.3. CLASSIFICATION OF DIARRHEA BASED ON DURATION OF ILLNESS:

a. Acute — symptoms lasting less than 14 days;
b. Persistent — symptoms lasting more than 14 days; or
c. Chronic — symptoms of more than 4 weeks duration

9.4. CLASSIFICATION OF DIARRHEA BASED ON EPIDEMIOLOGICAL SETTINGS:

a. Community acquired
b. Hospital acquired
c. Travel related

9.5. CLASSIFICATION OF DIARRHEA BASED ON PATHOPHYSIOLOGY:

Diarrhea is a condition of altered intestinal water and electrolyte transport. It has 4 pathophysiologic mechanisms:

a. Osmotic diarrhea (unabsorbed substance)
b. Secretory diarrhea (disordered electrolyte transport)
c. Inflammatory diarrhea (exudative, secretary, or osmotic components)
d. Altered motility of intestine (alter fluid absorption)

Note: usually the pathophysiology of diarrhea is multifactorial.

9.6. SIMPLIFIED 5-STEP APPROACH TO DIARRHEA:

a. Does the patient really have diarrhea? Beware of fecal incontinence and impaction.
b. Rule out medications as a cause of diarrhea (drug-induced diarrhea).
c. Distinguish acute from chronic diarrhea.
d. Categorize the chronic diarrhea as inflammatory, fatty, or watery.
e. Consider factitious diarrhea.

9.7. STOOL EVALUATION IN CHRONIC DIARRHEA

INFLAMMATORY STOOL

Frequent, small-volume, bloody stools
Tenesmus, fever, or severe abdominal pain.

COLON EVALUATION:
Inflammatory bowel disease
Ischemia
Infection – C. difficile, TB, CMV, E. histolytica

FATTY STOOL

(Steatorrhea = 7 g fat/24 h)
Weight loss, greasy or bulky stools that are difficult to flush
NOTE
Floating stool means gas production by bacteria and not steatorrhea

MUCOSAL
MALABSORPTION: Celiac disease

LUMINAL
MALDIGESTION
Chronic pancreatitis
Reduced bile (bacterial overgrowth or cirrhosis)

WATERY STOOL

OSMOTIC DIARRHEA
WITH POORLY ABSORBED IONS & SUGAR

Osmotic gap = 290 – [2(Na^+ + K^+)] = >50 mmol/L
Stool volume decrease with fasting

Poorly absorbed ions (Mg^{2+}, PO_4^{3-}, SO_4^{2-}) in laxative and antacids
Poorly absorbed sugar (lactose intolerance)

SECRETARY DIARRHEA
LOSS OF EPITHELIAL ELECTROLYTES TRANSPORT

Osmotic gap = 290 – [2(Na+ + K+)] = <50 mmol/L
Stool volume NOT decrease with fasting

CAUSES OF SECRETARY DIARRHEA
Infection
Bile acid malabsorption
Non-osmotic laxatives
Inflammatory bowel disease
Disordered regulation
(e.g., post vagotomy, diabetic neuropathy)
Peptide-secreting endocrine t e.g., carcinoid
Neoplasia (colon car, lymphoma, villous ad)
Idiopathic or epidemic secretory diarrhea

9.8. FORMATIVE ASSESSMENT:

Assessment Criteria: 0 Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
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5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

10. ROLEPLAY CASE: HEADACHE IN A 23-YEAR-OLD WOMAN

10.1. CASE SCENARIO:

You were in the duty room studying a case history when you received a call from the ER.
In ER, you found a 20-year-old Nasima with her father. Nasima was crying due to a headache.
You assured the girl that she will be all right in a short while and asked the nurse to give Nasima tw IM injections: Inj. Voren 75 mg IM stat in the buttock for headache and Inj. Gravinate 50 mg IV sta for vomiting.

Nasima's father informed you that she has had a severe headache for one hour which was associated with two episodes of vomiting.
"This is her 5th episode in the last two years she started having headaches. Previous episodes wer similar," he said.
"Her headache intensity usually decreases after vomiting but this time it is the same," he added.

Then, you asked further questions from Nasima. She informed:
"The headache is on the right side. It is like a heartbeat (pulsating). It is so severe that I couldn't g to college. It increases on climbing stairs and I cannot tolerate light. It will end after 16 hours."

Nasima further informed:
"Before headache, usually I have warning symptoms - things become blurred or there is perception of fortification walls. These symptoms last for about 15 minutes then the headache starts."

10.2. QUESTIONS ON THE ABOVE SCENARIO:

a. What are the differential diagnoses based on the symptoms?
b. What is the most likely diagnosis?

10.3. WHAT IS HEADACHE?

Headache is a pain or discomfort in the head or face. It arises from the pain-sensitive structures mainly extra- and intracranial blood vessels, the sensory part of cranial nerves, and the upper three cervical nerves.

10.4. CAUSES OF HEADACHE

PRIMARY HEADACHE

Migraine
Cluster headache
Tension headache

NEURALGIAS

Trigeminal neuralgia
Glossopharyngeal neuralgia
Postherpetic neuralgia

SECONDARY HEADACHE

Local organic diseases of the brain, intracranial vessels, meninges, special sense organs, and skull. These include infection, hydrocephalus, tumors, and vascular disorders.
Toxic states: The exogenous conditions include poisonous gases (CO), drugs (vasodilators, analgesic overdose, opium, lead, etc.), alcohol, tobacco, and lead. The endogenous conditions include septicemia, uremia, constipation, acidosis, and alkalosis.
Other condions: hypertension, noise or gun headache, sunstroke, menstrual headache, and insufficient sleep.

Discussion:

On the basis of clinical presentation, headaches may be classified: as 1) Episodic headaches, 2) Continuous headaches, and 3) The first and worst headache.

Primary headaches are episodic headaches. Secondary headaches especially sinusitis, meningitis, temporal arteritis, and tumors are usually continuous headaches. Subarachnoid hemorrhage usually presents as the first and worst headache in life.

Each headache may have associated features particular to that headache. Migraine may be precipitated by cheese and sunlight. Tension headache is associated with psychosocial stresses and depression. Meningitis is associated with fever, neck stiffness, and vomiting. Tumor headaches may have a worsening course, focal weakness, and vomiting. Temporal arteritis has a specific site and is increased by touching it. Sinusitis may be preceded by rhinitis.

10.5. MIGRAIN DIAGNOSTIC CRITERIA (ICHD-3):

a. At least 5 or more attacks in a lifetime
b. Headache attack lasting 4-72 hrs.
c. At least 2 out of 4 features (unilateral location, pulsating/throbbing quality, moderate - severe intensity, aggravation by/causing avoidance of routine physical activity).
d. At least 1 of the following features (nausea and/or vomiting, photophobia, and phonophobia).

10.6. INSTRUCTIONS FOR ROLEPLAY SIMULATION:

g. Make a subgroup of two students: one as a role-as-doctor and another as a role-as-patient.
h. The role-as-doctor follows the steps of history taking.
i. The role-as-patient follows the case scenario as a patient/attendant of a patient.
j. Time allocated for history taking is 10 minutes.
k. The role-as-patient is to carry out a formative assessment of the role-as-doctor at the end of the session.
l. The time allocated for formative assessment is 5 minutes.

10.7. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	**Introduction with the patient and obtaining consent**		
2	**Personal data of the patient and any chronic illness.**		
3	**Presenting complaints, identifying the chief complaint.**		
4	**History of present illness using mnemonic SOCRATES**		
5	**Past, social, personal, and family history**		
6	**Draw an illness graph showing onset, progression, duration, and severity.**		
7	**Make a differential diagnosis list and the most likely diagnosis**		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient):

11. ROLEPLAY CASE: RIGHT SIDED WEAKNESS IN A 65-YEAR-OLD MAN

11.1. CASE SCENARIO:

[Source: stroke.com]

A 62-year-old woman with a history of hypertension and hyperlipidemia presented to a primary stroke center with sudden onset of weakness of the right side. On examination, she had a global aphasia, left gaze preference, right homonymous hemianopsia (field cut), righ t facial droop, dysarthria, and right hemiplegia (NIH Stroke Scale = 22). Head CT showed only equivocal hypodensity in the left middle cerebral artery territory (Figure 1 on next slide). CT angiography showed a left middle cerebral artery occlusion (Figure 2 on next slide, arrow). She was given Alteplase intravenous tPA at 2 hours from symptom onset and transferred to a comprehensive stroke
center, where digital subtraction angiography confirmed left middle cerebral artery occlusion (Figures
3 and 4 on slide 9, arrows). She underwent mechanical thrombectomy with recanalization of the MCA (Figure 5 on slide 9). The next day, she had only a very mild expressive aphasia and right facial droop (NIHSS = 2). Three months later she had no neurological deficits (NIHSS=0)

11.2. SYMPTOMS OF STROKE (BEFAST)

Balance
Eyesight changes
Facial drooping
Arm weakness, especially one sided
Speech difficulty
Time (acute, tPA)

11.3. TYPES OF STROKES

Ischemic thrombotic
Ischemic embolic
Hemorrhagic
Dissection of vessel
Venous sinus thrombosis

11.4. RISK FACTORS OF STROKE

5 NON-MODIFIABLE RISK FACTORS

Gender: male
Age
Race: African and Asian
History of prior stroke
Heredity

MODIFIABLE RISK FACTORS

HBP
AF
Smoking
IHD
DM
High Cholesterol
Alcohol and Illicit Drugs
Obesity and Lack of Exercise

The single most important way to reduce stroke risk is lowering of BP.

STROKE IN CHILDREN AND TEANS

Congenital causes: congenital heart disease, AVM, aneurysm, Moya-Moya disease

Genetic causes: sickle cell, clotting disorders

Environmental causes: carbon monoxide poisoning, infection, medication, trauma, vasculitis, and dissection

STROKE IN YOUNG (20-40 YEARS)

Most common: HBP, High Cholesterol, DM, Smoking, obesity

Other risk factors: alcohol, OCP, clotting disorders, cocaine, migraine with aura, vasculitis, patent FO, peripartum, sickle cell, sedentary life style, homocystinuria

11.5. FORMATIVE ASSESSMENT:

Assessment Criteria: **0:** Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
3	Presenting complaints, identifying the chief complaint.		
4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient/attendant):

12. ROLEPLAY CASE:
LOWER LIMB WEAKNESS IN A 24-YEAR-OLD MAN

12.1. CASE SCENARIO:

[Adapted from: Paraplegia - clinical case presentation - https://www.youtube.com/watch?v=bDOTVaZkTDs]

A 24-year-old male university student resident of Rawalpindi presented with reduced sensations in the both lower limbs for 3 weeks and inability to walk for 2 weeks.

Patient was alright 4 weeks back when he suddenly developed abnormal bandlike sensation around the trunk at the level of xiphisternum. Then, during the next 3 days, he developed tingling, numbness, and mild burning sensation in the right lower limb followed by the left lower limb.

He also developed weakness of the right lower limb next day of the sensory symptoms. It was followed by the left lower limb weakness. He had difficulty in rising from chair, from squatting position, getting up from lying in bed, or turning in bed. He also felt stiffness of both lower limbs. He also c/o intermittent flexor spasm of the lower limbs. Weakness reached its maximum level on the 3rd day of sensory symptoms.

On enquiring, he had history of fever 1 month back which subsided after taking tablet Panadol within 3 days without hospitalization. The fever was intermittent about 100^{O}F and it was not associated with chills, rigors, or sweating.

There is no electric shock like sensation radiating to legs and no shock like sensation on bending his neck. There is no sharp shooting pain a particular dermatomal pattern which increases on coughing or sneezing. There is no h/o urinary urgency, frequency, or retention.

There is no complaint in the upper limb, neck muscles, of thinning of lower limb, or of respiratory distress.

There is no h/o headache, vomiting, seizure, speech problem (understanding or expression), altered behavior, recurrent hiccups, visual loss, double vision, painful eyes, difficulty in chewing, difficulty in swallowing, deviation of angle of mouth, tinnitus, dizziness, slurred speech or change in voice.

There is no h/o palpitation, postural dizziness, loss of sweating, joint pain, skin rash, hair loss, oral ulcer, dryness of mouth, or dryness of eyes, weight loss, decreased appetite, or swelling of the body.

There is no h/o of contact of TB, trauma on the back, recent vaccination, radiation, bleeding diathesis, or taking medication.

There is no PAST h/o similar illness, medical comorbidity (diabetes, hypertension, ischemic heart disease, chronic lung disease, chronic liver disease), animal bite, recent vaccination, or blood transfusion.

There is no FAMILY h/o of similar illness.

On PERSONAL history he is unmarried and doing master in engineering. His seriocomical status is satisfactory. His appetite, diet, sleep, and bowel & bladder habits are normal. He is neither addicted to smoking/drugs nor engaged in any high-risk behavior. He is not exposed to to xins or allergens.

Summary:

A 24-year-old unmarried male patient without any preexisting comorbidity developed acute onset of bilateral symmetrical spastic paraparesis associated with truncal weakness, pan sensory loss in both lower limbs, trunk, and up to the xiphisternum and a band like sensation in that level. There was h/o fever one month prior to the onset of symptoms. There is no radicular or back pain and no h/o TB or trauma.

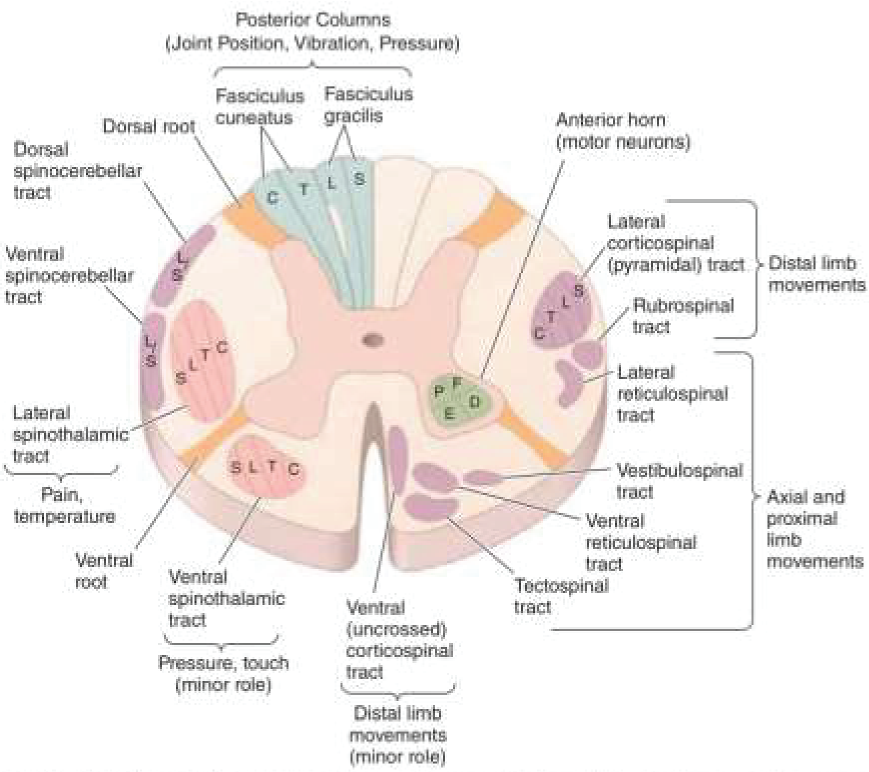

FIGURE 456-1 Transverse section through the spinal cord, composite representation, illustrating the principal ascending (*left*) and descending (*right*) pathways. The lateral and ventral spinothalamic tracts ascend contralateral to the side of the body that is innervated. C, cervical; D, distal; E, extensors; F, flexors; L, lumbar; P, proximal; S, sacral; T, thoracic.

[Source Harrison's Principles of Internal Medicine 19 Ed]

12.2. PATHOPHYSIOLOGY OF BAND -LIKE SENSATION

SPINAL ROOT

It is exactly at the dermatome of the root.

Sudden, sharp, and shock like pain.

It has precipitating factors e.g., weight lifting

If relieving factor -usually non-destructive lesion e.g., disc

If aggravating factor – usually destructive lesion e.g., TB or neoplasm

POSTERIOR COLUMN TRACT

Usually, 2-3 dermatomes involved.

Tingling sensation and pressure. Band-like sensation is like tight towel around the trunk.

No relieving or aggravating factors

Myelinated fibers have demyelination with following symptoms:

1. Band-like sensation
2. Lhermitte's sign – lightening cross body pain
3. Deep boring paresthesia due to spindle afferents
4. Ill-defined gloves and stocking loss of sensation in toes and finger tips. Reflexes will be preserved.
5. Gloves and stocking type of sensory loss with length dependent peripheral neuropathy. Reflexes are absent.

CROSSIING SPINOTHALAMIC TRACT

Usually, 2-3 dermatomes.

Diffuse burning paresthesia Or band-like sensation.

Less myelinated fibers.

Behcet's disease and other vasculitis may cause it.

12.3. SPINAL CORD SYNDROMES BASED ON EXTENT OF LESION

Pan-cord syndrome

e.g.,
Transverse myelitis
Transection of cord

Anterior cord syndrome
Spare posterior column
e.g.,
Anterior spinal artery ischemia

Posterior cord syndrome
Involve posterior column
e.g.,
B12 deficiency
Posterior spinal artery ischemia

Central cord syndrome
Involve spinothalamic and autonomic fibers
e.g.,
Syringomyelia
Tumor

Lateral cord syndrome or Brown Sequard syndrome
Ipsilateral vibration and contralateral pinprick loss
e.g.,
Hemi-section of cord

Tractopathy of cord
Random involvement of tracts
e.g.,
Demyelination

12.4. FORMATIVE ASSESSMENT:

Assessment Criteria: **0:** Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
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4	History of present illness using mnemonic SOCRATES		
5	Past, social, personal, and family history		
6	Draw an illness graph showing onset, progression, duration, and severity.		
7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient/attendant):

13. ROLEPLAY CASE: FREQUENT MICTURITION IN A 28-YEAR-OLD MAN

13.1. CASE SCENARIO:

[Modified from Source: Kutscher E and Greene RE. Ketamine Cystitis: An Underrecognized Cause of Dysuria. J GEN INTERN MED 2022; 37: 1286–9. (2022).]

A 28-year-old man presented to primary care with worsening urinary urgency, frequency, and dysuria for 6 months. The patient's symptoms started insidiously and progressively worsened. Upon presentation, he felt the urge to urinate every 20 to 60 min, urinating small quantities and occasionally having urge incontinence, causing him to wear a diaper whenever leaving the house. The patient also reported significant penile pain, with a constant burning sensation that worsened with urination. His urine was described as clear but with a few episodes of terminal gross hematuria. He denied any penile discharge or lesions, as well as any testicular pain. He reported being sexually active with his wife only. He denied a history of sexually transmitted infections. He reported smoking cigarettes since age 20 with a 2 pack-year history but denies alcohol use. He previously had tried marijuana. The patient also reported consistent use of recreational intranasal ketamine for one year. Though he had initially used ketamine only in the setting of electronic music festivals, his use increased during the lockdown phase of the COVID-19 pandemic. He denied any underlying mood or anxiety symptoms for which he was attempting to self-medicate.

The patient was initially evaluated for his symptoms at an outside clinic, where he was treated empirically for gonorrhea. He then presented to a urology clinic. Here, he had digital-rectal, urethral, and testicular examination. Investigations included urine-RE, urine culture, creatinine, ultrasound KUB, and cystoscopy. Except for RBCs on urinalysis, tests were normal. And, a diagnosis of ketamine-induced cystitis was made.

The patient was counseled on abstinence from ketamine and was referred to a cognitive behavioral therapist. He started abstaining from ketamine with mild improvement of symptoms in 2 weeks. At week 4, the patient noticed significant improvement in his urinary symptoms with decreased urinary frequency (urinating every 3–4 h) and resolved hematuria, but persistent dysuria. A month later, dysuria also disappeared.

13.2. WHAT IS NORMAL FREQUENCY OF URINE?

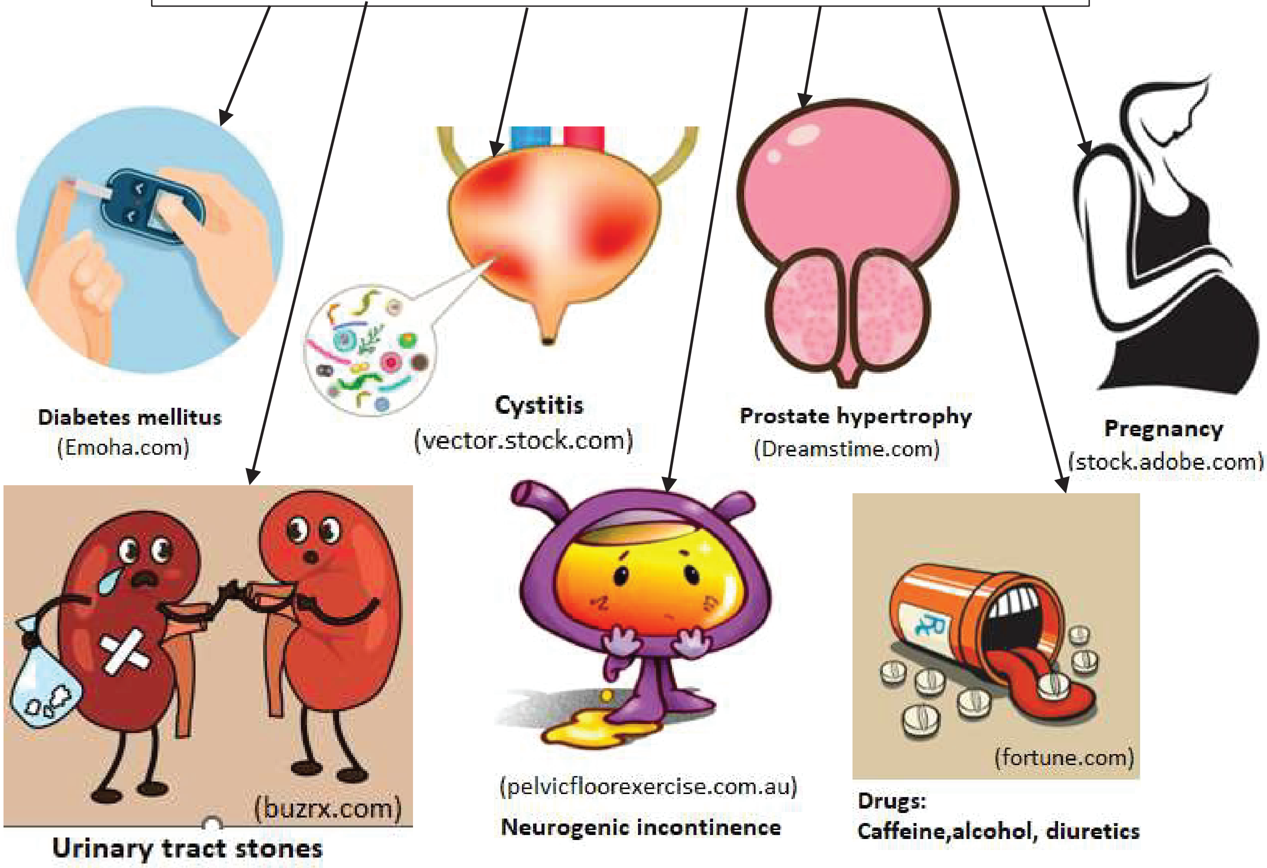
Most people pee about 7 to 8 times per day, on average. If you feel the need to pee much more than that, or if you're getting up every hour or 30 minutes to go, you might be frequently urinating.

13.3. INTERPRETATION OF FINDINGS

1. Dysuria suggests frequency is due to urinary tract infection (UTI) or calculi.
2. Prior pelvic surgery suggests incontinence.
3. Weak urine stream, nocturia, or both suggests benign prostatic hyperplasia (BPH).

4. Urinary frequency in an otherwise healthy young patient due to alcohol or caffeinated beverages.
5. Gross hematuria suggests UTI and calculi in younger patients and genitourinary cancer in older patients.

13.4. COMMON CAUSES OF FREQUENT MICTURITION



13.5. RED FLAGS

1. Lower-extremity weakness or signs of spinal cord damage
(e.g., loss of sensation at a segmental level, loss of anal sphincter tone and anal wink reflex)
2. Fever and back pain

13.6. KEY POINTS

1. UTI is the most common cause in children and women.
2. prostate disease is a common cause in men aged > 50 years.
3. Excessive intake of caffeine can cause urinary frequency in healthy people.

13.7. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
2	Personal data of the patient and any chronic illness.		
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7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient/attendant):

14. ROLEPLAY CASE:
JOINT PAIN IN A 48-YEAR-OLD WOMAN

14.1. CASE SCENARIO:

[Source: https://www.rheumatology.org/Portals/0/Files/Rheumatoid -Arthritis-Case-Study.pdf]

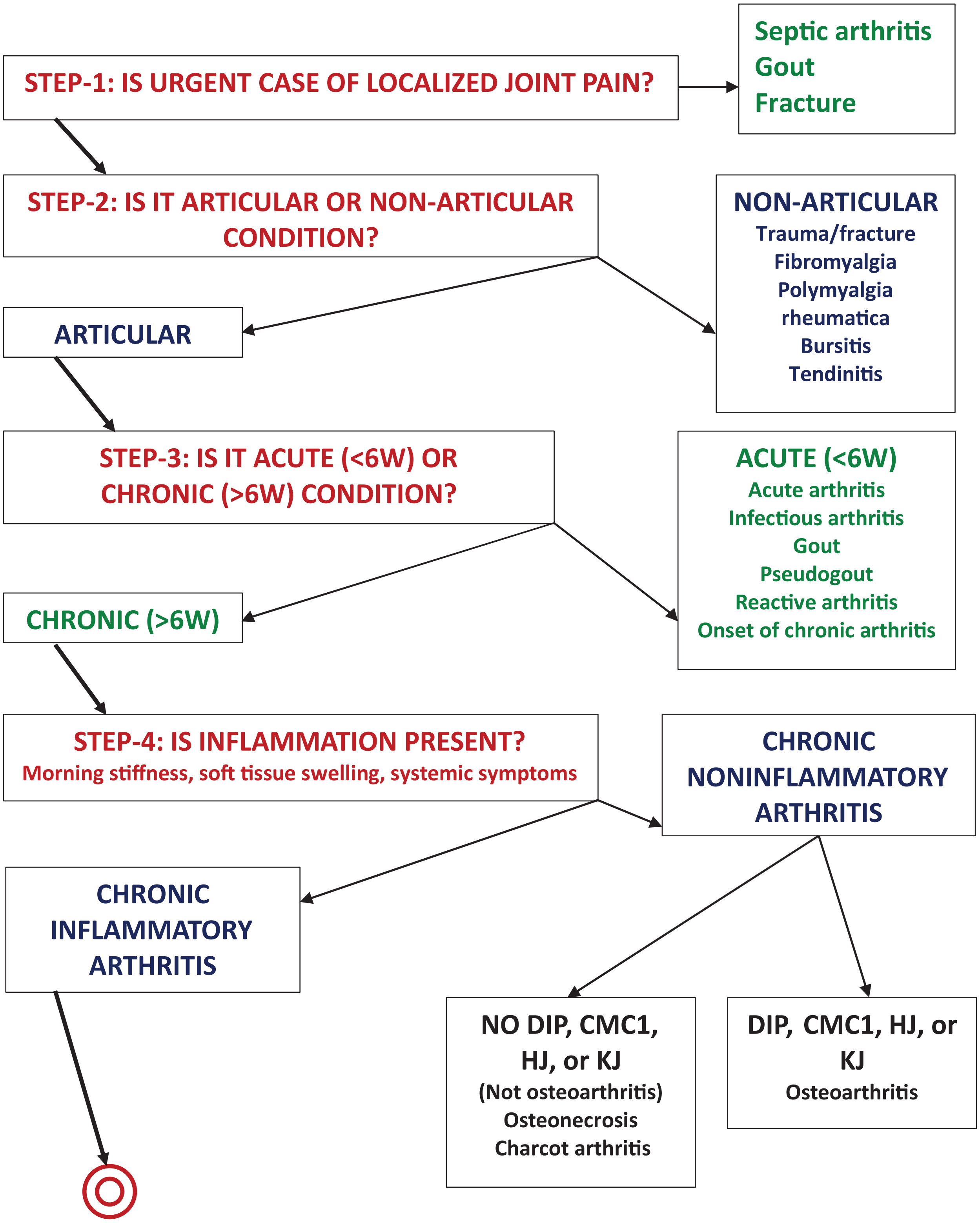
Mrs. G is a 48-year-old married mother of 3 active boys, ages 12, 15, and 18. She enjoys attending her sons' sporting events and providing "Mom-Taxi" services for her sons and their friends. She fondly takes care of her handicapped husband. She also loves her part-time job as a hairdresser at a popular salon.

Five months ago, Mrs. G began noticing stiffness in both hands in the morning that lasted longer and longer. Stiffness now lasted more than 1 hour every morning and included hands, wrists and ankles. She also had increasing difficulty standing for long periods at work or at home due to pain in the balls of the foot and ankle. She began taking ibuprofen 800 mg 3 times daily and found it helped her get through her day with less pain and stiffness. Three months ago, she noticed pain in her right and left shoulders when she would cut or blow dry her client's hair. She also began feeling extremely tired and short tempered. She had no energy to do her usual activities. Ibuprofen was no longer very effective for her pain or stiffness.

For one week Mrs. G noticed swelling of the fingers and one morning, she could not lift her arms at all without extreme shoulder pain. She knew it was time to get help. She had been speaking with her friends and they encouraged her to see a doctor.

She saw her Primary Care Physician (PCP), who examined her, ran a few preliminary blood tests, and then referred her to a Rheumatologist for expert advice. The Rheumatologist diagnosed and successfully treated her as a case of Rheumatoid arthritis.

14.2. ALGORITHM FOR JOINT OR PARAJOINT PAIN



STEP-5: HOW MANY JOINTS ARE INVOLVED: 1, 2-3, >3?

CHRONIC INFLAMMATORY POLYARTHRITIS (>3 JOINTS)

CHRONIC INFLAMMATORY MONOARTHRITIS (1 JOINT) OR OLIGOARTHRITIS (2-3 JOINTS)

Indolent infection
Psoriatic arthritis
Reactive arthritis
Pauciarticular JIA

STEP6: IS SYMMETRIC OR ASYMMETRIC ARTHRITIS?

SYMMETRIC ARTHRITIS WITH PIP, MCP, MTP JOINTS
Rheumatoid arthritis

SYMMETRIC ARTHRITIS WITHOUT PIP, MCP, MTP JOINTS
SLE, scleroderma, polymyositis

ASYMMETRIC ARTHRITIS
Psoriatic arthritis
Reactive arthritis

W: Week, DIP: Distal interphalangeal, **CMC1:** Carpometacarpal joint of the thumb, **HJ:** Hip joint, **KJ:** Knee joint, **JIA:** Juvenile idiopathic arthritis, **PIP:** Proximal interphalangeal, **MCP:** Metacarpophalangeal, **MTP:** Metatarsophalangeal, **SLE:** Systemic lupus erythematosus

14.3. FORMATIVE ASSESSMENT:

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	Assessment	Comments by Role Play Student-peer
1	Introduction with the patient and obtaining consent		
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7	Make a differential diagnosis list and the most likely diagnosis		

Time spent:

Date: **Name & Signature of the student (role-as-doctor):**

Name & Signature of the assessor (role-as-patient/attendant):

SUMMATIVE ASSESSMENT WITH OSCE

Assessment Criteria: 0: Below Expectation **1:** Meets Expectation **2:** Exceeds Expectation

S#	Activity	OSCE-1	OSCE-2	OSCE-3	OSCE-4	OSCE-5
1	Introduction with the patient and obtaining consent					
2	Personal data of the patient and any chronic illness.					
3	Presenting complaints, identifying the chief complaint.					
4	History of present illness using mnemonic SOCRATES					
5	Past, social, personal, and family history					
6	Draw an illness graph showing onset, progression, duration, and severity.					
7	Make a differential diagnosis list and the most likely diagnosis					

Date:

Name & Signature of the Assessor-1:

Name & Signature of the Assessor-2:

Name & Signature of the Assessor-3:

Name & Signature of the Assessor-4:

Name & Signature of the Assessor-5:

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