Master medicine 2

Tips from AMC examiner

AMC Clinical Exam: Official Advice & Its Implications (Tutor's Review)

I. Overarching Message from AMC (and Tutor's Endorsement):

- **Systematic Approach is Paramount:** AMC explicitly values a logical, systematic, and relevant approach to tasks.
- **Recall Memorization is Detrimental:**
  - AMC observation: Some candidates seem "convinced they know the answer already" (from recalls) and "do not proceed to address the task adequately and systematically."
  - Tutor's long-standing advice: Recalls are for familiarity with topics, not for memorizing answers. A structured approach is key to passing.
- **Avoid "Scattergun" or Random Questioning:**
  - AMC dislikes random, head-to-toe lists of associated symptoms without a clear rationale.
  - Tutor's alignment: Emphasizes a structured approach based on ruling out differentials, not just asking a long list of irrelevant questions.
- **Avoid Premature Closure:**
  - AMC warns against "knowing the answer without obtaining sufficient and detailed information." This is a direct hit at candidates relying on recalls without proper history taking to confirm the diagnosis.
  - Tutor's alignment: Always explore the complaint fully and screen differentials before "closing" on a diagnosis.
- **Tutor's Goal:** This official advice reinforces the tutor's teaching philosophy – to create better doctors with good knowledge and structured approaches, not just exam-passers via recall memorization.

II. Specific AMC Advice on Different Task Components & Tutor's Reflections:

- **A. General Task Performance:**
  - **AMC:** "No marks are given for doing a task that is not requested."
  - **Tutor:** This relates to the "psychological escape" where candidates, unsure about a task (e.g., differentials), might start talking about management instead. Stick to the assigned task.
  - **AMC:** Highlights the importance of the "predominant assessment area" in each case (e.g., History in a 6-min history task, Management in a counseling case). Failing this area means failing the case.
  - **Tutor:** Recalls alone won't help you pass these predominant assessment areas if you lack the underlying skill (e.g., structured history taking).
- **B. History Taking (Predominant Assessment Area):**
  - **AMC Advises TO DO:**
    - "Obtain a relevant, systematic, and thorough history."
      - **Tutor:** This is the structured, differential-based approach. Questions must be relevant to the potential diagnoses.
    - "Use all allocated time (e.g., 5 minutes) to gather information."
      - **Tutor:** Don't finish early. If you have extra time, review or probe further.
    - "Probe for more details as appropriate."
      - **Tutor:** If a patient gives a positive finding, explore it further.
    - "Follow a relevant, organized approach." (Repeated emphasis).
  - **AMC Advises TO AVOID:**
    - "Not listening or responding specifically to the initial statement or concern."
      - **Tutor:** Empathy (addressing concern) is important at the start. Don't just bulldoze through with questions.
    - "Taking a cursory history and jumping to a conclusion about the diagnosis (tunnel vision)."
      - **Tutor:** This is recall-driven behavior. Don't assume the diagnosis; explore thoroughly.
    - "Overuse of close-ended questions" (implies underuse of open-ended questions).
      - **Tutor:** Start with a good open-ended question to get the patient's opening statement.
    - **"Double and triple-barrelled questions"** (e.g., "Do you have any loss of weight, loss of appetite, or night sweats?").

        - **Tutor:** AMC states this "risks gathering inaccurate information" as the role-player might only answer one part or give a blanket "no." Ask questions one by one patiently.
    - **"Scattergun or random approach in your line of questioning"** (e.g., head-to-toe associated symptoms).
        - **Tutor:** This is a direct critique of unstructured symptom-listing. A differential-based approach is logical and systematic.
- **C. Diagnostic Formulation (Predominant Assessment Area):**
    - (Applies when history and/or physical exam/investigations are given to formulate a diagnosis).
    - **AMC Advises TO DO:**
        - "Give a **prioritized selection** of differential diagnoses."
            - **Tutor:** Your list should be long and specific, but important/likely differentials should be considered or mentioned first.
        - "Seek history, physical examination, or mental state examination findings, and investigations which are **prioritized according to their relevance**. Avoid wasting time on searches of low relevance."
            - **Tutor:** Focus your questioning and examination on findings that help confirm or refute your high-priority differentials.
        - "Clearly explain your **diagnostic formulation**" and "give **reasons** for a prioritized list of differential diagnoses."
            - **Tutor:** Crucial! State your diagnosis, give a brief/simple explanation for the patient, but MOST IMPORTANTLY, provide clear *reasons* (key positive/negative findings from history/exam/investigations) that support your diagnosis and differentiate it from others. Reason out why your top 1-3 differentials are considered.
    - **AMC Advises TO AVOID:**
        - "Premature closing" (diagnosing without sufficient data – recall-driven).
        - "Selecting diagnoses that are mutually exclusive without clarification" (e.g., saying "upper or lower airway signs" instead of "tonsillitis vs. pneumonia"). Be specific.
        - "Diagnosis is not specific" (e.g., "psychosis" instead of "schizophrenia," or "fluid overload" instead of "decompensated heart failure causing pulmonary oedema").
        - **"Using 'nasty growth' for cancer."**
            - **Tutor:** A long-standing piece of bad advice. Use the word "cancer" or "malignancy" professionally.
        - **"Not providing justification or reasoning for the diagnosis."** (AMC is "screaming out, please reason!").

III. Tutor's Concluding Remarks:

- The AMC document is exciting because it validates a structured, knowledge-based approach over recall memorization.
- The tutor has long advocated for these principles.
- The goal of this approach is not just to pass the exam but to become a better, more organized doctor in Australian practice.
- IMGs can perform as well as local graduates if they adopt these effective, systematic methods.
- The tutor encourages students to trust in building a strong approach and knowledge base rather than chasing and memorizing recalls.

Approach to tiredness-history taking

AMC Approach: Tiredness/Fatigue Cluster - Structure & Differentials

I. Introduction & Importance of the Tiredness Cluster:

- Tiredness/fatigue is a common presentation.
- Cases in this cluster often have **history taking as the predominant assessment area** (6-7 minute history tasks), meaning a thorough and structured history is crucial for passing.
- Diagnostic formulation (history + physical exam/investigations) is also common.
- **Key Principle:** A logical, structured approach is superior to memorizing recalls, especially as AMC varies findings.

II. The Foundation: Building a Comprehensive Differential Diagnosis List for Tiredness/Fatigue:

- (Scenario: 50 y.o. woman, complaining of fatigue and tiredness).
- **Murtagh's Model (Probable, Serious, Pitfalls):**
    - **Probable:**
        - Psychosocial stress, Anxiety, Depression.
        - Lifestyle factors.
        - Viral / Post-viral infections (e.g., EBV, Long COVID).
        - Sleep disorders (e.g., Obstructive Sleep Apnea - OSA).
    - **Serious (Don't Miss):**
        - Cardiovascular: **Heart Failure**, Cardiomyopathies, Arrhythmias.
        - Infections: HIV, Hepatitis, TB, travel-related (Dengue, Malaria).
        - **Cancers (Malignancies - Top Red Flag).**
        - Hematological: **Anemia**, Hemochromatosis.
    - **Pitfalls (Often Missed):**
        - **Celiac Disease.**
        - Fibromyalgia (covered in MSK).
        - **Pregnancy** (in appropriate demographic).
        - **Menopause** (in appropriate demographic).
        - Metabolic disorders, Narcolepsy, Multiple Sclerosis.
- **Expanding with Other Systems (UpToDate & other references):**
    - **Endocrine: Thyroid disorders (hypo/hyper)**, **Diabetes Mellitus**, Adrenal insufficiency.
    - **Liver Disorders:** Cirrhosis (Hepatitis already mentioned).
    - **Respiratory:** COPD.
    - **Drugs & Medications:** Many common drugs can cause tiredness (antihistamines, antidepressants, antihypertensives, corticosteroids, OCPs, NSAIDs).
- **Tutor's New Mnemonic for Tiredness Differentials: "HEMI AD COP x2"**
    - (This replaces the older "HEMIFATO ICP" to be more comprehensive).
    - The "x2" implies asking about two key conditions or groups of questions within each category.
    - **H - Hepatic/Hematological:**
        1. **H**emochromatosis.
        2. **H**epatitis (and other liver disorders like cirrhosis).
    - **E - Endocrine:**
        1. **T**hyroid disorders (hypo- and hyper-).
        2. **D**iabetes Mellitus.
    - **M - Malignancies:**
        1. General cancer screening questions.
        2. Specific system cancers if indicated by other symptoms.
    - **I - Infections (x3 groups of questions):**
        1. Viral prodromes/Post-viral: (EBV, COVID, flu-like symptoms).
        2. Sexually Transmitted Infections (STIs): (HIV, Syphilis, Hepatitis B/C).
        3. Travel-related infections.
    - **A - Anemia & Autoimmune:**
        1. **A**nemia.
        2. **A**utoimmune conditions (e.g., Polymyalgia Rheumatica/Temporal Arteritis, SLE, Rheumatoid Arthritis).
            - (MS can be a third if pushing).
    - **D - Drugs & Depression:**
        1. **D**rugs (illicit) & Medications (prescribed/OTC).
        2. **D**epression (representing psychological causes).
    - **C - Celiac & Cardiac/Pulmonary:**
        1. **C**eliac Disease (representing GI malabsorption/bowel problems).
        2. **C**ardiac (Heart Failure) & **P**ulmonary (COPD).
    - **O - OSA & Occupation:**
        1. **O**bstructive Sleep Apnea (OSA - representing sleep disorders).
        2. **O**ccupation (e.g., night shift work).
    - **P - Pregnancy & Peri/Post-Menopause:**
        1. **P**regnancy.
        2. **M**enopause.

- **Tutor's Rationale for New Mnemonic:** To ensure a more complete list of differentials is covered systematically, as previous structures sometimes missed emerging or less common recall variations.

III. Structured History Taking for Tiredness/Fatigue (4 Big Steps):

- **Big Step 1: Introduction**
    1. **No Haemodynamic Stability Check needed** for a primary complaint of chronic tiredness in a clinic setting (unless acute severe symptoms arise).
    2. **Good Open-Ended Question:**
        - *"How can I help you today?"* or
        - *"From the notes, I can see you are feeling tired. Tell me more about it."*
    3. **Address Concern / Empathy Statement:**
        - Patient will express worry/frustration about tiredness.
        - Respond with a rehearsed, reassuring statement: *"I understand your concern, James/Jane. I appreciate you coming in to discuss this. I'll ask you a few questions, and if needed, examine you. I will find the cause and make the best management plan for you."*
- **Big Step 2: Explore the Complaint (Tiredness/Fatigue - 4 Boxes)**
    1. **Describe/Define Tiredness (CRUCIAL for vague complaints):**
        - *"Can you tell me what you mean by tiredness? For example, are you feeling sleepy all the time? Or do you feel low in energy/lack energy to do things? Or perhaps you're feeling feverish and tired?"* (Differentiates somnolence/sleep disorders from true fatigue/systemic illness).
    2. **Timing/Course:**
        - *"Since when have you been feeling tired?"* / *"How long have you had this tiredness for?"*
        - *"Is the tiredness on and off, or constantly there throughout the day/week?"*
        - *"Is it getting worse?"*
    3. **Alleviating & Aggravating Factors:**
        - *"Is there anything that makes your tiredness better or worse?"* (General question).
    4. **Effect on Life/Impact on Function:**
        - *"How is this tiredness affecting your life?"* (e.g., work, daily activities, concentration).
- **Big Step 3: Rule Out Differentials (Using "HEMI AD COP x2" and Associated Symptoms)**
    - **Tutor's Method: Screening Questions vs. Probing Questions.**
        - **Screening:** Ask 1-2 high-yield questions for each differential category. If negative, move on.
        - **Probing:** If a screening question is positive, or if the case strongly suggests a particular differential, then ask more detailed "key point" questions for that condition.
    - **Applying HEMI AD COP x2 (Screening Questions):**
        - **H - Hepatic/Hematological:**
            - Hemochromatosis: *"Have you noticed any tanning of your skin?"*
            - Hepatitis/Liver: *"Any yellowish discoloration of your skin or eyes? Dark urine or pale stools? Itchiness of your skin?"*
        - **E - Endocrine:**
            - Thyroid: *"Do you have any weather preference? (e.g., intolerant to cold or hot environments?)"*
            - Diabetes: *"Are you passing more urine lately? Have you noticed an increase in your thirst or been drinking more water?"*
        - **M - Malignancies (Red Flags):**
            - General: *"Any unexplained loss of weight? Loss of appetite? Noticed any lumps or bumps in your body? Any night sweats?"*
            - History: *"Any past history or family history of cancers?"*
        - **I - Infections (x3 groups):**
            - Viral/Post-Viral: *"Any flu-like symptoms or sore throat recently?"*
            - STIs: *"Have you ever been sexually active? (If yes) Do you practice safe sex and use condoms?"*
            - Travel: *"Have you had any travel lately?"*
            - (Fever/Chills - General infection Q).
        - **A - Anemia & Autoimmune:**
            - Anemia: *"Any racing of your heart or shortness of breath, especially on exercise? Any recent blood loss (surgeries, deliveries)?"*

        - Autoimmune (PMR/TA & SLE/RA type Qs):
            - *"Any shoulder or hip stiffness, especially in the morning? Any headaches (temporal)?"*
            - *"Any joint pain? Any rashes?"*
            - (MS Q - if pushing: *"Any numbness or weakness in your body?"*)
    - **D - Drugs & Depression:**
        - Drugs/Meds: *"Do you use any recreational drugs? Are you taking any regular medications?"*
        - Depression (Screening):
            - Mood: *"How has your mood been lately?"*
            - Anhedonia: *"Are you still enjoying the activities you used to enjoy before?"*
            - Stressors: *"Any stress at home or at work?"*
    - **C - Celiac & Cardiac/Pulmonary:**
        - Celiac/Bowel: *"Any history of greasy stools? Any bloody diarrhoea?"*
        - Cardiac (Heart Failure): *"Any chest pain? Any swelling in your legs?"* (Pillows/orthopnoea are more for SOB).
        - Pulmonary (COPD/Lung Issues): *"Any cough? Ever coughed up blood? Do you smoke?"*
    - **O - OSA & Occupation:**
        - OSA: *"Has anyone told you that you snore loudly or gasp during sleep?"*
        - Occupation: *"What is your occupation?"* (Specifically looking for night shift work).
    - **P - Pregnancy & Peri/Post-Menopause:**
        - (For female patient of appropriate age).
        - Pregnancy: *"When was your last menstrual period (LMP)?"*
        - Menopause: (If LMP suggests peri/post-menopause) *"Are your periods regular or irregular? Any hot flushes?"*
  - **Tutor's Warning on Screening:** Don't push too hard with >2 screening questions for each differential if negative, or you'll run out of time. Move on if screens are negative. If positive, then probe.
- **Big Step 4: Good Closure (SADMA - what's left after differential screening)**
  - Most key elements (smoking, alcohol, specific meds, key PMHx/FMHx) should have been covered during differential screening.
  - If time, can ask generally: *"Any other medications I should know about? Any allergies? Anything else in your past medical or family history?"*
  - (Tutor: Not as critical as the differential screening if time is tight, as many components are already integrated).

IV. General Approach & Mindset:

- The goal in a tiredness case is to rule out a broad range of differentials systematically.
- You may not always reach a single definitive diagnosis from history alone, but demonstrating a thorough, logical approach is key.
- AMC knows tiredness is vague; they are assessing your process of elimination and consideration of serious causes.
- Practice the "HEMI AD COP x2" mnemonic with screening questions until it becomes fluid.

Approach to tireness-PEFE

AMC Approach: Physical Examination from Examiner (PEFE) for Tiredness/Fatigue Cases

I. Context & Challenges of PEFE in Tiredness Cases:

- **Predominant Assessment Area:** History taking and diagnostic formulation are often the main focus in tiredness cases. PEFE might be a shorter component.
- **Time Constraints:** If history is, for example, 4 minutes, PEFE might be allocated only ~2 minutes. Efficiency is key.
- **Vague Presentation:** Tiredness has a broad list of differentials, making a "focused" exam difficult initially. Therefore, a structured screening approach is better than trying to guess the recall and focusing too narrowly.
- **Examiner Interaction:** Findings are only provided if specifically requested. Vague requests ("I want to examine the respiratory system") will be met with "What are you looking for?" leading to wasted time.

II. Tutor's Recommended Basic PEFE Structure for Tiredness (Time-Efficient Screening):

- **Goal:** To quickly screen multiple systems for relevant clues related to common and serious causes of tiredness, while being specific enough to get answers from the examiner.
- **Transition to Examiner:** *"James/Jane, just give me a moment, I'll talk to my examiner. I'll be back to you."* (Turn to examiner).
- **Sequence of Examination Requests:**
    1. **General Appearance (Specific Probes):**
        - *"Examiner, on general appearance, I'm looking for:"*
        - *"Any **rashes**?"* (Autoimmune, infections, drug reactions).
        - *"Any **pallor or jaundice**?"* (Anemia, liver disease, hemolysis, malignancy).
        - *(Optional, if malignancy high on list and time allows: "Any **cachexia**?")*
    2. **Vital Signs (Quick Confirmation or Key Focus):**
        - (If vitals were given in the stem or asked for pre-history in a face-to-face, you might skip or just confirm specific abnormalities).
        - *"Examiner, what is the **temperature**?"* (Key for infection).
        - *(If other vitals are crucial based on evolving suspicion, ask: "What is the blood pressure? Pulse rate?")*
    3. **Neck Examination (Key Area for Tiredness Differentials):**
        - **Thyroid Examination:** *"Examiner, I want to do a thyroid examination. Is the thyroid normal?"* (Or, "Any goitre, nodules, tenderness?").
        - **Full Lymph Node Examination:** *"I'd like to do a full lymph node examination (cervical, axillary, inguinal, etc.). Do I find any lymphadenopathy?"* (Infection, malignancy, autoimmune).
    4. **Cardiovascular System (Screening):**
        - *"Examiner, on cardiovascular examination, are S1 and S2 normal? And do I have any murmurs or added sounds?"* (Heart failure, valvular disease, endocarditis).
    5. **Respiratory System (Screening):**
        - *"Examiner, on respiratory examination, is air entry equal? And are there any added sounds?"* (COPD, ILD, infection, HF).
    6. **Abdominal Examination (Focused Screening):**
        - *"Examiner, on abdominal examination, is there any **hepatosplenomegaly**?"* (Liver disease, hematological malignancy, infections like EBV).
    7. **Office Tests (Bedside Tests - Highly Relevant):**
        - **Urine Dipstick:** *"Examiner, what are the findings on a urine dipstick?"* (Diabetes, UTI, kidney disease).
        - **Blood Sugar Level (BSL/BGL):** *"What is the random blood sugar level?"* (Diabetes, hypoglycemia).
- **Timing:** This basic screen should be achievable within ~1.5 to 2 minutes if questions are specific and transitions are smooth.

III. Adding Key Points / Specific Findings (Based on Evolving Provisional Diagnosis):

- The above is a **basic screening structure.**
- If, during history taking, your suspicion for a specific condition becomes high, you would add more focused examination requests relevant to that condition *after* completing your basic screen (or integrate them if very confident).
- **Examples of Adding Specifics:**
    - **If Suspecting Hypothyroidism:** After the basic thyroid exam, you might add: *"Examiner, any periorbital puffiness? Any loss of outer third of eyebrows? Are the reflexes delayed?"*
    - **If Suspecting Obstructive Sleep Apnea (OSA):** (Less about PEFE from examiner, more about specific history/observations you'd make if examining yourself). *"I would also assess for features of OSA like neck circumference, BMI, and Mallampati score, though these might be observations from history rather than direct examiner findings."*
    - **If Suspecting Neurological Cause (e.g., MS):** After basic screen, request a focused neurological exam for specific deficits.
- **Tutor's Rationale:** The basic structure ensures you cover broad categories. Then, you tailor with specific "key point" questions for your leading differentials.

IV. Important Considerations for PEFE:

- **Specificity is Key:** Ask for specific findings (e.g., "any hepatosplenomegaly?" NOT "examine the abdomen").
- **Time Efficiency:** Practice the flow to be quick. Don't get bogged down. If an examiner asks "what are you looking for?" too many times, you're being too vague.
- **Don't Argue or Get Flustered:** If the examiner says "normal" or "no abnormal findings," accept it and move on to the next part of your structure.
- **Purpose:** The PEFE in tiredness cases is often to find clues supporting one of the broad differentials, or to rule out obvious red flags. It's rare that PEFE alone will give a definitive diagnosis without the history.

V. Example of Tutor Running Through the Basic PEFE Structure:

"Examiner, on general appearance, do I have any rashes? (No). Do I have any pallor or jaundice? (No). Do I have cachexia? (No). Tell me the vital signs: what is the temperature? (36.7). What is the blood pressure? (110/70). What is the pulse rate? (88). Good. I want to do a thyroid examination. Is the thyroid normal today? (Yes). I'd like to do a full lymph node examination, looking for lymphadenopathy. (No lymphadenopathy). On cardiovascular examination, is S1 S2 normal? (Yes). Do I have any murmurs or added sounds? (No). On respiratory examination, is air entry equal? (Yes). Do I have any added sounds? (No). Let's get to the abdomen. On abdomen, do I have hepatosplenomegaly? (No). I want to do office tests. What do you like to do? Tell me the blood sugar level. (It's 6.5). Tell me the urine dipstick. (It's normal)."

This demonstrates the rapid, specific questioning style needed to complete the basic screen efficiently.

Approach to tiredness-diagnosis and DDX

AMC Approach: Explaining Diagnosis & Differentials (Tiredness/Fatigue Focus)

I. The Challenge of the Diagnosis & Differentials Task:

- **High Failure Rate Component:** According to the tutor, this is where many candidates fail, for two main reasons:
    1. **Inadequate Preparation for Differentials:** Not having a broad, specific, and well-organized list of differentials.
    2. **Time Constraints:** This is the very last task in the station, and candidates often have less than a minute left after history and/or physical exam/investigation interpretation.
- **AMC Expectation:** Not just 3-4 differentials, but a **long, specific, and good (prioritized) list.**
- **AMC's Official Advice Reinforces This:**
    - "Demonstrate your ability to make a **reasoned diagnostic conclusion**."
    - "Clearly explain your **reasoning** for your diagnosis."
    - "Give reasons for a **prioritized list of differential diagnoses**."
    - Avoid selecting diagnoses that are "mutually exclusive" (e.g., "infections" - too broad) or "not specific" (e.g., "psychosis" instead of schizophrenia). Be precise.

II. Structured Approach to Explaining Diagnosis:

1. **State the Most Likely Diagnosis Quickly & Clearly:**
    - *"Most likely, you have a condition called [Specific Diagnosis, e.g., Diabetic Ketoacidosis]."*
2. **Provide a VERY Brief, Simple Explanation (Layman's Terms):**
    - **AMC does NOT want lengthy pathophysiology.** Focus on what the patient needs to understand simply.
    - Example (DKA): *"This means your sugar is high, and it creates some chemicals in your blood called ketones, which are making you unwell."*
    - Patient doesn't need more detail at this stage.
3. **Emphasize the REASONS for Your Diagnosis (CRITICAL):**
    - This is where you score heavily by demonstrating clinical reasoning.
    - Link back to key positive findings from the history, examination, or investigations.
    - Example (DKA): *"I am thinking about diabetic ketoacidosis because: number one, you've been passing more urine (polyuria); number two, you've been feeling more thirsty (polydipsia); and number three, on your urine test and blood sugar test, I found a high sugar level and also ketones in your urine. These are my reasons."*

III. Structured Approach to Explaining Differentials (Under Extreme Time Pressure):

- **The Goal:** Deliver a long, specific, and good (prioritized) list of differentials quickly.
- **Time Allocation:** Realistically, you might only have 30-60 seconds for *all* differentials. This means about 5-6 seconds per differential if you aim for many.
- **The "Safe & Practical" Structure:**
    1. **State and Briefly Reason Out the Top 2-3 Differentials:**
        - Choose important differentials that were high on your list but are less likely than your primary diagnosis.
        - Provide *one key negative finding* or reason why it's less likely.
        - Example:
            - *"I was also thinking about **heart failure**. It's not so likely in your condition because you don't have [e.g., significant leg swelling or shortness of breath when lying flat]."*
            - *"I was also thinking about **sexually transmitted infections (like HIV)**. This is not so likely because you mentioned you practice safe sex."*
            - *"I was also thinking about **obstructive sleep apnea**. This is not so likely because you're not snoring and no one has noticed you stop breathing at night."*
    2. **Rapidly List Remaining Differentials (No further reasoning or explanation):**
        - Once the top 2-3 are briefly reasoned, switch to just listing.
        - *"And then, for the rest of my differentials, I was thinking about [Hemochromatosis, Hepatitis, Thyroid problems, Diabetes (if not primary), other Infections like EBV or travel-related ones, Anemia, Autoimmune conditions like Polymyalgia or SLE, side effects of Drugs/Medications, Depression, Celiac disease, Cardiac problems (if not yet covered), Pulmonary conditions like COPD, Occupational factors like night shift work, and Pregnancy or Menopause if applicable]..."*
        - **Continue listing until the bell rings or you exhaust your relevant, memorized list.**
- **Source of Differentials:** Your pre-prepared, structured list (like the "HEMI AD COP x2" mnemonic for tiredness).
- **Prioritization (as per AMC advice):** Your list should implicitly reflect priority by covering serious and common causes first, then less common or less acute ones. The systematic approach using a mnemonic helps achieve this.

IV. What to AVOID in the Diagnosis & Differentials Task:

- **"Psychological Escape":** Do NOT start talking about investigations or management if the task is only diagnosis and differentials. Stick to the task.
- **Wasting Time Checking Patient Understanding Excessively:** A brief "does that make sense?" is fine, but don't get drawn into a long conversation if the clock is ticking on delivering differentials.
- **Over-reliance on Generic Empathy Statements at this Stage:** While important initially, generic statements like "don't worry, you're in good hands" will not score points here if they replace actual diagnostic reasoning or listing of differentials.
- **Giving only 3-4 differentials:** This is insufficient. Aim for a much longer list.

V. Tutor's Final Emphasis:

- **Structure and Key Points > Empathy (at this late stage):** While empathy is important for rapport, clinical reasoning and demonstrating knowledge of differentials are what pass this specific task.
- **Practice is Key:** Practice delivering your diagnosis and a long list of differentials concisely and quickly. Time yourself.
- **The Goal of Tiredness Cases (and many vague presentations):** It's often less about pinpointing one rare diagnosis and more about demonstrating a safe, thorough process of considering and ruling out a broad range of common and serious conditions.

This structured approach to the diagnosis and differentials task, especially for broad presentations like tiredness, is designed to maximize scoring under severe time pressure by focusing on reasoning for the primary diagnosis and breadth for the differentials.

Tiredness -hypothyroidsim

AMC Approach: Tiredness/Fatigue - Hypothyroidism Case & PEFE

I. Recap: Diagnosis & Differentials Task (General Principles for Tiredness Cases):

- **Most Critical Task / Highest Failure Rate:** Explaining diagnosis and differentials, often due to time constraints and inadequate preparation of a broad differential list.
- **AMC Expectations (from "Tips from Examiner" document):**
    - Demonstrate **reasoned diagnostic conclusion.**
    - Clearly explain **reasoning for the primary diagnosis.**
    - Provide reasons for a **prioritized list of differentials.**
    - Avoid "mutually exclusive" (too broad, e.g., "infections") or "not specific" (e.g., "psychosis") diagnoses/differentials.
- **Structured Approach to Explaining Diagnosis:**
    1. **State Most Likely Diagnosis:** Quickly and clearly.
    2. **Brief, Simple Explanation:** For the patient, not a pathophysiology lecture.
    3. **REASONS for Diagnosis (CRITICAL):** Link to key positive history/exam/investigation findings. This is where you show clinical reasoning.
- **Structured Approach to Explaining Differentials (Time-Constrained):**
    1. **Reason out Top 2-3 Differentials:** State why they are *less* likely (one key negative finding is enough).
    2. **Rapidly List Remaining Differentials:** From your comprehensive mnemonic (e.g., "HEMI AD COP x2") until the bell rings. Prioritize by covering serious/common ones first.
- **Avoid "Psychological Escape":** Don't talk about investigations/management if the task is Dx/DDx.
- **Empathy vs. Key Points:** Initial empathy is good, but at this stage, delivering a structured diagnosis, well-reasoned primary Dx, and a broad list of differentials scores the points.

II. Case 37 (Version 1 - History + Dx/DDx): 45 y.o. Lady, Complaining of Tiredness (Hypothyroidism Recall)

- **Stem Summary:** 45 y.o. lady, GP, complaining of tiredness.
- **Task:** History (6 mins), Explain diagnosis (plural form - "diagnoses") and differentials.
    - "Diagnoses" (plural) hints at mentioning the primary diagnosis AND the key differentials as part of the discussion.
- **Brainstorming Differentials (Recap "HEMI AD COP x2" applied to 45 y.o. lady):**
    - Hepatitis, Hemochromatosis
    - Endocrine (Thyroid - Hypo/Hyper, Diabetes)
    - Malignancies
    - Infections (Viral/Post-viral, STIs, Travel-related)
    - Anemia, Autoimmune (PMR/SLE/RA)
    - Drugs/Medications, Depression
    - Celiac/Bowel problems, Cardiac (HF), Pulmonary (COPD)
    - OSA, Occupation (Shift work)
    - Pregnancy (still possible at 45), Menopause
- **History Taking (Applying Full "HEMI AD COP x2" Structure):**
    1. **Intro:** Open-ended Q, address concern.
        - *"Hi, my name is Dr. Emir. What is your name? Nice to meet you, Jane. Jane, how can I help you today?"*
        - (Patient: "Feeling extremely tired for months, unusual, worried something is wrong.")
        - *"I'm so sorry to hear that, Jane. I understand it can be concerning, but let me ask you a few questions. I'll try to find the cause, and we will make a good management plan together. Does that sound good?"*
    2. **Explore Tiredness (4 Boxes):**
        - Describe: *"Jane, can you describe what you mean by tiredness? Is it lack of energy, you're feeling sleepy, or you're feeling feverish?"* (Patient: "Just don't have energy").
        - Timing: "How long (few months)? On/off or constant (always there)? Getting worse (definitely)?"
        - Alleviating/Aggravating: "Anything make it better or worse?" (Nothing better, worse with time).
        - Effect on Life: "Missing work, sick leaves, boss unhappy."
    3. **Screening Differentials (HEMI AD COP x2 - Screening Qs):**
        - **H** (Hepatic/Hemochromatosis): Tanning of skin? (No). Yellowish discoloration? Dark urine/pale stools? (No).
        - **E** (Endocrine):

        - Thyroid: *"Have you had any weather preference, like any cold or heat intolerance?"* (Patient: **"Yes, I am cold intolerant."** - Positive finding -> **PROBE/KEY POINT QUESTIONS FOR HYPOTHYROIDISM**).
            - *"Do you have dry skin, Jane?"* (Yes).
            - *"Have you noticed any constipation?"* (Yes).
            - *"Any weight gain lately?"* (Yes/No).
            - *"Any hair loss (eyebrows, scalp)?"*
            - *"Any swelling of your eyelids or your legs?"*
            - (Other positives confirm hypothyroidism suspicion).
        - Diabetes: Passing more urine? Increased thirst? (No).
    - **M** (Malignancies): *"Have you lost weight lately? Lost your appetite? Noticed any lumps/bumps? Night sweats? Past/Family Hx of cancers?"* (No).
    - **I** (Infections): Fever/chills? (No). Flu-like symptoms/sore throat recently? (No). Sexually active? Safe sex? (Yes, safe). Travel lately? (No).
    - **A** (Anemia & Autoimmune):
        - Anemia: SOB/racing heart on exercise? (No). Recent blood loss?
        - Autoimmune: Shoulder/hip stiffness? Headaches? Joint pain? Rashes? (No).
    - **D** (Drugs & Depression): Using drugs/medications? (No). Mood lately? (Okay). Still enjoying usual activities? (Yes). Stress at home/work? (Nothing special).
    - **C** (Celiac & Cardiac/Pulmonary): Greasy stools? Bloody diarrhoea? (No). Chest pain? Swelling in legs/pillows? (No). Cough? Smoke? (No).
    - **O** (OSA & Occupation): Snore/gasp during sleep? (No). Occupation? (Admin in office).
    - **P** (Pregnancy & Menopause - patient is 45): LMP? (2 weeks ago). Irregular periods or hot flushes? (Periods regular, no hot flushes).
4. **Closure (SADMA remnants):** Alcohol? Allergies? Other PMHx/FMHx?

- **Tutor's Point on Probing:** Once a key positive finding emerges (like cold intolerance for hypothyroidism), you then ask more specific "key point" or "probing" questions for that condition. If screening questions are negative, move on quickly.
- **Explaining Diagnosis ("Diagnoses" - Plural) and Differentials (Hypothyroidism Case):**
    1. **State Most Likely Diagnosis:** *"Most likely Jane, you have a condition called **hypothyroidism**."*
    2. **Brief Explanation:** *"This is a condition where a gland in the front of your neck (the thyroid gland) is not producing enough hormones / is underperforming / is not working as properly as expected."*
    3. **Reasons for Diagnosis (Key positive findings):** *"The reasons I'm making this diagnosis today are critical: you do have a weather preference – you don't like to be in a cold environment (cold intolerance). You do have dry skin. You do have constipation. I found that you do have weight gain, and [any other positive hypothyroidism symptoms found]." *
    4. **Differentials (Reason out top 2-3, then list others):**
        - *"I was also thinking about **menopause**, but it's not likely in your case because your periods are regular and you don't have hot flushes."*
        - *"I was thinking about **cancers** like lymphoma or leukaemia, but it's not likely in you because you're not losing weight."*
        - *"I was also thinking about **infections** like sexually transmitted infections (HIV, syphilis), but it's not so likely because you don't have any unsafe sexual practices."*
        - **List others from HEMI AD COP x2:** *"The other differentials or conditions I was thinking about were diabetes, liver problems like hepatitis, sleep apnea, side effects of drugs or medications, other infections such as EBV or COVID, celiac disease, inflammatory bowel disease, pulmonary problems like lung cancer or COPD, heart failure, travel-related infections, anemia, other autoimmune conditions like polymyalgia rheumatica or rheumatoid arthritis, etc."* (List until time is up).

III. Case 37 (Version 2 - History + PEFE + Dx/DDx - Online/Face-to-Face): Same Lady, Tiredness (Hypothyroidism Recall)

- **Task Variation:** History (4 mins) -> PEFE (elicit from examiner or on screen) -> Dx/DDx.
- **History (4 minutes):** More focused, prioritize key screening questions from HEMI AD COP x2. Aim to get to the hypothyroidism clues (cold intolerance, dry skin, constipation, weight gain) quickly. Less time for extensive negatives.
    - **Tutor's Note:** Diagnostic formulation is key here. AMC appreciates 4 mins isn't enough for exhaustive history. Doing your best to cover key areas is what's expected.
- **Physical Examination from Examiner (PEFE - Tailored for Hypothyroidism):**

1. **Basic PEFE Structure (as outlined in previous "PEFE for Tiredness" notes):**
    - General Appearance (Rashes, Pallor/Jaundice, ?Dress appropriate to weather, ?Dry skin).
    - Vitals (Temp, BP, **Pulse - expect bradycardia**).
    - **Thyroid Examination (CRITICAL):** Inspect (swelling/masses - e.g., goitre). Palpate (masses, nodules, tenderness). (Examiner: "Enlarged thyroid, no nodules").
    - Full Lymph Node Examination.
    - Cardiovascular Screen (S1S2, murmurs).
    - Respiratory Screen (Air entry, added sounds).
    - Abdominal Screen (Hepatosplenomegaly).
2. **Adding Key Point Questions for Hypothyroidism (after basic screen or integrated):**
    - **Reflexes:** *"Examiner, I'd like to check the reflexes. Are they normal, or do I find any decrease/delay, particularly in the relaxation phase?"* (Expect: Decreased/delayed reflexes).
    - **Periorbital Puffiness / Skin:** *"Any periorbital puffiness? Is the skin generally dry?"*
    - **Proximal Myopathy:** (Less common to ask in PEFE, but could: "Any evidence of proximal muscle weakness?").
    - **Oedema:** (Peripheral oedema can occur).
3. **Office Tests:** BSL, Urine Dipstick (Still do the basic screen).

- **Physical Exam Findings (Online Screen Example for this case):** Dry skin, enlarged thyroid, no hepatosplenomegaly, no lymphadenopathy, normal BSL & urine dipstick. (Bradycardia might be given in vitals).
- **Diagnosis and Differentials:** Explanation similar to Version 1, but now incorporating the positive physical exam findings (enlarged thyroid, dry skin, bradycardia, delayed reflexes) as further reasons for the hypothyroidism diagnosis.

IV. Key Learning Points for Hypothyroidism (Tiredness Presentation):

- **"HEMI AD COP x2" Mnemonic is Robust:** It covers hypothyroidism well within the "Endocrine" section.
- **Probing Positive Findings:** Once a key symptom like "cold intolerance" is positive, ask related hypothyroidism key point questions to build your case.
- **PEFE - Basic Screen + Key Points:** Perform your standard PEFE screen for tiredness, then add specific examination requests relevant to your leading diagnosis (e.g., detailed thyroid exam, reflexes for hypothyroidism).
- **Do Not Skip Differentials:** Even if hypothyroidism seems very likely after history, you *must* demonstrate a broad approach by briefly ruling out other significant causes of tiredness.
- **Time Management is Critical:** Especially in the 4-minute history version. Focus on efficient screening.
- This case tests the ability to use a broad differential approach for a vague symptom, recognize clues for a specific endocrine disorder, and then confirm with targeted history and examination.

Tiredness-lymphoma

AMC Approach: Tiredness/Fatigue - Lymphoma Case

I. Case 38 (Hypothyroidism - Roleplay Demonstration of 4-minute History):

- The tutor first does a roleplay with a participant ("Lily") to demonstrate that the comprehensive "HEMI AD COP x2" history structure *can* be squeezed into 4 minutes if screening questions are used efficiently and positives are probed quickly.
- **Scenario:** 45 y.o. lady with tiredness.
- **Roleplay Highlights:**
    - Standard intro and exploration of "tiredness" (lack of energy, constant, worsening, affecting work).
    - Systematic screening using HEMI AD COP x2.
    - **Positive Finding:** "Cold intolerance" elicited under "E" (Endocrine - Thyroid).
    - **Probing for Hypothyroidism:** The tutor then immediately asks key hypothyroidism questions: dry skin? (yes), constipation? (yes), weight gain? (feeling a bit), hair loss? (yes), swelling? (no).
    - The rest of the HEMI AD COP x2 differentials are rapidly screened and are negative.
- **Outcome:** Diagnosis of hypothyroidism is reached. The demonstration shows that even with probing, the structure can be covered.

II. Case 39 (Lymphoma - New Variation/Recall 2024): 35 y.o. Lady, Complaining of Tiredness

- **Stem Summary:** 35 y.o. lady, GP, complaining of tiredness.
- **Tasks (Variations for Online/Face-to-Face):**
    - History (6 mins online / 4 mins face-to-face).
    - Physical Examination (on screen or from examiner).
    - Explain diagnosis and differentials.
- **Brainstorming History Framework (Recap):**
    - Intro (Open-ended Q, Address Concern).
    - Explore Tiredness (Describe, Timing, Alleviating/Aggravating, Effect on Life).
    - Rule out Differentials (using "HEMI AD COP x2" mnemonic).
    - Good Closure (SADMA - if time).
- **History Taking (Applying "HEMI AD COP x2" - Key findings for Lymphoma):**
    1. **Intro & Explore Tiredness:** (Standard approach).
    2. **Screening Differentials:**
        - H (Hepatic/Hemochromatosis), E (Endocrine - Thyroid, Diabetes) - Assume negative.
        - **M (Malignancies - RED FLAGS - This becomes high yield):**
            - *"Have you lost any weight recently?"* (Patient: **"Yes"**).
            - *"Lost your appetite?"* (No).
            - *"Have you noticed any **lumps or bumps** in your body?"* (Patient: **"Yes, doctor, I've noticed two lumps in my armpit."**).
            - *"Any **night sweats**?"* (Patient: **"Yes, I'm also having night sweats."**).
            - *"Any past history or family history of cancers?"* (No).
            - *(At this point, with weight loss, axillary lumps, and night sweats, lymphoma/leukaemia becomes a very strong provisional diagnosis).*
            - (Tutor: "I'm not usually a fan of thinking about where that lymph node comes from, but if you want to push me to just ask an extra question, I'll ask about history of breast lumps." - This is to consider breast cancer with axillary mets, though lymphoma is more classic with these B symptoms).
        - **I** (Infections - Viral, STI, Travel): Screen and assume negative for primary infective cause of lymphadenopathy here, given other malignancy red flags.
        - **A** (Anemia & Autoimmune), **D** (Drugs & Depression), **C** (Celiac & Cardiac/Pulmonary), **O** (OSA & Occupation), **P** (Pregnancy/Menopause - age 35, ask LMP). Screen briefly and assume largely negative for this specific recall focus.
    3. **Closure (SADMA).**
- **Physical Examination from Examiner (PEFE - Tailored for Suspected Lymphoma):**
    1. **Basic PEFE Structure (as outlined previously for tiredness):**
        - General Appearance: Pallor? Jaundice? **Cachexia?** Rashes (leukemia/lymphoma can have skin manifestations like ecchymosis)?
        - Vitals: Especially **Temperature** (for B symptoms).
        - Thyroid Exam.
        - **Full Lymph Node Examination (CRITICAL):**
            - *"Examiner, I want to do a full lymph node examination. Do I find any lymphadenopathy?"* (Examiner: "Yes, you do have two enlarged axillary lymph nodes").
            - **Key Follow-up Questions for Palpable Lymph Nodes:**
                - *"Are they stony and hard (consistency)?"*
                - *"Are they fixed or mobile?"*
                - *"Are they tender?"*
                - (Examiner for lymphoma: "Nodes are hard, fixed, non-tender").
        - Cardiovascular Screen.
        - Respiratory Screen.
        - **Abdominal Screen (CRITICAL for Lymphoma):** *"Is there any **hepatosplenomegaly**?"*
    2. **Adding Key Point Questions for Lymphoma:**
        - **Skin:** *"Any **scratch marks** (pruritus can occur)?"*
        - **Bones:** *"Any **bone tenderness** (especially sternal tenderness for leukaemia, or general bone pain)?"*
    3. **Office Tests:** BSL, Urine Dipstick.

- **Physical Exam Findings (Online Screen Example for this case):**
    - Patient comfortable, temperature fine.
    - **Two large axillary lymph nodes felt: hard, non-tender.** (No mention of cervical, so assume only axillary for this specific recall).
    - Rest of examination normal (no hepatosplenomegaly).
- **Explaining Diagnosis and Differentials (Lymphoma Case):**
    - **Tutor's Note on Breaking Bad News:** This is NOT a breaking bad news case in the OSCE sense due to time. Deliver the likely diagnosis professionally but directly. The role-player will not have an overly emotional reaction.
    2. **Statement Acknowledging Broad Causes (Buffer):**
        - *"Jane, tiredness can have different causes or various causes or many causes."*
    3. **State Most Likely Diagnosis (with concern):**
        - *"In your case, I am concerned about the possibility of **lymphoma**, which is a type of cancer in the blood (or lymph system)."*
    4. **Offer Reassurance/Check Patient's Reaction (Briefly):**
        - *"How are you feeling about this?"* (Patient usually: "Okay, doctor" or "Do you really think that is happening?"). Answer directly: "Yes, I think that's the most probable cause, but as I said, there are other causes."
    5. **Reasons for Diagnosis (Key positive findings):**
        - *"The reasons I am concluding this is because you've lost weight, you have lumps and bumps – I've noticed (or you've told me) that you have two lumps in your armpit that are hard and not moving – and you also have night sweats. These are the reasons that I'm concluding that you may have lymphoma or leukaemia."*
    6. **Differentials (Prioritize other malignancies first, then other categories):**
        - *"I was also thinking about other causes. Given the findings, other types of **cancer** could be possible, for example, **leukaemia**, or even **breast cancer** or **lung cancer** that could cause lumps in that area (axilla)."*
        - *"Then, I was also thinking about **infections**. For example, **EBV (glandular fever)** can cause tiredness and swollen lymph nodes, or even **sexually transmitted infections like HIV**. These are not likely because you don't have a fever currently."*
        - *"I was also thinking about whether you might be **pregnant** and feeling tired, but your period was recent."*
        - *"I considered **sleep apnea**, but you don't have any snoring or gasping."*
        - *"And the other things I was thinking about from the rest of my differential diagnosis list are: hepatitis, diabetes, thyroid problems like hypothyroidism, anemia, autoimmune conditions like rheumatoid arthritis or lupus, celiac disease, heart failure..."* (List until time is up).

VI. Key Learning Points for Lymphoma (Tiredness Presentation):

- **"B Symptoms" are Key:** Unexplained weight loss, fever (often low-grade), drenching night sweats, in conjunction with lymphadenopathy, strongly suggest lymphoma.
- **Lymph Node Examination:** When lymphadenopathy is found or suspected, characterize the nodes (size, consistency - hard/rubbery/soft, tenderness, mobility - fixed/mobile). Hard, non-tender, fixed nodes are more concerning for malignancy.
- **Hepatosplenomegaly:** Always check in suspected lymphoma/leukaemia as these organs can be infiltrated.
- **Differential for Lymphadenopathy:** Includes malignancy (lymphoma, leukaemia, metastasis), infections (viral - EBV/CMV/HIV, bacterial - TB/cat scratch, fungal), and autoimmune conditions (SLE, RA).
- **Sticking to Structure is Protective:** Even if a candidate doesn't immediately think of lymphoma, systematically going through "Malignancies" in the HEMI AD COP x2 structure and asking about weight loss, lumps, and night sweats will lead them to the key findings.
- This case highlights how a vague symptom like tiredness can be the presentation of a serious underlying condition, and a structured, comprehensive approach is essential to uncover it.

Tiredness-OSA

AMC Recalls: Tiredness - Obstructive Sleep Apnea (OSA) Case

I. Case 40: 40 y.o. Male, Routine BP Monitoring (HTN on Perindopril), Complains of Tiredness Lately

- **Stem Summary:**

- 40-year-old male, GP.
- Routine BP monitoring. Known hypertension, on Perindopril (started 6 months ago).
- Nurse reports BP 135/85 (well-controlled).
- Patient consults today because he is "feeling tired lately."

- **Tasks:**
  1. Take history (6 mins).
  2. Explain diagnosis and differentials to the patient.
- **A. Initial Brainstorming - Critical Differentials for HTN + Tiredness:**
  - **Heart Failure:** (Hypertension is a major risk factor).
  - **Obstructive Sleep Apnea (OSA):** (Common in overweight/obese individuals, often with HTN, causes daytime sleepiness/tiredness).
  - **Malignancy:** (Always a red flag for tiredness).
  - **Infections:** (Chronic infections can cause fatigue).
  - (Also consider side effects of Perindopril, though less classic for profound tiredness).
- **B. Structured History Taking (Applying "HEMI AD COP x2" for Tiredness):**
  1. **Intro:** Good open-ended question, address concern.
     - Patient: Explains routine BP check, but main issue is recent tiredness.
  2. **Explore Tiredness (4 Boxes):**
     - Describe: *"Can you describe what you mean by tiredness? Is it lack of energy, sleepiness, or feverish?"* (Patient: **"I feel sleepy, sleepy a lot in the morning."**).
     - Timing: "How long (few months)? On/off or constant?" (Patient: "Usually happens in the mornings"). Getting worse?
     - Alleviating/Aggravating: "Anything make it better or worse?" (Patient: "If I drink alcohol, it's worse").
     - Effect on Life: (Explore impact on daily activities, work).
  3. **Screening Differentials (HEMI AD COP x2 - Focus on OSA clues emerging):**
     - H (Hepatic/Hemochromatosis), E (Endocrine - Thyroid, Diabetes), M (Malignancies - ask red flags), I (Infections - viral, STI, travel) - Screen systematically.
     - A (Anemia & Autoimmune), D (Drugs - Perindopril side effects? & Depression).
     - C (Celiac & Cardiac/Pulmonary):
       - Cardiac (Heart Failure - CRUCIAL): *"Any chest pain? How many pillows do you use at night? Any swelling in your legs?"*
       - Pulmonary (COPD): *"Any cough? Do you smoke?"* (Smoking also CVRF & OSA risk factor).
     - **O (OSA & Occupation - This becomes high yield):**
       - **OSA Screening:** *"Has anyone told you that you **snore loudly or gasp during sleep**?"* (Patient: **"Yes, my wife always tells me that I snore very loudly, and now that you're asking, she's told me that I stop breathing for a second or two."** - Positive for OSA).
       - **Probing Questions for OSA (Key Point Questions):**
         - Sleep Quality: *"Is your sleep refreshing? Do you feel your sleep is refreshing, or even after 8 hours, you wake up still tired/sleepy?"* (Not refreshing).
         - Morning Symptoms: (Sleepiness already mentioned). *"Any morning time difficulty concentrating? Any morning time headaches?"*
         - Risk Factors for OSA:
           - Weight: *"Have you had any recent weight gain?"* or *"Would you consider yourself to be overweight?"*
           - Alcohol: (Already mentioned it makes tiredness worse - alcohol relaxes pharyngeal muscles).
         - Occupation: *"What is your occupation?"* (OSA common in drivers - implications for driving safety).
     - P (Pregnancy/Menopause - N/A for male).
  4. **Closure (SADMA).**
- **C. Physical Examination (If Tasked - Key Points for OSA):**
  - (This specific recall was history + Dx/DDx, but if PEFE were included):
  2. **Basic PEFE Structure for Tiredness (as outlined previously).**
  3. **Adding Key Point Examination for OSA:**
     - **ENT Examination (Oropharynx):** *"Examiner, I'd like to assess the oropharynx for the **Mallampati score**."* (Looking for a crowded airway).

        - **BMI / General Habitus:** (Observation - if BMI is provided or "obese" is a finding).
        - **Neck Circumference:** *"What is the neck circumference?"* (Increased neck circumference is a risk factor).
- **D. Explaining Diagnosis and Differentials (OSA Case):**
    1. **Most Likely Diagnosis:** *"Look James, most likely you have a condition called **obstructive sleep apnea (OSA)**."* (Avoid abbreviation "OSA" with patient initially).
    2. **Brief Explanation of OSA:** *"Obstructive sleep apnea is a condition where, when you sleep, the muscles in your throat become floppy and can obstruct your airway. This causes the snoring and the episodes where you stop breathing (gasping) that your wife has noticed, and it means you don't get good quality sleep, leading to daytime sleepiness."*
    3. **Reasons for Diagnosis (Link to positive history findings):**
        - *"The reasons I think this is the case are because your wife has noticed you snore loudly and stop breathing or gasp during sleep."*
        - *"You also have several morning symptoms like feeling very sleepy, difficulty concentrating, and headaches."*
        - *"Your sleep is not refreshing."*
        - *"And factors like [being overweight, drinking alcohol] can contribute to this. Your high blood pressure can also be linked to sleep apnea."*
    4. **Differentials (Prioritize other key considerations for tiredness in this patient):**
        - *"Before reaching this conclusion, I was also thinking about other important causes for your tiredness:"*
        - *"**Heart failure** was a concern, given your hypertension, but it's less likely as you don't have [e.g., significant leg swelling or shortness of breath when lying down]."*
        - *"I also considered **cancers** like lymphoma or leukaemia, but these are less likely as you haven't lost weight and don't have other red flag symptoms."*
        - *"**Infections**, like sexually transmitted infections or chronic viral illnesses, were also on my mind, but you don't have fever or other specific signs."*
        - **List others from HEMI AD COP x2:** *"And the rest of my differentials included hemochromatosis, hepatitis, diabetes, thyroid problems, anemia, autoimmune conditions, side effects of medications (like Perindopril, though less typical for this degree of sleepiness), depression, celiac disease, and other lung problems."*

IV. Key Learning Points for OSA (Tiredness Presentation):

- **OSA is a Common Cause of Daytime Sleepiness/Tiredness:** Especially in patients with risk factors like obesity, increased neck circumference, male gender, alcohol use, and smoking.
- **Hypertension Link:** OSA is an important and often under-recognized secondary cause of hypertension. Treating OSA can improve BP control.
- **Key Probing Questions for OSA:** Snoring history (loud, disruptive), witnessed apneas/gasps, unrefreshing sleep, morning headaches, daytime sleepiness, difficulty concentrating. The Epworth Sleepiness Scale can quantify daytime sleepiness.
- **Physical Exam Clues for OSA:** Increased BMI/obesity, increased neck circumference, crowded oropharynx (high Mallampati score), retrognathia.
- **Differential Diagnosis is Still Key:** Even if OSA seems likely, work through the broader "HEMI AD COP x2" structure for tiredness to demonstrate a safe and comprehensive approach.
- This case tests the ability to identify a common sleep disorder presenting as tiredness, link it to co-morbidities like hypertension, and systematically rule out other important causes.

Tiredness-Infective endocarditis

AMC Recalls: Tiredness - Infective Endocarditis (IE) Case

I. Case 41: 45 y.o. Male, Complaining of Tiredness, History of Murmur in Childhood

- **Stem Summary:**
    - 45-year-old male.
    - Complaining of tiredness.
    - **Key information in stem:** History of a heart murmur in childhood.
- **Tasks (Variations for Online/Face-to-Face):**
    - History (6 mins online / 4 mins face-to-face).
    - Physical Examination (on screen or from examiner).

- Explain diagnosis and differentials.

- **Tutor's Initial Brainstorming - Critical Differentials (Given Tiredness + Childhood Murmur):**
  1. **Infective Endocarditis (IE) - High suspicion.**
  2. **Heart Failure (HF) -** (Consequence of long-standing valvular disease that caused the murmur).
  3. (Malignancy, Chronic Infections like TB - general red flags for tiredness).
- **A. Structured History Taking (Applying "HEMI AD COP x2" for Tiredness, with focus on IE clues):**
  1. **Intro:** Open-ended Q, address concern.
     - Patient: Tired for 3 weeks, getting worse, can't get out of bed, worried.
  2. **Explore Tiredness (4 Boxes):**
     - Describe: "Low in energy, fatigued."
     - Timing: "3 weeks, constant, getting worse."
     - Alleviating/Aggravating: "Getting worse with time."
     - Effect on Life: "Can't get out of bed."
  3. **Explore the Clue (Childhood Murmur - CRUCIAL early step):**
     - *"Tell me about the murmur you had in childhood."*
     - When diagnosed? (Childhood).
     - Specific diagnosis? (Patient: "Don't remember").
     - Treatment then/now? (Patient: "Don't remember").
     - **Probing for Rheumatic Fever History (Common cause of valvular damage leading to murmurs):**
       - *"Do you remember being on antibiotics for a long time as a child (e.g., monthly penicillin injections)?"*
       - *"Do you remember having recurrent sore throats as a child?"*
     - Regular follow-ups? (Patient: "No, was told I'm fine").
  4. **Screening Differentials (HEMI AD COP x2 - with IE focus emerging):**
     - H (Hepatic/Hemochromatosis), E (Endocrine - Thyroid, Diabetes) - Screen and assume negative.
     - M (Malignancies - Red Flags) - Screen (weight loss, appetite, lumps, night sweats, PMHx/FMHx cancer) - Assume negative for this IE-focused recall.
     - **I (Infections - This becomes high yield for IE):**
       - **General Infection Qs:** *"Have you had any **fever or chills**?"* (Patient: **"Been feeling feverish/hottish."** -> "Have you measured your temperature?" - No).
       - Viral/Post-Viral: Flu-like symptoms/sore throat recently?
       - STIs: Sexually active? Safe sex?
       - Travel: (Ask, but less direct for IE unless specific endemic infections causing endocarditis).
       - **Specific Probing for Infective Endocarditis (Key Point Questions):**
         - **Source of Bacteraemia (Entry Point for Bacteria):**
           - **Dental Procedures:** *"Have you had any **dental surgeries or procedures** recently (e.g., root canal, extraction)?"* (Patient: **"Yes, exactly three weeks ago, I had a root canal."** -> "Did you take any antibiotics before it?" - No).
           - IV Drug Use (IVDU): (Will be asked under "Drugs" in SADMA if not here. Patient says no to drugs).
           - Other skin infections, indwelling catheters, etc. (less common to detail unless clues).
         - **Peripheral Stigmata of IE (Skin Lesions):** *"Have you noticed any new **rashes or skin lesions on your hands** or feet?"* (Looking for Osler's nodes, Janeway lesions).
     - **A** (Anemia & Autoimmune): Screen for anemia symptoms. Autoimmune (PMR/SLE/RA) - less likely focus here.
     - **D** (Drugs & Depression): Illicit drugs (IVDU for IE)? Medications? Depression screen.
     - **C** (Celiac & Cardiac/Pulmonary):
       - Celiac/Bowel: Screen.
       - **Cardiac (Heart Failure - CRUCIAL, given murmur history):** *"Any chest pain? Any swelling in your legs? How many pillows do you use at night?"* (Valvular disease is a risk factor for HF).
       - Pulmonary (COPD/Lung issues): Screen.
     - **O** (OSA & Occupation), **P** (Pregnancy/Menopause - N/A for male).
  5. **Closure (SADMA).**
- **B. Key History Findings (Example for this IE Recall):**
  - Tiredness for 3 weeks, feverish.
  - History of childhood murmur, ?rheumatic fever (long-term antibiotics as child, recurrent sore throats).

    - **Dental surgery (root canal) 3 weeks ago, no antibiotic prophylaxis.**
    - **Patient noticed some "rashes" on hands.** (Prompted by specific IE question).
- **C. Physical Examination from Examiner (PEFE - Tailored for Suspected IE):**
    1. **Basic PEFE Structure for Tiredness.**
    2. **Adding Key Point Examination for Infective Endocarditis:**
        - **General Appearance:** Pallor (anemia), Jaundice (less direct), Rashes (systemic).
        - **Vitals: Temperature** (Patient has 38.5°C), HR (tachycardia common).
        - **Cardiovascular Examination (CRITICAL & Detailed):**
            - Inspection: JVP, visible apex.
            - Palpation: Displaced apex beat?
            - **Auscultation:** *"Examiner, I want to listen carefully for any murmurs or added sounds. Can you describe any murmurs?"* (Examiner: **"Yes, you have a mid-diastolic rumbling murmur best heard at the apex (mitral valve area)."** - This is classic for Mitral Stenosis, a common sequela of rheumatic heart disease).
        - **Peripheral Stigmata of IE (Ask Specifically):**
            - *"Examiner, do I see any **Osler's nodes or Janeway lesions** on the hands or feet?"* (No).
            - *"Do I see any **splinter haemorrhages** under the fingernails?"* (Examiner: **Yes, provides photo of splinter haemorrhages**).
        - (Respiratory, Abdominal screens as usual).
        - (Office tests: BSL, Urine Dipstick).
- **Tutor's Learning Point on PEFE for IE:** AMC designs cases where specific targeted questions are needed to elicit key signs (like asking for splinter haemorrhages to be shown the photo).
- **D. Explaining Diagnosis and Differentials (Infective Endocarditis Case):**
    1. **Most Likely Diagnosis:** *"Look John, most likely you have a condition called **infective endocarditis**."*
    2. **Brief Explanation of IE (Tailored to patient's history):**
        - *"In your heart, you have some valves or gateways. From your childhood history, it seems one of them, likely your mitral valve, is narrowed (this is the stenosis that causes the murmur)."*
        - *"When you had your dental surgery recently, it's possible some bacteria (bugs) entered your bloodstream. These bacteria can then settle and cause an infection on that already damaged valve and the inner layer of your heart. This is what we call infective endocarditis."*
    3. **Reasons for Diagnosis (Link to key positive findings):**
        - *"You had a heart murmur in childhood, and on examination today, I also found a murmur that suggests a narrowing in your mitral valve."*
        - *"You had a dental surgery recently, which can be a source for bacteria to enter the blood."*
        - *"You have been feeling feverish."*
        - *"And we found some small bleeds under your fingernails (splinter haemorrhages), which can be a sign of this type of heart infection."*
    4. **Differentials (Prioritize, then list):**
        - *"The other first thing I was looking for, given your heart murmur history, was **heart failure**, as long-term valve problems can lead to it. However, it's less likely the primary cause of your current acute symptoms like fever, though it could be a background issue."*
        - *"I also considered other causes for your tiredness and fever, such as **malignancies** like leukaemia or lymphoma, but you haven't had significant weight loss."*
        - **List others from HEMI AD COP x2:** *"Other infections (like viral illnesses, STIs), thyroid problems, diabetes, anemia, autoimmune conditions, side effects of medications, depression, sleep apnea, etc., were also considered but are less likely given your specific findings."*
        - (Tutor: When listing other cancers for a specific cancer case like lymphoma, be specific. For a general tiredness case where IE is primary, just "malignancies" or "cancers like leukaemia/lymphoma" is fine for the differential list).

V. Key Learning Points for Infective Endocarditis (Tiredness Presentation):

- **Childhood Murmur is a Major Clue:** Always explore this thoroughly, especially for a history suggestive of rheumatic fever (recurrent sore throats, long-term antibiotics).
- **Source of Infection:** Actively seek a portal of entry for bacteria (dental work, IVDU, skin infections, recent surgery).

- **Peripheral Stigmata are Key:** Ask about/look for Osler's nodes, Janeway lesions, splinter haemorrhages, Roth spots (fundoscopy). These are classic but not always all present.
- **Fever is Common:** IE is an infection.
- **Underlying Valvular Lesion:** IE usually occurs on damaged or prosthetic valves. Rheumatic heart disease (causing e.g., mitral stenosis) is a common predisposing factor.
- **Differential Diagnosis Still Important:** While IE may become clear, a structured approach ensures other causes of tiredness and fever are considered.
- This case tests the ability to connect a past medical history (childhood murmur) with recent events (dental procedure) and current symptoms/signs to diagnose a serious systemic infection.

Tiredness- atypical pneumona

AMC Recalls: Tiredness - Atypical Pneumonia Case (with Travel History)

I. Case 42: 45 y.o. Lady, Tiredness & Loss of Energy (No other specific complaints in stem)

- **Stem Summary:**
  - 45-year-old lady, GP.
  - Complaining of tiredness and loss of energy.
- **Tasks (Variations for Online/Face-to-Face):**
  - History (6 mins online / 4 mins face-to-face).
  - Explain diagnosis and differentials.
  - (Sometimes Physical Examination from examiner/on screen).
- **Tutor's Approach:** Do not get "spoiled" by knowing the recall. Apply the standard "HEMI AD COP x2" tiredness history structure systematically.
- **A. History Taking (Applying "HEMI AD COP x2" - Key findings for Atypical Pneumonia):**
  1. **Intro & Explore Tiredness:**
     - Patient describes tiredness as "low in energy," constant for a few weeks, getting worse, affecting daily activities.
  2. **Screening Differentials:**
     - H (Hepatic/Hemochromatosis), E (Endocrine - Thyroid, Diabetes) - Screen and assume negative.
     - **M (Malignancies - Red Flags):**
       - Weight loss? (No). Appetite loss? (No). Lumps/bumps? (No).
       - **Night sweats?** (Patient: **"Yes"** - Positive finding, keep in mind).
       - Past/Family Hx of cancers? (No).
     - **I (Infections - This becomes high yield):**
       - General Infection Qs: Fever or chills? (Usually negative in this specific recall, which is a feature of atypical pneumonia - low-grade or no fever).
       - Viral/Post-Viral: Flu-like symptoms/sore throat recently? (No).
       - STIs: Sexually active? Safe sex? (Assume routine screen).
       - **Travel History (CRITICAL):** *"Have you had any travel lately?"* (Patient: **"Yes, doctor."** - This is a major key point. Now PROBE the travel history).
         - **Detailed Travel History Exploration (Mnemonic: QUIT ABCDEFG + Sex):**
           - **Where & How Long:** *"Where did you go? How long did you stay?"* (Patient: "Cairns, Queensland" for a few weeks).
           - **Q**uality of Trip/Activities: *"What activities did you do?"* (Patient: "Vacation, having fun").
           - **U**nusual Exposures / **I**nsect Bites: *"Did you do any **B**ushwalking? Did you notice any **I**nsect bites?"*
           - **T**hrough Contact: *"Any **C**ontact with **A**nimals or **S**ick people?"*
           - **D**rugs: *"Did you use any recreational **D**rugs while you were there?"*
           - **E**xposure to Blood: *"Any **E**xposure to blood, like tattooing, piercing, or blood transfusions?"*
           - **F**ood & Water: *"Did you consume any street **F**ood or unbottled **W**ater?"*

            - **G**P Visit/Vaccinations Pre-Travel: *"Did you see your **G**P before travelling for any vaccinations or travel advice?"*
            - **Sex**ual Activity: *"Any new sexual partners or unprotected sexual activity while travelling?"*
            - *(Tutor notes: While some questions like drugs/blood exposure are less relevant for Cairns, it's good to have a full travel history structure).*
    - **A** (Anemia & Autoimmune):
        - Anemia: SOB/racing heart on exercise? (No).
        - Autoimmune: Shoulder/hip stiffness? Headaches? *"Any **joint pain**?"* (Patient: **"Yes, doctor... back pain."** Older recalls might say "body aches"). Rashes? (No).
    - **D** (Drugs & Depression):
        - Recreational drugs or medications? (Patient might volunteer here or when cough is explored: **"Yes, I've been having this cough for a while, saw a doctor, they gave me Amoxicillin, it didn't get better. Then they gave me a second antibiotic, Augmentin, still no better."** - KEY FINDING for atypical pneumonia).
        - Depression screen: (Assume negative for this recall focus).
    - **C** (Celiac & Cardiac/Pulmonary):
        - Celiac/Bowel: Greasy stools, bloody diarrhoea? (No).
        - Cardiac (HF): Chest pain, leg swelling/pillows? (No).
        - **Pulmonary (High Yield):**
            - *"Do you have any **cough**?"* (Patient: **"Yes."** -> PROBE).
                - *"Is it a dry or chesty cough?"* (Patient: **"Dry cough, doctor."**).
                - *"How long has it been there?"* (Patient: **"Few weeks now."**).
            - *"Have you ever coughed up blood (haemoptysis)?"*
            - *"Do you smoke?"*
    - **O** (OSA & Occupation), **P** (Pregnancy/Menopause). Screen briefly.
- **Key History Findings Summary for Atypical Pneumonia:**
    - Tiredness, night sweats.
    - Travel history (e.g., Cairns).
    - Constitutional symptoms (body aches/back pain).
    - **Dry cough for few weeks, NOT responding to typical antibiotics (Amoxicillin, Augmentin).**
- **Provisional Diagnosis from History: Atypical Pneumonia.**
    - (TB is a differential, especially if travel was to high-prevalence area, but dry cough and lack of response to standard beta-lactams lean more towards atypical organisms like Mycoplasma, Chlamydia pneumoniae, Legionella).
- **B. Physical Examination from Examiner (PEFE - Tailored for Suspected Atypical Pneumonia):**
    1. **Basic PEFE Structure for Tiredness.**
    2. **Adding Key Point Examination for Respiratory System (CRITICAL):**
        - *"Examiner, I want to perform a full respiratory examination."*
        - Inspection/Palpation: "Are chest movements symmetrical and equal?" (May have decreased expansion on one side). Tracheal position?
        - Percussion: "Any dullness?" (Patient: **"Dullness on the right mid-lobe."**).
        - Auscultation: "Is air entry equal? Any added sounds?" (Patient: **"Crackles on that right mid-lobe."**).
        - Vocal Resonance: (Likely normal or slightly increased if consolidation, but atypical pneumonias can have less dramatic signs).
    - **Temperature:** (Often low-grade in atypical pneumonia - e.g., 37.5°C).
    - (Lymph node exam - can be reactive. Rest of basic screen often normal).
- **C. Explaining Diagnosis and Differentials (Atypical Pneumonia Case):**
    1. **Most Likely Diagnosis:** *"Lily, based on these findings, most likely you have a condition called **atypical pneumonia**."*
    2. **Brief Explanation:** *"This is a type of **lung infection** caused by some **special types of bacteria or bugs** that don't respond to the usual antibiotics."*
    3. **Reasons for Diagnosis (Link to key positive findings):**
        - *"You have a dry cough that has been there for three weeks."*
        - *"You have a travel history to Cairns."*
        - *"You have some constitutional symptoms like back pain and tiredness (and night sweats)."*
        - *"Importantly, your cough has **not responded to the Amoxicillin and Augmentin** you've taken."*
        - *"And on your physical examination, I also found signs of infection in your lung (dullness, crackles)."*

4. **Differentials (Prioritize other infections, then broader list):**
    - *"I was also thinking about another type of infection called **Tuberculosis (TB)**, which is a chronic infection of the lung with a special bug. However, I don't think you have it because [e.g., TB is not that common from Cairns travel for a short trip, other TB specific symptoms might be absent]."*
    - *"Given the dry cough and some constitutional symptoms, **Lung Cancer** is something we always consider, especially if symptoms persist, but your X-ray (if done and clear) or lack of other major red flags makes it less likely now."*
    - *"Given your travel history, I also considered specific **travel-related infections** like Dengue fever, Ross River fever, or Malaria, but your main symptoms are respiratory, and you [may not have had significant insect bites or other features of these]." *
    - **List others from HEMI AD COP x2:** *"Other things I thought about were hepatitis, hemochromatosis, diabetes, thyroid problems, anemia, autoimmune conditions, side effects of drugs/medications, depression, celiac disease, heart failure, and (depending on age) pregnancy or menopause."*

II. Variations & Tutor's Insights:

- **Old Recall Version (Travel to Cambodia):**
    - History: Cough, night sweats, took street food, went bushwalking.
    - **Provisional Diagnosis:** Tuberculosis (TB) would be higher on the list due to travel to a high TB prevalence area and night sweats. Atypical pneumonia still a differential.
    - Differentials would include more specific travel-related infections linked to activities (Hepatitis A/E from street food, Dengue/Ross River/Malaria from bushwalking).
- **Hypothetical Variation (Leading to Lung Cancer):**
    - No travel history.
    - Dry cough for months.
    - **Significant weight loss.**
    - **Chronic smoker.**
    - Back pain (could be bone metastasis).
    - **Top Diagnosis:** Lung Cancer.
- **Tutor's Point:** AMC can subtly change findings (travel destination, specific symptoms like weight loss) to shift the most likely diagnosis. A robust, flexible structure ("HEMI AD COP x2") allows you to pick up these clues. The difficulty in this case is that findings are scattered across the history rather than clustered.

III. Typical vs. Atypical Pneumonia (Brief Comparison):

Feature	Typical Pneumonia	Atypical Pneumonia
Onset	Acute	More insidious, subacute, "walking pneumonia"
Cough	Productive (purulent sputum)	Often dry, persistent
Fever	High-grade	Low-grade or absent
Constitutional Symptoms	Less prominent early on	More prominent (malaise, myalgia, headache)
CXR	Lobar consolidation	Patchy, interstitial infiltrates ("reticulonodular")
Common Organisms	*Strep. pneumoniae, H. influenzae*	*Mycoplasma, Chlamydia, Legionella*
Antibiotic Response	Responds to Amoxicillin/beta-lactams	Does NOT respond well to beta-lactams (needs Macrolide/Doxycycline/Fluoroquinolone)

IV. Key Learning Points for Atypical Pneumonia (Tiredness Presentation):

- **Travel History is Paramount:** A recent travel history in a patient with respiratory symptoms and constitutional upset should always prompt consideration of atypical infections.
- **Non-Response to Standard Antibiotics:** If a patient with suspected respiratory infection has not improved on Amoxicillin or Augmentin, think atypical pneumonia.
- **Constitutional Symptoms:** Prominent tiredness, body aches, and low-grade fever (or no fever) with a persistent dry cough are characteristic.
- **Differential Diagnosis:** Must include TB (especially with relevant travel/exposure), viral pneumonias, and even non-infectious causes if the picture is unclear.
- This case tests the ability to elicit a detailed travel history, recognize a pattern suggestive of atypical infection, and differentiate it from common bacterial pneumonia and other causes of fatigue.

Tireness- DKA

AMC Recalls: Tiredness - Diabetic Ketoacidosis (DKA) Case

I. Case 43: 17 y.o. Boy, Tiredness & Feeling Unwell, Works on Farm (Rural GP Clinic)

- **Stem Summary:**
  - 17-year-old boy.
  - GP in a rural Queensland clinic (limited facilities).
  - Complaining of tiredness and feeling unwell.
  - Works on a farm, unable to keep up with work (concern expressed).
- **Tasks (Variations for Online/Face-to-Face):**
  - History (6 mins online / 4 mins face-to-face).
  - Physical Examination (on screen or from examiner).
  - Explain diagnosis and differentials.
- **Tutor's Note:** This is a very famous face-to-face case, known for high failure rates primarily due to poor time management in the final task. A variation with a 5 y.o. boy with known diabetes also exists, but this teen presentation is the classic DKA-as-first-presentation.
- **A. Structured History Taking (Applying "HEMI AD COP x2" for Tiredness):**
  1. **Intro:** Good open-ended question, address concern.
     - Patient: Tired for months, not able to keep up with farm work, parents unhappy.
  2. **Explore Tiredness (4 Boxes):**
     - Describe: *"Can you please describe what you mean by tiredness? Is it lack of energy or sleepiness?"* (Patient: "Low in energy").
     - Timing: "Few months, constantly there, getting worse."
     - Alleviating/Aggravating: "Nothing makes it better, just getting worse by time."
     - Effect on Life: "Not able to keep up with work, parents unhappy."
  3. **Screening Differentials (HEMI AD COP x2 - Key findings for DKA/Diabetes):**
     - H (Hepatic/Hemochromatosis) - Screen and assume negative.
     - **E (Endocrine - This becomes high yield):**
       - Thyroid: "Any weather preferences (cold/heat intolerance)?" (No).
       - **Diabetes (Key Screening Questions):**
         - *"Are you passing more urine lately?"* (Patient: **"Yes."**).
         - *"Have you noticed an increase in your thirst or been drinking more water?"* (Patient: **"Yes, doctor, I'm drinking more water."**).
         - **Tutor's Note on Patient's Reasoning:** Patient may rationalize these (e.g., "working on farm under sun, so I drink more, so I pass more urine"). Take the symptoms as positive regardless of patient's interpretation.
       - **Once polyuria/polydipsia positive -> PROBE/KEY POINT QUESTIONS FOR DIABETES/DKA:**

        - Polyphagia: *"Have you noticed an increase in your appetite too, or are you eating more/feeling more hungry?"*
        - Recurrent Infections: *"Any recurrent infections (e.g., skin, urine)?"*
        - **DKA Symptoms (Complication of new Type 1 DM):**
            - *"Any **abdominal pain**?"*
            - *"Any **nausea or vomiting**?"*
        - Other DM Complications (less acute, but good to screen if time):
            - Retinopathy: *"Any blurring of your vision?"*
            - Neuropathy: *"Any numbness in your legs?"*
    - **M** (Malignancies - Red Flags): Screen for weight loss (can be DKA too, but different mechanism), appetite loss, lumps, night sweats, PMHx/FMHx cancer.
    - **I (Infections):**
        - General: Fever/chills?
        - Viral/Post-Viral: Flu-like symptoms/sore throat?
        - STIs: Sexually active? (No).
        - Travel?
        - **Zoonotic Infections (Patient works on a farm):** *"Do you have any contact with animals on the farm?"* (For Q fever, Brucellosis etc. - good contextual question).
    - **A** (Anemia & Autoimmune), **D** (Drugs & Depression), **C** (Celiac & Cardiac/Pulmonary - HF/COPD), **O** (OSA & Occupation) - Screen systematically as per "HEMI AD COP x2".
4. **Closure (SADMA).**

- **Tutor's Time Management for 4-min History:** Focus on getting the diabetes clues (polyuria, polydipsia), then quickly screen other major categories like malignancies and infections. It's understood that not all 10+ HEMI AD COP categories can be deeply explored in 4 minutes. Prioritize key points and serious differentials.
- **B. Physical Examination from Examiner (PEFE - Tailored for Suspected DKA):**
    1. **Basic PEFE Structure for Tiredness.**
    2. **Adding Key Point Examination for DKA/Diabetes:**
        - **General Appearance:** *"Examiner, on general appearance, I'm looking for pallor, jaundice, rashes, but also specifically for signs of **dehydration**."*
        - **Vital Signs:** Temperature (infection?), BP (postural drop if dehydrated?), HR (tachycardia in DKA/dehydration?), **RR (Kussmaul breathing if severe acidosis?)**.
        - **(Thyroid, Lymph Nodes, CVS, Resp, Abdo - basic screens).**
        - **Office Tests (CRITICAL for DKA):**
            - **Blood Sugar Level (BSL/BGL):** *"Examiner, what is the blood sugar level?"* (Examiner: "18 mmol/L" - significantly high).
                - (Normal fasting BSL < 7 mmol/L, random < 11.1 mmol/L).
            - **Urine Dipstick (CRITICAL):** *"What are you looking for in your urine dipstick?"* (Examiner might prompt if general).
                - **Specific Request:** *"Examiner, in the urine dipstick, I am looking for **glucose and ketones**."*
                - (Examiner: "Glucose 4+, Ketones 3+").
- **Conclusion from History & PEFE:** High BSL + Glucosuria + Ketonuria in a symptomatic young person = **Diabetic Ketoacidosis (DKA)**, likely due to new onset Type 1 Diabetes.
- **C. Explaining Diagnosis and Differentials (CRITICAL Time Management Here):**
    - **Tutor's Warning:** This is where candidates fail despite getting the diagnosis. **DO NOT over-explain DKA pathophysiology.** Be extremely brief with explanation, focus on reasons, and then rapidly list differentials.
    2. **State Most Likely Diagnosis (Be Precise):**
        - *"Alex, most likely you have a condition called **diabetic ketoacidosis**, which is a **complication of diabetes** (likely newly diagnosed)."*
    3. **VERY Brief, Simple Explanation of DKA/Diabetes:**
        - *"In diabetes, your blood sugar level increases. This can lead to the production of some chemicals in your blood called ketones. This is the condition you have."*
        - **STOP HERE.** No need for pancreas, insulin, fat burning details.
    4. **Reasons for Diagnosis (Key positive findings):**
        - *"The reasons I'm making this diagnosis are: number one, you've been tired for a while; you are passing more urine; you are feeling more thirsty."*
        - *(If other positives found like polyphagia, recurrent infections, add briefly).*

        - *"And importantly, on your tests today, your blood sugar level was very high, and we found sugar and ketones in your urine."*
    5. **Differentials (Rapid Listing - Critical for Passing):**
        - **Reason out 1-2 briefly:**
            - *"I was also thinking about other conditions. For example, I considered serious infections like **leukaemia or lymphoma**, but these are not so likely because you don't have [significant weight loss or other red flags found earlier]." *
            - *"I also thought about other infections such as **EBV (glandular fever), Q fever (from farm exposure), or even HIV/STIs**, but these are less likely because you don't have [fever, specific exposure history for some, etc.]."*
        - **Then RAPIDLY LIST from "HEMI AD COP x2":**
            - *"For the rest, I will just make a list: I was thinking about hepatitis, thyroid problems like hypothyroidism, anemia, autoimmune conditions, side effects of drugs and medications, depression and psychological problems, celiac disease or inflammatory bowel disease, heart problems like heart failure, lung problems like atypical pneumonia, and obstructive sleep apnea."*
        - **Continue listing until the bell rings or you complete your comprehensive list.**
- **Tutor's Emphasis on Time:** If you spend too long explaining DKA, you WILL run out of time for differentials and fail, even with a score of 5 in history and 5 in PEFE. Prioritize breadth of differentials after a concise diagnosis and reasoning.

IV. Key Learning Points for DKA (Tiredness Presentation):

- **Recognize Diabetes Clues:** Polyuria, polydipsia, polyphagia, unexplained tiredness, recurrent infections.
- **DKA is an Emergency:** While the OSCE is controlled, understand that DKA is serious. Symptoms can include abdominal pain, nausea, vomiting, Kussmaul breathing (deep, sighing).
- **Office Tests are Diagnostic:** High BSL + Glucosuria + Ketonuria = DKA until proven otherwise in this context.
- **Time Management for Dx/DDx is Paramount:** Be ruthlessly efficient. A brief, clear diagnosis and reasons, followed by a rapid, comprehensive list of differentials is the goal.
- **"HEMI AD COP x2" is Your Safety Net:** Even if DKA seems obvious, systematically screening other causes of tiredness demonstrates a safe and thorough approach, and provides your list for the differential task.
- This case is a test of recognizing a serious metabolic emergency presenting with a common symptom, and crucially, managing the OSCE tasks (especially Dx/DDx) within strict time limits.

Tiredness-sleeping disorder

AMC Recalls: Tiredness - Sleep Disorder (Insufficient Sleep/Sleep Restriction)

I. Introduction to "Unwell Cases" & the Specificity of Tiredness:

- This case is part of a broader "unwell" cluster, but today's focus is on tiredness when it's primarily due to sleep issues.
- The "HEMI AD COP x2" mnemonic for tiredness differentials remains the foundational structure, but this case requires a deeper dive into one specific area – sleep.
- **Key Differentiator:** The patient will often describe their "tiredness" as **"sleepiness"** rather than just "lack of energy/fatigue." This, combined with other clues, should trigger a detailed sleep history.

II. Case 44: 22 y.o. Girl, Complaining of Tiredness, Worried it's not getting better (Yawning throughout)

- **Stem Summary:**
    - 22-year-old girl, GP.
    - Complaining of tiredness.
    - **Concern in stem:** Worried it's not getting better.
- **Tasks (Online Exam Version):**
    1. History (7 minutes - unusually long, indicating depth required).
    2. Physical Examination findings provided on screen.
    3. Explain diagnosis and differentials to patient.

- **Tutor's Note on Face-to-Face Version:** Initially, this case was 6 mins history, no PEFE, then Dx/DDx. It might revert or adapt.
- **Crucial Non-Verbal Clue (especially in face-to-face): Patient is yawning frequently throughout the consultation.** This is part of the role-play, signaling a sleep issue.
- **A. Structured History Taking (Standard Tiredness Approach, with a Pivot to Detailed Sleep History):**
    1. **Intro:**
        - Open-ended Q: *"Hi Lily, my name is Dr. Emir. How can I help you today?"*
        - Patient's Opening Statement & Concern: *"Doctor, I'm worried because I'm feeling tired, and it's not getting better. This started when I had my exams and was stressed. Now my exams are over, but I'm still feeling tired, and that's why I'm a little bit worried about it."*
        - Address Concern: *"I can imagine how stressful and concerning this can be, Lily. But let me ask you a few questions. I'll figure out the cause and make the best management plan for you. Is that okay with you?"*
    2. **Explore Tiredness (4 Boxes - First box is KEY here):**
        - **Describe Tiredness (CRITICAL):** *"Lily, can you please describe your tiredness for me? I'm interested to know: are you feeling low in energy, are you feeling sleepy, or are you feeling feverish?"* (Patient: **"Doctor, I'm feeling extremely sleepy."** - This is the PIVOT point).
        - Timing: "How long (few months)? On/off or constant (always there)? Getting worse (yes/no)?"
        - Alleviating/Aggravating: "Anything make it better or worse?" (Nothing better, getting worse with time).
        - Effect on Life: "Tired all the time, can't do daily activities, can't do studies."
    3. **DETAILED SLEEP HISTORY (Triggered by "sleepiness" and yawning - This becomes the "Key Point" exploration for this case):**
        - **Tutor's Rationale:** If the primary description is "sleepiness," a detailed sleep-wake history is paramount before going through all other organic causes of fatigue.
        - **Initial Open-Ended Sleep Q:** *"Lily, can you tell me more about your sleep?"*
        - **Pre-Sleep & Environment:**
            - *"When do you usually go to bed?"*
            - *"When do you typically fall asleep?"* (Differentiates sleep onset latency).
            - *"Do you use your phone or watch TV in bed?"* (Screen time).
            - *"Is your sleep environment quiet and dark?"*
            - *"Do you have any pets that might disturb your sleep?"*
        - **During Sleep:**
            - *"How many hours of sleep do you get on average per night?"* (Patient: e.g., "5 hours").
            - *"Is your sleep refreshing? Do you wake up feeling rested?"*
            - *"Do you have problems falling asleep (initiation) or do you wake up in the middle of the night and find it hard to go back to sleep again (maintenance)?"*
            - *"Any nightmares?"*
        - **Factors Interfering with Sleep:**
            - Medical/Sleep Disorders (Screening):
                - OSA: *"Has anyone told you that you snore or gasp during sleep?"*
                - Restless Legs: *"Do you have any pain or uncomfortable sensations in your legs at night?"*
                - Narcolepsy-related (hallucinations): *"Have you ever seen anything terrifying when falling asleep or waking up?"*
            - Stimulants:
                - *"Do you use any recreational drugs? Any special medications?"*
                - *"Do you drink alcohol?"*
                - *"Do you drink coffee or tea, especially in the evening? Any energy drinks?"* (Patient: e.g., "4-5 Red Bulls every day").
    4. **Screening Other Differentials (HEMI AD COP x2 - More briefly now, as sleep is the focus):**
        - **Psychological (Important, given exam stress trigger):**
            - Mood: "How has your mood been lately?"
            - Appetite: "How has your appetite been?"
            - Anhedonia: *"Are you still enjoying the things you used to enjoy before?"*
            - Stressors: "Any current stresses at home or university/school?"
        - **Narcolepsy (If not covered under "interfering factors," specifically ask now as it's a primary sleep disorder causing excessive daytime sleepiness):**
            - Sleep Paralysis: *"Have you ever woken up unable to speak or move?"*

        - Cataplexy: *"Have you experienced any sudden weakness when you have strong emotions (like laughing or surprise)?"*
    - **Pregnancy (Key for young female):** *"When was your last menstrual period?"*
    - Then, quickly screen the rest of HEMI AD COP x2: H (Hepatic/Hemochromatosis), E (Endocrine - Thyroid, Diabetes), M (Malignancies), I (Infections), A (Anemia, other Autoimmune), C (Celiac, Cardiac/Pulmonary).
- **Key History Findings for this "Insufficient Sleep" Recall:**
    - Describes tiredness as "sleepiness."
    - Sleeps only ~5 hours/night.
    - Consumes 4-5 cups of coffee/energy drinks daily.
    - Initial trigger was exam stress, but sleep pattern hasn't recovered.
    - Mood is fine now, stress is gone.
    - Other organic screens (red flags, thyroid, diabetes, anemia, etc.) are negative.
- **B. Physical Examination Findings (Online Screen Example):**
    - **Completely NORMAL physical examination.** (Temperature fine, no lymph nodes, CVS normal, Resp normal, Abdo normal, office tests normal).
    - This further points away from a primary organic medical illness.
- **C. Explaining Diagnosis and Differentials to Patient:**
    1. **Most Likely Diagnosis:**
        - *"Most likely, Lily, you have a condition called **sleep restriction** or **sleep deprivation**."*
    2. **Brief Explanation:**
        - *"This essentially means you are feeling tired and sleepy because, as you have not been getting enough good quality sleep, your body and mind are not getting the rest they need."*
    3. **Reasons for Diagnosis:**
        - *"The main reasons I'm making this diagnosis are, firstly, your detailed sleep history: I can see that you have not been sleeping properly, you only sleep for about five hours a night. Secondly, I can see that you're drinking a lot of coffee/energy drinks, which can interfere with your sleep. And thirdly, it seems this was initially triggered by exam stress, and perhaps your sleep routine hasn't fully recovered."*
        - **Crucial Second Reason:** *"Also, the rest of your history and your physical examination today are normal. We haven't found evidence of other serious medical conditions like cancers, infections, pregnancy, or other sleep disorders like sleep apnea that could be causing this profound sleepiness."* (Diagnosis of exclusion).
    4. **Differentials (Prioritize other sleep disorders, then psychological, then organic):**
        - *"Before concluding this, I was also thinking about **other sleeping disorders**, such as:"*
            - ***"Obstructive sleep apnea**, but you don't have any snoring."*
            - ***"Narcolepsy**, but you don't have features like sudden weakness on emotions."*
        - *"I also considered **psychological problems** like major depressive disorder, an adjustment disorder, or generalized anxiety disorder, especially as this started around your stress time. However, your mood is normal now, and you're not feeling particularly anxious or sad."*
        - *"And then, of course, I thought about **pregnancy** in your age group, but you have not missed your period."*
        - **List other organic causes from HEMI AD COP x2 briefly:** *"I also considered conditions like hepatitis, diabetes, hypothyroidism, leukaemia/lymphoma, infections like EBV or HIV, travel-related infections, anemia, autoimmune conditions, side effects of drugs, celiac disease, and heart problems like heart failure."*

III. Key Learning Points for Sleep Disorder (Tiredness Presentation):

- **"Tiredness" vs. "Sleepiness":** This initial description is a critical branch point. If "sleepiness" is dominant, a detailed sleep history is paramount.
- **Yawning as a Clue:** Don't dismiss patient yawning as poor role-playing; it's an intentional clue for sleep disorders.
- **Detailed Sleep History is Key:** The "pre-sleep/environment," "during sleep," and "factors interfering" structure helps cover all bases.
- **Insufficient Sleep is a Diagnosis:** Chronic sleep restriction/deprivation is a common cause of daytime sleepiness and impaired function.
- **Rule Out Other Sleep Disorders:** Systematically ask about OSA and narcolepsy.
- **Diagnosis of Exclusion:** After a thorough history and normal examination (and basic tests if done), insufficient sleep becomes a strong candidate if no other organic or primary psychiatric cause is found.

- **Don't Abandon the Full Differential Screen:** Even if a sleep disorder seems likely, briefly screen other HEMI AD COP x2 categories to ensure no red flags are missed. This demonstrates a safe approach.
- The tutor emphasizes that this case was initially failed by many who used the standard "HEMIFATO" mnemonic without adequately focusing on the sleep history once "sleepiness" was identified as the main issue. The structure needs to be a foundation, with focused probing based on emergent clues.

Tiredness-TA and PMR

AMC Recalls: Tiredness - PMR/TA & Steroid-Related Issues (+ Depression Variant)

I. Introduction to "Unwell Cases" & Key Area Focus:

- These cases often present with a primary complaint of tiredness but have underlying complexities.
- The "HEMI AD COP x2" differential mnemonic remains the foundation, but each case will have a **specific key area** requiring more in-depth exploration.
- **History Taking Time:** These cases might have longer history-taking times (e.g., 7 minutes in some online versions), indicating the need for a very thorough exploration.
- **Predominant Assessment Area:** History taking and diagnostic formulation.

II. Case 45 (Version 1 - Adrenal Insufficiency): 60 y.o. Lady, Diagnosed with PMR/TA 4 months ago, now Tiredness & Weight Loss

- **Stem Summary:**
  - 60-year-old lady.
  - Diagnosed with PMR or TA 4 months ago.
  - Presents with tiredness and loss of weight.
  - Concerned it's not getting better.
- **Tasks (Online Exam format example):**
  1. History (7 minutes).
  2. Physical Examination findings provided on screen.
  3. Explain diagnosis and differentials.
- **Initial Problem List / Areas to Explore (from stem):**
  1. Tiredness (Primary complaint - needs full exploration).
  2. Weight loss (Significant red flag - needs quantification and exploration).
  3. PMR/TA history & steroid use (This is the "lead point" from the stem).
- **A. Structured History Taking (Integrating PMR/TA & Steroid Hx into Tiredness Structure):**
  1. **Intro:** Open-ended Q, address concern.
     - Patient: Tired for months, losing weight, extremely concerned.
     - Empathy: *"I'm so sorry to hear that, Sam. I understand how concerning and stressful that can be, but is it okay if I ask you a few extra questions just to find out what's happening and make the best management plan for you?"*
  2. **Explore Tiredness (4 Boxes):**
     - Describe: "Don't have energy to do anything" (True fatigue).
     - Timing: "Around 6 weeks, always there, getting worse."
     - Alleviating/Aggravating: "Nothing makes it better, just getting worse."
     - Effect on Life: "Can barely get out of bed, not able to do daily activities."
  3. **Explore Weight Loss:**
     - *"Can you tell me how much weight you've lost?"* (e.g., 5-6 kilos).
     - *"Over what period of time did you lose this weight?"* (e.g., last 6 weeks/1-2 months - rapid).
     - (Intentionality - tutor finds this question odd, as concerned patients usually have unintentional weight loss. If asked: "No, it's not intentional").
  4. **Explore the "Lead Point" - PMR/TA & Steroid History (4 Key Questions for any existing medical condition):**
     - **Diagnosis Timing:** "When were you diagnosed with [Temporal Arteritis/PMR]?" (4 months ago).
     - **Treatment & Compliance (CRITICAL PROBE HERE):**
       - "What treatment are you taking?" (Patient: "Prednisolone").

        - *"Are you compliant? Are you taking your medication regularly?"* (Patient: **"No, doctor, I stopped it."** - MAJOR KEY FINDING).
        - **Probe "Why stopped?":** (Patient: e.g., "My doctor [or I] ran out of medication," "My dog died, I was busy," "I felt I didn't have to take it anymore").
        - **Probe "How stopped?":** *"Did you stop it abruptly, or did you gradually decrease the dose?"* (Patient: **"No, I just ran out of medication and didn't take it anymore."** - Abrupt cessation).
    - **Side Effects (while on Prednisolone - relevant for CVRFs/DM):** *"Did you notice any weight gain while you were on Prednisolone?"*
    - **Follow-up:** "Are you still having your regular follow-ups with your GP and your specialist?"
    - **Complications/Relapse of PMR/TA (Rule out relapse as cause of tiredness):**
        - *"Do you have any shoulder and hip pain or stiffness now?"*
        - *"Any headache? Any blurring of vision?"*
5. **Explore Symptoms of Adrenal Insufficiency (Secondary to Abrupt Steroid Cessation):**
    - (Tiredness and weight loss are already present).
    - *"Have you had any **nausea or vomiting**?"*
    - *"Any **pain in your stomach (abdominal pain)**?"*
    - *"Any **diarrhoea**?"*
    - (Dizziness/postural hypotension also common).
6. **Screening Other Differentials (HEMI AD COP x2 - With emphasis on malignancies and psychological factors given grief):**
    - **Psychological (Given "dog died" comment):**
        - *"I'm so sorry to hear about your dog. How are you feeling now? How are you coping with that?"*
        - Mood: "How has your mood been?"
        - Anhedonia: "Still enjoying things you used to enjoy?"
    - **Malignancies (Red Flags - CRITICAL in elderly with weight loss/tiredness):**
        - (Appetite already asked or can be re-asked). Lumps/bumps? Night sweats?
        - Past/Family Hx of cancers?
        - **Cancer Screening (for 60 y.o. lady):** *"Are you up to date with your mammogram? Cervical screening test? Bowel cancer screening?"*
    - H (Hepatic/Hemochromatosis), E (Endocrine - Diabetes especially given steroid Hx, other Thyroid issues), I (Infections - viral, STI, travel), A (Anemia, other Autoimmune), D (Drugs - other), C (Celiac, Cardiac/Pulmonary - HF/COPD), O (OSA, Occupation). Systematically screen.
7. **Geriatric Screening (for elderly patient - Home, Memory, Support, Diet, Falls):**
    - (Mood already covered).
    - Memory: "How has your memory been lately?"
    - Home/Support: "Can you describe your home situation? Who do you live with? Do you have enough support at home?"
    - Falls: "Have you had any falls at home?"
    - Diet/Nutrition: "Can you describe your diet for me? What do you usually eat? Who prepares your meals?" (Malnutrition risk).
8. **Closure (SADMA remnants).**

- **B. Explaining Diagnosis and Differentials (Adrenal Insufficiency Case):**
    1. **Most Likely Diagnosis:** *"Sam, most likely you have a condition called **adrenal insufficiency**."*
    2. **Brief Explanation (Secondary Adrenal Insufficiency):** *"When you take steroids like Prednisolone for a long time, a gland in your body called the adrenal gland stops working as much. If you suddenly stop taking the medication, this adrenal gland can't restart working immediately, and this causes your symptoms like tiredness and weight loss."*
    3. **Reasons for Diagnosis:**
        - *"You are tired and have lost weight."*
        - *"Crucially, you have **stopped your steroid (Prednisolone) medication abruptly**."*
        - *"And you may have mentioned symptoms like [nausea, vomiting, abdominal pain, diarrhoea] if these were positive."*
    4. **Differentials (Prioritize):**
        - *"I was also thinking about other conditions. Firstly, given your weight loss, I considered **cancers** like leukaemia, lymphoma, breast cancer, or bowel cancer. However, [you don't have lumps/bumps, and your cancer screenings are up to date or will be checked]."*

        - *"Secondly, I thought about **psychological problems** like depression or an adjustment disorder, especially since you mentioned your dog recently died. This could contribute to your tiredness."*
        - *"Thirdly, **menopause** can cause tiredness in your age group, or even a relapse of your **temporal arteritis/polymyalgia rheumatica** itself."*
        - **List others from HEMI AD COP x2 briefly.**

III. Case 45 (Version 2 - Major Depressive Disorder): Same Stem, Different History Findings

- **History Taking Path:**
    - Patient is **still taking Prednisolone compliantly.** (Rules out adrenal insufficiency from abrupt cessation).
    - No side effects like weight gain from steroids. Regular follow-ups.
    - **No relapse symptoms of PMR/TA.**
    - Organic screen with HEMI AD COP x2 for other causes of tiredness is largely **negative.**
    - **Psychological Assessment (Probing the "dog died" or other stressors):**
        - Mood: *"How has your mood been?"* (Patient: **"Been very low and sad."**).
        - Anhedonia: *"Are you still enjoying activities you used to enjoy?"* (Patient: **"No, doctor, I'm no longer enjoying things."**).
        - Sleep: (Patient has sleep problems - e.g., wakes up in the middle of the night, hard to go back to sleep - initial/middle/late insomnia).
        - Appetite: (May be decreased).
        - Concentration: *"Any difficulty in concentration?"* (Yes).
        - Guilt/Worthlessness: *"Have you been feeling guilty or worthless?"*
        - Energy: (Already low - tiredness).
        - Psychomotor changes: (Less likely to be a direct OSCE finding unless observed).
        - **Suicidal Ideation (CRITICAL for MDD):** *"Sam, have you ever thought about harming yourself or anyone else?"* (Assume simple "no" for this OSCE version, as it's not a primary psych case).
- **Key History Findings for MDD:** Low mood, anhedonia, sleep disturbance, fatigue, concentration difficulties (patient has ≥5 DSM criteria for MDD).
- **Explaining Diagnosis and Differentials (MDD Case):**
    1. **Most Likely Diagnosis:** *"Sam, most likely you have a condition called **Major Depressive Disorder**."*
    2. **Brief Explanation:** *"This is an intense or extreme sadness and low mood that affects your function and can cause significant tiredness."*
    3. **Reasons for Diagnosis (Link to DSM criteria met):**
        - *"You've described a persistent low mood and a loss of interest or pleasure in activities you used to enjoy (anhedonia)."*
        - *"You also have problems with your sleep, loss of concentration, and significant tiredness. These are all features that fit with depression."*
    4. **Differentials (Prioritize organic, then other psych):**
        - *"Even though depression is most likely, I was still thinking about physical causes like a relapse of your **temporal arteritis/PMR**, but you don't have the typical symptoms of that now."*
        - *"I also considered **malignancies (cancers)**, but your screening questions for those were largely negative."*
        - *"We also thought about **menopause**."*
        - *"Other psychological conditions like **adjustment disorder or generalized anxiety disorder** were also on my mind."*
        - **List other organic differentials from HEMI AD COP x2 briefly.**

IV. "Confused Recaller Syndrome" & "Emptiness Syndrome":

- Tutor highlights that vague recalls or misinterpretations by candidates can lead to confusing "new syndromes" appearing in recall lists (like "emptiness syndrome").
- Often, these are just poorly recalled versions of existing cases (e.g., the adrenal insufficiency case).
- **Message:** Don't panic about obscure recall terms. Stick to your fundamental structures and diagnose based on the findings you elicit.

V. Case 45 (Version 3 - Sarcoidosis on Steroids): Same Stem, Different PMHx

- **Change:** Patient has **Sarcoidosis** and is on steroids.
- **Approach:** The structure remains IDENTICAL.
    - Explore Sarcoidosis history (when diagnosed, treatment, compliance, side effects, follow-up).
    - Explore complications/relapse of Sarcoidosis (e.g., cough, SOB, skin rashes, eye symptoms, hypercalcemia symptoms).
    - Proceed with the full HEMI AD COP x2 screen for other causes of tiredness.
- **Outcome:** If patient stopped steroids abruptly -> Adrenal Insufficiency. If Sarcoidosis is active -> Sarcoidosis flare. If another cause found -> Diagnose that.

VI. Key Learning Points:

- **The "Lead Point" Strategy:** If the stem gives a significant past medical history (PMR/TA, Sarcoidosis), explore that condition thoroughly using the "4 Key Questions" (Dx timing, Rx/Compliance, Side Effects, Follow-up, Complications/Relapse) early in the history.
- **Abrupt Steroid Cessation = Adrenal Insufficiency:** This is a critical link to make.
- **Differential Diagnosis Remains Broad:** Even with a strong lead point, you MUST systematically screen for other causes of tiredness using "HEMI AD COP x2" to demonstrate a safe and comprehensive approach, especially in a 6-7 minute history station.
- **Psychological Co-morbidity/Alternative:** Be prepared for cases where tiredness might be due to depression, especially if psychosocial stressors are present. A mini-psych screen is important.
- **Geriatric Screening:** For older patients, incorporating brief questions about memory, home situation/support, falls, and diet/nutrition is good practice and can uncover relevant issues.
- **Time Management:** In longer history stations, you have more time to be thorough. In shorter (4-min) versions, prioritize key point exploration and rapid screening of high-yield differentials.
- **Don't Be Fooled by Minor Recall Variations:** The core diagnostic reasoning and structured approach should allow you to handle changes in the specific PMHx or findings.

Unwell- travel and heroin

AMC Recalls: Unwell Patient - Travel & IV Heroin Use (Hepatitis/HIV/IE Focus)

I. Case 46: 26 y.o. Male, "Feeling Unwell," Recent Trip (e.g., Indonesia), Used IV Heroin Overseas

- **Stem Summary (Vague "Unwell" Presentation with Key Clues):**
    - 26-year-old male, clinic setting.
    - Complaining of "feeling unwell."
    - **Key Clues in Stem:**
        - Recent overseas trip (e.g., to Indonesia).
        - Used IV heroin while overseas.
- **Tasks (Online Exam Origin, adapted for Face-to-Face):**
    1. Take history (6 mins).
    2. Physical Examination findings (on screen or card / from examiner).
    3. Explain diagnosis and differentials to patient.
- **Initial "Problem List" from Stem:**
    1. "Feeling unwell" (needs to be defined by patient).
    2. Travel history (needs detailed exploration for exposures).
    3. IV heroin use (major risk factor for blood-borne viruses and other infections).
- **A. Structured History Taking (Tiredness Structure as Base, with Focus on Lead Points):**
    - **Tutor's Note:** "Feeling unwell" is vague. The first step is to clarify what the patient means. It often equates to tiredness/fatigue.
    2. **Intro:** (Standard approach).

- Patient: "Feeling so unwell since [e.g., a week ago], getting worse, can't get out of bed, worried something is seriously wrong."

3. **Explore "Unwellness" (Treat as "Tiredness" initially):**
   - **Describe:** *"Gary, can you describe what you mean by feeling unwell? Are you feeling low in energy, sleepy, or feverish?"* (Patient: "Low in energy, doctor"). -> *This confirms a "tiredness" type presentation, so the "HEMI AD COP x2" structure can be applied, but with heavy emphasis on the lead points from the stem.*
   - Timing, Alleviating/Aggravating, Effect on Life: (Standard exploration).
4. **Explore Lead Point 1: Travel History (CRITICAL - use QUIT ABCDEFG + Sex Mnemonic):**
   - *"Gary, I understand you had a recent trip. Can you tell me where did you travel to? How long did you stay?"*
   - *"What activities did you do overseas?"* (Patient: "Just having fun with friends, leisure, vacation").
   - **Q**uality/Activities & **U**nusual Exposures / **I**nsect Bites: *"Did you do any **B**ushwalking? Did you notice any **I**nsect bites?"*
   - **T**hrough Contact: *"Did you have any **C**ontact with **A**nimals or **S**ick people overseas?"*
   - **D**rugs: (Heroin use is a separate lead point, explore later).
   - **E**xposure to Blood: *"Did you do any **T**attooing, **P**iercing, or have any **B**lood transfusions overseas?"*
   - **F**ood & Water: *"Did you consume any street **F**ood or **U**nbottled water while overseas?"*
   - **G**P Visit/Vaccinations Pre-Travel: *"Did you see your **G**P before travelling for any vaccinations or travel advice?"* (Patient in one version: "Yes, got a Hepatitis shot").
   - **Sex**ual Activity: *"Any new sexual partners or unprotected **S**exual activity while you were overseas?"* (Patient: "No, I'm not sexually active / No sex overseas." - *Tutor: Note this down in red, as it might change or be a distractor*).
5. **Explore Lead Point 2: IV Heroin Use (CRITICAL - do this sensitively):**
   - *"Gary, the notes also mention some heroin use. Can you tell me more about your heroin use?"*
   - (Patient: "Yes, doctor, it was this night we were partying, me and my friends. I feel so guilty about it. This is my first time using drugs, but yes, I used heroin for the first time in my life that night.")
   - *"Can you tell me **how you used it**?"* (Injected, sniffed, smoked?). (Patient: "I did inject it").
   - **"Did you share needles?"** (Patient: **"Yes, we had only one needle, so we ended up sharing our needles together."** - MAJOR RISK FACTOR).
6. **Screening for Differentials (Focus on Blood-Borne Viruses (BBVs) & Injection-Related Infections first, then broaden with HEMI AD COP x2):**
   - **Logical Next Step: Blood-Borne Viruses (BBVs) & Injection Complications:**
     - **A. HIV (Seroconversion Illness):**
       - *"Any sore throat? Any rash you've had? Any fever or chills? Any night sweats?"*
       - *"Lost any appetite? Noticed any lumps or bumps in your body (lymphadenopathy)?"*
       - *"Been losing weight?"*
     - **B. Hepatitis (Acute Viral Hepatitis B/C):**
       - *"Any yellowish discoloration of your skin or eyes (jaundice)?"*
       - *"Any abdominal pain? Nausea or vomiting?"*
       - *"Noticed any dark urine or pale stools?"*
     - **C. Injection-Related Infections:**
       - Local Site: *"Have you noticed any swelling or redness at the injection site?"* (Cellulitis/abscess).
       - Systemic (Infective Endocarditis - IE):
         - *"Any chest pain? Any racing of your heart?"*
         - *"Noticed any new skin lesions or rashes, especially on your hands or feet?"* (Osler's nodes, Janeway lesions).
   - **Systematic "HEMI AD COP x2" Screening (More briefly now, as BBVs are primary focus):**
     - **M**alignancies: (Already asked weight loss, appetite, lumps, night sweats under HIV screen). Add PMHx/FMHx cancer.
     - **I**nfections (other): (Fever/chills asked). *Revisit sexual history here if new concerns about STIs beyond BBVs arise, or if initial "no sex" answer seems incongruent.*
       - **Tutor's Point on Sexual History:** If the patient initially denies sexual activity but HIV/Hepatitis becomes a strong possibility through IVDU, it's reasonable to gently re-explore sexual risk factors later as BBVs are also STIs. Patient may disclose more once rapport is built or the seriousness is understood.

        - H (Hepatic - covered), E (Endocrine), A (Anemia, Autoimmune), D (Drugs - covered, Depression), C (Celiac, Cardiac-HF/Pulmonary-COPD), O (OSA, Occupation), P (Pregnancy/Menopause - N/A).
    7. **Closure (SADMA).**
- **B. Physical Examination Findings (Provided on Card/Screen or Elicited):**
    - **Version 1 (Hepatitis Focus):**
        - Mild hepatomegaly.
        - Right upper quadrant (RUQ) tenderness.
        - Jaundice.
        - Urine dipstick: Bilirubin positive.
    - **Version 2 (HIV Seroconversion / EBV-like Focus - if Hepatitis signs are absent):**
        - Generalized rash.
        - Lymphadenopathy (e.g., cervical, axillary).
        - Inflamed tonsils / pharyngitis.
        - Aphthous ulcers.
    - **Version 3 (Infective Endocarditis Focus - if cardiac symptoms prominent):**
        - Fever.
        - New or changed heart murmur.
        - Splinter haemorrhages, Osler's nodes, Janeway lesions.
        - Splenomegaly.
        - (Signs of heart failure if IE causes valve destruction).
    - **PEFE Structure (If Eliciting):** Standard tiredness structure, but with **strong emphasis on:**
        - General: Jaundice, pallor, rashes, signs of IVDU.
        - Lymph nodes.
        - Abdomen: Hepatomegaly, splenomegaly, RUQ tenderness.
        - CVS: Murmurs, signs of HF.
        - Skin: Peripheral stigmata of IE.
- **C. Explaining Diagnosis and Differentials (Tailor to predominant findings):**
    - **Scenario 1: Findings point to Acute Hepatitis (e.g., Jaundice, Tender Hepatomegaly, Bili in urine)**
        1. **Diagnosis:** *"Gary, most likely you have a condition called **acute hepatitis**."*
        2. **Brief Explanation:** *"This means your **liver is inflamed**, and this is most likely **caused by a virus** that you may have contracted when you shared needles."* (Can specify Hep B or C if common, but "viral hepatitis" is fine).
        3. **Reasons:** Link to jaundice, RUQ pain/hepatomegaly, history of needle sharing.
        4. **Differentials (Prioritize other BBVs, then broader):**
            - *"I am also concerned about other blood-borne viruses like **HIV** and potentially **infective endocarditis** (an infection of the heart lining), given the shared needle use."*
            - *"Other infections like **cellulitis** at the injection site are possible."*
            - *"We also need to consider **other STIs** like syphilis if there were other risk factors."*
            - *"And then less likely, but still considered, were **travel-related infections** like Dengue fever or Ross River fever, **malignancies** like leukaemia/lymphoma, and **psychological issues** like PTSD or an adjustment disorder related to the drug use."*
            - (Also list from HEMI AD COP x2: Hemochromatosis, endocrine, anemia, autoimmune, etc., briefly).
    - **Scenario 2: Findings point to HIV Seroconversion (e.g., Rash, Lymphadenopathy, Sore Throat, Fever - EBV/Mono-like picture)**
        1. **Diagnosis (Sensitive Delivery):** *"Gary, based on your symptoms, I am concerned about some possible causes for you feeling unwell. One possibility, given the needle sharing, is that you may have contracted the **HIV virus**. The initial stages of this infection can cause symptoms like the rash, sore throat, and swollen glands you're experiencing, and this is called **HIV seroconversion**."* (Human Immunodeficiency Virus).
        2. **Reasons:** Link to rash, sore throat, lymphadenopathy, night sweats, needle sharing.
        3. **Differentials (Prioritize other infections mimicking this, then broader):**
            - *"It's important to know that other viral illnesses can look very similar, like **EBV (glandular fever) or CMV**. We'd also think about **syphilis**."*
            - *"And we still need to consider **hepatitis** and **infective endocarditis** due to the needle sharing."*
            - Then list other HEMI AD COP x2 differentials.
    - **Scenario 3: Findings point to Infective Endocarditis (e.g., Fever, New Murmur, Splinter Haemorrhages, +/- HF signs)**
        1. **Diagnosis:** *"Gary, most likely you have a condition called **infective endocarditis**."*

2. **Brief Explanation:** *"This is an **infection of the inner lining of your heart**, and often the heart valves. You most likely contracted or caught the infection when you injected drugs and shared needles, allowing bacteria to enter your bloodstream and settle on your heart."*
3. **Reasons:** Link to fever, chest pain/palpitations (if present), new murmur, splinter haemorrhages, signs of heart failure (if present), needle sharing history.
4. **Differentials (Prioritize other BBVs, sepsis, then broader):**
    - *"Given the needle sharing, we must also consider **HIV and Hepatitis**."*
    - *"A more generalized **sepsis** or **cellulitis** from the injection site is also possible."*
    - Then list other HEMI AD COP x2 differentials.

II. Tutor's Point on Incomplete Recalls:

- A recall mentioning fever, JVP, groin lymph nodes, and splenomegaly (without history context) is difficult to definitively diagnose but would still make IE a strong contender if IVDU history was known.
- **Key is to stick to a structure and elicit findings.**

III. Key Learning Points for "Unwell Patient - IVDU & Travel":

- **"Unwell" is a Vague Complaint:** The first step is always to ask the patient to describe what "unwell" means to them (usually tiredness, feverishness, or lack of energy).
- **Lead Points are Critical:** Travel history and IV drug use are major red flags that MUST be explored in detail.
- **Structured Exploration of Lead Points:** Use mnemonics like "QUIT ABCDEFG + Sex" for travel to ensure comprehensive questioning. For IVDU, ask about method, needle sharing, first time vs. regular use.
- **Prioritize BBVs & Injection Complications:** Once IVDU and needle sharing are confirmed, HIV, Hepatitis B/C, and Infective Endocarditis become top-tier differentials. Also consider local site infections.
- **Systematic Screening for Other Systems:** Even with strong clues for BBVs, briefly run through the "HEMI AD COP x2" structure for tiredness to ensure no other major co-existing issues or alternative diagnoses are missed.
- **Be Prepared for Different Diagnostic Outcomes:** This case can pivot to Hepatitis, HIV, or IE based on the specific constellation of symptoms and signs elicited. Your structured approach should allow you to identify the most likely path.
- **Sensitive Questioning:** Approach topics like drug use and sexual history professionally and non-judgmentally.
- This is a complex case testing the ability to handle vague complaints, explore high-risk behaviours, and differentiate between several serious infectious diseases.

Unwell- Rash

AMC Recalls: Unwell Patient with Rash (STI/Viral Exanthem Focus)

I. Case 47: 27 y.o. Male, "Feeling Unwell" & Noticed a Rash (8 days)

- **Stem Summary:**
    - 27-year-old male, GP setting.
    - Complaining of "feeling unwell" for 8 days.
    - **New Symptom:** Noticed a rash on himself.
- **Tasks (Online Exam Format):**
    1. Take history (6 mins).
    2. Physical Examination findings provided on screen.
    3. Explain diagnosis and differentials to the patient.
- **Initial Brainstorming - Key Differentials for "Unwell + Rash + Fever (implied)":**
    - **STIs: HIV (seroconversion), Syphilis (secondary).**
    - **Viral Exanthems:** EBV (Mononucleosis), CMV, Measles, Rubella, other common viruses.
    - **Travel-related (if applicable):** Dengue, Ross River Fever.
    - **Serious Infections:** Meningococcaemia.
    - **Other:** Infective Endocarditis (IE), Drug Reactions, Leukemia/Lymphoma (can present with rash & malaise).
- **A. Structured History Taking (Treating "Unwell" as Tiredness/Feverish, with strong STI/Infection focus):**

1. **Haemodynamic Stability (Contextual - if concerning features arise, though less direct in GP for this specific stem):**
    - Online: *"Ben, just before I start, I'll check your vital signs and make sure you're stable. Is that okay with you?"*
    - Face-to-Face (if this were one): Ask examiner for vitals, especially if rash looks purpuric or patient seems very ill.
2. **Opening & Addressing Concern:**
    - Open-ended Q. Patient: "Feeling unwell for days, now a rash, worried."
    - Address concern.
3. **Explore "Unwellness" (Similar to Tiredness - 4 Boxes):**
    - Describe: *"Can you describe what you mean by feeling unwell? Are you low in energy, sleepy, or feverish?"* (Patient: "Feverish and low in energy").
    - Timing: "How long (8 days)? On/off or constant? Getting worse?"
    - Alleviating/Aggravating.
    - Effect on Life.
4. **Explore the Rash (Key New Complaint):**
    - **Describe Rash:** *"Can you please describe the rash? Is it redness, blisters, or does it look like a bruise?"* (Patient: "Just a red rash/red patch").
    - **Timing of Rash:**
        - *"When did the rash start? (How long have you had it for?)"*
        - *"Where did it start from (site)?"* (Patient: "Started on my chest").
        - *"Is it spreading?"* (Patient: "Yes, spread to my back and arms").
    - **Character of Rash:**
        - *"Is the rash itchy or painful?"* (Patient: "Not itchy, not painful").
5. **Screening for Differentials (Focus heavily on Infections, then broaden):**
    - **A. Infections (Prioritize based on Rash + Unwell):**
        - General Infection Qs: *"You mentioned feeling feverish. Have you checked your temperature? Any chills? Taken any medications for it? Is it working?"*
        - **Travel History (Rule out imported infections):** *"Have you had any travel recently?"* (Patient: No - this simplifies the differential significantly).
        - **Sexually Transmitted Infections (STIs - HIGH YIELD given non-specific rash + malaise):**
            - Initial Head's Up (for detailed sexual history): *"Ben, I'm going to ask you a few questions about your sex life or your sexual history. Is that okay with you?"*
            - **Detailed Sexual History (Partners, Practices, Protection - "3 Ps" or similar structure):**
                - Partners: *"Do you have a stable partner? Have you ever had multiple partners?"*
                - *"Are your partners male or female?"* (Key for MSM risk).
                - Practices: *"Do you practice oral, vaginal, or anal sex?"*
                - Protection: *"Do you practice safe sex and use condoms?"* (Patient: **"No, I don't use condoms."** -> Further probing: **"I have male partners," "Yes, multiple partners/casual relationships."** - MAJOR RISK FACTORS for STIs).
            - Previous STIs: *"Have you ever been diagnosed with an STI before?"*
            - (Sex under influence - less critical here if above are positive).
        - **Specific STI Symptom Screens (after risk established):**
            - Syphilis/Herpes (Primary lesions): *"Have you noticed any rash or ulcer on your private parts?"*
            - Hepatitis (B/C are STIs): *"Any yellowish discoloration of your skin or eyes? Abdominal pain? Nausea/vomiting?"*
            - Urethritis/Proctitis (Gonorrhoea/Chlamydia): *"Any discharge from your penis? Any pain or swelling in your testicles?"*
        - **Meningococcaemia/Meningitis (Life-threatening rash illness):**
            - *"Any dizziness? Headaches? Pain or stiffness in your neck? Are you light sensitive (photophobia)?"*
        - **Viral Exanthems (EBV, Measles, etc.):**
            - Childhood Immunizations: *"Did you receive your childhood immunizations?"* (For MMR).
            - URTI symptoms: *"Any sore throat? Runny nose or cough?"*
            - Antibiotic use with EBV: *"Did you take any antibiotics recently?"* (Amoxicillin rash with EBV).

        - GI Viral symptoms: *"Any diarrhoea, abdominal pain, vomiting?"*
      - **Rarer/Other Infections (Brief screen):**
        - Insect bites/Bushwalking (for tick/mosquito-borne, less likely if no travel).
        - Contact with animals (for zoonotic infections like Q fever).
        - Infective Endocarditis (if IVDU or valvular Hx suspected - less likely here based on stem): "Chest pain? Racing heart? Dental surgeries? IV drug use?"
    - **B. Malignancies (Leukaemia/Lymphoma - can cause rash, fever, malaise):**
      - Loss of weight, appetite, **lumps/bumps (lymphadenopathy)**, night sweats. Past/Family Hx of cancers.
    - **C. Febrile Drug Reactions:**
      - *"Any recent new medications?"*
    - **D. Other "HEMI AD COP x2" tiredness differentials (screen much more briefly now, as infection is the strong focus):**
      - Thyroid, Diabetes, Anemia, Autoimmune (e.g., SLE can have rash + systemic symptoms - ask "any joint pain?"), Depression, Celiac, HF, OSA etc.
6. **Closure (SADMA).**

- **B. Physical Examination Findings (Online Screen Example for this HIV/Syphilis recall):**
  - Temperature: 38.2°C (Fever).
  - **Generalized lymphadenopathy.**
  - (Other systems like CVS, Resp, Abdo are normal).
  - (No specific rash description beyond "red rash on chest and back, not itchy, not painful" from history).
- **Tutor's Note on Rash Description in OSCE:** If the rash description from history is vague, on PEFE, you'd ask the examiner to describe the rash (macular, papular, vesicular, purpuric, distribution). For an online case where findings are just given, you work with what you have.
- **C. Explaining Diagnosis and Differentials to Patient:**
  - **Tutor's Point:** With findings of fever, generalized lymphadenopathy, non-specific rash, and high-risk sexual history (MSM, no condoms, multiple/casual partners), HIV seroconversion and Secondary Syphilis are top differentials. EBV/CMV are also strong possibilities.
  2. **Broad Opening Statement:** *"Ben, I was thinking about different causes which could present with feeling unwell and a rash."*
  3. **State Main Concerns (STIs):** *"In your case, I am concerned about the possibility of a **sexually transmitted infection (STI)**."*
  4. **Name Specific STIs (Can group or state top 1-2):**
     - *"This could be something like **HIV**, which is the Human Immunodeficiency Virus, or **Syphilis**."*
     - (Tutor: "I think if you'd say two differentials, your examiner will like you a little bit more in this case because there is no way to differentiate them [clinically at this stage without tests] and you are just showing your good knowledge.")
  5. **Reasons for Diagnosis (Link to history and exam findings):**
     - *"My reasons for thinking about these are mainly your **sexual history** – you mentioned having sex with men, not always using condoms, and having casual partners, which increases the risk of STIs."*
     - *"Also, your symptoms of **rash, the enlarged glands (lymph nodes)** that we found on examination, and feeling **feverish and unwell** can all be features of these types of infections, especially in their early stages."*
  6. **Differentials (Prioritize other mimicking infections, then broader):**
     - *"It's also important to consider other viral illnesses that can look very similar, such as **Herpes infections**, or glandular fever caused by **EBV (Epstein-Barr Virus) or CMV (Cytomegalovirus)**, or even **Toxoplasmosis**."* (These are key differentials for a mono-like illness with rash/lymphadenopathy).
     - *"If you had travelled, I would think about infections like **Dengue fever, Ross River fever, or Malaria**, but you haven't travelled."*
     - *"Less likely, but still considered, were infections like **Meningococcaemia** (though your rash isn't typical for that), or skin infections like **cellulitis** if the rash was localized and painful."*
     - *"We also think about non-infectious causes like **malignancies (leukaemia, lymphoma)** or **febrile drug reactions**."*
     - (Briefly list other HEMI AD COP x2 categories if time allows and seems relevant).

IV. Tutor's Note on Case Evolution:

- This "unwell patient with rash" case is a newer recall. The key is the pivot to a detailed sexual history once risk factors are identified.
- The tutor contrasted this with the previous "unwell patient + IVDU + travel" case, where the focus shifted to BBVs (HIV, Hepatitis, IE) primarily through the IVDU route, though sexual history also became relevant. Here, the sexual history is paramount for HIV/Syphilis.

V. Key Learning Points for "Unwell Patient with Rash" Case:

- **Rash is a Major Clue:** It significantly narrows the differentials, often towards infective or immunological causes.
- **Detailed Rash History:** Characterize the rash (appearance, timing, spread, itch/pain).
- **Sexual History is CRITICAL if STIs are Suspected:** Use a structured approach (Partners, Practices, Protection, Past STIs). Provide a "heads-up" before asking sensitive questions.
- **Prioritize Key STI Differentials:** HIV seroconversion, Secondary Syphilis, and Herpes are important considerations for generalized rash + systemic symptoms + risk factors.
- **Consider Viral Exanthems:** EBV, CMV, Measles, Rubella are common causes of rash + fever + malaise, especially if STI risk is lower or features are more typical.
- **Meningococcaemia is a "Can't Miss":** Even if less likely, keep it in mind for any patient with fever + rash + feeling very unwell.
- This case tests the ability to take a sensitive sexual history, link risk factors to specific STIs, and differentiate between various causes of rash and systemic illness.

Unwell- Sauna & PrEP

AMC Recalls: Unwell Patient - Sauna Use & HIV PrEP (Hepatitis/STI Focus)

I. Case 49: 25 y.o. Male, "Feeling Unwell," Goes to Sauna with Friends (who have similar symptoms), Currently on PrEP

- **Stem Summary:**
  - 25-year-old male, GP.
  - Complaining of "feeling unwell."
  - **Lead Point 1:** Goes to the sauna with friends; friends have similar symptoms.
  - **Lead Point 2:** Currently on PrEP (HIV Pre-Exposure Prophylaxis).
- **Tasks (Online Exam Format):**
  1. Take history (5-6 mins).
  2. Physical Examination findings provided on screen.
  3. Explain diagnosis and differentials to the patient.
- **Initial "Problem List" & Conceptual Focus from Stem:**
  1. "Feeling unwell" (needs to be defined).
  2. Sauna use with friends + similar symptoms in friends (suggests a common source exposure, likely infectious, potentially related to recreational water).
  3. On PrEP (implies patient is at high risk for HIV, likely MSM - Men who have Sex with Men, and necessitates a detailed sexual history and consideration of other STIs).
  4. **Likely Infections from Sauna/Recreational Water:** Legionella (atypical pneumonia), Pseudomonas skin infections ("hot tub rash"), Hepatitis A/E (if hygiene is poor).
- **A. Structured History Taking (Integrating Lead Point Exploration):**
  1. **Intro & Haemodynamic Stability (If concerned):**
     - (Standard opening, address concern).
     - If "unwell" sounds severe, a brief statement about monitoring vitals (as in previous "unwell + rash" case) is appropriate.
  2. **Explore "Unwellness" (Treat as Tiredness/Feverish initially):**

        - Describe, Timing, Alleviating/Aggravating, Effect on Life.
    3. **Explore Lead Point 1: Sauna Use & Friends' Symptoms:**
        - *"Can you tell me more about the sauna use and your friends?"* (Patient: "We go a few times a week").
        - *"How often do you go there?"*
        - *"Do you know what symptoms your friends are having?"* (May or may not know specifics).
        - **Screen for Infections Associated with Recreational Water (Saunas, Spas):**
            - **Legionella (Atypical Pneumonia):** *"Have you had any cough? Shortness of breath? Any fever or chills?"* (Also ask: *"Any diarrhoea?"* - common with Legionella).
            - **Hepatitis A/E (if sanitation is an issue):** *"Any abdominal pain? Nausea or vomiting? Yellowish discoloration of your skin or eyes?"* (Dark urine/pale stools).
            - **Skin Infections (Pseudomonas - "Hot Tub Folliculitis"):** *"Do you have any rashes on your body?"*
    4. **Explore Lead Point 2: PrEP Use (This is a gateway to sexual history and STI screening):**
        - *"I see you're on PrEP. Can you tell me, are you compliant with your PrEP medication?"* (If not, HIV risk increases significantly).
        - *"Are you having regular follow-ups with your GP or specialist for your PrEP management?"*
        - **Crucial Follow-up for PrEP Users:** *"As part of PrEP care, are you having your routine three-monthly Sexually Transmitted Infection (STI) screenings and your Hepatitis A & B vaccinations done?"*
        - *(This naturally leads into exploring sexual risk & STI symptoms).*
    5. **Detailed Sexual History (CRITICAL, given PrEP use & likely MSM context):**
        - Heads-Up: *"Ben, I need to ask you some sensitive and detailed questions about your sex life to understand potential risks. Is that okay with you?"*
        - **Partners:** *"Do you have a stable partner? Have you ever had multiple partners?"*
        - *"Are your partners male or female?"* (Confirms MSM if male partners).
        - **Practices:** *"What methods of sex do you practice? Is it oral, vaginal, or anal?"*
        - **Protection:** *"Do you practice safe sex and use condoms?"* (Even on PrEP, condoms protect against other STIs).
        - (Patient in one recall version: "I have sex in the sauna with friends").
        - **Previous STIs:** *"Have you ever been diagnosed with an STI before?"*
        - **(Sex under influence - if not covered elsewhere).**
    6. **Screening for Symptoms of Common STIs (The "MSM Package"):**
        - **HIV Seroconversion:** *"Any sore throat? Rashes (if not already asked)? Lumps/bumps (lymphadenopathy)? Night sweats?"*
        - **Hepatitis B/C (also STIs):** (Yellowish discoloration, abdo pain, N/V already asked under sauna infections).
        - **Syphilis/Herpes (Ulcerative STIs):** *"Have you noticed any rash or ulcer on your private parts?"*
        - **Urethritis (Gonorrhoea/Chlamydia)/Epididymo-orchitis:** *"Any discharge from your penis? Any swelling or pain in your testicles?"*
    7. **Screening Other Differentials (HEMI AD COP x2 - More briefly now):**
        - **M**alignancies (Red Flags).
        - **I**nfections (other types, e.g., travel if they also travelled, though sauna is local).
        - **Tutor's Point:** By this stage, with sauna exposure and high-risk sexual history, the focus is heavily on infections. However, quickly running through other categories shows a comprehensive approach. Emphasize:
            - H (Hepatic - covered), E (Endocrine - Thyroid, Diabetes), A (Anemia, Autoimmune), D (Drugs - other recreational, Depression), C (Celiac, Cardiac-HF/Pulmonary-COPD), O (OSA, Occupation), P (Pregnancy/Menopause - N/A).
    8. **Closure (SADMA).**
- **B. Physical Examination Findings (Online Screen Example for this Hepatitis A/B/C recall):**
    - Enlarged, tender hepatomegaly.
    - Urine dipstick: Bilirubin positive.
    - (No jaundice mentioned in this specific recall, but often present with symptomatic acute hepatitis).
- **C. Explaining Diagnosis and Differentials (Hepatitis Focus for this version):**
    1. **Most Likely Diagnosis:** *"Ben, most likely you have a condition called **acute hepatitis**."*
    2. **Brief Explanation:** *"This means your **liver is inflamed**, most likely **caused by a virus**."*
    3. **Link to Potential Sources (Sauna OR Sexual Contact):**
        - *"Given your history, you could have contracted this either from exposure at the sauna if hygiene was an issue (this would typically be Hepatitis A), or it could be Hepatitis B or C, which can be transmitted sexually, especially with unprotected contact."*

4. **Reasons:** Link to abdominal pain, nausea/vomiting (if present), tender hepatomegaly, bilirubin in urine, and relevant exposure history (sauna and/or sexual risk).
5. **Differentials (Prioritize other relevant infections):**
    - **Other Recreational Water Infections:** *"When you go to a sauna, there's also a chance of getting other infections like a lung infection called **Legionella** (but you don't have cough/SOB), or common **skin infections** (like Pseudomonas folliculitis, but you don't have rashes)."*
    - **Other STIs (CRITICAL):** *"Because of your sexual practices, it's very important we also think about other sexually transmitted infections. **HIV** is at the top of my list to consider, as well as **Syphilis** and **Herpes**."* (Also mention Gonorrhoea/Chlamydia if urethral symptoms were present).
    - **Malignancies:** (Leukaemia/Lymphoma).
    - **Psychological Problems:** (e.g., Major Depressive Disorder, if mood symptoms were prominent).
    - (Briefly list other HEMI AD COP x2 categories).
- **Side Effect of PrEP (Kidney Issues - CKD):**
    - *"One other thing to consider, though less likely to cause these acute liver symptoms, is that PrEP itself can sometimes affect kidney function. We routinely monitor this, but it's something to keep in mind for overall health."* (This is a more peripheral differential for "unwell" generally, not the acute hepatitis picture).

IV. Key Learning Points for "Unwell Patient - Sauna & PrEP":

- **Multiple Lead Points:** This case has two strong clues (sauna + PrEP) that need independent and thorough exploration.
- **PrEP Implies High HIV Risk & MSM:** This should immediately trigger a detailed, non-judgmental sexual history and a high index of suspicion for STIs. Knowledge of routine 3-monthly STI screening for PrEP users is important.
- **Sauna/Recreational Water Infections:** Be aware of common infections like Legionella, Pseudomonas skin infections, and potentially Hepatitis A/E.
- **Overlap of Transmission Routes:** Hepatitis B & C can be transmitted both sexually and via blood (less likely in sauna context unless injuries/shared items). Hepatitis A/E are primarily fecal-oral (poor hygiene in shared facilities).
- **Structured History is Key to Unraveling:** Even with specific clues, use a framework to ensure all relevant areas (medical, sexual, exposure) are covered.
- **Diagnosis Depends on Findings:** This stem can lead to Hepatitis (if liver signs dominate), or if those are absent and STI symptoms/risks are high, then HIV/Syphilis/other STIs become primary.
- This is a complex case testing knowledge of infectious diseases, sexual health, and the ability to integrate multiple risk factors into a diagnostic formulation.

Unwell-incident at work

AMC Recalls: Unwell Patient - Incident at Work (Fecal-Oral Infections)

I. Introduction to "Unwell Patient" Cases:

- "Feeling unwell" is a vague presentation, similar to "tiredness."
- **Initial Key Question:** *"Can you describe what you mean by feeling unwell? Are you feeling tired, sleepy, or feverish?"* This helps to categorize the "unwellness."
- Newer "unwell" cases in AMC often have **specific clues or "lead points"** in the stem that guide the history taking towards a particular area of concern, beyond a general tiredness approach.
- The "HEMI AD COP x2" differential mnemonic for tiredness remains a useful background framework, but the lead points must be prioritized.

II. Case 48: 30 y.o. Lady, "Feeling Unwell," "Incident at Work" (Fell into Sewer)

- **Stem Summary:**
    - 30-year-old lady, GP.
    - Complaining of "feeling unwell."
    - **Lead Point:** "There has been an incident at work." (Stem doesn't initially specify what).
- **Tasks (Online Exam Format):**

1. Take history (6 mins).
2. Physical Examination findings provided on screen (or card in face-to-face).
3. Explain diagnosis and differentials to the patient.

- **Tutor's Spoiler (The "Incident"):** The patient works taking samples from the sewer and slipped and fell into the sewage.
- **Conceptual Focus of the Case:**
  - **Primary:** Exposure to fecal-oral transmitted infections.
  - **Secondary:** Potential for psychological trauma (PTSD) from the incident.
- **A. Structured History Taking (Integrating Lead Point Exploration):**
  1. **Intro & Haemodynamic Stability (If concerned by "unwell" description):**
     - (Standard opening, address concern).
     - If patient describes severe symptoms (high fever, very sick), a brief statement about monitoring vitals is appropriate, even in telehealth if implying advice to seek urgent assessment.
  2. **Explore "Unwellness" (Treat as Tiredness/Feverish based on patient's description):**
     - Describe, Timing, Alleviating/Aggravating, Effect on Life (as per standard tiredness exploration).
  3. **Explore the Lead Point - "Incident at Work" (CRITICAL):**
     - *"Can you tell me more about the incident at work?"*
     - (Patient describes falling into the sewer).
     - **Follow-up Questions for Sewer Exposure:**
       - Protective Equipment: *"Were you wearing any protective equipment at the time?"*
       - Ingestion/Mucous Membrane Exposure: *"Did any fluid enter your eyes or your mouth?"* (Key for fecal-oral route).
       - Incident Reporting (WorkCover context): *"Did you file an incident report with your employer?"*
       - Other Injuries from Fall: *"Did you hit your head anywhere? Did you sustain any other injuries during that fall?"*
  4. **Screening for Differentials (Focus heavily on Fecal-Oral Infections, then Psychological, then broaden with HEMI AD COP x2):**
     - **A. Fecal-Oral Transmitted Infections (Primary Medical Concern):**
       - **1. Hepatitis Viruses (A & E are fecal-oral):**
         - *"Any yellowish discoloration of your skin or eyes (jaundice)?"*
         - *"Any abdominal pain? Nausea or vomiting?"*
         - *"Noticed any dark urine or pale stools?"*
       - **2. Gastroenteritis Pathogens (Viral, Bacterial, Protozoal):**
         - *"Do you have any **diarrhoea**?"*
           - If yes, explore further: *"Is it loose stools or watery? Any **blood in your stools**? Any mucus or pus?"*
         - (Nausea, vomiting, abdominal pain already asked).
         - *"Any fever or chills?"*
       - **3. Other/Rarer Fecal-Oral Infections (Brief Screen):**
         - (Toxoplasmosis, CMV, Leptospirosis can have fecal-oral elements or exposure through contaminated water/soil).
         - *"Any rashes on your body? Noticed any lumps or bumps (lymphadenopathy)?"*
     - **B. Psychological Sequelae from Traumatic Incident:**
       - Opening Q: *"How are you coping with this incident?"*
       - Sleep: *"How has your sleep been since the incident?"* (Consider nightmares for PTSD).
       - Mood: (Ask standard mood/anhedonia questions).
       - Work-Specific Anxiety/Avoidance: *"Have you been avoiding going back to work?"* (Relevant for PTSD/Adjustment Disorder).
       - (General stress at work/home).
     - **C. Broaden with HEMI AD COP x2 (More briefly, as infection/psychological are primary focus):**
       - **M**alignancies (Red Flags - important).
       - **I**nfections (other types - e.g., recent flu unrelated to incident, STIs if other risks).
       - H (Hepatic - covered), E (Endocrine - Thyroid, Diabetes), A (Anemia, Autoimmune), D (Drugs - recreational, other Medications), C (Celiac, Cardiac/Pulmonary - HF/COPD), O (OSA, other Occupation factors), P (Pregnancy/Menopause - if applicable).
  5. **Closure (SADMA).**
- **B. Physical Examination Findings (Provided on Card/Screen):**

- **Version 1 (Hepatitis A/E Focus):**
  - No jaundice (interestingly, can be anicteric).
  - **Hepatomegaly.**
  - **Right Upper Quadrant (RUQ) tenderness.**
  - **Urine dipstick: Bilirubin positive.**
- **Version 2 (Gastroenteritis Focus - if hepatitis signs absent):**
  - No jaundice, no hepatomegaly.
  - Generalised abdominal discomfort or mild tenderness.
  - Signs of dehydration if diarrhoea/vomiting severe.
  - Urine dipstick normal or shows ketones if not eating/drinking.

- **C. Explaining Diagnosis and Differentials (Tailor to predominant findings):**
  - **Scenario 1: Findings point to Acute Viral Hepatitis (A or E)**
    1. **Diagnosis:** *"Lily, most likely you have a condition called **acute hepatitis**."*
    2. **Brief Explanation:** *"This means your **liver is inflamed**, and this is most likely **caused by a virus**, probably Hepatitis A or E, that you may have contracted when you fell into the sewer and were exposed to contaminated water."*
    3. **Reasons:** Link to RUQ pain/hepatomegaly, positive bilirubin in urine (if present), history of sewer exposure.
    4. **Differentials (Prioritize other fecal-oral, then psychological, then broader):**
       - *"I was also thinking about other infections that can be transmitted when you come into contact with urine and faeces, such as **gastroenteritis** caused by various viruses, bacteria, or protozoa."*
       - *"Given the traumatic nature of the incident, psychological problems like **Post-Traumatic Stress Disorder (PTSD) or an Adjustment Disorder** are also important to consider as they can make you feel generally unwell and tired."*
       - Then list other HEMI AD COP x2 differentials briefly (Malignancies, other infections, etc.).
  - **Scenario 2: Findings point to Gastroenteritis**
    1. **Diagnosis:** *"Lily, most likely you have a condition called **gastroenteritis**."*
    2. **Brief Explanation:** *"This is an **infection in your bowel**, most likely caused by a **bug (virus, bacteria, or parasite)** that you caught when you fell into the sewer."*
    3. **Elaborate on Types (Show breadth):** *"This could be a **virus** (like Rotavirus or Adenovirus), **bacteria** (like Salmonella, Shigella, or E. coli), or even a **protozoal infection** (like Giardiasis or Cryptosporidiosis)."*
    4. **Reasons:** Link to diarrhoea, nausea/vomiting, abdominal pain, fever, history of sewer exposure.
    5. **Differentials:**
       - *"We also need to consider **Hepatitis A or E**, as these are also transmitted through contaminated water."*
       - *"Psychological problems like **PTSD or an Adjustment Disorder**."*
       - Then list other HEMI AD COP x2 differentials briefly.

III. Tutor's Reflections on "Unwell" Cases & Recall Evolution:

- Newer "unwell" cases are becoming more specific with lead points in the stem (like this "incident at work" or the previous "travel + IVDU" case).
- This is an improvement over older, very vague "feeling unwell" stems which were harder to approach systematically.
- **Structure is Key:** Even with specific lead points, a foundational structure (like "HEMI AD COP x2" for the tiredness component of "unwell") combined with focused exploration of the lead points, allows for a comprehensive yet targeted history.
- **Don't Memorize Recalls, Understand Concepts:** The underlying *concept* (e.g., fecal-oral transmission, blood-borne virus risk) is more important than the exact details of one specific recall version, as AMC can change findings.
- This "incident at work" case has evolved, with different versions emphasizing Hepatitis vs. Gastroenteritis. A good structure allows you to adapt.

IV. Key Learning Points for "Unwell Patient - Incident at Work (Sewer Exposure)":

- **Prioritize Lead Point Exploration:** The "incident at work" (falling in sewer) is the central clue and must be explored in detail regarding exposure.
- **Focus on Fecal-Oral Transmission:** Differentials should heavily feature Hepatitis A/E and various causes of gastroenteritis.

- **Don't Forget Psychological Impact:** A traumatic event like falling into a sewer can have significant psychological sequelae (PTSD, Adjustment Disorder).
- **Apply Broad Infection Screening:** Even if focusing on fecal-oral, a quick screen for other infection types (respiratory, systemic) is good practice.
- **Systematic Approach to Vague Complaints:** When "unwell" is described as "tiredness/low energy," use the tiredness history framework as a base and integrate the specific exposure risks.

Tiredness IDA

AMC Recalls: Tiredness - Iron Deficiency Anemia (IDA) Cases

I. Introduction to IDA Cases:

- **Common Presentation:** Tiredness.
- **Key Information Provided in Stem:** Blood test results showing microcytic, hypochromic anemia with low ferritin, often with poikilocytosis and anisocytosis.
    - Low Hemoglobin (Hb).
    - Low MCV (Mean Corpuscular Volume).
    - Low MCH (Mean Corpuscular Hemoglobin).
    - Low MCHC (Mean Corpuscular Hemoglobin Concentration).
    - **Low Ferritin (confirms iron deficiency).**
    - Poikilocytosis (abnormally shaped RBCs).
    - Anisocytosis (RBCs of unequal size).
- **Important Distinction:** This is NOT a general "tiredness/HEMI AD COP" case once IDA is confirmed by bloods. The history taking now focuses on the **causes of IDA**.
- **Time Management is Critical:** These cases often have multiple tasks (explain results, history, Dx/DDx, management). Explaining blood results should be concise (max 1-1.5 mins) to leave adequate time for history and other tasks.

II. Differentials for Iron Deficiency Anemia (Causes of IDA):

1. **Low Intake of Iron:**
    - Specifically ask about **red meat consumption.** (Vegetarian/vegan diets are a key cause).
    - Tutor's note: Asking "how's your diet?" is too vague. A vegetarian can have a "healthy, balanced diet" but still be iron deficient.
2. **Decreased Absorption of Iron (Malabsorption):**
    - **Celiac Disease.**
    - **Inflammatory Bowel Disease (IBD - Crohn's, Ulcerative Colitis).**
    - (Post-gastrectomy, H. pylori gastritis, atrophic gastritis - less common to explore in detail unless specific clues).
3. **Blood Loss (Most Important Category to Explore Thoroughly):**
    - **Menstrual Loss (in pre-menopausal women):** Heavy periods (menorrhagia), frequent/irregular periods.
    - **Surgical/Traumatic Blood Loss / Deliveries.**
    - **Frequent Blood Donations.**
    - (Haemoptysis, Haematemesis - less common causes of chronic IDA unless massive and recurrent).
    - **Gastrointestinal (GI) Blood Loss (CRITICAL - Especially for Males & Post-Menopausal Women):**
        - **Peptic Ulcer Disease (PUD)** - can bleed.
        - **GI Malignancies (Bowel Cancer, Gastric Cancer) - TOP PRIORITY TO RULE OUT.**
4. **Increased Demand for Iron (Physiological):**
    - **Pregnancy** (especially multiple, closely spaced pregnancies).
    - Growth spurts in adolescents.

III. Key Guideline Principle for IDA (Especially Males & Post-Menopausal Females):

- If IDA is diagnosed and an obvious cause (like heavy periods in a young woman, or known vegetarian diet) is not identified, **GI blood loss, particularly from malignancy, MUST be excluded.**
- This usually requires **both upper endoscopy (gastroscopy) and lower endoscopy (colonoscopy).**

- **Handbook Critical Error:** A therapeutic trial of iron *instead of* full investigation for an underlying cause (especially GI malignancy) is a critical error. Investigation for the cause is the priority.

IV. Case 43 (Version 1 - Handbook Case): 50 y.o. Lady, Tiredness, Post-Menopausal, Bloods show IDA

- **Stem Summary:**
  - 50-year-old lady, GP.
  - Came a week ago for tiredness, looked pale.
  - Colleague arranged blood tests. Results show clear IDA.
  - Patient is here to discuss results.
- **Tasks:**
  1. Explain blood results to patient.
  2. Take a history (to find the cause of IDA).
  3. Tell her the most likely diagnosis (of the cause) and differentials.
  4. Explain management plan.
- **History Findings (for this recall, leading to suspicion of GI malignancy):**
  - Menopause 9-12 months ago (so menstrual loss is not current cause).
  - No recent surgery/blood donations.
  - Eats red meat (intake okay).
  - **Dark stools (melaena).**
  - **Weight loss (5-7 kg in 1-2 months).**
  - (No significant PUD symptoms like NSAID use or prominent heartburn).
  - (No significant malabsorption symptoms).
- **A. Explaining Blood Results to Patient (Concise & Simple):**
  1. **Start with Open-Ended Q:** *"Hello Jane, I see you're back to discuss your blood test results. Before we start, how are you feeling today?"* (Or, *"How can I help you today?"* Patient will say they are here for results).
  2. **Explain Components Simply:**
     - *"Okay Jane, let's discuss the results together. In our blood, we have **red blood cells** that carry oxygen around the body using a particle called **haemoglobin**. Haemoglobin is made of **iron**."*
     - *"On your results, the total amount of **haemoglobin in your blood is low**."*
     - *"The **size of your red blood cells has also decreased** (this is the MCV)."*
     - *"The **amount of haemoglobin in each cell and its concentration has also decreased** (MCH, MCHC)."*
     - *"Importantly, the **iron storage in your body (ferritin) is also low**."*
     - *"We've also seen that your red blood cells have **different sizes (anisocytosis)** and some have **abnormal shapes (poikilocytosis)**."*
  3. **Conclude with Diagnosis of IDA:**
     - *"All of these findings confirm that you have a condition called **iron deficiency anemia**."*
  4. **Transition to History:** *"Now, is it okay if I ask you a few questions to try and find out why this might be happening?"*
- **B. History Taking (Focus on Causes of IDA):**
  1. **Brief Tiredness Exploration (if not done prior):** (Describe, timing, getting worse).
  2. **Diet:** *"Do you take red meat in your diet?"*
  3. **Blood Loss (Non-GI):** Recent surgery/bleeding episodes? Blood donations? *"When was your last period? Did you have heavy periods before they stopped?"*
  4. **GI Blood Loss (CRITICAL - given dark stools & weight loss):**
     - Symptoms: *"Have you seen any blood in your stools, or have you had dark, tarry stools?"* (Patient: "Yes, dark stools").
     - **Peptic Ulcer Disease (PUD) Screen:** *"Are you using any anti-inflammatory painkillers like Ibuprofen or Nurofen? Any heartburn? Any abdominal pain?"*
     - **Bowel Cancer / GI Malignancy Screen (CRITICAL):**
       - (Weight loss already mentioned from stem for this recall). *"Any loss of appetite? Any lumps or bumps in your body?"*
       - *"Any changes in your bowel habits (e.g., new constipation or diarrhoea)?"*
       - *"Have you done your national bowel cancer screening test?"* (Likely "got it but haven't done it").
       - *"Any family history of bowel cancer?"*
  5. **Malabsorption (Celiac, IBD):**

        - *"Have you had any chronic or long-term diarrhoea? Any greasy stools that are hard to flush or float? Any blood in your diarrhoea (if diarrhoea present)?"*
        - (For IBD, also: mouth ulcers, joint pain, rashes).
    6. (SADMA briefly, focusing on medications like NSAIDs, anticoagulants).
- **C. Explaining Diagnosis (of the CAUSE) and Differentials:**
    1. **Acknowledge IDA, then state concern about cause:** *"Jane, as we discussed from your blood tests, you have iron deficiency anemia. Now we need to figure out why this is happening."*
    2. **State Most Likely Cause (Concern for Malignancy):**
        - *"Iron deficiency anemia can have various causes. However, **in your case, I am concerned about the possibility of a cancer in your bowels or stomach**."*
    3. **Reasons for this concern:**
        - *"The reasons I'm concerned about this are because you have been **losing weight**, and you also have **dark stools**, which means you are likely bleeding somewhere in your gastrointestinal tract (your stomach or bowel)."*
    4. **Key Differentials (Other causes of GI bleed/IDA):**
        - *"It can also be because of a **peptic ulcer disease**, which is an ulcer in your stomach that can bleed and cause iron deficiency anemia."*
        - **Then list other IDA causes systematically:**
            - *"Other causes could be a **low intake of iron in your diet**, for example, a vegetarian diet where you're not taking enough red meat."*
            - *"Or it could be due to other types of **blood loss**, like if you had very heavy periods before menopause, or from surgery or frequent blood donations."*
            - *"Finally, sometimes it's because you **don't absorb iron properly**, which can happen in conditions like celiac disease or inflammatory bowel disease."*
- **D. Explaining Management Plan (Priority: Investigate for Cancer):**
    - **Tutor's Critical Point:** The ABSOLUTE PRIORITY is to investigate for and rule out GI malignancy. Iron replacement is secondary.
    2. **State Priority:** *"Jane, the first and most important step in managing your case is to **find the cause of this bleeding and rule out anything serious like cancer**."*
    3. **Key Investigation:** *"To do this, I need to refer you urgently to a **gastroenterologist (a specialist in stomach and bowel problems)** for an **endoscopy AND a colonoscopy**."*
    4. **Explain Procedures Simply:** *"This means they will pass a small tube with a camera through your mouth to check your stomach (endoscopy), and another small tube through your back passage to check your bowel (colonoscopy). If they see any abnormal growths or any ulcers, they will take some small samples (biopsies) for testing."*
    5. **Address Iron Replacement (Carefully, as secondary):**
        - *"Once we have found the cause and treated it, we can then focus on replacing the iron your body has lost. We can do this either with **oral iron supplements (tablets)** or, if needed, with **intravenous iron injections**."*
        - *"I will arrange follow-up blood tests after starting iron supplements to make sure your hemoglobin and iron levels are improving."*
    - **Tutor's Warning:** If you start by saying "I'll give you iron tablets," you will likely fail. The endoscopy/colonoscopy referral MUST come first.
    - **Do NOT do an FOBT:** FOBT is a *screening* test for *asymptomatic* individuals. This patient is symptomatic with IDA and melaena; diagnostic endoscopies are required.

V. Case 43 (Version 2 - IDA in Pregnancy): 24 y.o. Pregnant Lady, Tiredness, Bloods show IDA

- **Stem Summary Change:** Young (24 y.o.), pregnant. Pregnancy has been uneventful. Bloods show clear IDA.
- **History Taking Focus:** Shifts towards causes of IDA in young, pregnant women.
    1. **Diet (Red Meat).**
    2. **Blood Loss (Menstrual Hx prior to pregnancy, GI - PUD/Bowel Ca less likely but screen briefly, Surgery/Donations).**
    3. **Malabsorption (Celiac/IBD).**
    4. **Pregnancy History (KEY AREA):**
        - *"How many pregnancies have you had?"* (Patient: "This is my third").
        - *"When did you have your previous pregnancies?"* (Patient: "All three in the last two years" - back-to-back pregnancies).

        - *"Did you space out your pregnancies, or did you get pregnant again soon after a delivery?"* (Soon after).
        - *"How is this current pregnancy going so far? Have you had your antenatal screenings?"* (Stem says uneventful).
- **Diagnosis (of the CAUSE):**
    - *"Most likely, the cause of your iron deficiency anemia is the **multiple pregnancies you have had in the last two years**."*
- **Explanation:**
    - *"In each pregnancy, your body needs to build new red blood cells for the baby and yourself, and this needs a large amount of iron. We usually recommend waiting for a few months after delivery until your body restores its iron storage. If you get pregnant again very quickly, you can be low in iron storage, and this will cause iron deficiency anemia."*
- **Differentials:** Same list as before (low intake, other blood loss, malabsorption), but with less emphasis on GI malignancy given age and pregnancy context.
- **Management (If asked):** Focus on iron replacement. In pregnancy, **IV iron** is often preferred for quicker repletion, especially if oral iron is poorly tolerated or if delivery is approaching. Also, dietary advice.

VI. "Multiple Findings Drama" in IDA Cases:

- AMC may give a patient *multiple* potential causes for IDA (e.g., vegetarian + heavy periods + NSAID use + back-to-back pregnancies).
- **Approach:**
    1. Acknowledge all positive findings during history.
    2. Choose the **most clinically significant or dominant cause** as your primary explanation for the IDA (e.g., in the 50 y.o. post-menopausal woman with melaena and weight loss, GI cancer is primary, even if she also uses ibuprofen).
    3. Mention the other positive findings as **contributing factors or other potential diagnoses** that also need consideration/management.
        - *"The most likely cause is X, but I also see you are a vegetarian (low intake) and you have heavy periods (blood loss), which can also be contributing to your iron deficiency."*
- **Tutor's Message:** Don't panic with multiple findings. It means you're doing a good job with history. Address them logically.

VII. Key Learning Points for IDA Cases:

- **Confirm IDA First:** Low Hb, MCV, MCH, MCHC, and critically, **low ferritin.**
- **History Focuses on CAUSES of IDA:** Intake, Absorption, Blood Loss, Increased Demand.
- **Prioritize GI Malignancy in Males & Post-Menopausal Females:** This is a "must-do" investigation (endo/colonoscopy) if no other obvious cause.
- **Pregnancy & IDA:** Multiple/closely spaced pregnancies are a common cause.
- **Time Management for Tasks:** Be concise with blood result explanation.
- **Management Priority:** Find and treat the *cause* of IDA first, then replace iron.
- These cases test thoroughness in identifying the cause of a common hematological problem and understanding the serious implications of IDA in certain demographics.

Allergic rhinitis

AMC Recalls: ENT - Allergic Rhinitis (Hay Fever) Case

I. Introduction to Rhinitis & Allergic Rhinitis:

- **Rhinitis:** Inflammation of the nasal mucosa.
- **Classifications (Therapeutic Guidelines):**
    1. **Allergic Rhinitis (Hay Fever):** Today's focus.
    2. **Infectious Rhinitis:** Viral (common cold), bacterial.
    3. **Drug-Induced Rhinitis:**
        - Decongestant nasal sprays (long-term use causing rhinitis medicamentosa).
        - Aspirin, NSAIDs.
        - Antihypertensives (vasodilators).

        - OCPs.
- **Allergic Rhinitis - The Atopic "Family":**
    - Allergic conditions often co-exist as they share an underlying atopic predisposition.
    - Nose: Allergic Rhinitis.
    - Eyes: Allergic Conjunctivitis.
    - Lungs: Asthma.
    - Skin: Eczema (Atopic Dermatitis).
    - **Clinical Implication:** If a patient presents with hay fever symptoms, ALWAYS ask about eye symptoms, asthma symptoms (cough, wheeze, SOB), and skin rashes (eczema). Finding features of these strengthens the diagnosis of an atopic condition.
- **Key Symptoms of Allergic Rhinitis:** Watery runny nose (rhinorrhoea), nasal itchiness, nasal congestion/blockage, sneezing.
- **Allergic Conjunctivitis Symptoms:** Itchy eyes, red watery eyes (clear discharge).
- **Asthma Symptoms:** Cough (worse at night/exercise), wheezing, SOB.

II. Differentials for Chronic Nasal Congestion/Runny Nose (6 months+):

- **Allergic Rhinitis (Hay Fever).**
- **Chronic Sinusitis.**
- **Nasal Tumours/Cancers (Red Flag).**
- (Nasal polyps - often associated with chronic sinusitis or allergy).
- (Foreign body - less common in adults for chronic symptoms).
- (Drug-induced rhinitis - if relevant medication history).

III. Red Flags for Nasal Symptoms (Prompting consideration beyond simple allergic rhinitis):

- **Unilateral symptoms** (blockage/discharge from only one nostril).
- Nasal obstruction with **purulent discharge.**
- **Facial pain.**
- **Loss of sense of smell (anosmia).**
- **Recurrent epistaxis (nosebleeds).**

IV. Case 50: 45 y.o. Lady, Blocked & Runny Nose (6 months)

- **Stem Summary:**
    - 45-year-old lady, GP.
    - Blocked and runny nose for 6 months (chronic).
- **Tasks:**
    1. History (6 mins).
    2. Physical Examination findings provided on screen (or card).
    3. Explain diagnosis and differentials.
    4. (Sometimes) Explain mechanism of action (for allergic rhinitis).
- **A. Structured History Taking:**
    1. **Intro:** (Standard approach).
        - Patient: Frustrated with 6-month history of runny/blocked nose, no one can figure it out.
        - Address concern: *"I'm so sorry to hear that you've been having such a difficult time. But I'll try to find the cause and make the best management plan/care plan for you. Is that okay with you?"*
    2. **Explore Complaint (Runny Nose/Nasal Discharge & Blockage - 5 Boxes):**
        - **Timing:**
            - *"How long has this been happening for?"* (6 months).
            - *"Is it on and off, or is it constant/continuously there?"* (Key to differentiate allergic - often episodic/seasonal - vs. chronic sinusitis).
            - *"Is it getting worse?"*
        - **Pattern (Unilateral vs. Bilateral - Red Flag Screen):**

        - *"Tell me, is the blocking and discharge only from **one nostril, or from both**?"* (Patient: Both).
    - **Character of Discharge (CCVO Mnemonic - Color, Consistency, Volume, Odor):**
        - Color: *"Is the discharge clear, or is it greenish or yellowish?"*
        - Consistency: *"Is it a watery discharge, or a thick and sticky discharge?"*
        - Volume: *"Would you say there's a large amount of discharge, or only a small amount?"*
        - Odor: *"Is there a bad smell to the discharge, or is the discharge bad smelling?"*
        - (Optional Content - Blood: *"Any blood in the discharge?"* - Red flag for tumour/severe infection).
    - **Alleviating & Aggravating Factors:**
        - General Q: *"Is there anything that makes your runny nose better or worse?"*
        - **Specific Triggers (for Allergic Rhinitis):** *"Is there any **place or special season** that makes it worse?"* (e.g., spring for pollen, dusty environments, work).
    - **Effect on Life:** *"How is this affecting your life?"*
- **Key History Findings from Complaint Exploration (for this recall):** Discharge from both nostrils, clear, watery. Worse in spring.

4. **Screening for Differentials (Prioritize Allergic Rhinitis, then Sinusitis, then Red Flags):**
    - **A. Allergic Rhinitis / Atopic Package (Symptoms & Triggers):**
        - **Symptoms (Atopic Package):**
            - Nasal: *"Any **itchiness in your nose**? Do you have any **sneezing**?"* (Yes).
            - Eyes (Allergic Conjunctivitis): *"Any **itchiness in your eyes**? Any **red, watery eyes**?"* (Yes, watery eyes).
            - Throat: *"Any itchy throat?"*
            - Lungs (Asthma): *"Any **cough**? Any **noisy breathing (wheezing)**? Any **shortness of breath**?"*
            - Skin (Eczema): *"Any history of itchy rashes on your body?"*
            - Allergies: *"Any history of allergies yourself?"*
            - Family Hx: *"Any **family history of asthma, eczema, or hay fever**?"* (Yes).
        - **Triggers (Environmental & Occupational):**
            - Home: *"Do you have any **pets** at home (cats, dogs)? Do you have **carpets**? Any significant **exposure to dust** at home?"* (Yes, cat; yes, new house with carpets).
            - Occupation: *"What is your occupation? Any exposure to dust or fumes at work?"*
            - Medications: *"Are you using any medications that might give you a runny nose?"*
            - Smoking: *"Do you smoke, or does anyone at home smoke?"* (Partner smokes - passive exposure).
    - **B. Chronic Sinusitis:**
        - *"Any headaches? Any facial pain or pressure?"*
        - *"Any fever?"*
        - *"Do you feel any secretions dripping down the back of your throat (post-nasal drip)?"*
        - *"Have you lost or noticed any changes in your sense of smell?"*
        - (All these are negative in this recall).
    - **C. Red Flags (Nasal Tumours):**
        - (Unilateral symptoms, purulent discharge, facial pain, anosmia already asked).
        - *"Have you had any unexplained weight loss? Loss of appetite? Any lumps or bumps in your body (e.g., neck)? Feeling generally tired?"*
        - *"Any history of recurrent nosebleeds?"*
        - (All negative).
5. **Closure (SADMA - if not covered).**

- **B. Physical Examination Findings (Online Screen/Card Example):**
    - **ENT examination is NORMAL.**
    - **Tutor's Note:** A normal ENT exam does NOT rule out allergic rhinitis. Signs like swollen, pale, boggy nasal mucosa might be seen but are not always present or might not be given in the OSCE. The diagnosis is often clinical based on history. Absence of sinister findings (polyps, masses) is reassuring.
- **C. Explaining Diagnosis, Differentials, and Mechanism of Action:**
    1. **Most Likely Diagnosis:**
        - *"Look [Patient's Name], most likely you have a condition called **allergic rhinitis**, which is also commonly known as **hay fever**."*
    2. **Brief Explanation of Allergic Rhinitis:**

- *"In this condition, an **allergen** (something you're allergic to) triggers an **allergic reaction** in the inner lining of your nose. This causes inflammation, leading to the blockage and runny nose you're experiencing."*

3. **Reasons for Diagnosis (Link to key positive findings):**
   - *"The reasons I think this is hay fever are: the **character of your discharge** (it's watery and clear); your **other symptoms** like sneezing and watery eyes; the fact that it's **worse in spring** (seasonal pattern); your **exposure to common allergens** like having a cat at home, carpets (dust mites), and your partner smoking; and your **family history** of asthma and seasonal allergies."*
4. **Key Differentials (Briefly, why less likely):**
   - *"I also considered other conditions. I ruled out **sinusitis**, which is an infection in your sinuses, as you don't have facial pain, fever, or loss of smell."*
   - *"And importantly, I made sure there are no **red flags for a nasal tumour**, as you haven't had weight loss, nosebleeds, or one-sided symptoms."*
5. **Mechanism of Action of Hay Fever (If specifically asked):**
   - *"You asked about how this happens. The **allergen**, which can be things like dust, pollen, or cat fur, is what triggers the reaction."*
   - *"When you are exposed to or come into contact with this allergen, it activates a **special cell in your immune system called the mast cell**."*
   - *"This mast cell then releases a chemical called **histamine**."*
   - *"Histamine is what causes the **inflammation and dilation of the blood vessels** in your nose, and this leads to the symptoms of runny nose, blockage, and itching."*

V. Key Learning Points for Allergic Rhinitis Case:

- **Atopic Package:** Always screen for co-existing allergic conditions (conjunctivitis, asthma, eczema) and family history of atopy.
- **Discharge Character:** Clear, watery discharge is typical for allergic rhinitis, contrasting with purulent (green/yellow, thick) discharge in bacterial sinusitis.
- **Triggers are Key:** Thoroughly explore environmental (pets, dust, carpets, pollens/seasons) and occupational triggers.
- **Differentiate from Chronic Sinusitis:** Key distinguishing features for sinusitis are facial pain/pressure, purulent discharge, fever, and anosmia.
- **Rule Out Red Flags:** Unilateral symptoms, epistaxis, persistent purulent discharge, or signs of mass effect require exclusion of nasal tumours.
- **Mechanism Explanation:** Keep it simple for the patient (allergen -> immune cell activation -> histamine release -> inflammation & symptoms).
- This case tests the ability to diagnose a common allergic condition based on a characteristic history, differentiate it from other chronic nasal conditions, and explain its basis simply.

Rhinitis medicamentosa

AMC Recalls: ENT - Rhinitis Medicamentosa Case

I. Case 51: 27 y.o. Male, Runny Nose (2 weeks, worsening), Known Hay Fever, Family Hx Asthma

- **Stem Summary:**
  - 27-year-old male.
  - Runny nose for 2 weeks, getting worse.
  - **Known case of hay fever.**
  - Family history of asthma (mother has asthma).
- **Physical Examination Findings (Provided in Stem/Card/Screen):**
  - Afebrile (not sinusitis).
  - Nose: Watery, clear discharge. Inferior turbinates enlarged/swollen (typical for allergic rhinitis).
  - Respiratory exam: Normal.
- **Tasks (Crucial Task Structure):**
  1. **Take history for 2 minutes to inquire about treatments taken.** (Extremely focused history).
  2. Explain the diagnosis.
  3. Counsel the patient about immediate and long-term management.

- **Tutor's Note:** The 2-minute history is a key indicator. It means there's a very specific piece of information to find, and the rest of the station is about management/counseling.
- **A. Focused History Taking (2 Minutes - STRICTLY about treatments):**
    - **DO NOT ask about pets, carpets, symptoms beyond what's needed to confirm the type of rhinitis if unclear, or other triggers.** The task is *only* about treatments.
    2. **Opening & Addressing Concern (Brief):**
        - *"Hi James, my name is Dr. Emir. How can I help you today?"*
        - (Patient: "This runny nose for 2 weeks, getting worse, whatever I'm using isn't helping.")
        - *"I'm so sorry to hear that. Let me ask you a few questions to figure out the cause, and we'll make a good management plan together today, as that's my main task."*
    3. **Inquire About Treatments Taken (Key Questions):**
        - **Question 1 (Current Treatment):** *"Can I know what medication you are using now for your nose? And is it helping?"*
            - (Patient: **"I am using Otrivin."** [Brand name for Oxymetazoline, a decongestant]. **"I've been using it for a good two weeks, doctor. Initially, it did help, it was lovely for the first few days, but then everything started getting worse."** - This is the KEY diagnostic clue).
        - **Question 2 (Previous Treatments):** *"Can you tell me what medications or what treatments you tried before this Otrivin? And did they help?"*
            - (Patient: *"I used oral antihistamines (e.g., Telfast/Zyrtec), and it did help only with my watery eyes but not my nose. Then I changed to a nasal steroid spray (e.g., Nasonex/Flixonase), and it did help, but I have a concern: it was quite expensive, and because it was expensive, I couldn't continue it. And that's when I started using Otrivin. That helped, but then it stopped working."*)
        - **Question 3 (Concerns about Treatments):** *"Do you have any concerns about the treatments you've taken?"*
    - (The 2 minutes will likely be up by now).
- **B. Diagnosis: Rhinitis Medicamentosa**
    - This is a rebound nasal congestion caused by the overuse of topical decongestant nasal sprays (like Otrivin/Oxymetazoline or Sudafed nasal spray/Xylometazoline).
    - Initially, they relieve congestion, but with prolonged use (more than 3-5 days), they cause a paradoxical worsening of congestion when the effect wears off, leading to a cycle of dependency.
- **C. Explaining the Diagnosis to Patient:**
    1. **State Diagnosis Clearly:**
        - *"Look James, most likely you have a condition called **rhinitis medicamentosa**."*
    2. **Explain the Cause (Link to their medication):**
        - *"I understand you have underlying hay fever. However, the current worsening of your symptoms is actually because of the **Otrivin spray** that you are using."*
    3. **Explain Rebound Congestion Simply:**
        - *"This medication (Otrivin) has a side effect that we call **rebound congestion**. This means if you use it for more than 3 to 5 days, initially it helps the runny nose and blockage, but then the congestion and discharge can actually get worse when the spray's effect wears off, and things start getting worse and worse."*
- **D. Explaining Management Plan (Immediate & Long-Term - Comprehensive for Hay Fever, after addressing Rhinitis Medicamentosa):**
    - **Tutor's Note:** Predominant assessment area is management. Be specific with drug classes and examples.
    - **1. IMMEDIATE Management (Address Rhinitis Medicamentosa First):**
        - **STOP THE DECONGESTANT SPRAY (CRITICAL FIRST STEP):**
            - *"The very first and most important step, James, is that you **need to stop using the Otrivin spray immediately**. This is what's causing the problem right now."*
            - (Acknowledge it might be difficult for a few days as congestion might feel worse before it gets better).
    - **2. ACUTE/SHORT-TERM Management (Re-establishing control of Allergic Rhinitis):**
        - *"Now that we've stopped the Otrivin, let's make a plan to manage your underlying hay fever properly."*
        - **a. Intranasal Saline:**
            - *"First, I can give you **intranasal saline spray or rinse**. This helps to irrigate your nasal cavity and helps remove the discharge and allergens more easily."*
        - **b. Antihistamines (Oral and/or Intranasal):**
            - *"Secondly, we can use **antihistamines**. We have two main options:"*

        - *"**Oral antihistamines**, which are tablets like Loratadine, Cetirizine, or Fexofenadine (Telfast). These can help with sneezing, runny nose, and itchy eye symptoms."*
        - *"Or, we can use an **intranasal antihistamine spray**, for example, Azelastine (e.g., Ryaltris often contains this or similar). This works directly in the nose and can be very effective for nasal symptoms with a fast onset."*
    - **c. Intranasal Corticosteroids (INCS - Mainstay for moderate-severe or persistent allergic rhinitis):**
        - *"A very important step for managing persistent hay fever is **intranasal corticosteroid sprays**. Examples include Mometasone (Nasonex), Fluticasone (Avamys/Flixonase), or Budesonide (Rhinocort)."*
        - **Patient Education for INCS:**
            - *"The important thing about these steroid sprays is that they **do not provide immediate relief**. You will have to use them regularly, usually twice a day (once in each nostril, morning and night), and it might take a **few days to a week for them to start working fully**."*
            - *"You mentioned your previous concern about the **cost** of steroid sprays. There are many different brands and types available, and I can prescribe you a more affordable generic option if cost is an issue."*
    - **d. Combination Intranasal Spray (INCS + Intranasal Antihistamine):**
        - *"If a single steroid spray or antihistamine isn't enough, we also have the option of using a **combined spray** that contains both an antihistamine and a corticosteroid. An example is Dymista (Azelastine/Fluticasone). This can be very effective as it has both medications acting together."*
    - **e. Nasal Spray Technique (CRUCIAL for efficacy of all nasal sprays):**
        - *"I also want to quickly tell you how to use these nasal sprays properly, because if you don't use them correctly, they won't help as much."*
        - *"First, gently **shake the bottle**."*
        - *"Then, **clear your nose** by blowing gently."*
        - *"**Bend your neck forward and look down** slightly."*
        - *"The important part is to **aim the nozzle towards the outer wall of your nostril** (towards your ear on that side), not straight up or towards the middle part (the septum)."*
        - *"Spray once, and then **sniff gently** at the same time. Don't sniff too hard, or you'll just taste the spray."*
    - **f. (Optional - If symptoms are very severe and not responding):**
        - *"If these sprays don't work, we have other options like Montelukast tablets (especially if you also have asthma) or Ipratropium nasal spray (for very watery rhinorrhoea), but these are usually for more difficult cases."*
- **3. NON-PHARMACOLOGICAL Management (Allergen Avoidance):**
    - *"It's also important to try and **avoid common allergens** as much as possible:"*
    - *"If you have pets, try to keep them outside the bedroom."*
    - *"If you have carpets, vacuum them regularly to reduce dust mites."*
    - *"If pollen is a trigger (seasonal), try to stay indoors more during high pollen seasons, keep windows closed, and use air conditioning if possible."*
    - *"If your partner smokes at home, ask them to please smoke outside, as passive smoke can worsen your symptoms."*
- **4. LONG-TERM Management (If symptoms are severe, persistent, and not controlled by standard Rx):**
    - **a. Allergy Testing (to identify specific allergens):**
        - *"In the long term, if your symptoms are hard to control, we can do an **allergy test** for you to find out exactly what you're allergic to."*
        - *"We have two main types of testing: one is called the **RAST test**, which is a blood test that checks for specific antibodies to common allergens like pollens, dust mites, or cat fur. The other is a **skin prick test**, where we place tiny amounts of different allergens on your skin and see which ones cause a reaction."*
    - **b. Allergen Immunotherapy (Desensitisation - Specialist Treatment):**
        - *"Once we know what you are allergic to, if your symptoms are very severe and not responding well to other treatments, we can send you to an **allergy clinic or an immunologist (allergy specialist)**."*
        - *"They can offer a special type of treatment called **allergen immunotherapy**, also known as desensitisation."*

        - *"This means that once we've found the allergen you're reacting to, they will purify it and give it to you in very small, gradually increasing doses, either by **injections or with tablets under your tongue**. This process usually goes on for several months, even up to a few years."*
        - *"The aim is to **train your immune system to react less severely** to that allergen over time, so you get fewer symptoms like runny nose and itchiness."*
    - **c. (CT Scan of Sinuses - if chronic sinusitis is suspected as a comorbidity or alternative diagnosis):**
        - *"If we have any ongoing concerns about chronic sinusitis, we might also consider a CT scan of your sinuses, but that's not immediately necessary for uncomplicated allergic rhinitis."*
- **Tutor's Final Emphasis:**
    - The most critical step is **STOPPING THE OTRIVIN.**
    - Then, provide a comprehensive, stepped management plan for the underlying allergic rhinitis.
    - Being specific with medication classes, examples, and patient education (like spray technique) is key for a counseling station.

V. Key Learning Points for Rhinitis Medicamentosa Case:

- **Focused History is Key:** The 2-minute history is specifically to identify the use of decongestant nasal sprays.
- **Recognize Rhinitis Medicamentosa:** History of prolonged decongestant use (>3-5 days) with worsening nasal congestion despite initial relief.
- **Stop the Offending Agent:** This is the cornerstone of immediate management.
- **Comprehensive Allergic Rhinitis Management:** After addressing the medicamentosa, treat the underlying hay fever effectively using the stepped approach (saline, antihistamines, INCS, combination sprays, allergen avoidance, and consider allergy testing/immunotherapy for severe/refractory cases).
- **Patient Education:** Proper nasal spray technique is vital. Explaining the chronic nature of allergic rhinitis and the need for regular preventer use (INCS) is important.
- This case tests knowledge of a specific drug-induced condition and the detailed management of a common allergic disorder.

Unwell- rhinosinusitis

AMC Recalls: Unwell Patient - Acute Rhinosinusitis (Allergic/Asthma Flare)

I. Case 53: 30 y.o. Patient, "Feeling Unwell" (No other specific complaint in stem - the "horrible" vague case)

- **Stem Summary (Deliberately Vague):**
    - 30-year-old patient, GP.
    - Complaining of "feeling unwell" for several days (e.g., 2-3 days).
- **Tutor's Note:** This type of vague "unwell" stem is challenging for the 2-minute thinking time. The key is to start broad with history and narrow down.
- **Tasks (Online Exam Format):**
    1. Take history (6 minutes).
    2. Physical Examination findings provided on screen.
    3. Explain diagnosis and differentials to the patient.
- **A. Structured History Taking (Initial "Unwell/Tiredness" Approach, Pivoting to ENT/Respiratory):**
    1. **Haemodynamic Stability (Contextual - Important if "unwell" sounds severe like sepsis):**
        - Online: *"Ben, just before I start, I'll check your vital signs and make sure you're stable. Is that okay with you?"*
        - Face-to-Face: Ask examiner for vitals, especially if any red flags emerge or general appearance is concerning (e.g., for meningococcaemia if rash was mentioned).
    2. **Opening & Addressing Concern:** (Standard approach).
    3. **Explore "Unwellness" (CRITICAL First Step for Vague Complaints):**
        - *"Can you describe what you mean by feeling unwell? Are you feeling low in energy, sleepy, or are you feeling **feverish**?"*
        - Patient: **"By unwell, I mean I have a stuffy nose and watery eyes."** *-> This is the PIVOT. The complaint is now specific to ENT symptoms.*
    4. **Explore Specific ENT Symptoms (Now that "unwell" is defined as nasal/eye symptoms):**

- **Timing:** "How long have you had the stuffy nose/watery eyes? (2-3 days). On/off or constant? (Constant). Getting worse? (Yes)."
- **Pattern (Unilateral vs. Bilateral):** *"Is the stuffy nose/watery eyes in one nostril/eye or both?"* (Patient: Both).
- **Character of Nasal Discharge (CCVO):**
  - Color: *"Is the discharge clear, or greenish or yellowish?"* (Clear).
  - Consistency: *"Is it watery, or thick and sticky?"* (Watery).
  - Volume: *"Large amount or small amount?"* (A lot).
  - Odor: *"Any bad smell?"* (No).

5. **Systematic Questioning for ENT & Associated Respiratory Conditions:**
   - **A. Upper Respiratory Tract / ENT (Beyond initial complaints):**
     - **Usual ENT Questions:**
       - Fever or chills? (Yes, implied or confirmed).
       - Ear pain or discharge?
       - Sore throat?
       - **Sinusitis Symptoms (Key for Rhinosinusitis):**
         - *"Any **facial pain or pressure**?"* (Patient: Points to maxillary sinuses, **"Yes, I have pain here."**).
         - *"Any secretions dripping down the back of your throat (PND)?"*
         - *"Have you noticed any changes in your sense of smell?"* (CRITICAL question, often forgotten).
       - Lumps/bumps in the neck (lymphadenopathy)?
     - **ENT Red Flags (Key for this case - to rule out serious complications):**
       - **Rashes?** (Meningococcaemia, viral exanthems).
       - **Drooling or difficulty swallowing?**
       - **Changes in your voice?** (Hot potato voice).
       - **Headache? Sore neck? Ocular symptoms (changes in vision, swelling around the eye)?** (Concern for spread of infection to eyes/brain).
   - **B. Lower Respiratory Tract (Asthma link becomes important):**
     - *"Do you have any **cough**?"* (Patient: **"Yes."**)
     - *"Any **shortness of breath or difficulty breathing**?"* (Patient: **"Yes."**)
     - *"Any **noisy breathing (wheezing)**?"* (Patient: **"Yes."**)
     - (Haemoptysis - less likely here but part of full respiratory screen).
   - **C. Exploring Atopic Background / Allergic Component (Triggered by wheezing/SOB + rhinitis):**
     - Past History: *"Do you have any **past history of wheezing or asthma**?"* (Patient: **"Yes, in childhood I had asthma. I grew out of it... I had to give up hockey because I used to get symptoms when I exercised."** - Significant PMHx).
     - Other Atopic Symptoms: *"Any **sneezing**? **Itchy eyes or itchy nose**?"* (Yes, itchy and watery eyes).
     - *"Any past history of **itchy rashes (eczema)**?"*
     - Allergies: *"Any known allergies?"*
     - Family Hx: *"Any family history of **asthma, eczema, or hay fever**?"* (Mom has hay fever, sister has asthma).
     - **Triggers (for Allergic Rhinitis/Asthma):**
       - Home: Pets? Carpets? Dust exposure?
       - Work: Dust/fume exposure?
       - Medications? Smoking (patient or household)?
       - (Patient: Has pets, carpets, partner smokes, lots of dust at home).
6. **Screening Other Differentials (Briefly from "HEMI AD COP x2" as ENT/Respiratory is dominant):**
   - Key infections not yet covered: Travel Hx? Contact with sick people/animals? STIs (less likely focus here unless other clues).
   - Malignancies (red flags - though less likely for this acute presentation).
   - (Other HEMI AD COP categories very briefly if time and indicated).
7. **Closure (SADMA).**

- **B. Physical Examination Findings (Online Screen Example):**
  - (Assume findings consistent with acute rhinosinusitis and asthma exacerbation, e.g., nasal mucosal swelling, sinus tenderness, bilateral wheeze on chest auscultation. No signs of severe airway compromise or neurological spread).
- **C. Explaining Diagnosis and Differentials to Patient:**

- **Tutor's Point:** This case likely involves more than one diagnosis. The rhinosinusitis and the asthma flare-up.

2. **Primary Diagnosis (Rhinosinusitis):**
   - *"Most likely, you have a condition called **acute rhinosinusitis**."*
   - **Brief Explanation:** *"This is an **inflammation in the inner lining of your nose and also in some cavities in your skull called sinuses** (especially where you pointed out the pain)."*
   - **Elaborate on Cause (Allergic likely, but acknowledge possible viral trigger):** *"This can be allergic, viral, or bacterial. **In your case, it's most likely allergic**, given your history, but a viral infection could also be a trigger for your current symptoms."*
3. **Secondary Diagnosis / Associated Condition (Asthma Flare-up):**
   - *"It also seems you are having an **acute exacerbation or a flare-up of your asthma**."*
4. **Reasons for Diagnoses (Link to key positive findings):**
   - Rhinosinusitis: "No fever (points away from severe bacterial), clear watery discharge, facial pain over sinuses, history of atopy, exposure to triggers (pets, dust, smoke)."
   - Asthma Flare: "Your history of childhood asthma, current wheezing, cough, and shortness of breath, likely triggered by the same allergens or a viral component affecting your airways."
5. **Differentials (Focus on ENT/Respiratory, then broader if needed):**
   - **Tutor's preferred approach for "unwell + ENT symptoms":**
     - Start with specific URTIs: *"Other things I was thinking about were other **upper respiratory tract infections**. This includes:"*
       - ***"Viral tonsillitis and pharyngitis** (caused by viruses like EBV, Adenovirus, Influenza, COVID)."*
       - ***"Bacterial tonsillitis and pharyngitis** (like Strep throat, or even Chlamydia/Gonorrhea pharyngitis if risk factors were present)."*
     - Then severe URTIs/Complications: *"I also considered more serious conditions like **Quinsy (peritonsillar abscess)** or **Epiglottitis**, but you don't have the severe difficulty swallowing or voice changes typical of those."*
     - Other sinus issues: *"While we're calling it rhinosinusitis, if it were just **sinusitis** or just **allergic rhinitis** without the sinus pain, those would be considerations."*
   - Lower Respiratory Infections: *"I also thought about a **lower respiratory tract infection such as pneumonia**, or conditions like **pertussis (whooping cough) or tuberculosis** if other features were present."*
   - (Briefly mention other systemic causes of "unwell" if history prompted them, e.g., "Given your rash earlier, I thought about specific viral exanthems like measles or even STI related rashes like secondary syphilis or HIV seroconversion, but your current main picture is respiratory.").
   - Nasal polyps (as a cause of chronic rhinosinusitis symptoms, less acute).
- **Tutor's Note on Differential List for ENT:** It can feel less structured than other systems. Grouping by URTIs (viral, bacterial, complications) and LRTIs is a reasonable approach.

IV. Key Learning Points for "Unwell Patient - Rhinosinusitis/Asthma Flare":

- **Clarify "Unwell":** This is the absolute first step. The patient's definition dictates the entire direction of the history.
- **Pivot Based on Clarification:** Once "unwell" is defined as "stuffy nose/watery eyes," the history must pivot to a detailed ENT and respiratory system review.
- **Atopic Package is Key:** For any rhinitis/sinusitis/asthma-like symptoms, always explore the full atopic picture (personal/family history of asthma, eczema, hay fever, specific triggers).
- **ENT Red Flags:** Be vigilant for signs of complicated sinusitis or severe airway issues (periorbital swelling, severe headache, vision changes, altered consciousness, drooling, stridor).
- **Recognize Co-existing Conditions:** It's common for allergic rhinosinusitis and asthma to flare up together.
- **Structured Approach to Differentials for ENT:** While it can feel less "neat" than other systems, thinking in categories (URTI - viral/bacterial/complications; LRTI; Allergic; Red Flag - Tumours) helps.
- This case tests the ability to handle a very vague initial complaint, pivot history based on clarification, recognize patterns of atopic disease, and differentiate common ENT/respiratory conditions while being mindful of red flags.

Sore throat

AMC Recalls: ENT - Sore Throat Cases

I. Introduction to Sore Throat Cases:

- Common in face-to-face exams, less so in recent online formats but could reappear.
- Often perceived as easy but have a high failure rate if key differentiating questions and management principles are missed.

II. Case 52 (Version 1 - Peritonsillar Abscess/Quinsy): 25 y.o. Lady, Sore Throat, Requesting Painkillers

- **Stem Summary:**
  - 25-year-old lady, GP.
  - Sore throat, requesting painkillers.
- **Tasks:**
  1. History (4 mins).
  2. Ask Physical Examination from Examiner (PEFE).
  3. Explain diagnosis and management plan.
- **A. Structured History Taking for Sore Throat (Modified SICORA + System Review):**
  1. **Intro & Haemodynamic Stability:**
     - (Tutor: Haemodynamic stability check is a "yes or no" – less critical than acute chest pain but can be done if concerned about severe infection/sepsis. If done, standard approach).
     - Open-ended Q: "How can I help you today?"
     - Address concern.
  2. **Explore Complaint (Sore Throat - using SICORA principles):**
     - **S**ite: *"Is the pain on **one side** of your throat, or is it on both sides/your entire throat?"* (Key for Quinsy - usually unilateral).
     - **I**ntensity: "Scale of 1-10, how bad is the sore throat?"
     - **C**haracter/Quality: "Is it like a burning pain or a dull ache?"
     - **O**nset & Timing: "How long/since when have you had this sore throat? Is it on and off or constant? Getting worse?"
     - **R**adiation: "Does the pain radiate anywhere, for example, to your ear?" (Ear pain common in Quinsy).
     - **A**lleviating/Aggravating Factors: "Anything make it better or worse? Taken any medication for it? Is it working?"
  3. **Systematic Questioning (Focus on ENT, Red Flags, then broaden):**
     - **Upper Respiratory Tract / ENT Symptoms:**
       - Fever or chills?
       - Ear pain or discharge?
       - Runny nose? (If yes, explore color/consistency).
       - Sinusitis symptoms: Facial pain? Secretions behind your throat (PND)? Loss/change in sense of smell?
       - Lumps/bumps in the neck (lymphadenopathy)?
     - **RED FLAGS for Severe Sore Throat / Airway Compromise (CRITICAL):**
       - **"Do you have any drooling?"**
       - **"Do you have any difficulty swallowing (dysphagia)?"** (Different from painful swallowing/odynophagia).
       - **"Any change in your voice (e.g., 'hot potato' voice)?"**
       - **"Any noisy breathing (stridor)?"**
     - **Rash:** "Any rashes on your body?" (Scarlet fever, viral exanthems).
     - **Meningeal Signs (if concerned about spread):** Headache? Sore neck? Blurring of vision/photophobia?
     - **Lower Respiratory Symptoms (to rule out LRI):** Cough? Shortness of breath? (Noisy breathing already asked).
     - **GI Symptoms (for viral prodromes/EBV):** Nausea, vomiting? Diarrhoea? Abdominal pain? (Especially for splenomegaly in EBV).
     - **STI Screen (if risk factors or atypical pharyngitis):** "Are you sexually active? Practice safe sex?" (Gonococcal/Chlamydial pharyngitis).

        - **Key Question for Rheumatic Fever Risk (Australian Context):** *"Do you have any past history of **rheumatic heart disease** in yourself or anyone at home (family history)?"* (Impacts antibiotic decisions for suspected bacterial pharyngitis).
        - **Vaccination Status:** "Have you received all of your vaccinations, including your childhood immunizations and COVID vaccine?"
- **History Findings (for Quinsy version):**
    - Sore throat is **unilateral.**
    - **Unable to eat solid food (difficulty swallowing).**
    - Feverish.
- **B. Physical Examination from Examiner (PEFE - Tailored for Sore Throat):**
    1. **General Appearance:** Level of consciousness (alert/drowsy)? Dehydration? Rashes? **Drooling? Stridor?** (Airway red flags).
    2. **Vital Signs: Temperature** (key). (BP, HR, RR if concerned about sepsis).
    3. **ENT System (Detailed):**
        - Ear Examination (Otoscopy): "Tympanic membrane redness, bulging, discharge?"
        - **Throat Examination (CRUCIAL):** *"Examiner, I want to examine the throat. What do I see?"* (Examiner hands photo).
        - Nasal Examination: "Any discharge?"
        - Sinus Examination: "Any sinus tenderness?"
        - **Cervical Lymph Nodes:** "Any cervical lymphadenopathy? Is it tender?"
    4. **Respiratory Examination (Brief):** Air entry equal? Added sounds?
    5. **Abdominal Examination (Brief - for EBV/splenomegaly):** *"Any **splenomegaly**?"*
- **Photo Interpretation (for Quinsy):**
    - Examiner hands a photo of the oropharynx.
    - **Key Features to Verbalize:**
        - **"I see unilateral swelling** [e.g., on the right side] around the tonsil."
        - **"The uvula is deviated** to the opposite side [e.g., to the left] due to the swelling."
        - (May also see redness, exudate on the affected tonsil).
- **Physical Exam Findings (for Quinsy version):** Temp 38.5°C. Tender cervical lymph nodes. Photo shows unilateral peritonsillar swelling and uvular deviation.
- **C. Explaining Diagnosis and Management (Quinsy):**
    1. **Diagnosis:** *"Look [Patient's Name], you have a condition called **quinsy**, or **peritonsillar abscess**."* (Mentioning both is good).
    2. **Brief Explanation:** *"This means there is an **infection in your tonsil**, and you have **pus collected behind the tonsil**, causing an abscess (which is like a sac full of pus). This is pushing the tonsil and causing your severe sore throat."*
    3. **Reasons:** *"The main reasons for this diagnosis are your **one-sided sore throat**, your **difficulty swallowing**, and on examination, I can see a **big swelling on one side of your throat** with the uvula (the dangly bit) pushed to the other side."*
    4. **Management (PRIORITY: Drainage + Antibiotics + Supportive):**
        - **Referral:** *"I need to refer you to the **emergency department immediately**. I'll call an ambulance to send you to the hospital."*
        - **Key Procedure (Drainage):** *"The key step in your management is that we will need to do an **incision and drainage** of the abscess. This means we will be **numbing your throat** and then **making a small cut to remove the pus** and the discharge."* (Needle aspiration is also done, but I&D is more definitive).
        - **Supportive Care:**
            - *"We will also be giving you some **strong painkillers**."*
            - *"We'll be starting you on **intravenous antibiotics** initially because it's a severe infection, and later on, we'll switch to oral antibiotics."*
            - *"We might also decide to give you some **intravenous fluids** too, as eating and drinking will be a bit tough for the first few days."*
        - (Steroids sometimes used to reduce swelling, but not a primary step to mention unless prompted).
    - **Tutor's Warning:** Prioritize explaining the need for drainage. Don't just start with IV fluids and painkillers.

III. Case 52 (Version 2 - Viral Tonsillitis/Pharyngitis, Patient Requesting Antibiotics): 25 y.o. Male, Sore Throat, Requesting Antibiotics

- **Stem Summary:** Same age, GP, sore throat, but **specifically requesting antibiotics.**
- **Tasks:** History, Physical Examination on a card, Dx/DDx, Counsel on Management.
- **Physical Examination on Card (Example for Viral Pharyngitis):**
    - Temperature: Normal.
    - Nose: Watery discharge.
    - Throat: Inflamed tonsils and pharynx, **NO exudates.**
    - Lymph Nodes: No lymphadenopathy.
    - Abdomen: No organomegaly.
- **Differentiating Viral vs. Bacterial Pharyngitis (Centor Criteria - knowledge helps reasoning):**
    - **Features suggesting BACTERIAL (Strep throat):**
        - Tonsillar Exudates.
        - Tender Anterior Cervical Lymphadenopathy.
        - History of Fever (or high measured temp >38°C).
        - Absence of Cough.
    - *(Age also a factor in scoring, but focus on clinical signs for OSCE).*
    - **This case (Normal temp, no exudates, no lymphadenopathy, likely has cough if viral URTI) points to VIRAL.**
- **A. Explaining Diagnosis and Differentials (Viral Pharyngitis):**
    1. **Diagnosis:** *"Look James, most likely you have a condition called **viral tonsillitis** or **viral pharyngitis** (or both)."*
    2. **Brief Explanation:** *"This is an **infection at the back of your throat**, and it is **caused by a virus**."*
    3. **Reasons (Why it's likely VIRAL, not bacterial - for examiner & to set up antibiotic discussion):**
        - *"The reasons I think it's a viral infection are: you are also coughing (if true from history), you don't have a high fever, there is no pus or white spots on your tonsils on examination, and there are no enlarged glands (lymph nodes) in your neck."*
    4. **Differentials (Briefly list other causes of sore throat):**
        - *"While a virus is most likely, I was also thinking about **bacterial tonsillitis/pharyngitis** (like Strep throat). Other possibilities, though less likely here, could include **Quinsy** (but your throat doesn't look like that), severe infections like **epiglottitis** (but you're not drooling or struggling to breathe), **laryngitis**, or even **sinusitis** if you had prominent facial pain."*
        - (Could mention EBV, other viruses like Rhinovirus, COVID, Influenza as causes of viral pharyngitis).
- **B. Counseling on Management (Focus on Antibiotic Stewardship):**
    - **Tutor's Key Points for Saying NO to Antibiotics:**
        1. Antibiotics won't work for viruses.
        2. Risk of antibiotic side effects.
        3. Risk of antibiotic resistance.
    - **Management Steps:**
        1. **General / Symptomatic Management (Address patient's discomfort first):**
            - *"Since this is a viral infection, it's usually **self-limiting**, meaning it gets better by itself in a few days."*
            - *"For now, I can help you with **pain relief**. You can take regular paracetamol or ibuprofen, or use throat lozenges or sprays."*
            - *"It's important to keep **drinking plenty of fluids**."*
            - *"You should also **rest**."*
            - **Medical Certificate for Work (Address patient's agenda):** *"I understand your concern about work. I can give you a **medical certificate** so you can take some time off to rest and recover, which will help you get better sooner."*
        2. **Counseling about Antibiotics (Addressing the request):**
            - *"Now, regarding antibiotics which you asked for: "*
            - *"Firstly, as this is a **viral infection, taking antibiotics will have no effect** or benefit; they won't make you better faster because antibiotics only work against bacteria, not viruses."*
            - *"Secondly, taking antibiotics when they are not needed carries a **risk of side effects**. You might get things like diarrhoea or a rash, or sometimes even more serious problems like an allergic reaction or liver inflammation from the antibiotic itself."*

        - *"Thirdly, and very importantly, if we use antibiotics when they're not needed, the **bacteria in your body can become resistant** to that antibiotic. This means if you get a bacterial infection in the future when you really do need that antibiotic, it might not work anymore."*
    3. **Safety Netting / Red Flags:**
        - *"However, I want you to come back and see me, or go to the emergency department, if you start feeling dizzy, develop a very high temperature, have difficulty swallowing or breathing, or if your symptoms are getting much worse instead of better."*
- **Tutor's Note on Antibiotics for Bacterial Pharyngitis (Australian Context):**
    - Even if suspected bacterial, antibiotics are NOT given routinely to everyone.
    - **Indications for antibiotics (as per Therapeutic Guidelines, focusing on preventing Rheumatic Fever):**
        - High risk of Acute Rheumatic Fever (ARF): Aboriginal or Torres Strait Islander peoples, personal history of ARF, family/household contact with ARF.
        - Severe symptoms (e.g., marked dysphagia, systemic toxicity).
        - Scarlet fever.
    - This shared decision-making approach should be explained if antibiotics *are* being considered for suspected bacterial infection.

IV. Key Learning Points for Sore Throat Cases:

- **Differentiate Viral vs. Bacterial vs. Complicated:** This is the core skill. Use history (unilateral vs. bilateral, red flags) and examination findings (Centor criteria elements like exudates, lymphadenopathy, fever, absence of cough).
- **Red Flags are Critical:** Drooling, dysphagia, voice change, stridor point to serious conditions like Quinsy or Epiglottitis.
- **Quinsy Management:** Recognize the unilateral swelling/uvular deviation and understand the need for urgent ED referral for drainage.
- **Antibiotic Stewardship:** For viral pharyngitis, confidently and clearly explain *why* antibiotics are not indicated, addressing patient concerns about getting better quickly (offer symptomatic relief and medical certificate).
- **Rheumatic Fever Prevention:** Understand the specific Australian context for antibiotic use in suspected Group A Strep pharyngitis.
- These cases test diagnostic acumen, understanding of red flags, and communication skills, especially around appropriate antibiotic prescribing.

Neck lump

AMC Recalls: Neck Lump Case

I. Case 54: 47 y.o. Lady, Concerned about a Lump in the Neck

- **Stem Summary:**
    - 47-year-old lady, GP.
    - Presents concerned about a lump in her neck.
- **Tasks (Typical for Face-to-Face or adapted Online):**
    1. Take history (6 mins - ample time for detailed exploration).
    2. (If Face-to-Face: Ask PEFE. If Online: PE findings given on screen).
    3. Explain diagnosis ("diagnoses" - plural often used) and differentials.
- **Tutor's Initial Brainstorming - Broad Categories for Neck Lump:**
    1. **Thyroid Problems:** Cancer, nodule, cyst, goiter, thyroglossal duct cyst.
    2. **Lymph Node Problems:**
        - Malignant Lymphadenopathy (Cancer):
            - Generalized: Lymphoma, Leukaemia, HIV/EBV (can cause generalized LAD).
            - Localized (metastasis to neck nodes): Head & Neck cancers (skin - melanoma, naso/oro/pharyngeal), oesophageal, gastric, lung, salivary gland.
        - Infective Lymphadenitis (Infection): ENT infections (tonsillitis, pharyngitis, sinusitis), dental infections, skin infections (impetigo).
    - (Other rarer causes like branchial cleft cyst, lipoma, sternocleidomastoid tumour - less focus for initial history unless specific clues).

- **A. Structured History Taking for a Neck Lump:**
    1. **Intro:**
        - Open-ended Q: *"Hi [Patient's Name], my name is Dr. Emir. How can I help you today?"*
        - Patient: "Doctor, I was playing with my neck yesterday, suddenly I felt a lump, and I'm so worried about it because I read on Google it can be all these bad stuff." (Expresses high concern).
        - Address Concern (Crucial for rapport with an anxious patient): *"I can imagine how stressful this can be, but thank you for coming to check it out. As always, I'll ask you a few questions, try to find a cause, and make the best management plan for you."*
    2. **Explore the Complaint (The Lump - Specific Lump History):**
        - **Character:** *"Is it one lump you're feeling, or a few multiple lumps?"*
        - **Site:** *"Can you show me where the lump is?"* (Is it midline or on the side of the neck? - Patient usually indicates side).
        - **Timing:**
            - *"When did you first notice it?"* (e.g., "Just today/last night").
            - *"Is this the first time you're having a lump in the neck?"*
            - *"Is it increasing in size? Have you noticed it getting larger?"*
        - **Patient's Perception of Lump Features (as PEFE is later):**
            - *"Is the lump hard or soft on touch?"*
            - *"Is the lump painful or tender?"*
            - *"Have you noticed any skin changes over it (redness, swelling)?"*
            - *"Does it move freely under the skin, or does it feel fixed?"*
    3. **Screening for Differentials (Systematic - Thyroid, then Malignancies, then Infections):**
        - **A. Thyroid Differentials:**
            - Movement with Swallowing: *"Does the lump move when you swallow?"* (Thyroid lumps and thyroglossal duct cysts typically move).
            - Symptoms of Hypo/Hyperthyroidism: *"Any weather preference (cold or heat intolerance)? Any constipation or diarrhoea?"*
            - Family Hx: *"Any family history of thyroid problems?"*
            - (All typically negative in this specific recall pathway focusing on non-thyroid causes, but essential to ask).
        - **B. Malignancies (CRITICAL - This is a major focus):**
            - **Lymphoma (General Cancer Qs / B Symptoms):**
                - *"Have you lost any weight lately?"* (No, for this version).
                - *"Noticed any loss of appetite?"*
                - *"Any lumps or bumps **anywhere else** in your body (other lymph node areas - axilla, groin)?"*
                - *"Any tiredness? Any night sweats?"*
                - *"Any past history or family history of cancers?"*
            - **Localized Head & Neck / Metastatic Cancers (System by System):**
                - Skin Cancer (Melanoma, SCC): *"Have you noticed any new or changing moles or skin lesions on your head and neck area? Any history of excessive sun exposure?"*
                - Naso-oro-pharyngeal Cancers:
                    - Nasal: *"Any recurrent nosebleeds? Any long-term blocking of one side of your nose?"*
                    - Oral: *"Any history of non-healing ulcers in your mouth?"* (Positive in one recall version).
                    - Pharyngeal: *"Any history of long-term or persistent sore throat?"*
                - Oesophageal Cancer: *"Any difficulty swallowing (dysphagia)? Any painful swallowing (odynophagia)?"* (Vomiting also possible).
                - Gastric Cancer: *"Any history of abdominal pain? Noticed any dark, tarry stools (melaena)?"* (Alcohol as risk factor).
                - Lung Cancer:
                    - *"Any history of coughing? (If yes: Dry/chesty? Duration?). Any history of shortness of breath?"*
                    - **"Have you ever coughed up any blood (haemoptysis)?"**
                    - **"Do you smoke?"** (Yes, in many recall versions).

        - Pancoast Tumour symptoms: *"Noticed any numbness or pins and needles in your hands? Any asymmetry in your face (for Horner's)?"*
        - Salivary Gland Cancer (e.g., Parotid): *"Have you noticed any swelling in your face, or on the side of your cheeks?"*
    - **C. Infections (Lymphadenitis):**
        - General: *"Any fever or chills?"*
        - Dental Infections: *"Do you have any toothache? Any pain on chewing? How is your dental hygiene? When did you see the dentist last time?"* (Toothache positive in one recall version).
        - ENT Infections: *"Any sore throat (if not already asked)? Runny nose? Ear pain?"* (Sinusitis: "Any secretions behind your throat?").
        - Skin Infections (Head/Neck): *"Noticed any rashes or infections on your skin (scalp, face, neck)?"* (Impetigo, cellulitis).
    - **D. Other Less Common/Systemic (Brief Screen if time after above priorities):**
        - Travel History (for unusual infections like TB, fungal).
        - Contact with Animals (Zoonoses, e.g., Cat Scratch Disease, Toxoplasmosis).
        - STIs (HIV, Syphilis, EBV - can cause generalized or prominent cervical lymphadenopathy). *"Are you sexually active? Practice safe sex?"*
4. **Closure (SADMA - what's left):** Alcohol (covered with gastric Ca), Drugs, Medications, Allergies. Most key PMHx/FMHx should be integrated.

- **"Multiple Finding Drama" in Neck Lump Case:**
    - The tutor highlights that this case is notorious for giving **multiple positive findings** from different categories (e.g., smoking + dry cough + toothache + non-healing oral ulcer + dysphagia).
    - **DO NOT PANIC.** This means you are asking the right questions and uncovering a complex picture.
    - The case is designed to see if you can handle multiple possibilities rather than latching onto one recall.
- **B. Physical Examination (If Tasked):**
    - Would focus on a thorough Head & Neck exam including:
        - Inspection and palpation of the neck lump (site, size, shape, consistency, tenderness, mobility, skin changes).
        - Full thyroid exam.
        - **Full Lymph Node Station Examination (cervical, supraclavicular, axillary, inguinal).**
        - Oral cavity and oropharynx inspection.
        - Cranial nerves (if neurological symptoms or suspicion of skull base involvement).
        - Respiratory and abdominal exam if malignancy in those areas is suspected.
- **C. Explaining Diagnosis and Differentials (When Multiple Findings Present):**
    - **Tutor's Approach for Multiple Positives:**
        1. **Acknowledge Complexity:** *"Jane, based on our conversation, I was thinking about different possible causes for a lump in the neck."*
        2. **Group Concerns (e.g., around Cancer if multiple red flags):** *"In your case, Jane, I am concerned about the possibility of a cancer."*
        3. **List Specific Potential Primary Cancers based on findings (reasoning for each):**
            - *"The lump in your neck could be because of a **lung cancer** that might have spread, because you have a chronic long-term cough and you have been smoking for a very long time."*
            - *"It could be because of an **oral cancer** (a cancer in your mouth) because of that ulcer you told me about that is not healing."*
            - *"I'm also thinking about a **cancer in your oesophagus** (your food pipe) because you mentioned you have difficulty in swallowing."*
        4. **Acknowledge Other Co-existing (but perhaps less sinister immediate) Findings:**
            - *"But you also have a **toothache**, so it can also be because of a **dental infection** causing this lump in your neck too."*
        5. **Broaden to Other Differential Categories (if not directly linked to current positives but still on list):**
            - *"I was also thinking about other conditions, Jane. I was thinking about problems in your **thyroid gland**, like a thyroid cancer, a thyroid cyst, or a thyroid nodule, or even a goiter, but [reason why less likely e.g., 'you don't have weather preference or other thyroid symptoms']." *
            - *"I was considering other **cancers that can spread to your neck**, like skin cancers (melanoma) in the head and neck area, or cancers in your nose, or even from your stomach or salivary glands."*
            - *"And then I was thinking about other **infections** too, like skin infections (impetigo, cellulitis) or other ENT infections (tonsillitis, pharyngitis, sinusitis)."*

- **Key is not to fixate on ONE diagnosis when multiple strong possibilities exist.** Present them logically.

IV. Key Learning Points for Neck Lump Case:

- **Broad Differential is Essential:** Do not assume it's just a thyroid lump. Think: Thyroid, Lymph Nodes (Malignant - primary/metastatic, Infective), Congenital (less likely in adults but possible).
- **Systematic Malignancy Screen:** This is paramount. Go through potential primary sites that metastasize to neck nodes (Skin, Naso/Oro/Pharynx, Oesophagus, Gastric, Lung, Salivary). Ask "B symptoms" for lymphoma.
- **Infection Screen:** Dental, ENT, and skin infections are common causes of cervical lymphadenitis.
- **Thyroid Questions:** Even if lump is lateral, briefly screen for thyroid dysfunction and family history.
- **Explore the Lump Characteristics (via History):** Onset, duration, number, site, size change, pain, consistency, mobility, skin changes.
- **Handle Multiple Positives:** If the patient gives multiple significant findings pointing to different potential diagnoses, acknowledge them all. Your "diagnosis" might be a list of primary concerns.
- **Don't Be Afraid to Mention Cancer:** Deliver this information professionally but directly if findings are concerning. This is not a BBN station focused on the emotional reaction, but on diagnostic reasoning.
- This case tests thoroughness in history taking for a common but potentially serious presentation, requiring a wide knowledge of head/neck and systemic pathology.

hoarseness

AMC Recalls: ENT - Hoarseness of Voice Case (Pancoast Tumor)

I. Introduction to Hoarseness Cases:

- Hoarseness is an older recall that might reappear in face-to-face exams.
- It's a "multitask case" often involving history, PEFE, diagnosis/differentials, and investigations, requiring efficient time management. **If >3 tasks, you must be quick and concise.**

II. Case 55: 45 y.o. Lady, Change in Voice & Hoarseness

- **Stem Summary:**
  - 45-year-old lady, GP.
  - Complaining of change in her voice and hoarseness (duration often a few weeks).
- **Tasks (Typical Face-to-Face):**
  1. History (4 mins).
  2. Ask Physical Examination from Examiner (PEFE).
  3. Explain diagnosis and differentials.
  4. Explain further investigations.
- **Initial Brainstorming - Differentials for Hoarseness:**
  - **Common/Benign:** Laryngitis (viral/bacterial), vocal abuse/overuse, vocal cord nodules/polyps.
  - **Serious (Red Flags):**
    - **Malignancy:** Laryngeal cancer, Thyroid cancer (invading recurrent laryngeal nerve - RLN), Lung cancer (especially Pancoast tumor affecting RLN), Oesophageal cancer (invading RLN).
    - Recurrent Laryngeal Nerve (RLN) Palsy (from causes other than direct cancer invasion - e.g., surgical trauma, aortic aneurysm, other mediastinal masses).
    - Epiglottitis/Supraglottitis (acute, severe).
  - **Other:** GERD (laryngopharyngeal reflux), Hypothyroidism (myxedema of vocal cords), Myasthenia Gravis, inhaled steroid use.
- **A. Structured History Taking for Hoarseness:**
  1. **Intro & Haemodynamic Stability:** (Standard approach; haemodynamic stability less critical for chronic hoarseness unless acute severe symptoms).
  2. **Explore Complaint (Change in Voice/Hoarseness):**
     - **Timing:**

        - *"How long have you had this hoarseness / When did you first notice the change in your voice?"*
        - *"Is the hoarseness on and off, or is it constantly/continuously there?"*
        - *"Is it getting worse?"*
    - **Alleviating/Aggravating Factors:**
        - General Q: *"Is there anything that makes it better or worse?"*
        - Specific: *"Does it get better with **resting your voice**?"* (For vocal overuse).
    - **Pattern / Diurnal Variation:**
        - *"Have you noticed it's **worse at the end of the day**, or is it the same throughout the day?"* (Worse at end of day suggests overuse/fatigue).
3. **Screening for Differentials (Systematic - ENT, then Cancers, then Rare):**
    - **A. Acute Laryngitis / URTI (Common Causes):**
        - *"Do you have any fever or chills?"*
        - *"Any sore throat? Runny nose? Facial pain (sinusitis)?"*
        - **Red Flags for Severe URTI/Airway:** *"Any drooling? Difficulty swallowing? Any noisy breathing (stridor)?"*
    - **B. Vocal Overuse:**
        - *"What is your **occupation**?"* (Patient: **"I'm a teacher."** - High vocal demand).
        - *"Do you talk for long hours at work?"*
        - *"Do you do any singing? Have you had any recent episodes of screaming or shouting?"*
    - **C. Cancers (CRITICAL Red Flag Area - Laryngeal, Thyroid, Lung, Oesophageal):**
        - **Oesophageal/Pharyngeal Symptoms:**
            - *"Do you have any **difficulty swallowing (dysphagia)**?"*
            - (Painful swallowing/odynophagia).
            - (History of vomiting).
        - **Thyroid Symptoms/Cancer:**
            - *"Have you noticed any **lumps or swelling in your neck**?"*
            - *"Any weather preference (cold/heat intolerance)?"* (For associated thyroid dysfunction).
        - **Lung Cancer (Pancoast Tumor Focus):**
            - *"Do you have any **cough**?"* (Patient: **"Yes."** -> Explore: Dry/chesty? Duration? -> "Dry, for months").
            - **"Do you smoke?"** (Patient: **"Yes, 20-30 years."**).
            - *"Have you ever coughed up any blood (haemoptysis)?"* (Negative).
            - **Pancoast Specific (RLN/Brachial Plexus/Horner's):**
                - *"Have you also noticed any **numbness or pins and needles in your hands** (especially ulnar side)?"*
                - *"Have you noticed any **asymmetry in your face** (e.g., one droopy eyelid, smaller pupil)?"*
        - General Cancer Red Flags: (Weight loss, appetite loss, lumps elsewhere, tiredness, night sweats - ask if not covered by PMR/TA history in previous case).
    - **D. Rare Causes:**
        - **GERD (Laryngopharyngeal Reflux):**
            - *"Do you have any heartburn? A sudden increase of saliva in your mouth (water brash)?"*
        - **Myasthenia Gravis:**
            - *"Any history of blurring of vision or double vision, especially towards the end of the day?"* (Fatigable weakness).
        - **Hypothyroidism:** (Weather preference already asked). *"Any constipation? Dry skin?"*
        - **Surgical/Traumatic RLN Injury:**
            - *"Any previous surgeries on your neck (e.g., thyroidectomy)? Any history of trauma to the neck?"*
        - **Medications (Inhaled Steroids):**
            - *"Are you using any steroid inhalers or puffers (e.g., for asthma or COPD)?"*
4. **Closure (SADMA).**

- **B. Physical Examination from Examiner (PEFE - Tailored for Hoarseness):**
    - **Tutor's Note:** This case has multiple tasks, so PEFE needs to be efficient but cover key areas.
    2. **General Appearance:** "Examiner, on general appearance, I'm looking for cachexia and any visible swelling in the neck."

3. **Vital Signs:** "Just tell me the temperature, please." (Other vitals less critical unless sepsis suspected).
4. **ENT Examination (Focused):**
    - **Throat Examination:** *"I'd like to do a throat examination. Do I see any abnormal growths or masses? Any signs of infection (swelling, redness, exudates)?"* (No).
    - **(Nasal/Sinus exam briefly if rhinitis/sinusitis symptoms were prominent).**
    - **Cervical Lymph Node Examination:** *"Do I have any cervical lymphadenopathy?"*
5. **Neck Examination:**
    - **Thyroid Examination:** *"Is the thyroid normal on examination?"* (No goitre/nodules).
6. **Respiratory Examination (CRITICAL given smoking, cough, suspicion of Pancoast):**
    - *"On inspection and palpation, is chest movement symmetrical and equal?"* (Examiner: **"No, you have decreased chest movement on the left lower zone."**).
    - (Tracheal position - likely midline unless massive effusion/collapse).
    - *"On percussion, do I have any findings?"* (Examiner: **"You have dullness on the left lower zone."**).
    - *"On auscultation, are breath sounds normal? Any added sounds?"* (Examiner: **"You have absent breath sounds on the same left lower zone."**).
    - (Vocal resonance - likely decreased over effusion).
7. **Key Point Additions (for Pancoast Tumor suspicion):**
    - *"Examiner, do I see any signs of **Horner's syndrome** (ptosis, miosis, anhydrosis)?"* (May be a photo).
    - *"I'd like to do an **upper limb neurological examination**, specifically looking for C8/T1 involvement (power/sensation changes)."* (Examiner may give findings like weakness/sensory loss in ulnar distribution).

o **(Indirect Laryngoscopy - Tutor notes this is often "unavailable" in OSCEs as it's a specialist procedure, but good to be aware it's the definitive way to see vocal cords. Don't get stuck if unavailable).**

- **Interpreting PE Findings:** The findings of unilateral decreased chest movement, dullness, and absent breath sounds in the left lower zone are highly suggestive of a **pleural effusion** or **lung collapse/consolidation** in that area. Combined with hoarseness and smoking history, a Pancoast tumor causing RLN palsy and a secondary pleural effusion is a strong possibility.
- **C. Explaining Diagnosis and Differentials to Patient:**
    1. **Acknowledge Broad Causes:** *"Mrs. [Patient's Name], I was thinking about different causes for your voice change or hoarseness."*
    2. **State Main Concern (Lung Cancer - Pancoast):**
        - *"In your case, I am concerned about the possibility of a **lung cancer**, specifically one that might be in the upper part of your lung."*
    3. **Reasons for Diagnosis (Link to key findings):**
        - *"The reasons I am concerned are: you've had a change in your voice, you've been having a cough for a few months, and you are a long-term smoker."*
        - *"Importantly, on examination, I found some abnormal findings in your lung examination on the left side, suggestive of some **fluid collection (pleural effusion)** in your chest cavity. A lung cancer at the top of the lung can sometimes affect the nerve that goes to your voice box, causing hoarseness, and can also lead to fluid build-up."*
        - (Mention positive Pancoast neuro signs if found: *"Also, [the weakness in your hand / the changes in your face] can be related to this."*)
    4. **Key Differentials (Grouped by category):**
        - **Other ENT/Laryngeal Causes:** *"I was also thinking about common infections in the throat like **laryngitis or tonsillitis**, or even **overuse of your voice** since you're a teacher, or benign growths like **vocal cord polyps**."*
        - **Other Cancers:** *"We also need to consider other cancers that could affect the nerve to your voice box, such as **thyroid cancer** or **oesophageal (food pipe) cancer**."*
        - **Rare Causes:** *"Less likely, but also on my mind, were conditions like **GERD (acid reflux)** irritating your throat, or even **Myasthenia Gravis** (a nerve-muscle condition)."*
- **D. Explaining Further Investigations (Bullet points for this multi-task station):**
    - **Tutor's Note:** Be quick, prioritize, no lengthy explanations.
    2. **Chest X-ray (Initial Imaging for Lungs).**
    3. **Direct Laryngoscopy (To visualize vocal cords directly - ENT referral).**
    4. **CT Scan of Chest (If CXR shows mass/effusion, for better characterization & staging).**
    5. **Biopsy (If mass found on CT or laryngoscopy).**
    6. (Thyroid Function Tests & Ultrasound - if thyroid cancer was a higher suspicion).

IV. Key Learning Points for Hoarseness Case:

- **RLN Palsy is Central:** Hoarseness often implies an issue with the recurrent laryngeal nerve. Think what can compress/invade it: Thyroid cancer, Lung cancer (esp. Pancoast), Oesophageal cancer, Laryngeal cancer, mediastinal masses, surgical trauma.
- **Pancoast Tumor is a Classic:** Apical lung tumor -> hoarseness (RLN), arm pain/weakness (brachial plexus C8/T1), Horner's syndrome.
- **Systematic Cancer Screen:** When hoarseness is persistent, especially in a smoker, a thorough screen for relevant malignancies is vital.
- **Don't Forget Benign Causes:** Laryngitis and vocal overuse are common, but red flags (persistent hoarseness >3 weeks, smoking, other cancer symptoms) demand further investigation.
- **Pleural Effusion as a Sign:** In the context of suspected lung cancer, pleural effusion on exam is a significant finding.
- **Time Management in Multi-Task Stations:** Be extremely concise and focused, especially for investigations and management if they are not the primary assessed area.
- This case tests the ability to link a specific ENT symptom (hoarseness) to potentially serious underlying thoracic or neck pathology and to formulate a logical diagnostic and investigative plan.

Unwell-pyelonephritis

AMC Recalls: Unwell Patient - Pyelonephritis in Pregnancy

I. Case 56: 25 y.o. Lady, 20 Weeks Pregnant, "Feeling Unwell"

- **Stem Summary:**
  - 25-year-old lady.
  - 20 weeks pregnant.
  - Presents to clinic "feeling unwell."
- **Tutor's Note:** This case is tricky because "unwell" is vague, and pregnancy introduces a specific set of serious differentials. Many fail due to poor differential listing and time management.
- **Tasks (Face-to-Face Exam Version):**
  1. Take history (3-4 minutes - very short).
  2. Ask Physical Examination from Examiner (PEFE).
  3. Explain diagnosis and differentials.
  4. Explain management plan.
- **(Predominant Assessment Area: Likely Diagnostic Formulation, but all tasks are critical in a 4-task station).**
- **A. Initial Brainstorming - Critical Differentials for "Unwell" in a 20-week Pregnant Patient:**
  - **Urinary Tract Infection (UTI) / Pyelonephritis (Very common and important in pregnancy).**
  - Pre-eclampsia (PET) (Can start manifesting around 20 weeks, though more classic later).
  - Gestational Diabetes (GDM) related issues (though "unwell" is non-specific).
  - Cholestasis of Pregnancy / Acute Fatty Liver of Pregnancy (Serious liver conditions).
  - Anemia of pregnancy.
  - **Infections (Non-UTI):**
    - Chorioamnionitis (intra-amniotic infection).
    - STIs (e.g., Herpes outbreak, acute HIV, Syphilis).
    - Common viral illnesses.
  - (Standard "HEMI AD COP x2" differentials for tiredness/unwell are background but pregnancy-specific ones take priority).
- **B. Structured History Taking (Focused due to Time & Pregnancy):**
  1. **Haemodynamic Stability (Crucial in unwell pregnant patient):**
     - Face-to-Face: *"Examiner, can you please tell me the patient's vital signs before I start? (BP, HR, RR, Temp)."* (Assume stable for OSCE progression).
  2. **Opening & Addressing Concern:** (Standard approach). Patient worried, feeling unwell for a few days, acute onset.
  3. **Explore "Unwellness" (Patient defines as "feverish"):**
     - *"Mary, can you describe what you mean by feeling unwell? Are you feeling tired, sleepy, or **feverish**?"* (Patient: "Feverish"). *-> This immediately pivots to an infective cause.*
     - Explore Fever: "Checked temperature? (No). Chills? Taken medication for fever? Helping?"

- Timing of Unwellness/Fever: "When did this start? On/off or constant? Getting worse?"
- Alleviating/Aggravating for general unwellness.

4. **Screening for Differentials (Prioritize Infections, esp. UTI/Pyelo, then PET, GDM, Liver):**
    - **A. Urinary Tract Infection / Pyelonephritis (Top Priority):**
        - Lower UTI (Cystitis) Symptoms:
            - *"Do you have any **burning or pain when passing urine (dysuria)**?"* (Yes).
            - *"Are you **passing urine more frequently** than usual?"* (Yes).
            - *"Have you noticed any **blood in your urine**?"*
        - Upper UTI (Pyelonephritis) Symptoms:
            - *"Any **nausea or vomiting**?"* (Yes, 3-4 times).
            - *"Any **abdominal pain** or **flank pain** (pain in your side/back)?"* (If yes to abdo pain, explore with SOCRATES briefly - e.g., flank pain radiating to groin).
    - **B. Other Infections (STI, Chorioamnionitis, General):**
        - STIs: *"Are you currently sexually active? Do you practice safe sex and use condoms?"*
            - *"Any unusual vaginal discharge? Any rashes or ulcers on your private parts?"*
        - Chorioamnionitis (less likely without ruptured membranes/labour, but consider if abdo pain): "Any waters broken? Regular contractions?"
        - General/Respiratory/ENT: "Any sore throat? Runny nose? Cough? Headache? Sore neck? Rashes?" (Quick screen).
        - Travel Hx?
    - **C. Pre-eclampsia (PET - screen even if early for florid symptoms):**
        - *"Any blurring of your vision or vision problems? Swelling in your legs or hands? Any nausea/vomiting (already asked) or pain in the upper part of your abdomen?"* (Headache already asked).
    - **D. Gestational Diabetes (GDM) related issues (less direct "unwell" cause unless DKA/hypo):**
        - *"Have you noticed any increase in your thirst or are you passing more urine (polyuria)?"* (Can overlap with UTI, but also GDM sign).
    - **E. Cholestasis of Pregnancy / Acute Fatty Liver (can cause malaise, N/V):**
        - *"Any yellowish discoloration of your skin or eyes (jaundice)? Itchy skin?"*
    - **F. Anemia (Common in pregnancy):**
        - *"Any racing of your heart or shortness of breath, especially on exercise?"*
5. **(Brief review of current pregnancy, e.g., "How has this pregnancy been going so far? Any problems identified?")**
6. **(No time for full HEMI AD COP x2 or extensive SADMA due to 3-4 min history limit).**

- **Key History Findings (Example for this Pyelonephritis Recall):**
    - Feverish, chills.
    - Vomited 3-4 times.
    - Abdominal/flank pain (radiating to groin).
    - Dysuria, frequency.
    - (Sometimes a patient might initially report suprapubic pain (cystitis) in history, but then renal angle tenderness is found on exam, upgrading to pyelonephritis).
- **C. Physical Examination from Examiner (PEFE - Tailored for Unwell Pregnant Patient):**
    - **Tutor's Note:** Time efficiency is paramount. Be very specific.
    2. **General Appearance:** Drowsy? Dehydrated? Jaundice? Rashes?
    3. **Vital Signs:** (If not already obtained, but usually some info is in stem or asked initially). Focus on **Temperature** (High). (BP for PET, HR/RR for sepsis).
    4. **ENT Examination (Quick screen for source of fever):** *"Examiner, I want to examine the throat. Any swelling or redness?"* (No).
    5. **Respiratory Examination (Quick screen):** *"Is air entry equal? Any added sounds?"* (No).
    6. **Cardiovascular Examination (Quick screen):** *"Are S1 and S2 normal? Any murmurs or added sounds?"* (No).
    7. **Abdominal Examination (CORE - Systematic, considering pregnancy & pyelonephritis):**
        - Inspection: "Any bruising or swelling (distension)?"
        - Palpation:
            - *"Any suprapubic tenderness?"*
            - *"Any right upper quadrant tenderness (for liver/gallbladder)?"*
            - *"Any organomegaly, specifically hepatomegaly?"*
            - **Fundal Height:** *"What is the fundal height?"*
            - **Uterine Tenderness:** *"Is the uterus tender on palpation?"*

        - **Fetal Heart Rate:** *"What is the fetal heart rate?"*
        - **Special Test (CRUCIAL):** *"Examiner, do I have any **renal angle tenderness**?"* (Key for pyelonephritis).
    8. **Urine Dipstick (Office Test - CRUCIAL):**
        - *"Examiner, on urine dipstick, what am I looking for specifically?"* (Patient needs to state). -> *"I am looking for **leukocytes and nitrites**."* (Examiner: "Both positive").
        - (Blood may also be positive due to UTI).
    - **(Pelvic Exam - Tutor suggests being wary due to time unless very strong indication like PV discharge/bleeding. If asked, be specific: "Looking for discharge and rashes on vulva/vagina, cervical motion tenderness.")**
- **Key PEFE Findings (for Pyelonephritis version):** High temp, tachycardia. Renal angle tenderness. Urine dipstick: Leukocytes + Nitrites positive (+/- Blood).
- **D. Explaining Diagnosis and Differentials (Pyelonephritis in Pregnancy):**
    - **Tutor's Warning:** Do NOT explain/reason differentials if the task is only Dx + Management and time is short. If Dx + DDx, then yes, but be quick.
    2. **Most Likely Diagnosis:** *"Mary, most likely you have a condition called **pyelonephritis**."*
    3. **Brief Explanation:** *"This is an **infection in your kidneys**."*
    4. **Reasons for Diagnosis (Link to key positive findings):**
        - *"The reasons for this are: you have burning when passing urine and are going more frequently. You also have fever and have vomited a few times. Importantly, on examination, you have pain in your flank (side/back), and your urine test shows signs of infection (white blood cells and nitrites)."*
    5. **Differentials (Quickly list - do NOT reason or explain unless specifically asked and time allows):**
        - *"Before running out of time, I just want to tell you I was also thinking about **gestational diabetes complications, pre-eclampsia, other infections like STIs (Herpes, HIV), tonsillitis, pneumonia, and cholestasis or acute fatty liver of pregnancy**."* (List relevant pregnancy/infective differentials).
- **E. Explaining Management Plan (Pyelonephritis in Pregnancy - Prioritize):**
    - **Tutor's Note:** You have very little time (maybe 10 seconds if you just did Dx/DDx). Prioritize CRITICAL actions.
    2. **Investigations (Key ones):** *"We'll do a **urine MCS** (microscopy, culture, sensitivity) to confirm the bug and what antibiotics work best. We'll also do some **blood tests** (FBE, UEC, CRP, Blood Cultures) to check the severity of the infection."*
    3. **Immediate Actions (Hospitalization & IV Antibiotics):**
        - *"I need to **refer you to the emergency department** now."*
        - *"We will need to **admit you to the hospital**."*
        - *"And we'll start you on **intravenous (IV) antibiotics** immediately."*
    4. **Supportive Care:**
        - *"We will also give you **IV fluids** to keep you hydrated."*
        - (Pain relief, antiemetics as needed).
    5. **Follow-up/Monitoring:**
        - *"Once you are stable and the infection is improving, we can switch you to oral antibiotics, usually for a total of 10-14 days."*
        - *"We will also need to do a **follow-up urine MCS** after treatment to make sure the infection is completely gone, as UTIs in pregnancy need careful management."*
- **Tutor's Time Management Advice:** If tasks are Dx + Management (4 tasks total), and history was 4 mins, PEFE 1.5-2 mins, then Dx/DDx needs to be ~1 min, leaving only ~1-1.5 mins for management. Be very concise. Prioritize ED referral and IV antibiotics.

IV. Key Learning Points for Unwell Pregnant Patient (Pyelonephritis):

- **Pregnancy Changes Everything:** Always consider pregnancy-specific conditions when a pregnant patient presents as unwell.
- **UTI/Pyelonephritis is Common & Serious in Pregnancy:** Must be high on the differential and treated promptly to avoid complications for mother and baby.
- **Red Flags in Pregnancy:** Fever, abdominal/flank pain, vomiting, signs of pre-eclampsia.
- **Focused History & PEFE:** Given time constraints, tailor questions and examination to the most likely serious conditions in a pregnant patient.
- **Urine Dipstick is Key:** Leukocytes and nitrites are highly suggestive of UTI.
- **Management of Pyelonephritis in Pregnancy:** Hospital admission, IV antibiotics, IV fluids. Test of cure is important.

- **Time Management in Multi-Task Stations:** This is paramount. Be extremely efficient, prioritize key information, and avoid lengthy explanations unless specifically required for a counseling task.
- This case tests the ability to recognize a serious infection in a vulnerable patient group, apply relevant obstetric knowledge, and manage time effectively across multiple tasks.

Unwell-hepatitis

AMC Recalls: Unwell Patient - Hepatitis A/E (Travel-Related, Starts with PEFE)

I. Case 57: 40 y.o. Lady, "Feeling Unwell," Tiredness, Nausea, Recently Returned from Philippines

- **Stem Summary (Provides significant history upfront):**
  - 40-year-old lady, GP.
  - "Feeling unwell," tired, and has nausea.
  - **No feverish feeling.**
  - **Recently returned from a trip to the Philippines.**
  - **Explicit Negatives in Stem:** No sexual activity overseas, no mosquito bites, no needle exposures.
  - PMHx: Appendectomy 10 years ago.
- **Tasks (Unique Structure):**
  1. **Start with Physical Examination from Examiner (PEFE).** (No initial history taking by candidate).
  2. Investigation results provided on a card (at ~4 minutes). Explain investigations to the patient.
  3. Explain diagnosis and differentials to the patient.
- **Initial "Problem List" & Conceptual Focus from Stem:**
  - "Unwell" with tiredness and nausea (suggests systemic illness, possibly GI/hepatic).
  - Travel to the Philippines (high risk for food/water-borne illnesses like Hepatitis A/E, gastroenteritis).
  - Explicitly ruling out some BBV/vector-borne risks helps narrow focus.
- **Tutor's Initial Thought Process for Differentials (before PEFE):**
  - Given nausea + travel history, **GI system is the primary focus.**
  - Top differentials: **Gastroenteritis, Viral Hepatitis (A/E).**
  - Pregnancy (always a differential for a 40 y.o. female with nausea/tiredness until proven otherwise).
- **A. Physical Examination from Examiner (PEFE - Structured Approach for "Unwell/Tiredness" with GI/Travel Clues):**
  - **Tutor's Note on Starting PEFE:** Even though there's no preceding history *you've* taken, still do a brief, polite intro to the patient in the room before turning to the examiner. *"Jane, my name is Dr. Emir, I'll be taking care of you today. Just give me a few minutes [to talk to my examiner], I'll come back to you."*
  2. **General Appearance:**
     - *"Examiner, on general appearance: Is my patient alert or drowsy? Any rashes? Importantly, any **jaundice**? Any signs of dehydration? Any pallor?"*
  3. **Vital Signs (Focus on temperature first):**
     - *"Examiner, what is the temperature?"* (Then ask for BP, HR, RR if indicated or as part of routine).
  4. **ENT Examination (Quick screen for other sources of "unwell"):**
     - *"On throat examination, do I have any swelling or redness?"*
     - *(Optional: "On ear examination, any red, bulging tympanic membrane?")*
  5. **Neck Examination:**
     - *"Any issues on thyroid examination?"* (Normal).
     - *"Any concerns on full lymph node examination?"* (No lymphadenopathy).
  6. **Respiratory & Cardiovascular Systems (Screening):**
     - *"Examiner, on respiratory examination, is air entry equal? Any added sounds?"* (No).
     - *"On cardiovascular examination, are S1 and S2 normal? Any murmurs or added sounds?"* (No).
  7. **Abdominal Examination (CORE Examination - Systematic & Detailed given nausea/travel):**
     - Inspection: *"Any distension, rashes, or bruises on the abdomen?"*
     - Palpation:
       - *"Examiner, on palpation, is there any tenderness? And specifically, is there any **hepatosplenomegaly**?"* (Examiner: **"Yes, you do have hepatomegaly."**).
       - **Probing Hepatomegaly:** *"Is the liver tender? Is the liver border regular or irregular?"*
     - Percussion (for ascites): *"Do I have any shifting dullness?"*
     - Auscultation (for bowel sounds, bruits - less critical here but part of full exam).

        - *(Optional but good: "Any scratch marks on the skin?" - for cholestasis/pruritus).*
    8. **Pelvic Examination (Rule out obstetric/gynaecological causes of nausea/malaise in a 40 y.o. female):**
        - **Consent & Chaperone:** *"Examiner, with the patient's consent and in the presence of a chaperone, I would like to perform a pelvic examination."*
        - Inspection: *"Looking for any discharge or rashes."*
        - Speculum: *"On speculum examination, any discharge from the cervix?"*
        - Bimanual: *"On bimanual examination, any cervical motion tenderness? What is the uterine size? Is the uterus tender? Any adnexal masses or tenderness?"*
    9. **Office Tests (CRITICAL):**
        - **Urine Dipstick:** *"Examiner, what are the findings on a urine dipstick?"* (Examiner: After prompting "What are you looking for?" -> Candidate: "Specifically bilirubin, urobilinogen, glucose, ketones." -> Examiner: **"Bilirubin is present in the urine."**).
        - **Urine Pregnancy Test (UPT):** *"I would also like to perform a urine pregnancy test."*
- **Key PEFE Findings for this Hepatitis A/E Recall:** Jaundice (on GA), hepatomegaly (non-tender in this recall), bilirubinuria.
- **B. Investigation Results (Provided on Card after PEFE):**
    - **FBC:** Increased White Blood Cells (WCC) - suggests infection/inflammation.
    - **LFTs: Hepatocellular pattern** (Raised ALT, AST significantly more than ALP/GGT).
        - (e.g., AST, ALT high; GGT might be mildly raised; ALP, Bilirubin might be normal or mildly up).
    - **Hepatitis Serology: Hepatitis B surface antigen (HBsAg) NEGATIVE, Hepatitis C antibody (Anti-HCV) NEGATIVE.**
- **Tutor's Interpretation:** The stem ruled out needle exposure (lowering risk for chronic Hep B/C). Negative Hep B/C serology further confirms this. The LFT pattern is consistent with acute viral hepatitis. Travel history points to Hepatitis A or E.
- **C. Explaining Investigation Results to Patient (Concise & Simple):**
    1. *"Jane, let me explain your results for you. We've done a series of blood tests for you today."*
    2. **FBC:** *"In your full blood count, I'm mainly looking at your **white blood cells**. These are the cells of your immune system, and they are **higher than normal**, which can mean there is an infection or inflammation in your body."*
    3. **LFTs:** *"We've done a liver function test for you. I can see your **liver enzymes are raised**. This means there's an **inflammation in your liver** specifically."*
    4. **Hepatitis B & C Serology:** *"With this, we tested for two common viruses that cause inflammation in the liver, called Hepatitis B and Hepatitis C, and in your case, these have **come back as negative**."*
- **D. Explaining Diagnosis and Differentials to Patient:**
    1. **Most Likely Diagnosis:** *"Look Jane, you are most likely having a condition called **acute hepatitis**, likely **Hepatitis A** (or you can say Hepatitis A or E)."*
    2. **Brief Explanation:** *"This means your **liver is inflamed**, and this is most likely **caused by a virus** called Hepatitis A, which you likely contracted from contaminated food or water during your recent trip to the Philippines."*
    3. **Reasons for Diagnosis (Link to stem, PEFE, and investigations):**
        - *"The reasons for this are: you have an **enlarged liver** on examination, you have **yellowish discoloration of your skin (jaundice)**, and we found a substance called **bilirubin in your urine**, all of which confirm there's a problem with your liver."*
        - *"Your blood tests also show inflammation in your liver (high liver enzymes) and signs of infection (high white cells)."*
        - *"Given your **recent travel** and the fact that common Hepatitis B and C are negative, Hepatitis A (or E) is the most likely virus."*
    4. **Differentials (Prioritize other travel-related infections, then broader):**
        - **Tutor's Note:** Since history wasn't taken by candidate, list differentials for "unwell traveller with abnormal LFTs/jaundice."
        - *"While Hepatitis A is most likely, I was also thinking about other **travel-related infections** that can affect the liver or make you feel unwell, such as:"*
            - *"**Dengue fever, Ross River fever, Malaria** (though mosquito bites were denied, it's good to keep in mind for travel to endemic areas)."*
            - *"Other viral illnesses like **EBV (glandular fever) or CMV** can sometimes affect the liver."*
            - *"We also consider other causes of liver inflammation like **autoimmune hepatitis** or **medication-induced hepatitis**, but these are less likely given your acute presentation after travel."*

- *"Less likely, but always on our mind with jaundice and liver issues, would be problems with the gallbladder like **cholangitis or cholecystitis**, or even rare **cancers** affecting the liver or pancreas, but your picture fits best with an acute viral infection."*
- *"And, of course, in any woman of your age feeling unwell with nausea, we consider **pregnancy**, though other findings make this less probable as the primary cause now."*

IV. Key Learning Points for "Unwell Patient - Starts with PEFE - Hepatitis A/E":

- **Unique Task Order:** Be prepared for OSCE stations that start directly with PEFE, using the stem as the "history."
- **PEFE Guides Differentials:** Your physical examination needs to be broad enough to cover differentials for "unwell traveller with nausea" (focus on GI/Hepatic, but screen other systems).
- **Travel History is Paramount:** Even if provided in the stem, the implications of travel to specific regions (e.g., Philippines for Hep A/E, Dengue) must be integrated into your reasoning.
- **Interpreting LFTs:** Understand the basic patterns (hepatocellular vs. cholestatic) to support your diagnosis.
- **Hepatitis A/E Transmission:** Fecal-oral route (contaminated food/water) - strongly linked to travel to endemic areas.
- **Ruling out Hep B/C:** The stem and negative serology help steer away from these, fitting the acute travel-related picture.
- **Time Management:** Even with no initial history task, the subsequent tasks (PEFE, explaining investigations, Dx/DDx) need to be managed efficiently within the station time.
- This case tests the ability to perform a relevant physical exam based on limited initial data, interpret investigations, and formulate a diagnosis in a specific epidemiological context (travel-related illness).

Unwell-HIV and cough

AMC Recalls: Unwell Patient - HIV Positive, Off Medication, with Cough/Fever (Opportunistic Infection Focus)

I. Case 58: 30 y.o. Male, "Feeling Unwell" & Feverish, Known HIV, Stopped Antivirals 6 Months Ago

- **Stem Summary:**
  - 30-year-old male, GP or ED.
  - Complaining of "feeling unwell" and feverish.
  - **Key Context:** Known case of HIV. **Stopped his antiviral medication 6 months ago.**
- **Tasks (Online Exam Origin, adapted for Face-to-Face):**
  1. Take history (6 mins).
  2. Physical Examination findings (on screen or card / from examiner).
  3. Explain diagnosis and differentials.
- **Core Concept of the Case:**
  - An HIV-positive patient who is non-compliant with antiretroviral therapy (ART) is at high risk of immunosuppression (progressing towards AIDS).
  - In this state, they are highly susceptible to **opportunistic infections** and certain **HIV-associated malignancies.**
  - The history and differential diagnosis must heavily focus on these possibilities.
- **A. Structured History Taking (Modified "Unwell/Tiredness" Structure, Prioritizing Infection & HIV Status):**
  1. **Haemodynamic Stability (CRUCIAL in unwell, potentially septic HIV patient):**
     - Face-to-Face: *"Examiner, can you tell me the vital signs (BP, HR, RR, Temperature)?"*
     - Online: *"Jack, before I start, I'll take you to the treatment room/resuscitation cubicle, check your vitals, and make sure you're stable. Is that okay?"*
  2. **Opening & Addressing Concern:** (Standard approach). Patient very unwell, feverish, concerned.
  3. **Explore "Unwellness" & Fever:**
     - Describe "Unwell": *"Can you describe what you mean by feeling unwell? Are you sleepy, low in energy, or **feverish**?"* (Patient: "Feverish").
     - Explore Fever: "How long (few days)? On/off or constant? Getting worse? Measured temperature? (No). Chills? Taken medication for fever? Helping?"
  4. **Explore Lead Point: HIV Status & Medication Non-Compliance (CRITICAL):**
     - *"Tell me about your HIV. When were you diagnosed?"*

        - *"I understand from the notes you stopped your antiviral medication about 6 months ago. Can I ask why you stopped your medication?"* (Reason doesn't change immediate medical approach but good for rapport/understanding).
        - *"Are you having regular follow-ups with your GP or your infectious disease specialist?"*
    5. **Screening for Complications/Opportunistic Infections (Systematic "Sepsis Workup" Mindset):**
        - **A. Respiratory (High Yield given later finding of cough):**
            - *"Do you have any **cough**?"* (Patient: **"Yes."** -> PROBE).
                - *"Is your cough dry or chesty (with phlegm)?"*
                - *"Any shortness of breath or difficulty breathing? Any noisy breathing?"*
        - **B. ENT (Common site for opportunistic infections like oral candidiasis, or other URTIs):**
            - *"Any sore throat? Runny nose? Facial pain (sinusitis)? Ear pain?"*
        - **C. Gastrointestinal (GI):**
            - *"Any nausea or vomiting? Abdominal pain? Diarrhoea?"*
        - **D. Urinary Tract (UTI):**
            - *"Any burning or pain when passing urine? Passing urine more frequently?"*
        - **E. Neurological (Meningitis, Toxoplasmosis - Serious OIs):**
            - *"Any headache? Sore neck? Are you light sensitive (photophobia)?"*
            - (Dizziness, confusion).
        - **F. Skin/Systemic:**
            - *"Any rashes on your body?"*
            - (Lumps/bumps for lymphadenopathy - will ask under malignancies too).
            - (Night sweats - will ask under malignancies too).
        - **G. STIs (High-Risk Group - Co-infections common):**
            - **Full Sexual History is Indicated:** *"Are you sexually active now or have you been recently (last 3 months)? Do you practice safe sex and wear condoms?"* (Partners, practices as per previous detailed sexual history structure).
            - **STI Symptoms:** *"Any discharge from your penis? Any rashes or ulcers on your penis? Any swelling or pain in your testicles?"*
        - **H. Other Infections (Briefly consider less common OIs or general infections):**
            - Hepatitis (if not covered by STI screen): "Yellowish discoloration of skin/eyes?"
            - Travel History? (Less direct if HIV is the main driver, but good for completeness).
            - Contact with animals? (For zoonoses, e.g., Toxoplasmosis).
            - Infective Endocarditis (if IVDU was a risk factor for HIV transmission): "Chest pain? Racing heart?"
    6. **Screening for HIV-Associated Malignancies (Second major concern after OIs):**
        - General Cancer Red Flags: *"Have you noticed any unexplained loss of weight lately? Loss of appetite? Any lumps or bumps in your body? Any night sweats?"*
        - Kaposi's Sarcoma: *"Have you noticed any new purplish or dark spots or lumps on your skin or in your mouth?"* (The "white patch in mouth" finding from the stem will come up here or during ENT screen).
        - Lymphoma: (Lumps/bumps and night sweats already asked).
        - Lung Cancer (if smoker): *"Do you smoke? Ever coughed up blood?"*
        - Skin Cancers.
    7. **Brief Screen of Other "HEMI AD COP x2" Categories (Very briefly, as infection/malignancy are the overwhelming priorities):**
        - E.g., Endocrine (DM, Thyroid - can co-exist), Anemia, Autoimmune, Psychological (depression common with chronic illness).
    8. **Closure (SADMA).**
- **B. Key History Findings (Example for this Pneumocystis Pneumonia (PCP) Recall):**
    - Cough (often dry for PCP).
    - Fever, chills.
    - Shortness of breath (exertional then at rest).
    - Stopped ART 6 months ago.
    - (Other OI/Malignancy screens negative for this specific recall path).
- **C. Physical Examination Findings (Online Screen Example or Elicited):**
    - **Vitals:** Temp 38°C (Fever), SpO2 low (e.g., 90% - Hypoxia), RR high (Tachypnoea).
    - **General Appearance:** Drowsy? Rashes? Jaundice? Dehydration?
    - **ENT:**

        - **Throat Examination:** *"Examiner, on throat examination, looking for swelling/redness. Is there anything else?"* (Examiner: **"You see a white patch in his mouth."**).
            - **Probing the White Patch:** *"Is the patch painful? Can I scrape it off with a tongue blade?"* (Helps differentiate Candidiasis - scrapes off, often non-painful; from Kaposi's - purplish, firm, non-scrapable, can be painful; or Oral Hairy Leukoplakia - non-scrapable, often lateral tongue).
    - **Lymph Nodes:** "Any lymphadenopathy?"
    - **Thyroid.**
    - **Respiratory Examination:**
        - Inspection/Palpation: Chest movement symmetrical? (Yes). Percussion? (Normal).
        - **Auscultation:** *"Any added sounds?"* (Examiner: "Normal" OR "Fine bilateral crackles" - PCP can have minimal signs or diffuse crackles. **A normal chest exam does NOT rule out serious lung OIs like PCP in an AIDS patient**).
        - Vocal Resonance.
    - **CVS & Abdomen:** (Quick screen - usually normal unless co-morbidity).
    - **Office Tests:** Urine Dipstick, BSL.
- **Tutor's Note on Normal Respiratory Exam in AIDS:** Immunocompromised patients (like in AIDS) may not mount a typical inflammatory response leading to classic consolidation signs. Hypoxia + tachypnoea with a relatively clear chest exam is highly suspicious for PCP.
- **D. Explaining Diagnosis and Differentials (PCP in AIDS Patient):**
    1. **State Most Likely Diagnosis (Focus on the current problem, then link to HIV):**
        - *"Jack, based on your history and the findings, most likely you are having a **pneumonia** (a lung infection)."*
    2. **Explain the Link to HIV & Opportunistic Nature:**
        - *"Because you have HIV and your immune system is currently affected (especially as you've stopped your medication), there is a higher chance of getting what we call **opportunistic infections**. These are infections that don't usually affect people with strong immune systems but can cause serious illness when the immune system is weak."*
        - *"In your case, this lung infection could be due to one of these opportunistic bugs, such as **Pneumocystis (PCP)** or even **Tuberculosis (TB)**. However, it could still be a more common **viral pneumonia** (like COVID or Influenza) or a **bacterial pneumonia** (like Pneumococcal pneumonia or Legionella/Mycoplasma)."*
    3. **Reasons for Diagnosis:**
        - *"You have fever, cough, and are feeling unwell."*
        - *"Your oxygen level is low, and you are breathing fast, which suggests your lungs are affected."*
        - *"The fact you stopped your HIV medication makes you vulnerable to these infections."*
        - (Mention white patch if relevant to Candidiasis as another sign of immunosuppression, but the lung infection is primary).
    4. **Differentials (Prioritize other OIs, HIV-related malignancies, then general):**
        - **Primary Concern is Lung OI:** (PCP, TB, atypical bacterial, fungal pneumonias).
        - **Other Infections (Systemic/Other sites):** Mention any relevant from history (e.g., if GI symptoms were prominent, consider opportunistic gut pathogens).
        - **HIV-Associated Malignancies:**
            - *"Given your HIV status, we also need to think about the possibility of certain **cancers** that can occur more frequently. For example, seeing a white patch in your mouth makes me consider something like **Kaposi's sarcoma**, though it could also be a fungal infection like thrush (Candidiasis)."* (Also mention Lymphoma if lymphadenopathy was present).
        - **Briefly list other "HEMI AD COP x2" categories if relevant and time allows, but OIs and HIV-related cancers are the priority differentials.**

IV. Variations:

- **HIV Patient with Diarrhoea (Off ART):** The diagnostic focus shifts to opportunistic GI pathogens (Cryptosporidium, Microsporidia, CMV colitis, MAC) and HIV enteropathy, as well as GI lymphomas.
- **HIV Patient with Neurological Symptoms (Off ART):** Focus on CNS opportunistic infections (Toxoplasmosis, Cryptococcal meningitis, PML) and CNS lymphoma.

V. Key Learning Points for "Unwell HIV Patient Off ART":

- **Immunosuppression is the Central Theme:** Non-compliance with ART leads to a weakened immune system (low CD4 count, high viral load), making the patient susceptible to OIs and certain cancers.
- **Opportunistic Infections (OIs) are Top Differentials:** Have a list of common OIs affecting different organ systems (Lungs: PCP, TB, fungal; Brain: Toxo, Crypto; Gut: Crypto, Micro, CMV; Skin/Mouth: Candida, Kaposi's).
- **HIV-Associated Malignancies:** Kaposi's sarcoma, Non-Hodgkin's Lymphoma (especially CNS lymphoma), cervical cancer.
- **Comprehensive Infection Screen:** A "sepsis workup" approach to history is needed, covering multiple systems.
- **Sexual History is Still Relevant:** For co-infections and partner notification.
- **Don't Be Falsely Reassured by "Normal" Exam Findings:** Especially for chest exam in suspected PCP; hypoxia and tachypnoea can be present with a relatively clear auscultation.
- **The "White Patch in Mouth":** Needs careful probing – painful? scrapable? – to differentiate Candida, Kaposi's, Oral Hairy Leukoplakia.
- This is a complex medical case requiring knowledge of HIV/AIDS, opportunistic infections, and associated malignancies. A structured approach focusing on these specific risks is essential.

Audiometry-OME

AMC Recalls: ENT - Audiometry & Otitis Media with Effusion (OME) in a Child with Speech Delay

I. Introduction & Case Presentation (Newer Recall - Child with Hearing Loss & Speech Issues):

- **Case Vignette (Recent Recall - Aug 2024):**
  - 3-year-old child, GP.
  - Known history of recurrent otitis media (AOM) - multiple episodes last year, one in last 6 months.
  - **Presents with:** Not speaking properly, hearing loss.
  - Audiometry findings provided.
- **Tasks:** History and Diagnosis. (Tutor notes this is a developmental case but focuses on ENT aspects today).
- **Older, Classic Case Vignette (Face-to-Face Exam):**
  - 2.5 - 3-year-old child, brought by mother.
  - **Concern:** Speech development delay (child not talking as much as expected).
  - Audiometry findings provided.
- **Tasks (Classic Face-to-Face):**
  1. Ask Physical Examination from Examiner (PEFE).
  2. Interpret audiometry results to the examiner.
  3. Explain diagnosis to the mother.
- **Core Concept:** Hearing impairment in children is a major cause of speech delay. Recurrent AOM can lead to persistent middle ear effusion (OME), causing conductive hearing loss.

II. Audiometry Interpretation Essentials:

- **Purpose:** To assess hearing thresholds at different frequencies.
- **Procedure Basics:** Headphones deliver sounds (air conduction) and a bone vibrator (on mastoid) delivers sounds (bone conduction). Patient indicates when they hear the sound.
- **Audiogram Chart:**
  - **Horizontal Axis (X-axis):** Frequency (Hz) - Low pitch to High pitch.
  - **Vertical Axis (Y-axis):** Hearing Level (dB HL - decibels Hearing Level). **Lower numbers (e.g., 0-20 dB) mean better hearing (softer sounds heard). Higher numbers mean worse hearing (louder sounds needed).**
- **Interpreting the Audiogram:**
  - **Symbols:** Different symbols for Right Ear Air Conduction (AC), Right Ear Bone Conduction (BC), Left Ear AC, Left Ear BC. (Red for Right, Blue for Left is common). Masked vs. Unmasked symbols exist (less critical for basic interpretation).
  - **Normal Hearing:**
    - Both AC and BC thresholds are **between 0 and 20 dB HL** across all frequencies.

        - AC and BC thresholds are **very close together or overlapping** (no significant air-bone gap).
    - **Conductive Hearing Loss (CHL):**
        - Problem with sound conduction through outer or middle ear (e.g., wax, OME, ossicular chain problem).
        - **Bone Conduction (BC) is NORMAL** (within 0-20 dB).
        - **Air Conduction (AC) is WORSE than BC** (thresholds are higher/lower on the chart).
        - **Significant Air-Bone Gap:** A noticeable difference (>10-15 dB) between AC and BC thresholds, with BC being better.
    - **Sensorineural Hearing Loss (SNHL):**
        - Problem with inner ear (cochlea) or auditory nerve.
        - **Both AC and BC thresholds are EQUALLY DEPRESSED** (worse than normal, i.e., >20 dB).
        - **No significant air-bone gap.** AC and BC lines run close together but are below the normal range.
    - **Mixed Hearing Loss:** Components of both CHL and SNHL. BC is abnormal, and AC is even worse than BC (creating an air-bone gap).
- **Tympanometry (Often done with Audiometry):**
    - Measures middle ear pressure and eardrum mobility.
    - Device in ear canal emits a tone and varies air pressure.
    - **Type A Tympanogram (Normal):** Peak compliance at or near 0 daPa (normal middle ear pressure). Sharp peak.
    - **Type B Tympanogram (Flat - Suggests OME/Fluid):** No discernible peak. Flat line. Indicates fluid in the middle ear, perforation, or blocked probe. (This is key for OME).
    - **Type C Tympanogram (Negative Pressure):** Peak compliance is significantly negative (e.g., < -150 daPa). Suggests Eustachian tube dysfunction. Smaller peak shifted to the left.
    - **Tutor's Simplification:** For OSCEs, primarily remember Type A (Normal) and Type B (Fluid/OME).

III. Otitis Media with Effusion (OME) / "Glue Ear":

- Fluid in the middle ear without signs of acute infection.
- Often follows an episode of Acute Otitis Media (AOM).
- **Natural History:** Most effusions resolve spontaneously within 3 months.
- **OME:** If effusion persists > 3 months.
- **Consequence:** Conductive hearing loss, which can impact speech and language development in children.
- **Otoscopy:** May see fluid level, air bubbles behind TM, dull/retracted TM, loss of light reflex. Sometimes TM looks relatively normal.

IV. Case Approach (Classic Face-to-Face: Speech Delay + Audiometry):

- **A. Physical Examination from Examiner (PEFE - Focused on ENT & Development):**
    - **Initial Interaction:** Briefly greet mother and child before turning to examiner. *"Hi Mary, my name is Dr. Emir. I'll be taking care of [Child's Name] today. Just give me a minute, I'll talk to my examiner."*
    2. **General Appearance:**
        - *"Examiner, on general appearance, are there any **dysmorphic features**?"* (To rule out syndromes associated with hearing loss/developmental delay).
        - *"How is the **child's behaviour**? Is he reacting to sounds and noises or when the mother calls his name?"*
    3. **Growth Chart:** *"Is the growth chart normal?"*
    4. **Vital Signs:** *"What is the **temperature**?"* (Rule out acute infection).
    5. **ENT Examination (CORE):**
        - **Otoscopy (CRUCIAL):** *"Examiner, I want to perform otoscopy. What am I looking for? I am looking for any **fluid behind the tympanic membrane**, visible **fluid levels or air bubbles**. Also, any **perforations** or **discharge**?"* (Examiner: "Yes, you can see fluid behind the tympanic membrane. No redness or perforation.").
        - Nasal Examination: *"Any septal deviation? Any signs of allergic rhinitis (pale, boggy mucosa) or polyps?"* (Link to Eustachian tube function).
        - Throat Examination: *"Any signs of cleft palate? What do the tonsils look like (e.g., very large - adenotonsillar hypertrophy contributing to Eustachian dysfunction)?"*
        - Cervical Lymph Nodes: *"Any cervical lymphadenopathy?"*
    6. **Developmental Screen (Brief - Neurology/Speech):**

        - Neurological: *"On neurological examination, what is the **tone**? What are the **reflexes**? Can I perform **fundoscopy**?"* (Looking for gross abnormalities).
        - (Speech pathologist would do formal speech assessment, but GP can make general observations).
    7. **(Brief Respiratory/CVS screen if any concerns).**
- **B. Interpret Audiometry Results to Examiner:**
    - (Audiogram shows bilateral conductive hearing loss: BC normal, AC thresholds elevated, clear air-bone gap. Tympanogram shows Type B bilaterally).
    - *"Examiner, looking at the audiogram for the right ear, the bone conduction thresholds are within the normal range (0-20 dB). However, the air conduction thresholds are [e.g., around 30-40 dB], indicating an air-bone gap. This pattern is consistent with a **conductive hearing loss in the right ear**."*
    - *"Similarly, in the left ear, the bone conduction is normal, and the air conduction thresholds are elevated with an air-bone gap, indicating a **conductive hearing loss in the left ear**."*
    - *"The tympanogram for both ears shows a Type B (flat) curve, which is consistent with fluid in the middle ear."*
    - *"Therefore, the overall audiological findings suggest **bilateral conductive hearing loss, most likely due to bilateral otitis media with effusion**."*
- **C. Explain Diagnosis to Mother:**
    1. **State Diagnosis Clearly:** *"Mary, most likely your child, [Child's Name], has a condition called **otitis media with effusion**, which some people call 'glue ear'."*
    2. **Explain OME Simply:**
        - *"After a middle ear infection (which you mentioned he's had a few of), it's normal for some fluid to collect in the middle ear space, behind the eardrum."*
        - *"Usually, we expect this fluid to be absorbed by the body within about three months. However, if the fluid stays longer than three months, we call it otitis media with effusion or chronic otitis media with effusion."*
        - *"This fluid in the middle ear is what I could see when I (or the examiner described) looked into his ears."*
    3. **Link OME to Hearing Loss & Speech Delay:**
        - *"This fluid in the middle ear creates some **hearing loss** for him, making it harder for him to hear sounds clearly. This is what the hearing test (audiometry) confirmed – he has a conductive hearing loss in both ears."*
        - *"In children, we need normal hearing to develop normal speech abilities. Because his hearing has been affected by this fluid, it's likely contributing to his speech delay."*
- **D. Management (If asked, or briefly integrated into explaining what happens next):**
    - Watchful waiting for 3 months from onset of effusion is an option if hearing loss is mild and no significant speech delay.
    - **Referral to ENT Specialist:** If effusion persists >3 months, or if there's significant hearing loss / speech delay / recurrent AOM.
    - **Grommets (Ventilation Tubes):** ENT specialist may recommend insertion of grommets. *"The specialist might suggest inserting a tiny tube, called a grommet or ventilation tube, into his eardrum. This tube helps to drain the fluid from the middle ear and allows air to enter, which can improve his hearing."*
    - **Speech Pathology Referral:** *"We also need to help him catch up with his speech. So, I will refer [Child's Name] to a **speech pathologist**. They are experts in helping children with speech and language development."*
    - (Adenoidectomy might be considered by ENT if enlarged adenoids contribute to Eustachian tube dysfunction).

V. Key Learning Points for OME / Audiometry Case:

- **Link Hearing to Speech:** Understand that impaired hearing is a primary cause of speech delay in children.
- **OME Pathophysiology:** Recurrent AOM -> persistent middle ear fluid -> conductive hearing loss.
- **Audiometry Basics:** Differentiate normal, conductive, and sensorineural patterns. Recognize the air-bone gap in CHL.
- **Tympanometry Basics:** Type A (normal), Type B (fluid/OME).
- **Focused PEFE:** For a child with speech delay, prioritize ENT (especially otoscopy) and a basic developmental/neurological screen.
- **Clear Patient Explanation:** Use simple terms to explain OME, its effect on hearing, and the link to speech delay.
- **Management Principles:** Watchful waiting, ENT referral for persistent effusion/significant impact, consideration of grommets, and speech therapy.
- This case tests the ability to interpret basic audiological tests, link them to a common pediatric ENT condition, and explain the implications for development to a parent.

Hyponatremia

AMC Recalls: Electrolytes - Hyponatremia Cases (with SIADH Focus)

I. Introduction to Electrolyte Cases in AMC:

- Common electrolyte imbalances tested: Hyponatremia, Hyperkalemia, Hypokalemia, Hypercalcemia.
- Hyponatremia and Hyperkalemia are frequent.
- Key to these cases: Knowing the differential diagnoses for the specific electrolyte imbalance.

II. Understanding Hyponatremia:

- **Definition:** Low serum sodium (typically < 135 mmol/L - normal ranges provided in exam).
- **Symptoms:**
  - Mild hyponatremia: Often asymptomatic.
  - Moderate/Severe: CNS symptoms primarily – impaired consciousness, gait problems, confusion, and in late stages, seizures.
- **Step 1: Rule out Pseudo-hyponatremia:**
  - This is when serum sodium *appears* low due to other substances in the blood, but total body sodium/water balance isn't the primary issue.
  - **Key Causes:**
    - Hyperglycemia (high blood sugar).
    - Hypertriglyceridemia (high triglycerides).
    - Hyperproteinemia (high protein levels).
  - **How to assess:** Check serum osmolality. If normal or high despite low sodium, suspect pseudo-hyponatremia.
- **Step 2: Assess True Hyponatremia (Hypotonic Hyponatremia - Low Serum Osmolality):**
  - Categorize based on **patient's volume status** (assessed by physical examination – hydration, JVP, edema, skin turgor, mucous membranes).
  - **A. Hypervolemic Hyponatremia (Too much body water, diluting sodium):**
    - **Causes:** Conditions causing fluid retention.
      - Heart Failure.
      - Liver Failure (Cirrhosis).
      - Renal Failure (Kidney Disease / Nephrotic Syndrome).
  - **B. Hypovolemic Hyponatremia (Losing both sodium and water, but relatively more sodium or replacing fluid losses with hypotonic fluids):**
    - **Causes:** Conditions causing fluid loss.
      - Diarrhoea, Vomiting.
      - Dehydration (from poor intake or other losses like burns).
      - **Diuretics (especially Thiazides).**
  - **C. Euvolemic Hyponatremia (Normal body volume, but a problem with ADH or water intake):**
    - **Key Causes:**
      - **Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH) - VERY IMPORTANT for AMC.**
      - Hypothyroidism.
      - (Adrenal insufficiency, psychogenic polydipsia - less common focus for these recalls).
- **Drug-Induced Hyponatremia (Important Causes to Memorize - Overlaps with SIADH causes):**
  - **Thiazide diuretics.**
  - **SSRIs** (Selective Serotonin Reuptake Inhibitors - antidepressants).
  - **Carbamazepine** (anti-epileptic, mood stabilizer).
  - (NSAIDs, Ecstasy, ACE inhibitors - "DISH" mnemonic in some guidelines, but Thiazides, SSRIs, Carbamazepine are high yield).

III. Understanding SIADH (Syndrome of Inappropriate Antidiuretic Hormone Secretion):

- **Key Diagnostic Features (Blood & Urine Tests - numbers given in exam, focus on pattern):**

    - **Serum Sodium: LOW** (Hyponatremia).
    - **Serum Osmolality: LOW.**
    - **Urine Sodium: HIGH** (inappropriately high for a low serum sodium - ADH is causing water retention AND sodium excretion).
    - **Urine Osmolality: HIGH** (inappropriately concentrated urine - ADH is causing water retention).
- **Causes of SIADH (Crucial to know for history taking):**
    1. **Medications: SSRIs, Carbamazepine**, TCAs, NSAIDs, opiates, ecstasy.
    2. **Malignancies (Paraneoplastic Syndrome):**
        - **Lung Cancer (especially Small Cell Lung Cancer).**
        - Lymphoma.
        - GI Cancers.
    3. **Infections (especially CNS & Pulmonary):**
        - Meningitis, Encephalitis (Brain infections).
        - Tuberculosis (TB).
        - Pneumonias.
        - (HIV).
    4. **CNS Disorders (Non-infectious):**
        - Intracranial haemorrhage (Subdural, Subarachnoid).
        - Stroke, Head trauma.
    5. (Other rarer causes: post-op, pain, nausea - less emphasis for OSCE differential list).
- **Management of Hyponatremia (General Principles - "IT DEPENDS" on cause and volume status):**
    - **Hypervolemic:** Fluid restrict. Treat underlying cause (HF, liver, kidney disease). Diuretics like Furosemide.
    - **Hypovolemic:** IV Normal Saline (0.9% NaCl) given slowly. Treat underlying cause (D&V, dehydration).
    - **Euvolemic (SIADH):**
        - **Fluid restrict (primary treatment).**
        - **Treat the underlying cause** (stop offending drug, treat infection/cancer).
        - (Specialist Rx: Demeclocycline, Vaptans - not for GP OSCE level).
        - *Correcting sodium too rapidly can cause Central Pontine Myelinolysis - so slow correction is key if severe/symptomatic.*

IV. Case 59 (Version 1 - Face-to-Face, Telephone OSCE): 78 y.o. Male in Aged Care, Hyponatremia on Bloods, Nurse on Phone

- **Stem Summary:**
    - 78-year-old male, living in aged care.
    - HMO (you) contacted by nurse via telephone.
    - Consultant busy.
    - Blood results: Hyponatremia (Na 118), low Chloride, low Serum Osmolality.
- **Tasks:**
    1. Inform/Report results to the nurse.
    2. Take a history from the nurse.
    3. Explain possible diagnosis and differentials to the nurse.
    4. (Management not asked).
- **Unique OSCE Format:** No patient/examiner in the room, only a telephone. The nurse (played by examiner) is on the other end.
- **A. Interaction with Nurse:**
    1. **Introduction & Patient Identification:** *"Hello, this is Dr. [Your Name], HMO. Who am I speaking with?"* (Nurse Jackie). *"Hi Jackie, I'm calling about Mr. [Patient's Name] in [Ward/Aged Care Name]. Can you confirm his details?"*
    2. **Initial Safety Check (before explaining results):** *"Jackie, just before I explain the investigation results, I just want to check: is Mr. [Patient's Name] alert and oriented, or is he drowsy? And can you quickly check his vital signs and let me know if he's stable?"* (Nurse: "Yes, he is stable and alert").
    3. **Explain Investigation Results (To a healthcare professional - be concise, use medical terms):**
        - *"Okay, Jackie. Looking at Mr. [Patient's Name]'s recent electrolytes, I can see that his **sodium is low at 118 mmol/L**. His chloride is also decreased, and his **serum osmolality is low**. This confirms he has true hyponatremia."*
    4. **Take History from Nurse (Focus on causes of hyponatremia, especially SIADH in elderly):**

- Initial Open-ended Q: *"Can you tell me more about Mr. [Patient's Name]? Why was he admitted (if in hospital) or what's his current general condition?"*
- Key Information to Elicit from Nurse (using differential framework):
  - **Patient Background:** *"Can you tell me his past medical history? What medications is he currently taking? Any recent surgeries?"* (Nurse often reveals medications like Thiazides, SSRIs, or Carbamazepine here -> SIADH/drug-induced).
  - **Symptoms of Hyponatremia (CNS):** *"Is he confused? Complaining of dizziness? Any headaches? Any problems with his walking or gait?"*
  - **Rule out Pseudo-hyponatremia:** *"Do we have any recent results for his blood sugar level, triglycerides, or serum protein level?"* (Nurse: "Normal").
  - **Assess Volume Status (ask nurse for observations):**
    - Hypovolemia: *"Has he had any recent vomiting or diarrhoea? Is he drinking water as usual, or is his intake poor?"* (Assess hydration).
    - Hypervolemia: *"Any signs of heart failure like chest pain or shortness of breath? Any swelling in his legs? Any history of liver failure or kidney disease?"*
  - **Euvolemic - SIADH Causes (Key focus):**
    - (Medications already asked - critical for SIADH).
    - Infections: *"Does he have any fever? Is he complaining of any headache or sore neck (for meningitis)? Is he coughing (for pneumonia/TB)?"*
    - Malignancies: *"Is he reporting any recent loss of weight? Have any lumps or bumps or lymphadenopathy been detected? Any past history of cancers?"*
  - Euvolemic - Other:
    - Hypothyroidism: *"Any history of thyroid problems? Has he complained of cold intolerance or constipation?"*
    - (Psychogenic Polydipsia - rare, harder to assess via nurse): *"Have you noticed him drinking an excessive amount of water throughout the day?"*

5. **Explain Possible Diagnosis & Differentials to Nurse:**
   - (Assume history from nurse points to medication-induced SIADH, e.g., on an SSRI or Carbamazepine, no signs of hyper/hypovolemia, other SIADH causes negative).
   - **Most Likely Diagnosis:** *"Jackie, based on these findings, the most likely reason for his hyponatremia is **SIADH (Syndrome of Inappropriate Antidiuretic Hormone secretion)**. I think this SIADH is most likely **triggered or caused by the medication** he is taking, for example, the [Carbamazepine/SSRI]." *
   - **Explain Volume Status Assessment to Nurse (Shows reasoning):** *"I believe he has a euvolemic type of hyponatremia, meaning his fluid status appears normal, because [he hasn't had diarrhoea or vomiting, and he's not showing signs of fluid overload like leg swelling]."*
   - **Other Key Differentials for Euvolemic Hyponatremia:** *"Other possibilities for euvolemic hyponatremia include hypothyroidism."*
   - **Broaden to Other Hyponatremia Categories:** *"Of course, we also considered if it could be a **hypovolemic** cause, which is why I asked about vomiting, diarrhoea, or dehydration. And we thought about **hypervolemic** causes, like heart failure, liver failure, or chronic kidney disease, which is why I asked about those conditions and leg swelling."*

V. Case 59 (Version 2 - Patient Consult, Full Lab Results Including Urine): 50 y.o. Male, Discuss Bloods

- **Stem Summary:** 50 y.o. male, here to discuss blood test results.
- **Lab Results Provided:**
  - Serum: Low Sodium, Low Osmolality.
  - Urine: **High Urine Sodium, High Urine Osmolality.**
  - Glucose, Triglycerides, Protein: Normal (rules out pseudo-hyponatremia).
  - Thyroid Function: Normal (rules out hypothyroidism).
  - Kidney Function (eGFR): Normal (rules out severe CKD as cause of hypervolemic hyponatremia).
  - CXR & Brain CT: Normal (rules out common lung/brain causes of SIADH).
- **Tasks:**
  1. Take history from the patient.
  2. Explain the diagnosis and the causes of the abnormal results.

- **History Taking (Patient directly - focus on SIADH causes, especially medications):**
    1. **Haemodynamic Stability** (ask examiner for vitals if face-to-face).
    2. **Opening:** *"Hello Mr. [X], I see you're here to discuss your blood test results. Before we do, how are you feeling? Any particular complaints?"* (Patient: "No specific complaints, just here for results of routine check-up"). -> *"Why did you do the blood test?"* (Routine).
    3. **Symptoms of Hyponatremia (CNS - even if patient says "no complaints" initially):** "Any dizziness, confusion, tiredness, memory problems, headache, problems with walking?" (All negative).
    4. **Rule out Hypo/Hypervolemia (briefly, as labs suggest euvolemic):**
        - Hypo: Vomiting, diarrhoea, drinking enough water?
        - Hyper: SOB, chest pain, leg swelling? Hx of HF, liver/kidney disease?
    5. **Focus on SIADH Causes (Medications, Infections, Malignancies - given labs point strongly to SIADH):**
        - **Medications (CRITICAL):** *"Are you taking ANY regular medications, including over-the-counter or herbal ones? Specifically, any for mood like antidepressants (SSRIs), or for seizures/nerve pain (Carbamazepine), or diuretics (Thiazides)?"* (Patient: **"Yes, doctor, I'm using Citalopram (an SSRI)."** - Likely diagnosis found).
        - Infections: Recent fever, chills, headache/sore neck, cough?
        - Malignancies: Weight loss, appetite loss, lumps/bumps, night sweats?
        - (Head injuries - less likely without complaint).
    6. (SADMA to complete, focusing on other meds, alcohol, smoking).
- **Explaining Diagnosis & Causes (Patient has SSRI-induced SIADH):**
    1. **Explain the Low Sodium:** *"On your blood test, we detected a **low sodium level** in your blood. Sodium is an important mineral or salt in your blood."*
    2. **State Diagnosis (SIADH):** *"Most likely, the cause of this low sodium is a condition called **SIADH**. This is an abbreviation for the Syndrome of Inappropriate secretion of a hormone called ADH."*
    3. **Explain Cause of SIADH (Medication):** *"This SIADH is most likely **caused by the Citalopram medication** you are taking. It's a known side effect."*
    4. **Simple Explanation of SIADH Mechanism:** *"In this condition (SIADH), there is an excessive production or effect of a hormone called ADH in your body. This hormone makes your body hold onto too much water, which then dilutes the sodium in your blood, causing the low sodium level."*
    5. **Briefly Mention Other Causes of SIADH (Differentials for the *cause* of SIADH):**
        - *"While medication is the most likely cause in your case, SIADH can sometimes be caused by **cancers** (like lung cancer or lymphoma), certain **infections** (like lung infections or brain infections like meningitis), or sometimes problems in the **brain** (like bleeding)."*
    6. **Briefly Mention Other Causes of Hyponatremia (already largely excluded by labs/history but good for completeness):**
        - *"Before concluding it was SIADH, I also considered other causes for low sodium, such as problems where you might **lose too much fluid** (like with vomiting or diarrhoea or not drinking enough), or conditions where your body **holds onto too much fluid** (like heart failure, liver problems, or kidney problems), but these are less likely in your situation given your other tests and symptoms."*

VI. Key Learning Points for Hyponatremia/SIADH Cases:

- **Understand Hyponatremia Classification:** Pseudo vs. True; then Hypervolemic, Hypovolemic, Euvolemic.
- **SIADH is Key for Euvolemic Hyponatremia:** Know its diagnostic criteria (Low serum Na/Osmol, High urine Na/Osmol, euvolemia) and its main causes (Medications, Malignancies, Infections, CNS disorders).
- **Medications are a Frequent Culprit:** SSRIs, Carbamazepine, Thiazides are high-yield for causing hyponatremia/SIADH.
- **Time Management in Telephone OSCEs:** Be structured and direct with the nurse.
- **Patient Explanation:** Simplify complex physiology. For SIADH, focus on "too much water-retaining hormone" leading to "diluted sodium."
- These cases test knowledge of electrolyte physiology, common causes of hyponatremia, and systematic diagnostic reasoning.

Hyperkalemia

AMC Recalls: Electrolytes - Hyperkalemia (Triple Whammy & CKD)

I. Understanding Hyperkalemia (High Potassium):

- **Kidneys are Key:** Healthy kidneys are very efficient at excreting potassium. Hyperkalemia usually implies significant kidney dysfunction (Acute Kidney Injury - AKI, or Chronic Kidney Disease - CKD).
- **Main Differentials/Causes of Hyperkalemia:**
    1. **Kidney Dysfunction:**
        - **Chronic Kidney Disease (CKD) - Most common underlying factor.**
        - Acute Kidney Injury (AKI).
    2. **Severe Volume Depletion:** Can impair kidney function and lead to relative hyperkalemia.
    3. **Drugs & Medications (Very Important):**
        - **ACE Inhibitors (ACE-I) / Angiotensin Receptor Blockers (ARBs).**
        - **Potassium-Sparing Diuretics** (e.g., Spironolactone, Amiloride).
        - **NSAIDs** (can impair renal function, especially if other risks).
        - (Beta-blockers, Digoxin toxicity - less common).
    4. **Increased Potassium Release from Cells (Tissue Damage):**
        - **Rhabdomyolysis.**
        - Massive trauma, burns, crush injuries.
        - Tumor lysis syndrome.
    5. **Impaired Potassium Entry into Cells / Hormonal:**
        - **Hypoaldosteronism** (e.g., Addison's disease - aldosterone promotes K+ excretion; if low, K+ retained).
        - (Insulin deficiency / severe acidosis - less focus for primary cause in OSCE).
- **Pseudo-hyperkalemia:** Haemolysis of the blood sample during collection/processing can falsely elevate potassium. (Always consider if K+ is unexpectedly high without clinical context).
- **ECG Changes in Hyperkalemia (CRITICAL to recognize):**
    - **Tall, peaked ("tented"), narrow-based T-waves** (Earliest and most common sign).
    - Flattening or absence of P-waves.
    - Prolongation of PR interval.
    - **Widening of QRS complex.**
    - Sine wave pattern (pre-cardiac arrest).
    - Can lead to bradycardia, AV blocks, ventricular arrhythmias, asystole.
- **Management Principles (Brief Overview - more detail if it's a management station):**
    1. **Protect the Heart (if ECG changes or severe K+):** IV Calcium Gluconate (stabilizes cardiac membrane).
    2. **Shift Potassium into Cells:** IV Insulin + Glucose; Sodium Bicarbonate (if acidosis); Beta-agonists (Salbutamol nebulized - less common as sole Rx).
    3. **Remove Potassium from Body:** Diuretics (if good renal function); Cation-exchange resins (e.g., Resonium A - oral/rectal, slow acting); **Dialysis** (if severe/refractory, or severe renal failure).
    4. **Address the Underlying Cause.**

II. The "Triple Whammy" - A Dangerous Drug Combination:

- **Definition:** Concurrent use of:
    1. **Diuretic** (especially loop or thiazide).
    2. **ACE Inhibitor (ACE-I) or Angiotensin Receptor Blocker (ARB).**
    3. **NSAID** (Non-Steroidal Anti-Inflammatory Drug).
- **Mechanism:** All three drugs can independently impair renal function or renal perfusion. Together, they synergistically increase the risk of **Acute Kidney Injury (AKI)**.
- **High-Risk Patients:** Elderly, pre-existing CKD, volume depletion (e.g., D&V, sepsis).
- **Clinical Significance:** A common cause of preventable AKI. MUST be recognized.

III. Case 60: 50 y.o. Lady, Nausea, Vomiting, Weak, Lethargic; PMHx: HTN, CKD; Meds: Perindopril, Frusemide, and recently started NSAID (Triple Whammy)

- **Stem Summary:**
    - 50-year-old lady, clinic.

    - Complaints: Nausea, vomiting, feeling weak and lethargic.
    - **PMHx:** Hypertension, Chronic Kidney Disease (CKD).
    - **Medications:** On Perindopril (ACE-I), Frusemide (Loop Diuretic), and has recently started an NSAID for pain. **(This is the Triple Whammy).**
- **Tasks (Face-to-Face Exam - Old Recall):**
    1. (Implied) Recognize Triple Whammy.
    2. (Implied) History taking.
    3. Request Investigations from examiner.
    4. Interpret ECG given by examiner.
    5. Explain diagnosis and differentials to patient.
- **Physical Exam Clue (Often in stem or early finding):** Patient may be holding a vomit bag.
- **A. Structured History Taking (Focus on AKI symptoms, Hyperkalemia symptoms, and exploring the Triple Whammy):**
    1. **Haemodynamic Stability:** (Crucial if patient looks very unwell/vomiting).
    2. **Opening & Addressing Concern:** (Standard approach).
    3. **Explore Complaints (Nausea, Vomiting, Weakness, Lethargy):**
        - Timing: "When did these symptoms start? Getting worse?"
        - Explore N/V: *"What is the color of your vomit? Any blood in your vomit?"*
        - Explore Tiredness/Weakness: *"Can you describe what you mean by tired/weak? Low energy, sleepy, or feverish?"*
    4. **Explore Lead Points (CKD, HTN, and Medications - CRITICAL):**
        - CKD/HTN: "When were you diagnosed? What medications are you taking for them (confirm Perindopril, Frusemide)? Are you compliant? Regular follow-ups?"
        - **NSAID Use (The Trigger):** *"Have you started any **new medications** recently, especially any **painkillers**?"* (This is how you elicit the NSAID use if not volunteered upfront). *"When did you start the painkiller? Who prescribed it, or did you get it over-the-counter?"*
    5. **Screening for Differentials (Consider causes of N/V/Lethargy, and complications of AKI/Hyperkalemia):**
        - **Acute Abdomen (as a cause of N/V):** "Any diarrhoea or constipation? Any abdominal pain?"
        - **Stroke/CNS problem (as cause of weakness/lethargy):** "Any headaches? Blurring of vision? Numbness in your body?"
        - **Ischemic Heart Disease / MI (can present atypically with N/V, weakness in CKD/DM):** "Any chest pain? Shortness of breath? Racing of your heart?"
        - **Sepsis (can cause N/V, lethargy, AKI):** "Any fever or chills? Any rash?"
        - **Diabetic Ketoacidosis (DKA - if diabetic, can cause N/V, lethargy):** "Any history of diabetes? Increased thirst or passing more urine?"
    6. (SADMA to complete).
- **B. Requesting Investigations from Examiner (Prioritize for AKI/Hyperkalemia):**
    - **Tutor's Note:** Prioritize key tests.
    2. **UEC (Urea, Electrolytes, Creatinine) + eGFR (CRITICAL):** To assess kidney function and potassium levels. *"Examiner, I need Urea, Electrolytes, Creatinine, and an eGFR."*
    3. **ECG (CRITICAL):** To look for signs of hyperkalemia.
    4. **Arterial Blood Gas (ABG):** To check for acidosis (common in AKI).
    5. **Blood Sugar Level (BSL):** (To rule out DKA/hypoglycemia).
- **Examiner's Response (Example):** UEC shows high Creatinine, high Urea, LOW eGFR (e.g., 10-15). **Potassium is HIGH.** ECG is provided.
- **C. Interpreting ECG (Showing Hyperkalemia):**
    - **Key Finding: Tall, peaked ("tented"), narrow-based T-waves.**
    - (May also see: flat P waves, prolonged PR, wide QRS if K+ is very high).
    - **Verbalize to Examiner:** *"Examiner, on this ECG, the most prominent finding is the presence of tall, peaked T-waves, which are suggestive of hyperkalemia."* (No need for full 7 steps if task is just "what do you see" in context of investigation request).
- **D. Explaining Diagnosis and Differentials to Patient:**
    1. **State Most Likely Diagnosis (Be Precise, Link to kidney injury & high potassium):**
        - *"Marianne, based on your symptoms and the tests, it appears you have an **acute kidney injury**, which means your kidneys are not working properly at the moment. This has happened on top of your **chronic kidney disease***

*that you already have. As a result of this kidney injury, the **potassium level in your blood has become too high (hyperkalemia)**."*

2. **Explain the Cause (The Triple Whammy):**
    - *"As you are aware, you have chronic kidney disease, which means your kidneys are already functioning lower than normal levels."*
    - *"The **combination of medications** you were taking – the Perindopril and Frusemide for your blood pressure, and the new painkiller (NSAID) you started – are together called the **'Triple Whammy'**. This combination can put your kidneys under significant pressure and has likely caused this acute kidney injury."*
3. **Explain Symptoms & Link to Kidney/Potassium:**
    - *"Now that your kidneys are not functioning well acutely, they are unable to remove waste products from your blood effectively, and they are also unable to balance the salts in your blood properly. This has led to the high potassium level, and these problems are causing your symptoms of nausea, vomiting, weakness, and tiredness."*
4. **Patient Question: "Was this preventable?" / "Was it the doctor's fault?"**
    - **Diplomatic Answer:** *"Yes, Marianne, this situation was potentially preventable. We usually try to **avoid this specific combination of medications (Triple Whammy)**, especially in people who already have some kidney disease."*
    - **Empower Patient (Avoid Blame):** *"It is important for next time to always tell any doctor you see, and also your pharmacist if you're getting over-the-counter medications, that you are taking blood pressure medications [name them] and have a kidney condition, just to make sure any new medications are safe for you."*
5. **Differentials (Briefly, as AKI due to Triple Whammy is clear primary issue):**
    - *"While the kidney injury from the medications is the most likely cause, when someone feels unwell with nausea and vomiting, we also think about other possibilities like a severe **gastroenteritis**, problems with the **pancreas or gallbladder (acute abdomen)**, or sometimes even a **heart problem (MI)** or a **stroke** presenting atypically, though these are less likely given all your findings."*

- **Management (Not explicitly the main task, but would involve):**
    - Stop the Triple Whammy (especially NSAID, review ACE-I/diuretic).
    - Treat hyperkalemia based on severity and ECG changes (IV Calcium Gluconate, Insulin/Dextrose, etc.).
    - IV fluids if dehydrated (cautiously, monitor fluid balance).
    - Address nausea/vomiting.
    - Identify and treat any other contributing factors.
    - Monitor renal function closely.

IV. Variation (Old Hyperkalemia Recall - Increased ACE-Inhibitor Dose):

- **Scenario:** Patient with CKD on dialysis, presents with diarrhoea and palpitations.
- **Key Change:** GP recently *increased the dose* of their ACE inhibitor.
- **ECG:** Shows hyperkalemia.
- **Diagnosis:** Hyperkalemia secondary to increased ACE inhibitor dose in a patient with end-stage renal disease (unable to excrete the extra K+ retained by ACE-I).

V. Key Learning Points for Hyperkalemia (Triple Whammy/CKD):

- **Recognize the Triple Whammy:** Diuretic + ACE-I/ARB + NSAID = High risk of AKI. This is a critical patient safety issue.
- **Hyperkalemia is a Complication of AKI/CKD:** Impaired kidneys cannot excrete potassium effectively.
- **ECG in Hyperkalemia:** Know the progressive changes, starting with peaked T-waves.
- **History Taking:** Focus on medications (especially recent changes or additions like NSAIDs), symptoms of AKI (oliguria, malaise), and symptoms of hyperkalemia (weakness, palpitations, paraesthesia - though often non-specific).
- **Patient Explanation:** Clearly link the medications to the kidney injury and the kidney injury to the high potassium and symptoms.
- **"Preventable" Question:** Handle diplomatically, focusing on future medication safety awareness for the patient.
- This case tests recognition of a significant drug interaction, understanding of electrolyte disturbances in kidney disease, and basic ECG interpretation for hyperkalemia.

AMC Recalls: Electrolytes - Hyperkalemia (CKD/Dialysis Patient, Increased ACE-I Dose)

I. Recap of Hyperkalemia Essentials:

- **Kidneys are Central:** Impaired kidney function (AKI or CKD) is the primary reason for an inability to excrete potassium, leading to hyperkalemia.
- **Main Causes Reviewed:**
    1. **CKD/AKI.**
    2. **Volume Depletion** (can worsen renal function and concentrate K+).
    3. **Drugs: ACE Inhibitors (ACE-I)/ARBs**, Potassium-Sparing Diuretics (e.g., Spironolactone), NSAIDs.
    4. **Tissue Damage/Rhabdomyolysis.**
    5. **Hypoaldosteronism** (e.g., Addison's disease - Aldosterone excretes K+; low aldosterone = K+ retention).
- **Initial Assessment:** Rule out pseudo-hyperkalemia (haemolysed sample). Focus on kidney function, volume status, and acid-base balance.
- **ECG in Hyperkalemia (Provided in Stem for this Case):** Tall, peaked ("tented"), narrow-based T-waves are the classic early sign.

II. Case 61: 60 y.o. Male, for Dialysis Appointment, Complaining of Diarrhoea & Palpitations (ECG in Stem shows Hyperkalemia)

- **Stem Summary:**
    - 60-year-old male.
    - Arrived at hospital for his routine dialysis appointment.
    - Known End-Stage Kidney Disease (ESKD) on dialysis.
    - **Complaints:** Diarrhoea and palpitations.
    - **ECG provided in the stem shows signs of hyperkalemia** (e.g., peaked T-waves).
- **Tasks:**
    1. Take further history (3 minutes - very short).
    2. Ask examiner for further investigations.
    3. Explain the condition to the patient.
- **Tutor's Note on Short History Stations (2-3 minutes):**
    - Not enough time for a full structured history (like HEMI AD COP x2).
    - The goal is to elicit **key points** relevant to the already strongly suggested diagnosis (hyperkalemia in a CKD patient).
    - A predominant assessment area is NOT history here; it's more likely diagnostic reasoning and communication.
- **A. Focused History Taking (3 Minutes - Key Points for Hyperkalemia in ESKD):**
    1. **Haemodynamic Stability (Quick Check):**
        - Face-to-Face: *"Examiner, can you quickly tell me the patient's blood pressure, pulse rate, respiratory rate, and saturation?"* (Temperature less critical unless sepsis also suspected for diarrhoea).
    2. **Opening & Addressing Concern:** (Standard brief intro). Patient complains of diarrhoea/palpitations.
    3. **Explore CKD Background (Briefly Confirm Status):**
        - *"I understand you have chronic kidney disease. How long have you had it?"*
        - *"What treatment are you currently taking for it?"* (Confirms dialysis, also current medications like Perindopril, Thiazides, Erythropoietin - this will be key).
        - *"Are you having your regular follow-ups with your GP and kidney specialist?"*
    4. **Explore Symptoms of Hyperkalemia (Beyond Palpitations):**
        - *"Apart from the palpitations and diarrhoea, are you also feeling tired? Any shortness of breath? Any nausea or vomiting?"*
    5. **Explore Potential CAUSES/PRECIPITANTS of Hyperkalemia in THIS Patient (KEY POINTS):**
        - **Dietary Changes:** *"Have you had any significant changes in your diet recently, especially eating more foods high in potassium?"* (Unlikely to be the sole cause in a dialysis patient but good to ask).
        - **Missed Dialysis:** *"Did you miss any of your recent dialysis appointments?"* (Crucial).
        - **Medication Changes (VERY HIGH YIELD for this recall):**
            - *"Have you started any new medications recently?"* (No).

        - **"Have there been any changes to your existing medications, like a dose increase?"** (Patient: **"Yes, my GP increased the dose of one of my medications last week."** -> "Which one?" - Patient doesn't know).
            - (Given the common meds for CKD/HTN are Perindopril (ACE-I) and Thiazides, and knowing ACE-I can cause hyperkalemia, this is the likely culprit).
    - **Volume Depletion (Diarrhoea as a cause/contributor):**
        - (Nausea/vomiting already asked).
        - *"Are you still drinking enough fluids despite the diarrhoea?"* (Assessing hydration).
    - **Tissue Injury/Falls (Rhabdomyolysis):**
        - *"Have you had any recent injuries or falls?"*
6. **(Time will likely be up. No need to explore diarrhoea/palpitations with full SOCRATES if focusing on hyperkalemia causes).**

- **B. Requesting Further Investigations from Examiner (Prioritize):**
    - **Tutor's Note:** You need to ask for specific tests that confirm hyperkalemia and assess kidney function.
    2. **UEC (Urea, Electrolytes, Creatinine) + eGFR (CRITICAL):** *"Examiner, I need a Urea, Electrolytes, and Creatinine level, and an eGFR."* (This will confirm high potassium and baseline renal function).
    3. **(ECG - Already provided in stem, but if it wasn't, this would be #1 or #2).**
    4. **Arterial Blood Gas (ABG) or Venous Blood Gas (VBG):** *"I would also like a blood gas analysis (preferably arterial)."* (To check for acidosis, which can worsen hyperkalemia).
    - (Blood sugar - less critical here unless a diabetic context was also present).
- **Examiner's Response (Example):** eGFR is very low (e.g., 10-12). **Potassium is high (e.g., 5.9 mmol/L).** ABG is normal (or shows metabolic acidosis).
- **C. Explaining the Condition to the Patient:**
    1. **State Overall Diagnosis (Linking Acute on Chronic Kidney Issue to Hyperkalemia):**
        - *"Mr./Ms. [Patient's Name], it seems you have an **acute worsening of your chronic kidney condition (acute on chronic renal failure)**. Because of this, the **potassium level in your blood has become too high**, and we call this **hyperkalemia**."*
    2. **Explain the Cause (Increased ACE Inhibitor Dose):**
        - *"As you know, you have chronic kidney disease, meaning your kidneys don't function properly, which is why you have dialysis."*
        - *"It appears that the **acute kidney injury** (the recent worsening) in your case is happening because of the **increase in the dose of one of your medications**, likely your blood pressure pill, Perindopril (an ACE inhibitor). This medication, especially at a higher dose when your kidneys are already struggling, can cause potassium to build up."*
    3. **Link Hyperkalemia to Symptoms:**
        - *"This high potassium level is what is causing your **palpitations** (the racing of your heart) and can also contribute to the **diarrhoea** and other symptoms you're feeling."*
    4. **(No differentials task, so focus on the explanation of the primary problem).**
- **Management (If this were a management station, or if patient asks "What will you do?"):**
    - **Immediate (if severe K+ or ECG changes):**
        - *"We will give you a medication called **Calcium Gluconate** through your veins. This is to protect your heart from the effects of the high potassium."*
    - **Definitive (for this ESKD patient):**
        - *"The best way to lower your potassium and help your kidneys will be to proceed with your **dialysis treatment** today, perhaps with some adjustments."*
    - **Address Medication:**
        - *"We will also need to review the dose of your Perindopril with your kidney specialist."*
    - (Other measures like Insulin/Glucose, Bicarbonate, Resins are less relevant if dialysis is imminent and effective).

IV. Key Learning Points for Hyperkalemia in CKD/Dialysis Patient:

- **Recognize High-Risk Patients:** Patients with CKD, especially those on dialysis, are at very high risk for hyperkalemia.
- **Medication Review is Crucial:** Changes in dose or addition of potassium-affecting drugs (ACE-I, ARBs, K+-sparing diuretics, NSAIDs) are common precipitants.
- **ECG is Key:** Peaked T-waves are the hallmark. The ECG in the stem is a major diagnostic clue.

- **Focused History:** In short stations with a clear likely diagnosis (from stem ECG + PMHx), history should target confirming symptoms of hyperkalemia and identifying the most likely *precipitating cause* for *this episode*.
- **Prioritized Investigations:** UEC (for K+ and renal function) and ABG (for acidosis) are essential.
- **Patient Explanation:** Clearly link the underlying CKD, the precipitating factor (e.g., medication change), the resulting hyperkalemia, and the patient's symptoms.
- This case tests knowledge of a common and serious electrolyte disturbance in a specific patient population, focusing on identifying the trigger and understanding the immediate implications.

Hypokalemia

AMC Recalls: Electrolytes - Hypokalemia (Thiazide-Induced)

I. Understanding Hypokalemia (Low Potassium):

- **Normal Range:** Approximately 3.5 - 5.0/5.2 mmol/L (will be provided in exam). This case has mildly low potassium.
- **Main Causes/Mechanisms of Hypokalemia (Simplified):**
    1. **Decreased Potassium Intake:**
        - Poor dietary intake (rare as sole cause, but can contribute).
        - Malnutrition (especially in elderly).
    2. **Increased Potassium Loss:**
        - **Urinary Loss:**
            - **Diuretics (VERY COMMON):** Thiazides and Loop diuretics (potassium-losing).
            - Hyperaldosteronism (Aldosterone causes sodium retention and potassium excretion).
            - (Other renal tubular disorders - less common for OSCE).
        - **Gastrointestinal (GI) Loss:**
            - Vomiting.
            - Diarrhoea.
            - Laxative abuse.
    3. **Potassium Shift into Cells (Transcellular Shift):**
        - Insulin (especially with glucose).
        - Beta-adrenergic agonists (e.g., Salbutamol).
        - Alkalosis.
    4. **(Phaeochromocytoma - can sometimes be associated with hypokalemia due to beta-adrenergic stimulation).**
- **Symptoms of Hypokalemia:** Often asymptomatic if mild. Can include muscle weakness, cramps, fatigue, constipation, palpitations/arrhythmias if more severe.

II. Case 62 (Pre-op Hypokalemia): 50 y.o. Male, Scheduled for Inguinal Hernia Repair, Pre-op Bloods Show Hypokalemia, Known HTN on Thiazides

- **Stem Summary:**
    - 50-year-old male.
    - Scheduled for inguinal hernia repair in 10 days.
    - Pre-operative assessment blood tests done.
    - Known case of hypertension, on **Thiazide diuretics.**
    - **Bloods:** Sodium borderline, **Potassium mildly low**, eGFR normal, Creatinine normal, Anion gap normal.
- **Tasks:**
    1. Explain investigation results to the patient.
    2. Take a history from the patient (to find the cause of hypokalemia).
    3. Explain diagnosis (of the cause) and differentials.
- **Tutor's Note:** This case is NOT a general tiredness/HEMI AD COP case. The focus is specifically on the causes of hypokalemia because the abnormal lab result is already given. The common recall for this case is **thiazide-induced hypokalemia.** However, failing to consider other differentials is a common reason for failing the station.
- **A. Explaining Investigation Results to Patient (Concise & Simple):**
    1. **Opening:** *"Hello Mark, I see you're here to discuss your recent blood test results done for your pre-operative assessment. How are you feeling today?"*

2. **Explain Key Findings Simply:**
    - *"Mark, we've done some blood tests for you. The first thing I can see is that your **kidneys are functioning normally**."*
    - *"We've also checked some salts and minerals in your blood. There's a salt called **sodium**, and that is **normal**; it's still within the normal range."*
    - *"However, there is another salt called **potassium**, and that is **a little bit lower than the normal range** in your blood."*
3. **Transition to History:** *"So, I'll just need to ask you a few questions to try and find the cause for this low potassium. Is that okay?"*

- **B. Structured History Taking (Focus on Causes of Hypokalemia):**
    - **(No primary "complaint" to explore with SICORA, as this is about an abnormal lab result. Start by exploring the known conditions/context from stem, then move to differentials for hypokalemia).**
    - **Time Allotment:** Good 4 minutes for history, so be thorough.
    3. **Explore Pre-operative Context (Hernia):**
        - *"Tell me about your inguinal hernia. When were you diagnosed?"*
        - *"Any pain? Any changes in your bowel motions (complications of hernia)?"*
    4. **Explore Hypertension & Thiazide Use (Lead Point):**
        - *"You have a history of hypertension. How long have you had that?"*
        - *"What treatment are you using for it?"* (Patient confirms Thiazides).
        - *"Have there been any recent **changes in the dose** of your medication?"* (Increased dose could worsen hypokalemia).
        - *"Are you having regular follow-ups with your GP for your blood pressure?"*
        - **Complications/Symptoms related to HTN:** *"Any chest pain? Shortness of breath? Any blurring of vision?"*
    5. **Screening for Causes of Hypokalemia (Systematic):**
        - **A. Decreased Potassium Intake:**
            - *"Can you tell me about your **diet**? Any recent significant changes? Do you eat plenty of fruits and vegetables (good K+ sources)?"*
        - **B. Increased GI Loss of Potassium:**
            - *"Have you had any **nausea or vomiting** recently?"*
            - *"Have you had any **diarrhoea**?"*
            - *"Have you been using any **laxatives**?"*
        - **C. Increased Urinary Loss (Diuretics already covered, focus on Hyperaldosteronism):**
            - *"Have you experienced any **muscle cramps or muscle weakness**?"*
            - *"Have you noticed yourself **passing more urine** lately (polyuria)?"* (Hyperaldosteronism can cause this).
        - **D. Other Causes / Transcellular Shift / Phaeochromocytoma:**
            - **Phaeochromocytoma (rare, but on differential list):** *"Have you had any recent episodes of headache, flushing, or racing of your heart?"*
            - **Other Medications (that could cause K+ shift or loss):** *"Are you using any **other medications**, for example, insulin (if diabetic), or asthma puffers (beta-agonists) frequently?"*
    6. **(SADMA to complete - other meds, alcohol, allergies, family Hx of kidney/endocrine issues).**
- **C. Explaining Diagnosis (of the cause) and Differentials:**
    1. **State Overall Lab Finding:** *"Mark, as we discussed, your blood test shows you are having a condition called **hypokalemia**, which means the salt potassium is lower than the normal range in your blood."*
    2. **State Most Likely Cause (Thiazide Diuretic):**
        - *"The **most likely cause** of this low potassium is your **blood pressure medication (the thiazide diuretic)**."*
    3. **Brief Explanation:** *"This type of medication works by helping your body get rid of excess salt and water, but as a side effect, it can also cause your body to lose potassium through your urine."*
    4. **Differentials (Systematically list other causes of hypokalemia):**
        - *"However, there are other things I was also thinking about that can cause low potassium:"*
        - *"One is a **decreased intake of potassium in your diet**, for example, if you're not eating enough fruits and vegetables."*
        - *"Another is **losing potassium through your bowels**, for example, if you were having significant vomiting or diarrhoea, or if you were using laxatives."*
        - *"I also considered some other hormonal conditions like **hyperaldosteronism** (where a gland produces too much of a certain hormone that affects potassium) or a rare condition called **phaeochromocytoma**."*

    - *(Briefly mention medications if other relevant ones: "And certain other medications like insulin or asthma puffers can sometimes shift potassium into cells, lowering the blood level.")*
- **Tutor's Note:** Even though thiazide is the obvious cause from the stem, you MUST list other differentials to show a comprehensive understanding and to demonstrate you've considered alternatives. This is often why candidates fail.
- **Management (Not explicitly the main task, but would involve):**
    - Confirming if the hypokalemia is genuine (repeat test if doubt/no symptoms).
    - Assessing severity (mild in this case).
    - Dietary advice (increase potassium-rich foods).
    - Oral potassium supplements if needed.
    - Reviewing the need for/dose of the thiazide diuretic with the prescribing doctor, especially pre-operatively. Consider switching to a potassium-sparing diuretic or adding one if HTN treatment is still essential.
    - Ensuring potassium is corrected before elective surgery (anaesthetists are wary of electrolyte imbalances).

IV. Key Learning Points for Hypokalemia Case:

- **Recognize the Obvious but Explore Broadly:** Thiazide is the likely culprit, but a good candidate explores other causes of hypokalemia.
- **Systematic Approach to Causes:** Think: Intake, Loss (Renal/GI), Shift.
- **Medication History is Key:** Diuretics are a very common cause. Ask about dose changes.
- **Link to Clinical Context:** Pre-operative assessment means ensuring the patient is fit for surgery; electrolyte imbalances can increase surgical risk.
- **Time Management:** Even with a "simple" diagnosis, tasks like explaining results, history, and Dx/DDx need to be paced appropriately.
- This case tests knowledge of a common electrolyte imbalance, its causes (especially drug-induced), and the importance of a thorough differential diagnosis even when a likely cause is apparent from the stem.

hypercalcemia

AMC Recalls: Electrolytes - Hypercalcemia Case (Primary Hyperparathyroidism)

I. Understanding Hypercalcemia (High Calcium):

- **Significance:** Important because it can be a sign of serious underlying conditions, primarily hyperparathyroidism or malignancy.
- **Calcium Regulation:** About 50% of serum calcium is ionized (active), and 50% is bound to albumin and other proteins.
- **Corrected Calcium:** Blood tests report "total calcium." This value needs to be "corrected" for the albumin level to get the true physiologically active calcium level. The "corrected calcium" is the one to focus on.
- **False Positives:** Can occur due to haemoconcentration during blood collection or high serum protein (especially albumin). (The corrected calcium usually accounts for albumin).
- **Symptoms of Hypercalcemia (Mnemonic: "Bones, Stones, Abdominal Moans, Psychic Groans"):**
    - Bones: Bone pain, fractures.
    - Stones: Kidney stones (renal colic).
    - Abdominal Moans: Abdominal pain, constipation, nausea, vomiting, anorexia.
    - Psychic Groans/Overtones: Tiredness, weakness, drowsiness, confusion, depression, psychosis.
    - Other: Thirst, polyuria (nephrogenic diabetes insipidus).

II. Differential Diagnosis for Hypercalcemia (Prioritized):

1. **Primary Hyperparathyroidism (Most common cause in outpatients):** Overactive parathyroid gland(s) producing too much Parathyroid Hormone (PTH).
2. **Malignancy (Most common cause in inpatients):**
    - Humoral Hypercalcemia of Malignancy (tumour produces PTH-related peptide - PTHrP).
    - Lytic bone metastases (e.g., from breast, lung, myeloma, kidney cancer) releasing calcium.
    - Lymphoma (can produce calcitriol).
    - **Key cancers to consider:** Lymphoma, Breast, Lung, Kidney.

3. **Vitamin D Intoxication/Excess:** Over-supplementation with Vitamin D.
4. **Hyperthyroidism / Thyrotoxicosis:** (Can cause mild hypercalcemia due to increased bone turnover).
5. **Medications:**
    - **Thiazide diuretics** (reduce urinary calcium excretion).
    - **Lithium** (can cause hyperparathyroidism).
    - (High dose Vitamin A).
6. **Granulomatous Diseases (Excess Calcitriol Production by Granulomas):**
    - **Sarcoidosis.**
    - **Tuberculosis (TB).**
    - (Other fungal infections, berylliosis).
7. **Milk-Alkali Syndrome:** Excessive intake of calcium (e.g., antacids) and absorbable alkali.
8. **Other Endocrine (Rarer):**
    - Phaeochromocytoma (can be associated, especially if part of MEN syndrome).
    - Adrenal insufficiency.
9. **Immobilization** (Increased bone resorption - usually prolonged bed rest).
10. **Familial Hypocalciuric Hypercalcemia (FHH)** (Rare genetic condition, low urine calcium).

III. Case 63: 45 y.o. Lady, Discuss Blood Results, Known Hypothyroidism (on Levothyroxine)

- **Stem Summary:**
    - 45-year-old lady, GP.
    - Here to discuss blood test results.
    - Known hypothyroidism, on Levothyroxine.
- **Blood Results (Provided in Stem):**
    - TSH: Normal (means euthyroid on current Levothyroxine dose).
    - Free T4: Normal.
    - Total Calcium: Normal.
    - **Corrected Calcium: HIGH.**
- **Tasks:**
    1. History taking.
    2. Explain investigations you have (the bloods).
    3. Request further investigations from the examiner.
    4. Explain diagnosis (based on all info) with reasons.
- **Tutor's Initial Note:** The normal TSH rules out thyrotoxicosis from *excessive* Levothyroxine as the primary cause of hypercalcemia. If TSH were suppressed, then it would be a consideration.
- **A. History Taking (Focus on Symptoms & Causes of Hypercalcemia):**
    1. **Opening & Context Setting:**
        - *"Hello [Patient's Name], I see you're here to discuss your blood test results. Before we dive into those, can I ask why these blood tests were done in the first place? Were you having any particular symptoms, or was it a routine check-up?"* (Patient: "Routine check-up").
        - *"Okay. Looking at your results, I can see you have a high calcium level in your blood. Is it okay if I ask you a few questions to understand this better?"*
    2. **Previous History of High Calcium:**
        - *"Have you ever been told before that you have a high calcium level?"* (Patient: **"Yes, doctor. My previous blood test also showed high calcium."**).
        - *"Did you do anything about it then? Any investigations or treatments?"* (Patient: **"My GP told me to stop taking supplements and decrease dairy products. I did that, but my calcium is still high."** - This implies the cause isn't simple dietary excess/supplements).
    3. **Symptoms of Hypercalcemia ("Bones, Stones, Moans, Groans"):**
        - General: *"Any nausea or vomiting? Feeling particularly tired or weak? Noticed any muscle weakness?"*
        - Bones: *"Any bone pain?"*
        - Stones (Kidney): *"Any history of kidney stones or severe pain in your back/side (renal colic)?"*
        - Abdominal Moans: *"Any abdominal pain or constipation?"*
        - Psychic Groans: *"Feeling more thirsty than usual or passing more urine? Any confusion, drowsiness, or changes in your mood like depression?"*

4. **Screening for Differentials (Prioritize Hyperparathyroidism & Malignancy):**
    - **A. Primary Hyperparathyroidism (already covered by symptoms of hypercalcemia).**
    - **B. Malignancy (Red Flags):**
        - General Cancer Screen: *"Have you lost any weight recently? Any changes in your appetite? Noticed any lumps or bumps anywhere in your body? Any night sweats?"*
        - Breast Specific (for female): *"Any previous history of breast lumps, or any breast lumps now?"*
        - Lung Specific: *"Any cough? Are you a smoker? Ever coughed up blood?"*
        - Past/Family Hx of cancers?
    - **C. Medications & Supplements (Key for Vit D tox, Milk-Alkali, Thiazides, Lithium):**
        - *"Are you taking any **Vitamin D supplements** or multivitamins?"* (Already discussed patient was told to stop them).
        - *"Are you taking any other regular medications? Specifically, any for blood pressure like **thiazide diuretics**, or any for mood like **lithium**? Do you take a lot of **antacids** (e.g., for heartburn)?"*
    - **D. Granulomatous Diseases (TB, Sarcoidosis):**
        - TB: (Cough, haemoptysis already asked). *"Any prolonged fever? History of contact with TB?"*
        - Sarcoidosis: *"Any joint pain? Any rashes (especially like erythema nodosum)? Any eye problems?"*
    - **E. Other Endocrine (Hyperthyroidism - already known hypothyroid but check for thyrotoxicosis if TSH was abnormal, Phaeochromocytoma):**
        - (TSH is normal here).
        - Phaeochromocytoma: *"Any episodes of headache, flushing, or racing of your heart?"*
    - **F. (Hypothyroidism review - already on Levo, TSH normal):**
        - *"How long have you had hypothyroidism? Are you compliant with your Levothyroxine? Regular follow-ups with GP?"*
5. **(SADMA to complete).**

- **B. Explaining Existing Investigations (Bloods) to Patient:** (This task was sometimes present, sometimes not. If asked, it's similar to the IDA result explanation - keep it simple).
    - Focus on the corrected calcium being high. Mention TSH is normal (good control of hypothyroidism).
- **C. Requesting Further Investigations from Examiner (Prioritize for Hypercalcemia Workup):**
    - **Tutor's Note:** Priority list is key.
    2. **PTH (Parathyroid Hormone) Level (CRITICAL - to diagnose/exclude primary hyperparathyroidism).**
    3. **Vitamin D Level (25-hydroxyvitamin D) (To check for deficiency or intoxication).**
    4. **Phosphate Level** (Often reciprocal to calcium in PTH disorders; can be low in primary hyperparathyroidism).
    5. **eGFR / Renal Function** (Kidneys involved in calcium/Vit D metabolism; hypercalcemia can affect kidneys).
    6. **Chest X-ray** (Screen for lung cancer, sarcoidosis, TB).
    7. **Full Blood Examination (FBE)** (General screen, look for anemia/abnormal cells in malignancy).
    8. **Urine Calcium** (To help differentiate FHH from primary hyperparathyroidism if PTH is borderline/equivocal - FHH has low urine calcium).
- **Examiner's Response (Example for Primary Hyperparathyroidism):** PTH is HIGH. eGFR normal. FBE normal.
- **D. Explaining Diagnosis (Primary Hyperparathyroidism) and Differentials to Patient:**
    1. **State Most Likely Diagnosis:** *"Mrs. [Patient's Name], based on your blood tests showing high calcium and now a high parathyroid hormone level, the most likely cause of your high calcium is a condition called **primary hyperparathyroidism**."*
    2. **Brief Explanation of Hyperparathyroidism:**
        - *"Behind your thyroid gland in your neck, you have four small parathyroid glands. These glands are responsible for keeping the calcium in your blood in balance."*
        - *"In your case, it seems one or more of these glands are **overworking** and producing **excessive amounts of parathyroid hormone**. This hormone then causes too much calcium to be released into your blood."*
        - *(If further explanation on PTH function: "This hormone normally helps to increase calcium levels when they are low, but when it's overproduced, it makes the calcium levels too high.")*
    3. **Reasons for Diagnosis:** Link to high corrected calcium and high PTH. Mention any symptoms of hypercalcemia the patient reported (e.g., tiredness, thirst, constipation).
    4. **Key Differentials (Reason out based on investigations/history):**
        - *"Before reaching this conclusion, I was also thinking about other serious causes for high calcium. The second most important one is **malignancy (different types of cancer)** such as lymphoma, breast cancer, or lung cancer. However, [your history and initial tests make this less likely at this stage, but we always keep it in mind]." *

        - *"I also considered if it could be due to **excessive Vitamin D supplements**, but you mentioned you stopped those."*
        - *"**Thyrotoxicosis (overactive thyroid)** can sometimes cause high calcium, but your thyroid tests are currently normal on your Levothyroxine."*
        - *"Other medications like **thiazide diuretics or lithium** can also be a cause, but you are not taking those."*
        - *"And finally, conditions like **sarcoidosis or tuberculosis**, or rare ones like **phaeochromocytoma**, were also on my list but are less probable here."*
- **Management of Primary Hyperparathyroidism (Briefly, if asked or as part of "what next"):**
    - Depends on severity of hypercalcemia, symptoms, and presence of complications (kidney stones, osteoporosis).
    - **Mild, asymptomatic:** May be monitored ("wait and watch").
    - **Symptomatic or significant hypercalcemia/complications:**
        - **Surgery (Parathyroidectomy):** Definitive treatment, especially if a single adenoma is identified (via imaging like Sestamibi scan or neck ultrasound - these are further specialist investigations).
        - Medical management (e.g., Cinacalcet) if surgery not an option.
    - (Acute severe hypercalcemia is a medical emergency requiring IV fluids, bisphosphonates, calcitonin - not the scenario here).

V. Key Learning Points for Hypercalcemia Case:

- **Corrected Calcium is Key:** Understand its importance.
- **Top 2 Differentials: Hyperparathyroidism & Malignancy.** Your history and initial investigations should aim to differentiate these.
- **PTH is the Pivotal Test:** High Calcium + High PTH = Primary Hyperparathyroidism. High Calcium + Low/Suppressed PTH = Suspect Malignancy or other causes.
- **Vitamin D's Role:** Both deficiency (leading to secondary hyperparathyroidism, though usually with low/normal calcium) and excess (leading to hypercalcemia) are important.
- **Medication Review:** Thiazides and Lithium are important drug causes.
- **Systematic Screening:** Even if hyperparathyroidism seems likely, a screen for malignancy red flags and other causes is essential.
- This case tests knowledge of calcium metabolism, the common causes of hypercalcemia, and the initial diagnostic workup.

Increased thirst

AMC Recalls: Unwell Patient - Increased Thirst (Vitamin D Toxicity/Hypercalcemia)

I. Case 64: 45 y.o. Male, Concerned about "Feeling Too Thirsty" / Increased Thirst

- **Stem Summary:**
    - 45-year-old male, GP.
    - Complaining of feeling too thirsty / increased thirst.
- **Tasks:**
    1. Take history (6 mins - ample time for detailed exploration).
    2. Explain diagnosis and differentials to the patient.
- **Tutor's Initial Note:** "Increased thirst" (polydipsia) is the specific complaint here, not just general "unwell" or "tiredness." This requires a tailored differential list. The tutor points out that finding a comprehensive list of differentials specifically for "polydipsia" in standard textbooks is difficult, so it requires clinical reasoning.
- **A. Differential Diagnosis for Increased Thirst (Polydipsia):**

1. **Diabetes Mellitus (DM):** (Osmotic diuresis due to hyperglycemia causes dehydration and thirst).
2. **Diabetes Insipidus (DI):** (Central or Nephrogenic - deficiency of ADH action leads to excessive water loss and intense thirst). *Though often a complex diagnosis, it's a classic cause of polydipsia/polyuria.*
3. **Hypercalcemia (from any cause):** High calcium can impair kidney's ability to concentrate urine (nephrogenic DI-like effect) and directly stimulate thirst.
    - Common causes of hypercalcemia: Primary Hyperparathyroidism, Malignancy, **Vitamin D toxicity.**
4. **Multiple Myeloma:** (Can cause hypercalcemia, renal impairment).
5. **Psychogenic Polydipsia:** Excessive water intake due to a psychological reason (less a cause of *true thirst*, more a cause of *drinking*).
6. **Medications:**
    - Diuretics (cause fluid loss).
    - Anticholinergics (cause dry mouth, leading to increased drinking).
    - Lithium (can cause nephrogenic DI).
7. **Thyrotoxicosis (Hyperthyroidism):** (Increased metabolism, can lead to increased thirst).
8. **Dehydration (from any cause):**
    - Excessive sweating (exercise).
    - Vomiting/Diarrhoea.
    - Poor fluid intake.
    - High salt intake.
    - Excessive caffeine/alcohol (diuretic effect).
9. **(Rare: Brain tumours affecting thirst centre - hypothalamic/pituitary lesions).**

- **B. Structured History Taking (Focus on Differentials for Polydipsia):**
    1. **Intro:** (Standard approach). Patient concerned about increased thirst and excessive water drinking.
    2. **Explore the Complaint (Increased Thirst):**
        - **Timing:** *"How long has this been happening for?"* (Patient: "Around 10 days" - relatively acute). *"On and off or constantly there? Getting worse?"*
        - **Severity/Quantify:** (Difficult to quantify thirst itself, but can ask about fluid intake and polyuria).
        - **Alleviating/Aggravating Factors:** *"Anything makes it better or worse? Worse after eating or exercising?"* (Patient: "Haven't noticed anything specific").
        - **Effect on Life:** (e.g., constantly needing water, interrupting activities).
    3. **Screening for Differentials:**
        - **A. Diabetes Mellitus (Top of mind):**
            - **Polyuria (Key associated symptom):** *"Are you passing more urine than usual lately?"*
            - Polyphagia: *"Have you noticed any increase in your appetite, or are you eating more/feeling more hungry?"*
            - Recurrent infections? Family Hx of diabetes?
            - (Patient in this recall: No to polyuria, no to polyphagia, but father has diabetes).
        - **B. Hypercalcemia / Vitamin D Toxicity / Multiple Myeloma:**
            - **Vitamin D/Calcium Supplements (CRITICAL for this recall):** *"Are you taking any **Vitamin D supplements** or multivitamins?"* (Patient: **"Yes."** -> PROBE).
                - *"Why are you taking Vitamin D?"* (Patient: "Mom has osteoporosis, GP gave her Vitamin D, so I started taking it too").
                - *"How much are you taking?"* (Patient: **"Four capsules every day."** - High dose, e.g., 4000 IU daily if standard capsules). *This is a major clue for Vitamin D toxicity.*
            - Symptoms of Hypercalcemia ("Bones, Stones, Moans, Groans"):
                - *"Any nausea or vomiting? Any bone pain? Any abdominal pain or constipation?"*
                - (Tiredness, weakness - if not already asked).
            - Multiple Myeloma (Red flags): *"Any tiredness? Any bone pain (especially back pain)? Recurrent infections?"*
        - **C. Thyrotoxicosis (Hyperthyroidism):**
            - *"Any weather preference, especially heat intolerance? Any diarrhoea? Any racing of your heart? Any tremors/shakiness in your hands?"*
        - **D. Medications (Other than Vit D):**
            - *"Are you using any other medications or drugs regularly (diuretics, lithium, anticholinergics)?"*
        - **E. Dehydration Causes / Lifestyle Factors:**

        - *"Are you using excessive salt in your diet? Do you drink a lot of coffee or alcohol? How much exercise do you do?"*
    - **F. (Rare - Brain Tumours/DI):**
        - *"Any headaches? Any blurring of vision?"* (General screen for intracranial issues).
    - **(Psychogenic Polydipsia - less likely to be the patient's primary *concern* of "thirst" but can be considered if other causes excluded and history of very high intake without physiological drive).**
4. **Past Medical History / Family History / Social History (SADMA components not yet covered).**

- **Key History Findings for this Vitamin D Toxicity/Hypercalcemia Recall:**
    - Increased thirst for 10 days.
    - No polyuria or polyphagia (making DM less likely as primary).
    - Father has diabetes.
    - **Taking high doses of Vitamin D supplements (4 capsules/day) prophylactically.**
    - (May or may not have other subtle symptoms of hypercalcemia like mild nausea or constipation).
- **C. Explaining Diagnosis and Differentials to Patient:**
    1. **Most Likely Diagnosis (Focus on the cause of hypercalcemia):**
        - *"Mr. [Patient's Name], most likely the cause of your increased thirst is related to **taking too much Vitamin D supplements**, which we can call **Vitamin D toxicity or overdose**."*
    2. **Brief Explanation (Linking Vitamin D to High Calcium to Thirst):**
        - *"When you take excessive amounts of Vitamin D, it can cause a **high calcium level in your blood** (hypercalcemia). This high calcium in your blood is what then causes an **increase in your thirst**."*
        - (Tutor: "Hypercalcemia due to Vitamin D toxicity" is also good, but going step-by-step might be easier for patient).
    3. **Reasons for Diagnosis (Link to history):**
        - *"The main reason I think this is the case is because you mentioned you've been taking a high dose of four Vitamin D capsules daily."*
        - *"While your father has diabetes, you don't have other strong symptoms of diabetes like passing a lot of urine."*
    4. **Differentials (Systematically list other causes of increased thirst):**
        - *"Of course, before concluding this, **diabetes** was on my mind, especially with your family history."*
        - *"I also considered some **malignancies** that can sometimes affect calcium levels, like **multiple myeloma**, or other cancers that can cause hypercalcemia (like lymphoma)."*
        - *"We also thought about **brain tumours** that can rarely affect thirst."*
        - *"**Thyrotoxicosis (an overactive thyroid gland)** was another possibility."*
        - *"Certain **medications** can cause increased thirst."*
        - *"And finally, lifestyle factors like an **excessive amount of salt in your diet, drinking too much coffee, or too much exercise leading to dehydration**."*
        - *(Psychogenic polydipsia can be mentioned as a rare cause if others are excluded).*

IV. Key Learning Points for Increased Thirst (Polydipsia) Case:

- **Broad Differential for Polydipsia:** Don't just fixate on diabetes. Consider hypercalcemia (and its causes), DI, medications, psychogenic causes, and general dehydration triggers.
- **Medication/Supplement History is CRITICAL:** Specifically ask about Vitamin D and calcium supplements, diuretics, lithium, etc.
- **Vitamin D Toxicity:** Over-supplementation is a recognized cause of hypercalcemia.
- **Hypercalcemia Causes Thirst:** Understand this physiological link (impaired renal concentration, direct thirst stimulation).
- **Rule out Diabetes Mellitus:** Polyuria is a key differentiating symptom.
- **Malignancy as a Cause of Hypercalcemia:** Always consider this, especially multiple myeloma or PTHrP-secreting tumours.
- This case is "odd" because polydipsia isn't a common standalone OSCE complaint. It tests the ability to generate a relevant differential for a less common presentation and to identify a specific iatrogenic cause (Vitamin D overdose) through careful history taking.

Lymphoma PEFE

AMC Recalls: Tiredness - Lymphoma Case (Starts with PEFE)

I. Case 65: 40 y.o. Lady, Tiredness, Weight Loss, Night Sweats, Loss of Appetite (No Initial History Task)

- **Stem Summary (Provides significant history upfront):**
  - 40-year-old lady.
  - Presents with: Feeling tired, weight loss (in last few months), night sweats, loss of appetite.
  - (Tutor notes: The stem is rich with "B symptoms" strongly pointing towards lymphoma or other systemic illness/malignancy).
- **Tasks (Unique Face-to-Face Exam Structure):**
  1. **Start with Physical Examination from Examiner (PEFE).** (Examiner will only provide findings if *specifically* requested).
  2. Explain diagnosis and differentials.
  3. Request further investigations.
- **Time Allocation & Predominant Assessment Area:**
  - PEFE is a major component (~4-5 minutes), requiring a thorough and detailed approach.
  - Diagnosis & Differentials (~2 minutes).
  - Investigations (~1 minute - bullet points).
  - Predominant assessment area is likely **Diagnostic Formulation**, but a strong PEFE is crucial to gather the data for it.
- **A. Approach to PEFE when it's the FIRST Task (Detailed & Specific):**
  - **Tutor's Rationale:** With ample time for PEFE (4-5 mins), a more comprehensive examination is expected than the rapid screening done in shorter PEFE segments. You need to "dig" for positive findings.
  - **Initial Interaction:** Briefly greet patient before turning to examiner. *"Mary, my name is Dr. Emir. I'm taking care of you today. Just give me a moment [to talk to my examiner]."*
  3. **General Appearance (Looking for specific clues):**
     - *"Examiner, on general appearance, I am looking for:"*
     - *"**Pallor** (anemia - common in malignancy/chronic disease)?"*
     - *"**Jaundice** (liver involvement/obstruction)?"*
     - *"**Rashes** (can be associated with haematological malignancies, or other conditions)?"*
     - *"**Cachexia** (significant weight/muscle loss - for malignancy)?"*
  4. **Vital Signs:**
     - *"Examiner, what are the vital signs? Specifically, I'd like to know the **temperature** (for B symptoms/infection), blood pressure, pulse rate, and respiratory rate."*
  5. **Hands (Systematic distal to proximal approach often good):**
     - *"Examiner, looking at the hands, do I see any **clubbing** (lung cancer, ILD, bronchiectasis - less direct for lymphoma but good general check)?"*
     - *"Any **scratch marks** (pruritus is common in lymphoma)?"* (Examiner: **"Yes, scratch marks present."**)
     - *"Any **ecchymosis** (bruising - for platelet issues/leukaemia)?"*
  6. **Joints (Brief screen for associated autoimmune/inflammatory):**
     - *"Any **joint swelling or redness**?"*
  7. **Face & Mouth (Looking for specific lymphoma/leukaemia signs):**
     - (Pallor/Jaundice already requested).
     - *"Examiner, in the mouth, do I see any **gum hypertrophy or bleeding** (leukaemia)?"*
     - *"Are the **tonsils enlarged** (Waldeyer's ring involvement in lymphoma)?"*
  8. **Neck Examination (CRITICAL for Lymphoma):**
     - **Full Lymph Node Examination (Systematic - ALL chains):**
       - *"Examiner, I want to do a **full lymph node examination**, checking all chains (cervical, supraclavicular, infraclavicular, axillary, epitrochlear, inguinal)."* (Examiner: **"Yes, you have two to three enlarged cervical lymph nodes."**).
       - **Key Follow-up Questions for Palpable Lymph Nodes:**
         - *"What is the **consistency** of these nodes?"* (Examiner: **"Rubbery."**)
         - *"Are they **mobile or fixed**?"* (Examiner: **"Fixed."**)
         - *"Are they **painful or non-tender**?"* (Examiner: **"Non-tender."**)
         - *(Rubbery, fixed, non-tender nodes are suspicious for lymphoma).*
     - **Thyroid Examination:** *"Is the thyroid gland normal on examination?"* (Normal).
     - **Bone Tenderness (for leukaemia/metastases):** *"Is there any **bone tenderness**, for example, over the sternum or clavicles?"* (Examiner: **"Yes, sternal tenderness present."**)

9. **Respiratory Examination (Screen for lung involvement/other causes):**
    - *"Examiner, on respiratory examination, is air entry equal? Any added sounds?"* (Fast approach if no specific respiratory symptoms in stem).
10. **Cardiovascular Examination (Screening):**
    - *"Are S1 and S2 normal? Any murmurs or added sounds?"*
11. **Abdominal Examination (CRITICAL for Lymphoma):**
    - Inspection: *"Any swelling, distension, redness?"*
    - Palpation: *"Any tenderness? Importantly, is there any **hepatomegaly or splenomegaly**?"* (Examiner: **"Splenomegaly present."**).
12. **(Pelvic Examination - Tutor mentions this for an *older* lady if tiredness was the *only* symptom, but here, with B symptoms, less of a priority unless specific gynaecological symptoms were hinted at. Focus on lymphoma signs).**
13. **Office Tests:**
    - *"Examiner, I'd like to check a random **blood sugar level** and a **urine dipstick**."* (General screen).

- **Summary of Positive PEFE Findings for Lymphoma:** Scratch marks, cervical lymphadenopathy (rubbery, fixed, non-tender), sternal tenderness, splenomegaly.
- **B. Explaining Diagnosis and Differentials to Patient:**
    1. **State Main Concern (Lymphoma - Sensitive Delivery):**
        - *"Jane, based on the symptoms you described (tiredness, night sweats, weight loss) and what I found on examination today, I am concerned about the possibility of a type of cancer called **lymphoma**."*
    2. **Reasons for Diagnosis (Link to history from stem & PEFE findings):**
        - *"The reasons I am concerned are: you've been feeling tired, have had night sweats, and have been losing weight. On examination today, I found some **enlarged glands (lymph nodes) in your neck**. These feel rubbery, don't move easily, and are not painful, which can be features of lymphoma. I also found that your **spleen**, an organ in your tummy, is larger than usual, and you have some **scratch marks** on your skin, all of which can be associated with this condition."*
    3. **Key Differentials (Prioritize other malignancies & serious infections):**
        - *"While lymphoma is my main concern, I was also thinking about **leukaemia**, which is another type of blood cancer that can cause similar symptoms."*
        - *"Other types of **cancer** that might have spread to the lymph nodes (like bowel or lung cancer) were also considered, though your symptoms fit best with a primary blood/lymph system cancer."*
        - *"Serious **infections** can also cause tiredness, fever (night sweats can be a form of fever), and swollen glands. So, I was thinking about infections like **tuberculosis (TB), HIV, or even EBV (glandular fever)**."*
        - *"Less likely, but also on the list, would be an overactive **thyroid gland (hyperthyroidism)**, as this can sometimes cause weight loss and sweating."*
        - (Briefly mention other "HEMI AD COP x2" categories if a tiredness case, but here, lymphoma/cancer/infection are primary).
- **C. Requesting Further Investigations (Prioritized for Lymphoma):**
    - **Tutor's Note:** Bullet points, prioritize key tests, max 1 minute.
    2. **Full Blood Examination (FBE) and Blood Film (CRITICAL for leukaemia/lymphoma signs).**
    3. **Lymph Node Biopsy (Excisional biopsy is gold standard for lymphoma diagnosis).**
    4. **CT Scans (Chest, Abdomen, Pelvis - for staging, looking for other involved nodes/organs).**
    5. **PET Scan (Often used for staging and assessing treatment response in lymphoma).**
    6. **(LDH, Uric Acid - tumour markers/turnover for lymphoma).**
    7. **(HIV serology, EBV serology - to rule out infective causes of lymphadenopathy).**
    8. **(ESR, CRP - inflammatory markers).**
    9. **(TSH - to rule out thyroid issue if still a concern).**
- **Tutor's Warning:** Don't give a "laundry list" of every conceivable test. Prioritize. FBE/Film and Biopsy are paramount for diagnosis. Staging scans follow. If you only have 30 seconds, FBE/Film and Biopsy are the "must-say" tests.

IV. Key Learning Points for Lymphoma Case (Starts with PEFE):

- **Recognize "B Symptoms":** Unexplained fever (or night sweats), significant unintentional weight loss (>10% in 6 months), drenching night sweats. These are red flags for lymphoma and TB.

- **Detailed PEFE is Required:** When PEFE is the first task and given ample time, perform a thorough, systematic examination looking for specific signs related to your emerging differentials (e.g., detailed lymph node characterization, checking for hepatosplenomegaly, skin signs for lymphoma).
- **Lymph Node Characterization:** Remember to describe consistency (rubbery, hard, soft), mobility (fixed, mobile), and tenderness for palpable lymph nodes.
- **Prioritize Investigations:** Start with tests that confirm the diagnosis (FBE/Film, Biopsy), then move to staging/other causes.
- **Structure Protects:** Even in a PEFE-first case, having a mental framework for examination (general appearance, vitals, then system-by-system with specific additions for key differentials) is crucial.
- This case is a strong test of clinical examination skills (eliciting specific signs), diagnostic reasoning (linking B symptoms and PEFE findings to lymphoma), and formulating an appropriate initial investigation plan.

Neck lump PEFE

AMC Recalls: Neck Lump Case - Starting with PEFE (Lymphoma Focus)

I. Case 66: 45 y.o. Male, Presents with a Lump in his Neck (PEFE is the First Task)

- **Stem Summary:**
  - 45-year-old male.
  - Presents with a lump in his neck.
- **Tasks (Face-to-Face Exam Structure):**
  1. **Ask Physical Examination from Examiner (PEFE) as the FIRST task.** (Findings only given if *specifically* requested).
  2. Explain diagnosis and differentials to the patient.
  3. Request further investigations.
- **Tutor's Note on Task Structure & Time:**
  - This structure (PEFE first) is different and means PEFE is a significant assessment area.
  - You have more time for PEFE (e.g., 3-4 minutes) compared to when it's a shorter component after a long history. This allows for a more detailed and specific examination.
  - Diagnosis & Differentials, and Investigations will be shorter, more focused tasks.
- **A. Recap: Differentials for a Neck Lump (Guiding the PEFE):**
  1. **Thyroid Problems:** Thyroid cancer, nodule, cyst, goiter, thyroglossal duct cyst.
  2. **Malignant Lymphadenopathy:**
     - Generalized: **Lymphoma (top of list for this recall)**, Leukaemia, (HIV/EBV can cause generalized LAD).
     - Localized (Metastasis): Cancers of Skin (head/neck), Naso/oro/pharynx, Oesophagus, Gastric, Lung (Pancoast), Salivary glands.
  3. **Infective Lymphadenitis:**
     - ENT infections (tonsillitis, pharyngitis, sinusitis).
     - Dental infections.
     - Skin infections (impetigo, cellulitis of head/neck).
  - (Benign causes like lipomas, branchial cleft cysts are less of an OSCE focus unless specific clues).
- **B. Structured Physical Examination from Examiner (PEFE - Detailed & Specific for Neck Lump):**
  - **Tutor's Rationale for "Layers":** Start with a basic framework, then add specific "key point" examinations relevant to your top differentials (in this case, Lymphoma and other neck lump causes).
  - **Initial Interaction:** Briefly greet patient. *"Hi [Patient's Name], my name is Dr. Emir. I'll be taking care of you today. Just give me a moment [to talk to my examiner]."* (Turn to examiner).
  3. **General Appearance (Looking for systemic clues):**
     - *"Examiner, on general appearance, I am looking for:"*
     - *"**Cachexia** (for malignancy)?"*
     - *"**Pallor** (anemia - malignancy, chronic infection)?"*
     - *"**Jaundice** (liver involvement/obstructive malignancy)?"*
     - *"**Scratch marks** (pruritus in lymphoma)?"* (Examiner: **"Yes, scratch marks present."**)
     - *(Optional: Dehydration if infection suspected).*
  4. **Vital Signs (Focus on temperature):**

        - *"Examiner, what are the vital signs? Specifically, I'd like to know the **temperature**."* (Then ask for BP, HR, RR).
    5. **Hands (Brief systemic clues):**
        - *"Examiner, on the hands, do I see any **clubbing**? Any **ecchymosis** (bruising)?"* (Scratch marks already asked).
    6. **Joints (Brief screen for autoimmune/inflammatory if relevant to other differentials):**
        - *"Any **joint swelling or redness**?"*
    7. **Face & Mouth (Key area for head/neck pathology):**
        - (Pallor/Jaundice already requested).
        - *"Examiner, in the mouth, do I see any **gum hypertrophy or bleeding** (leukaemia)?"*
        - *"Are the **tonsils enlarged**, or any redness/exudates (infection, lymphoma)?"*
        - *"Any **ulcers in the mouth** (oral cancer, aphthous ulcers in some systemic diseases)?"*
        - **Dental Examination (briefly, for source of infection):** *"I'd like to quickly inspect the dentition. Am I looking for dental caries, or swelling/redness in the gums?"* (Or ask specifically: "Any obvious dental caries or gum inflammation?").
    8. **Nasal Examination (Briefly, for nasopharyngeal source):**
        - *"On nasal examination, do I see any discharge or any abnormal growths in the nasal cavity?"*
    9. **Neck Examination (CRITICAL & DETAILED):**
        - **Full Lymph Node Examination (ALL CHAINS - CRITICAL):**
            - *"Examiner, I want to do a **full lymph node examination**, assessing all chains (cervical, supraclavicular, infraclavicular, axillary, epitrochlear, inguinal)."* (Examiner: **"Yes, you have two to three enlarged cervical lymph nodes."**).
            - **Key Follow-up Questions for Palpable Lymph Nodes:**
                - *"What is the **consistency** of these nodes (e.g., rubbery, hard, soft)?"* (Examiner: **"Rubbery."**)
                - *"Are they **mobile or fixed**?"* (Examiner: **"Fixed."**)
                - *"Are they **painful or non-tender**?"* (Examiner: **"Non-tender."**)
                - *"Any **overlying skin changes**?"*
        - **Thyroid Examination (Full & Detailed):**
            - *"Examiner, I want to do a thyroid examination. On inspection, can I see any visible mass? Any engorged veins?"*
            - *"On palpation, what is the size of the thyroid? Is there any nodularity? Any tenderness?"*
            - *"On percussion, is there any retrosternal dullness/expansion?"*
            - (Auscultation for bruits, Pemberton's sign - if suspecting goitre/thyroiditis, but can be skipped if all above normal and time is a factor). (Examiner: Thyroid is normal).
        - **Bone Tenderness (for leukaemia/metastases):** *"Is there any **bone tenderness**, for example, over the sternum or clavicles?"* (Examiner: **"Yes, sternal tenderness present."**)
    10. **Respiratory Examination (Screen for lung primary/mets):**
        - *"Examiner, on respiratory examination, is air entry equal? Any added sounds?"* (Fast approach).
    11. **Cardiovascular Examination (Screening).**
    12. **Abdominal Examination (CRITICAL for Lymphoma/Mets):**
        - Inspection: *"Any swelling, distension, redness?"*
        - Palpation: *"Any tenderness? Importantly, is there any **hepatomegaly or splenomegaly**?"* (Examiner: **"Splenomegaly present."**).
    13. **Full Skin Check Examination (Especially Head & Neck for Primary Melanoma/SCC):**
        - *"Examiner, I would like to do a full skin check. Do I see any suspicious skin lesions or moles, particularly on the head and neck?"*
    14. **Office Tests:** (BSL, Urine Dipstick - less direct relevance here but part of a "full" tiredness screen if that was the initial complaint. For a "neck lump" focus, these are lower priority).
- **Summary of Positive PEFE Findings for Lymphoma (this recall version):** Scratch marks, cervical lymphadenopathy (rubbery, fixed, non-tender), sternal tenderness, splenomegaly.
- **C. Explaining Diagnosis and Differentials to Patient:**
    - (Same approach as the previous Lymphoma case where B symptoms were given in the stem).
    2. **State Main Concern (Lymphoma - Sensitive Delivery):**
        - *"Jane, based on what I found on examination today, I am concerned about the possibility of a type of cancer called **lymphoma**."*
    3. **Reasons for Diagnosis (Link PEFE findings):**

- *"On examination today, I found some **enlarged glands (lymph nodes) in your neck**. These feel rubbery, don't move easily, and are not painful. I also found that your **spleen**, an organ in your tummy, is larger than usual, you have some **scratch marks** on your skin, and some **tenderness over your breastbone**. These can all be features associated with lymphoma."*

4. **Key Differentials (Prioritize other malignancies & serious infections):**
   - *"While lymphoma is my main concern, I was also thinking about **leukaemia**."*
   - *"Other types of **cancer** that might have spread to the lymph nodes from elsewhere (like thyroid, skin, mouth, throat, lung, or stomach) were also considered."*
   - *"Serious **infections** can also cause swollen glands, so I was thinking about infections like **tuberculosis (TB), HIV, or EBV (glandular fever)**."*
   - *"Less likely, but also on the list, would be problems with your **thyroid gland** itself, like thyroid cancer or nodules, or other causes of lymph node swelling like **dental or ENT infections**."*

- **D. Requesting Further Investigations (Prioritized for Lymphoma):**
  - (Same as previous Lymphoma case).
  2. **Full Blood Examination (FBE) and Blood Film.**
  3. **Lymph Node Biopsy (Excisional biopsy).**
  4. **CT Scans (Chest, Abdomen, Pelvis - for staging).**
  5. **PET Scan.**
  6. (LDH, Uric Acid).
  7. (HIV serology, EBV serology, ESR/CRP).
  8. (TSH/Thyroid Ultrasound - if thyroid still a concern).
- **Tutor's Emphasis on Prioritization:** FBE/Film & Biopsy are top for diagnosis. If time is very short, say these first.

IV. Key Learning Points for Neck Lump Case (Starts with PEFE):

- **PEFE is the Focus:** When PEFE is the first task and given more time, a detailed, hypothesis-driven examination is expected, not just a quick screen.
- **Differential-Guided PEFE:** Your knowledge of neck lump differentials (Thyroid, Lymph Nodes - Malignant/Infective, Cancers that spread to neck) should guide your specific examination requests.
- **Specific "Key Point" Additions to Basic PEFE:** For lymphoma, this includes detailed lymph node characterization, checking all nodal groups, looking for hepatosplenomegaly, skin signs (scratch marks), and bone tenderness. For other neck lump causes, it would include a very detailed thyroid exam, oral/ENT exam, full skin check of head/neck.
- **Don't Assume the Recall:** Even if you suspect lymphoma, go through the motions of examining other relevant structures for a neck lump (e.g., thyroid, oral cavity) to show a comprehensive approach.
- **Verbalize Rationale (Implicitly):** By asking for specific signs (e.g., "gum hypertrophy" after "face/mouth"), you are showing the examiner your thought process.
- This format tests your ability to translate a presenting complaint (neck lump) into a targeted yet comprehensive physical examination strategy to uncover diagnostic clues.

Amiodarone-thyrotoxicosis

AMC Recalls: Endocrine/Cardio - Amiodarone & Thyrotoxicosis vs. Pituitary Adenoma

I. Case 67: 66 y.o. Male, "Nervousness," Known AF, Switched from Flecainide to Amiodarone 4 weeks ago, Presents for Blood Test Results

- **Stem Summary:**
  - 66-year-old male, GP.
  - Complaining of "nervousness" (or "feeling more anxious").
  - Known atrial fibrillation (AF).
  - Medication changed from Flecainide to **Amiodarone 4 weeks ago** by his cardiologist.
  - Here today for blood test results.
- **Blood Test Results (Key Finding & Source of Confusion):**
  - **TSH: NORMAL.**
  - **Free T4 (FT4) & Free T3 (FT3): HIGH.**

- **Tasks (Online Exam format likely):**
    1. Take history (6 minutes).
    2. (Implied before history, or after) Explain investigation results (the blood tests) to the patient.
    3. Explain diagnosis and differentials.
- **A. Understanding the Thyroid Lab Abnormality (Normal TSH, High FT4/FT3):**
    - **Typical Primary Hyperthyroidism:** LOW TSH, HIGH FT4/FT3. (Thyroid gland itself is overactive, negative feedback suppresses TSH).
    - **Typical Primary Hypothyroidism:** HIGH TSH, LOW FT4/FT3.
    - **Subclinical Hyperthyroidism:** LOW TSH, NORMAL FT4/FT3.
    - **The finding of NORMAL TSH with HIGH FT4/FT3 is UNUSUAL and points to specific conditions:**
        1. **TSH-Secreting Pituitary Adenoma (Secondary Hyperthyroidism):** A tumour in the pituitary gland inappropriately secretes TSH, which then overstimulates the thyroid to produce excess T4/T3. The pituitary doesn't respond to the negative feedback from high T4/T3.
        2. **Thyroid Hormone Resistance:** Peripheral tissues are resistant to thyroid hormones, so the pituitary keeps making TSH even with high T4/T3. (Rare).
        3. **Amiodarone Effect (Complex):** Amiodarone can cause both hypothyroidism and hyperthyroidism (Amiodarone-Induced Thyrotoxicosis - AIT).
            - AIT can be Type 1 (iodine-induced hyperthyroidism in pre-existing goitre/Graves') or Type 2 (destructive thyroiditis).
            - Amiodarone also inhibits peripheral conversion of T4 to T3 and can interfere with TSH assays.
            - **Crucially, in some phases or types of AIT, or during recovery, TSH might be "inappropriately normal" or not fully suppressed despite high FT4/FT3, especially early on or if there's pituitary desensitization.** UpToDate mentions that in AIT, TSH is usually suppressed but can be normal. Therapeutic Guidelines also state a TSH-secreting pituitary disorder is a rare exception where TSH is elevated or *inappropriately normal* with thyrotoxicosis.
- **B. Amiodarone and Thyroid Dysfunction:**
    - Amiodarone contains a large amount of iodine.
    - Can cause both hypothyroidism and hyperthyroidism (Amiodarone-Induced Thyrotoxicosis - AIT).
    - AIT can develop during treatment or even months after stopping.
    - Two main types of AIT:
        - Type 1: Iodine-induced hyperthyroidism (Jod-Basedow effect) in patients with underlying thyroid disease (e.g., multinodular goitre, latent Graves').
        - Type 2: Destructive thyroiditis, releasing pre-formed hormone.
    - The clinical picture and thyroid function tests can be complex.
- **C. Structured History Taking (Focus on Thyrotoxicosis, Pituitary symptoms, AF, and Amiodarone context):**
    1. **Intro & Explaining Blood Results (May happen before or after history depending on OSCE flow):**
        - *"Mr. [Patient's Name], I have your blood test results here. They show that your thyroid gland, which is a gland in the front of your neck producing hormones, is secreting or producing excessive amounts of thyroid hormones (T4 and T3 are high). Interestingly, another hormone called TSH, which is produced in the brain and controls your thyroid function, is currently in the normal range. This pattern needs some further exploration."*
    2. **Explore "Nervousness" (The Presenting Complaint):**
        - *"Can you describe what you mean by nervousness or feeling nervous? Do you mean you're feeling stressed, or do you have shaking in your hands, or perhaps a racing of your heart?"*
        - Timing: "How long? On/off or constant? Getting worse?"
        - Alleviating/Aggravating: "Any specific place, person, or situation makes it worse?"
        - Effect on Life.
    3. **Explore Atrial Fibrillation (AF) & Amiodarone History (Lead Points):**
        - *"How long have you had atrial fibrillation for?"*
        - Medication Compliance & Switch: *"I understand your medication was recently changed to Amiodarone. Are you taking it regularly as prescribed? Why was the medication changed from Flecainide?"*
        - Side Effects of Amiodarone (General query): *"Have you noticed any side effects with this new medication (Amiodarone)?"*
        - AF Control/Complications: *"Are you still having any episodes of racing of your heart (palpitations from AF)? Any chest pain? Any shortness of breath, especially on exercise?"* (Screen for IHD/HF as AF causes).
        - Stroke Risk: (Briefly, if AF Hx is long: "Any previous TIA/stroke symptoms like weakness/numbness?")
    4. **Screening for Differentials (Prioritize Thyrotoxicosis & Pituitary Adenoma symptoms):**

        - **A. Thyrotoxicosis Symptoms (Hyperthyroidism):**
            - *"Do you have any weather preference, specifically heat intolerance (intolerant to hot environments)?"*
            - *"Any changes in your bowel habit, like diarrhoea?"*
            - *"Any changes in your weight, especially unexplained weight loss despite a good appetite?"*
            - *"Do you sweat a lot or have noticed excessive sweating?"*
            - *"Noticed any shaking in your hands (tremor)?"*
            - (Palpitations already asked).
        - **B. Pituitary Adenoma Symptoms (Especially if TSH-secreting suspected):**
            - **Headaches?**
            - **Visual disturbances / Blurring of vision?** (Optic chiasm compression).
            - (Other hormonal imbalances - less likely to be a focus unless very specific clues).
            - (Weakness, numbness if large tumour causing other deficits - less common).
        - **C. Psychological Differentials (for "Nervousness"):**
            - Mood: "How has your mood been lately?"
            - Sleep: "How has your sleep been?"
            - Suicidal Ideation (if significant mood disturbance).
            - Stressors: "Any stress at home or work?"
        - **D. Other Organic Causes (Briefly, as per palpitation/anxiety structures):**
            - Stimulants: "How much coffee or tea do you drink? Use any drugs? Alcohol?"
            - Phaeochromocytoma: (Headache, sweating, flushing, palpitations).
    5. **(SADMA to complete).**
- **D. Explaining Diagnosis and Differentials to Patient:**
    - **Tutor's Approach (Acknowledging diagnostic uncertainty due to atypical labs):** Present both key possibilities.
    2. **Acknowledge Main Finding:** *"James, as we discussed from your blood tests, your thyroid gland is overactive and producing too much thyroid hormone. However, the TSH hormone from your brain, which usually controls the thyroid, is in the normal range when we would typically expect it to be low if the thyroid was overactive on its own."*
    3. **Possibility 1: Pituitary Adenoma (TSH-secreting):**
        - *"There are two main conditions I am thinking about. The first possibility is a **pituitary adenoma or pituitary tumour**. This is a small, usually benign (non-cancerous) growth in a gland in your brain called the pituitary gland. This gland produces TSH, and if there's a growth, it might be producing inappropriate amounts of TSH, which then overstimulates your thyroid."*
    4. **Possibility 2: Amiodarone-Induced Thyrotoxicosis (with atypical TSH):**
        - *"The second thing I'm thinking about is a **side effect of your new medication, Amiodarone**. This medication is known to affect the thyroid gland and can cause it to become overactive (thyrotoxicosis)."*
        - *"Now, usually in that case, we expect your TSH to be low. However, your TSH is normal. There is a possibility that after some time on Amiodarone, the TSH can sometimes normalize or be inappropriately normal even when the thyroid is overactive due to the drug's effects."*
    5. **Summary & Next Steps (Investigations):** *"So, these are the two main possibilities we need to investigate further to know for sure."*
    6. **Other Differentials (Briefly, for "nervousness" if not fully explained by thyroid):**
        - *"I was also thinking about other causes for your nervousness, such as psychological problems like **generalized anxiety disorder or panic disorder**."*
        - *"And less likely, conditions like **phaeochromocytoma** or the effects of **stimulants** like too much coffee."*
    7. **Mentioning other thyroid problems (as context for thyrotoxicosis):** *"When we talk about an overactive thyroid (thyrotoxicosis), other common causes include Graves' disease or a toxic thyroid nodule, but given your specific blood test pattern and the Amiodarone, the two possibilities I mentioned are higher on my list."*
- **Further Investigations (If asked):**
    - To differentiate:
        - Repeat TFTs (including TSH, FT4, FT3).
        - Thyroid antibodies (for Graves' - TRAb, TPOAb).
        - Thyroid ultrasound (nodules, goitre, vascularity).
        - Radioactive iodine uptake scan (RAIU - helps differentiate AIT Type 1 vs Type 2, and Graves' vs thyroiditis).
        - **MRI of Pituitary gland** (if TSH-secreting adenoma is suspected).
    - General: ECG (for AF), consider Holter if palpitations are intermittent.

IV. Key Learning Points for Amiodarone & Thyroid Case:

- **Amiodarone's Thyroid Effects are Complex:** It can cause both hypo- and hyperthyroidism (AIT Type 1 & 2). Its high iodine content is a key factor.
- **Atypical TFTs (Normal TSH with High T4/T3):** This pattern is a red flag. Main differentials are TSH-secreting pituitary adenoma or, in the context of amiodarone, a more complex AIT presentation where TSH may not be fully suppressed.
- **Prioritize Key Differentials in History:** Focus questions on symptoms of thyrotoxicosis and symptoms suggestive of a pituitary lesion (headache, visual changes).
- **Patient Explanation - Acknowledge Uncertainty:** It's okay to tell the patient there are a couple of strong possibilities that need further tests to confirm.
- **Reference Guidelines:** Therapeutic Guidelines and UpToDate are good resources for understanding these complex endocrine interactions.
- This case is challenging due to the atypical lab results requiring a deeper understanding of thyroid physiology and drug side effects. It tests the ability to reason through a complex endocrine problem.

Weight loss

AMC Recalls: Tiredness/Unwell Cluster - Weight Loss Case

I. Case 68: 35 y.o. Lady, Complaining of Weight Loss

- **Stem Summary:**
  - 35-year-old lady, GP.
  - Complaining of weight loss.
- **Tasks (Typical for Face-to-Face or adapted Online):**
  1. Take history (6 mins).
  2. Explain diagnosis and differentials to the patient.
  3. (Sometimes PEFE is a task, or investigation request).
- **Tutor's Note:** Predominant assessment area is history taking. Even if a PEFE task is included, the history needs to be comprehensive.
- **A. Brainstorming Differentials for Weight Loss (Go beyond just "cancer"):**
  - **Malignancies (Top Red Flag):**
    - General: Leukaemia, Lymphoma.
    - Specific (depending on demographic/symptoms): Lung, GI (oesophageal, gastric, bowel), Breast, Cervical, Ovarian, Pancreatic.
  - **Infections (Chronic/Systemic):**
    - HIV, Syphilis (can cause systemic symptoms including weight loss).
    - Tuberculosis (TB).
    - Chronic Hepatitis (B/C).
    - (Severe parasitic infections - if travel history).
  - **Psychiatric Disorders:**
    - Major Depressive Disorder (MDD) - often with appetite changes.
    - **Eating Disorders** (Anorexia Nervosa, Bulimia Nervosa, Atypical presentations) - Patient may not complain of weight loss as a "problem" but as a goal, or may have distorted body image.
  - **Endocrine Conditions:**
    - **Hyperthyroidism** (increased metabolism).
    - Diabetes Mellitus (Type 1 often presents with weight loss despite polyphagia; poorly controlled Type 2 can also lead to weight loss).
    - Adrenal insufficiency.
  - **Gastrointestinal (GI) Problems (Non-cancerous):**
    - **Inflammatory Bowel Disease (IBD - Crohn's, UC).**
    - **Celiac Disease** (Malabsorption).
    - Chronic pancreatitis.
  - **Inadequate Intake / Malnutrition (Can be primary or secondary):**
    - Poor diet, restrictive dieting.

        - Poverty, access to food.
        - Dental problems, dysphagia.
    - **Substance Use:**
        - Alcohol abuse.
        - Illicit drug use (e.g., stimulants like amphetamines, cocaine).
    - **Medications (Side Effects):** Some medications can cause nausea, appetite loss, or increased metabolism.
    - **Chronic Systemic / Rheumatological Conditions:**
        - Advanced Rheumatoid Arthritis (RA), Systemic Lupus Erythematosus (SLE) - can cause cachexia.
        - (Sarcoidosis - if systemic involvement).
- **B. Structured History Taking for Weight Loss (Using "HEMI AD COP x2" framework from Tiredness, adapting for weight loss):**
    - **Tutor's Note:** The "HEMI AD COP x2" for tiredness covers many causes of weight loss. The key is to ask the *right screening questions* for each category in the context of weight loss.
    2. **Intro:** Open-ended Q, address concern.
        - Patient: "Losing weight, concerned about it."
        - Address concern empathetically.
    3. **Explore the Complaint (Weight Loss - 2 Key Questions):**
        - **Quantify:** *"How much weight have you lost?"* (e.g., 6-7 kilos).
        - **Timeframe:** *"Over what period of time have you lost this weight?"* (e.g., last 3 months).
        - **Intentionality (Tutor finds this Q funny but asks to make a point):** *"Just to confirm, this weight loss has not been intentional, correct?"* (If patient is trying to lose weight, their concern is different).
    4. **Screening for Differentials (HEMI AD COP x2 - Adapted for Weight Loss):**
        - **Malignancies (Top Priority - Red Flags):**
            - (Weight loss is the primary symptom). *"Have you lost your **appetite**? Noticed any **lumps or bumps** in your body? Feeling unusually **tired**? Any **night sweats**?"*
            - *"Any past history or family history of **cancers**?"*
            - **Cancer Screening (Age/Gender Appropriate):** *"Are you up to date with your **cervical screening test**?"* (For a 35 y.o. lady. Add mammogram/bowel screen if older).
        - **Infections (Chronic/Systemic):**
            - Fever or chills?
            - HIV/Syphilis: Sexual history screen (Sexually active? Safe sex/condoms?).
            - TB: Travel history? Cough? SOB? Contact with sick people?
            - Hepatitis: Yellowish discoloration? Itchiness? Pale stools/dark urine?
        - **Psychiatric Conditions (Depression & Eating Disorders):**
            - Depression Screen: *"How has your **mood** been lately? Are you still **enjoying the things you used to enjoy** before?"*
            - **Eating Disorder Screen (CRITICAL for this recall):**
                - Dietary Habits (Initial open Q): *"Can you describe your **diet** for me?"* (Explores intake).
                - Restrictive Dieting: *"Any recent **crash dieting**, or have you been on any specific diets recently?"* (Patient: **"Yes, taking less frequent meals, smaller portions."**).
                - Excessive Exercise: *"Are you doing any **excessive exercise**?"* (Patient: **"Yes, 6-7 hours a day."**).
                - Compensatory Behaviours: *"Are you using **laxatives**? Have you ever **induced vomiting**?"* (Negative for this recall).
                - Body Image/Fear of Weight Gain (Key for Anorexia Nervosa): *"Do you have any **fear of gaining weight**?"* (Patient: **"No, never had any fear of getting fat."** - This helps differentiate from classic Anorexia Nervosa).
                - Binge Eating (for Bulimia): *"Have you ever had episodes when you eat a large amount of food in a short period of time, perhaps feeling out of control?"* (No).
        - **Endocrine Conditions:**
            - Hyperthyroidism: *"Any weather preference (heat intolerance)? Diarrhoea? Racing heart? Tremors?"*
            - Diabetes: *"Passing more urine? Increased thirst? Recurrent infections?"*
        - **Gastrointestinal (GI) Problems (Non-cancerous malabsorption/inflammation):**
            - IBD/Malabsorption: *"Any history of diarrhoea? Any blood in your stools?"*
            - Celiac Disease: *"Noticed any greasy stools that are hard to flush or float on water? Do your stools stick to the pan?"*

        - (General: Abdominal pain, vomiting - already asked).
    - **Drugs, Alcohol, Medications:**
        - *"Do you use any recreational **drugs**? Drink **alcohol**? Taking any regular **medications**?"*
    - **Rheumatological Conditions:**
        - *"Any **joint pain**? Any **rashes**?"*
5. **Closure (SADMA remnants):** Allergies, other PMHx/FMHx not covered.

- **Key History Findings for this "Excessive Exercise/Reduced Intake" Recall:**
    - Weight loss (e.g., 7kg in 3 months).
    - **No intention to lose weight** (patient is concerned).
    - **Exercising 6-7 hours daily.**
    - **Eating smaller portions and less frequent meals.**
    - No fear of gaining weight (making classic Anorexia Nervosa less likely).
    - No binging/purging.
    - Other organic screens (cancer red flags, infections, endocrine, GI malabsorption) are largely negative.
- **C. Physical Examination from Examiner (PEFE - If Tasked):**
    - **Focus:** General nutritional status, signs of specific deficiencies, ruling out organic causes.
    2. **General Appearance:** Cachexia? Pallor? Jaundice? Rashes? Hydration?
    3. **Vital Signs:** Temperature. **BMI** (would be key here - "Examiner, what is the BMI?").
    4. **Neck:** Thyroid exam. Full lymph node exam.
    5. **CVS & Respiratory Screen.**
    6. **Abdominal Screen:** Hepatosplenomegaly? Masses?
    7. **(If eating disorder strongly suspected from history, might look for signs like lanugo hair, dental erosion (if vomiting), parotid swelling - but less focus if history denies these).**
    8. **Office Tests:** BSL, Urine Dipstick.
- **D. Explaining Diagnosis and Differentials to Patient:**
    - **Tutor's Point:** The "diagnosis" here isn't a disease in the traditional sense, but an explanation of the physiological reason for weight loss.
    2. **State Most Likely Cause:**
        - *"Lily, the most likely cause of your weight loss is the **excessive amount of exercise you are doing** combined with a **reduced intake of food (calories)**."*
    3. **Brief Explanation (Simple Energy Balance):**
        - *"Essentially, you are burning significantly more energy through your long hours of exercise than you are taking in through your food. When this happens over time, your body starts to use up its reserves, leading to weight loss."*
    4. **Acknowledge Other Considerations (Differentials - Prioritize serious, then others):**
        - *"Before reaching this conclusion, it was very important for me to think about other serious causes for weight loss:"*
        - *"The first thing I considered was **eating disorders**, like anorexia nervosa, because you are exercising a lot and eating less. However, you mentioned you don't have a fear of gaining weight, which is a key feature of anorexia, so that makes it less likely to be the primary issue, though your current pattern is concerning."*
        - *"I also thought carefully about **malignancies (cancers)** like leukaemia or lymphoma, or cancers in other parts of your body. However, you don't have other strong red flag symptoms like lumps, bumps, or night sweats, which is reassuring."*
        - *"We also considered **infections** such as HIV, syphilis, or tuberculosis, but again, your history doesn't strongly point to these."*
        - **List others from HEMI AD COP x2 briefly:** *"Other conditions like an **overactive thyroid (hyperthyroidism), diabetes, gastrointestinal problems causing malabsorption (like celiac disease or IBD), side effects of medications, or even depression** were also on my mind, but seem less probable given our discussion."*
- **Management (If asked, would involve):**
    - Education about healthy energy balance.
    - Referral to a dietitian for nutritional assessment and guidance.
    - Discussion about moderating exercise to a healthy level.
    - If any underlying psychological issues contributing to the exercise/eating pattern are suspected, further psychological assessment/support.

- Follow-up to monitor weight and ensure no other causes emerge.

III. Variations & Tutor's Insights:

- **Pancoast Tumour Recall:** The tutor mentions that very old recalls (pre-2017) for a similar stem might have been a Pancoast tumour (lung cancer at the apex causing e.g., cough, weight loss, and potentially shoulder/arm pain or Horner's syndrome). This highlights how recalls can evolve, and why sticking to a comprehensive structure that includes a cancer screen is vital.
- **Importance of Diet & Exercise History:** In any weight loss case, detailed questions about dietary intake (quantity, quality, changes) and exercise patterns (type, frequency, intensity, changes) are fundamental and often overlooked if candidates jump to "disease hunting."

IV. Key Learning Points for Weight Loss Case (Excessive Exercise/Reduced Intake):

- **Broad Differential for Weight Loss:** It's a significant symptom that requires a wide-ranging differential diagnosis.
- **"HEMI AD COP x2" is Adaptable:** The tiredness mnemonic provides a good framework for covering many systemic causes of weight loss.
- **Detailed Diet & Exercise History is Crucial:** When other organic causes are excluded, these lifestyle factors can be the primary reason for weight change.
- **Screen for Eating Disorders:** Especially in younger patients with weight loss and intense exercise, ask key screening questions for anorexia/bulimia.
- **Prioritize Malignancy & Serious Infections:** These must be thoroughly considered and excluded in any patient with unexplained significant weight loss.
- **Time Management:** Even in a 6-minute history, a structured approach allows for broad coverage. The "screening question then probe if positive" technique is key.
- This case is a good example of how a "symptom" (weight loss) can be due to lifestyle factors rather than a specific disease, but requires careful exclusion of serious pathology.

Sleeping disorder counselling

AMC Recalls: Unwell/Tiredness Cluster - Sleep Disorder Counseling (Insufficient Sleep)

I. Case 69: [e.g., 22] y.o. Girl, Complaining of Tiredness for a while, Stem provides significant history

- **Stem Summary (Rich with information - indicating less history taking, more counseling):**
  - Young patient (e.g., 22 y.o. girl).
  - Complaining of tiredness for a while.
  - **History already taken (provided in stem):**
    - Student, preparing for exams recently, was stressed.
    - Has been sleeping late.
    - "Type A" personality (implies tendency towards stress/perfectionism).
    - Mood is normal (no features of anxiety/depression as primary cause).
    - Drinks 3-4 cups of coffee every night.
  - **Tutor's Expectation:** Stem will likely include more negative findings (no weight loss, no fever, no travel) to rule out other causes of tiredness and focus the case on the sleep disorder.
- **Tasks:**
  1. Explain your assessment (diagnosis & reasons) to the patient (3 minutes).
  2. Counsel regarding the management plan (6-7 minutes for management + patient questions).
  3. Answer the patient's questions (likely about sleeping pills).
- **A. Explaining Your Assessment (Diagnosis & Reasons) to Patient:**
  - **Initial Interaction (Even in counseling, start with an open question & address concern):**
    - *"Hi Lily, my name is Dr. Emir. How can I help you today?"*
    - (Patient: "Feeling tired, exams were stressful, still not sleeping well, coffee use...").
    - Acknowledge any concern expressed by the patient about their tiredness.

        - **Invite to Discuss:** *"I can see you've been tired lately. I'm really sorry to hear that. Is it okay if we have a chat about it and make a management plan together?"*
    2. **State Most Likely Diagnosis:**
        - *"Lily, the most likely cause of your tiredness is a **sleeping disorder**."*
    3. **Specify the Type (Sleep Restriction/Deprivation):**
        - *"Sleeping disorders have several types. In your case, I am thinking about **sleep restriction** or **sleep deprivation**."* (Can also use "chronic sleep restriction").
    4. **Brief Explanation of Sleep Restriction & Importance of Sleep:**
        - *"This means you are feeling tired because you haven't been getting enough adequate, good quality sleep, which is an important requirement to help your body and mind function normally."*
    5. **Link to Patient's History (Reasons for this assessment):**
        - *"These sleeping problems can usually be triggered by stressful events, like the exams you mentioned, but can sometimes continue even after the stressful event has ended or passed."*
        - *"From what you've told me, you've been sleeping late, likely only getting about [e.g., 5 hours if elicited or implied] of sleep. You also mentioned drinking several cups of coffee at night, which can significantly interfere with your sleep quality."*
        - *"Importantly, we have also (implicitly or explicitly from stem) **ruled out other common medical causes of tiredness** like [mention 1-2 key negatives from stem, e.g., thyroid problems or infections, as you haven't lost weight and don't have fever], which helps us conclude that the sleep problem is the main issue."*
    - **(Time Check: Aim for ~1.5-2 minutes for this part, leaving ample time for management).**
- **B. Counseling Regarding Management Plan (Comprehensive Approach):**
    - **Overall Aim:** *"Our main aim, Lily, is to **improve your sleep quality**."*
    - **Tutor's Note:** For counseling, mention specific actionable points. Don't just say "improve sleep hygiene."
    3. **Sleep Hygiene Education (Provide specific examples):**
        - *"I'm going to print out a sleep hygiene fact sheet for you, but let me highlight some key points:"*
        - **Sleep Diary:** *"It might be good to keep a **sleep diary** for a week or two. Every night, write down when you went to bed, and the next morning, note when you think you fell asleep, how many hours you got, and rate the quality of your sleep. This will give us a better picture over time."*
        - **Regular Sleep Schedule:** *"Try to have a **regular sleep time and wake-up time**, even on weekends, to help set your body clock."*
        - **Bedroom Environment:** *"Keep the bed for **sex and sleep only**. This means avoid watching TV, using your phone, or reading books in bed if you're not sleepy."*
        - *"Ensure your sleep environment is **quiet, dark, and comfortable**."*
        - *"Avoid pets in the bedroom if they disturb you."*
        - **Rule for Not Falling Asleep:** *"Don't stay in bed if you don't fall asleep within about **20-30 minutes**. If you're still awake, get out of bed, do something relaxing in another room, and only go back to bed when you feel sleepy again."*
        - **Pre-Sleep Routine:** *"Things like a warm glass of milk or a hot shower before bed might help you relax."*
        - **Exercise:** *"Regular physical exercise, especially in the afternoon, can help improve sleep quality at night."*
        - **Avoid Stimulants:** *"Crucially, I want you to **avoid coffee, tea, and energy drinks, especially in the afternoon and evening**. You mentioned drinking 3-4 cups of coffee every night; this is definitely affecting your sleep. Also, avoid alcohol and smoking close to bedtime."*
    4. **Cognitive Behavioural Therapy for Insomnia (CBT-I) - First Line Treatment:**
        - *"One of the most effective treatments for sleep problems like yours is **Cognitive Behavioural Therapy for Insomnia, or CBT-I**."*
        - *"I will **refer you to a psychologist** who specializes in this."*
        - **Explain CBT-I Simply:**
            - *"CBT-I has two main components. The **cognitive part** helps you understand and change any unhelpful thoughts and feelings you might have about sleep or that contribute to your sleep problems. They also provide education about sleep and help you set realistic expectations for sleep."*
            - *"The **behavioural part** focuses on teaching you techniques like stimulus control (linking your bed only with sleep), relaxation techniques, and reinforcing good sleep habits like the ones we just discussed."*
    5. **Relaxation Techniques (Can be part of CBT-I or standalone):**
        - *"Learning some **relaxation techniques** can also be very helpful to calm your mind before sleep. This could include things like yoga, meditation, or mindfulness exercises."*
    6. **Lifestyle Modifications (Reinforce):**

- *"As we touched on with sleep hygiene, maintaining a **healthy diet** and getting **regular physical exercise** are important for overall well-being and can improve sleep."*
- *"And again, **cutting down or stopping coffee, especially at night**, and avoiding alcohol and smoking will be very beneficial."*

7. **Support Groups (If available and relevant):**
   - *"There are also support groups and resources available that can help with sleep problems. For example, the **Sleep Health Foundation** or the **Australasian Sleep Association** have excellent information on their websites."* (Tutor's joke: if you don't know a specific one, "X Association/Foundation of Australia" often works).
8. **Follow-up & Further Steps if No Improvement (Safety Netting):**
   - *"I'd like to see you again in a few weeks to see how you're going with these strategies."*
   - *"If you are not better with all of these steps, we may need to consider a few other things:"*
   - *"We might do some **blood tests**, for example, checking your thyroid function (TSH), just to make sure there isn't an underlying medical cause we've missed."*
   - *"In some cases, if sleep problems are persistent and severe, we might consider a **sleep study (polysomnography)**. This is where you sleep overnight in a special clinic, and they monitor your sleep patterns, breathing, and other things to see if there's a more specific sleep disorder."*
9. **Addressing the Inevitable Patient Question: "Can I get sleeping pills like Temazepam?"**
   - (This will likely come up in the "answer patient's questions" task).
   - **Acknowledge & Validate, then Counsel Against Routine Use:**
     - *"That's a very common question, Lily. Medications like Temazepam are sleeping pills, and while they can sometimes help you fall asleep in the short term, they are **not the best long-term solution** for problems like yours."*
   - **Explain Risks/Downsides of Benzodiazepines (e.g., Temazepam):**
     - *"They only help in the **short term**, and your body can get used to them, meaning they **stop working as well over time (tolerance)**."*
     - *"There's a significant **risk of dependence**, which is like addiction. Your body can become reliant on the medication to sleep."*
     - *"If you try to stop them after using them for a while, you can get **withdrawal symptoms**, which can make your sleep even worse."*
     - *"They can also have side effects like next-day drowsiness, dizziness, and affect your memory and concentration."*
   - **Reiterate Preferred Approach:** *"That's why we prefer to focus on these other strategies like improving your sleep habits (sleep hygiene) and CBT-I, as these address the underlying reasons for poor sleep and provide long-lasting solutions without the risks of medication."*

III. Key Learning Points for Sleep Disorder Counseling:

- **Thorough Sleep Hygiene is Core:** Be able to list multiple specific, actionable sleep hygiene recommendations.
- **CBT-I is First-Line:** Know that it's the gold standard non-pharmacological treatment for insomnia/sleep restriction and be able to explain its basic components simply.
- **Address Stimulant Use:** Coffee, alcohol, smoking are major culprits for poor sleep.
- **Counseling Against Routine Hypnotic Use:** Be prepared to explain why sleeping pills (benzodiazepines/Z-drugs) are not a good long-term solution (tolerance, dependence, withdrawal, side effects).
- **Safety Netting & Follow-up:** Essential to monitor progress and consider further investigation (blood tests, sleep study) if initial strategies fail.
- **Structured Counseling:** Even in a counseling case, have a logical flow: acknowledge problem, explain likely cause, outline management steps (non-pharmacological first), address medication concerns, safety net, and arrange follow-up.
- This case tests communication skills, knowledge of non-pharmacological sleep management, and the ability to counsel a patient appropriately about medication requests.

Thyroid nodule

AMC Recalls: Endocrine - Incidental Thyroid Nodule Management Counseling

I. Case 70: 60 y.o. Male, Discuss CT Results (Incidental Thyroid Nodule), Hx of Stroke

- **Stem Summary:**
  - 60-year-old male, GP.
  - Here to discuss results.
  - Had a CT angiogram for a previous stroke.
  - **Incidental finding on CT:** Thyroid nodule.
- **Tasks:**
  1. Take a history from this patient.
  2. Explain the investigations you would request (this is a counseling task about the management/investigative pathway of a thyroid nodule).
- **Tutor's Note:** This case differs from typical "complaint-driven" OSCEs. The "complaint" is an investigation finding. History taking will focus on risk factors and symptoms related to thyroid nodules/cancer.
- **A. Initial Brainstorming - Key Questions for a Thyroid Nodule History:**
  - Symptoms of thyroid dysfunction (hyper/hypo).
  - Symptoms of malignancy/compression (hoarseness, dysphagia, pain).
  - Risk factors for thyroid cancer (radiation exposure, family history of thyroid/other related cancers).
- **B. Understanding the Workup of a Thyroid Nodule (RACGP Guidelines / General Principles):**
  - **Triple Test (Surgeons often refer to this concept):**
    1. Clinical Examination (palpation of thyroid and neck nodes).
    2. Imaging (Ultrasound is the primary imaging modality for thyroid nodules).
    3. Cytology (Fine Needle Aspiration Cytology - FNAC - if indicated by ultrasound features).
  - **RACGP Flowchart for Thyroid Nodule Investigation:**
    1. **Step 1: TSH (Thyroid Stimulating Hormone) blood test.** This is the FIRST step.
       - **If TSH is LOW (suppressed):** Suggests the nodule might be functioning autonomously (a "hot" nodule, e.g., toxic adenoma) and causing hyperthyroidism.
         - Next step: **Radioactive Iodine Uptake Scan (RAIU)** or Technetium scan to confirm if the nodule is "hot" (takes up iodine) or "cold" (doesn't). Hot nodules are rarely malignant.
       - **If TSH is NORMAL or HIGH:** Suggests the nodule is likely non-functioning (or the patient is euthyroid/hypothyroid). Malignant nodules are usually "cold" (non-functioning).
         - Next step: **Thyroid Ultrasound.**
    2. **Step 2 (if TSH normal/high): Thyroid Ultrasound.**
       - Assesses nodule characteristics (size, solid/cystic, margins, calcifications, vascularity) and looks for suspicious cervical lymph nodes.
       - Ultrasound findings guide the need for FNAC (e.g., based on TIRADS classification).
    3. **Step 3 (if ultrasound suspicious or nodule meets criteria): Fine Needle Aspiration Cytology (FNAC).**
       - A sample of cells is taken from the nodule with a fine needle for cytological examination (Bethesda classification).
       - Determines if nodule is benign, malignant, suspicious, or non-diagnostic.
- **Tutor's Note:** A surgeon mentioned to the tutor that the "triple test" concept (examine, image, FNA) is broadly applied, making sense of this pathway.
- **C. Structured History Taking (Focused on Thyroid Nodule Context):**
  1. **Opening & Setting the Scene:**
     - *"Hi Ben, my name is Dr. [Your Name]. I see you're here to discuss your recent scan results. How are you feeling today?"* (Patient: "Here for results").
     - *"I have your results with me. The CT scan you had for your stroke follow-up has shown a small lump, or what we call a **nodule, in your thyroid gland**, which is a gland in your neck."*
     - *"Is it okay if I ask you a few questions about this before we discuss what we need to do next?"*
  2. **Previous Thyroid History:**
     - *"Have you ever had a previous history of a thyroid nodule or any other thyroid disease before?"* (Patient: No).
  3. **Symptoms Related to the Nodule/Thyroid Dysfunction:**
     - **Local Compressive Symptoms (Red Flags for Malignancy/Large Nodule):**
       - *"Have you noticed any **swelling in the front of your neck** yourself?"*
       - *"Any **pain or discomfort** in your neck?"*
       - *"Any **changes in your voice** (hoarseness)?"*

        - *"Any **difficulty in swallowing (dysphagia)**?"*
    - **Thyroid Function Symptoms (Hyper-/Hypo-):**
        - *"Do you have any **weather preference** (specifically, heat intolerance for hyper, or cold intolerance for hypo)?"*
        - *"Any changes in your **bowel motions** (diarrhoea for hyper, constipation for hypo)?"*
        - (Palpitations, weight changes, fatigue - covered by general questions if needed).
4. **Risk Factors for Thyroid Cancer:**
    - **Radiation Exposure:** *"Any previous history of radiation treatment or significant imaging (many CTs) to your neck area?"* (Patient had CT angiogram - one CT is low risk but good to ask about others).
    - **Occupation:** *"Can I know what your occupation is?"* (Looking for occupational radiation exposure, e.g., radiographer).
    - **Family History (Thyroid & Related Cancers):**
        - *"Any previous history of cancers yourself?"*
        - *"Any family history of **thyroid cancer**?"*
        - *"Any family history of **breast or bowel cancer**?"* (Associated with some genetic syndromes that include thyroid cancer risk, e.g., MEN syndromes, FAP, Cowden).
5. **Review of Stroke History (Briefly, as it's in the stem):**
    - *"Regarding your stroke, when did that happen? What treatment are you currently taking for it? Are you having regular follow-ups with your GP and your specialist?"*
    - *"Do you still have any weakness or numbness in your body from the stroke?"*
6. **(SADMA to complete, focusing on medications, allergies, smoking, alcohol).**

- **D. Explaining the Investigation Plan (Counseling on Thyroid Nodule Workup):**
    - **Tutor's Note:** This is a counseling task. Follow the logical flowchart of investigations. Explain *why* each step is done.
    2. **Acknowledge Nodule & Purpose of Investigation:**
        - *"Ben, as we discussed, the scan showed a thyroid nodule, which is a growth in your thyroid gland. Many of these nodules are benign (not cancerous), but we need to investigate it properly to find out what type of nodule it is."*
        - **Types of Nodules (Briefly set context for investigation goals):** *"A thyroid nodule can be a non-cancerous (benign) growth, like an inflammatory nodule, a hyperplastic nodule (just overgrowth of normal cells), or a thyroid cyst (fluid-filled sac). However, it can also sometimes be cancerous, like a papillary or follicular thyroid cancer, or even a metastasis (spread from another cancer), though that's rare for an incidental finding like this."*
    3. **Step 1: Physical Examination (by YOU, the GP):**
        - *"The very first step is that **I will need to examine you today**. I will carefully feel the nodule in your neck to check its characteristics (like size, consistency, if it's painful), and I'll also check for any enlarged glands (lymph nodes) in your neck."*
    4. **Step 2: Thyroid Function Blood Test (TSH):**
        - *"Next, I will arrange for a **blood test** for you. This test primarily checks your **thyroid function**, and it's called a **TSH test**."*
    5. **Explain Subsequent Steps Based on TSH Result (Flowchart Logic):**
        - **Scenario A: If TSH is LOW:**
            - *"If your TSH blood test is low, this might suggest the nodule is overactive. In that case, we will proceed to a **radioactive iodine scan**. For this scan, we will inject you with a very small, safe amount of a radioactive substance (iodine), and then do a scan to see if your thyroid nodule picks up this iodine. This tells us if the nodule is 'functioning' or 'hot', which usually means it's not cancerous."*
        - **Scenario B: If TSH is NORMAL or HIGH (More common for incidental nodules):**
            - *"If your TSH blood test is normal or high, then the next step will be a **thyroid ultrasound scan**. This ultrasound will give us a detailed picture of the nodule – its size, whether it's solid or fluid-filled, and if it has any concerning features. It also allows us to check the lymph nodes in your neck carefully."*
            - **Following Ultrasound - Potential FNAC:**
                - *"If there are any concerning features on the ultrasound scan, or if the nodule is of a certain size, we will then need to take a **sample from the nodule with a very fine needle**. This is called a **Fine Needle Aspiration** or FNAC. We numb the area, insert a small needle into the nodule, and take some cells to check under the microscope for any signs of cancer."*
    6. **Concluding Statement & Follow-up:**

- *"Based on all these results – my examination, your blood tests, the ultrasound, and potentially the needle sample – we will then have a clear idea of what type of nodule it is, and I will arrange the most appropriate management plan for you."*
- *"Is that okay? Do you have any questions about this plan?"*
- (Arrange follow-up to discuss results).

V. Key Learning Points for Incidental Thyroid Nodule Case:

- **Incidentalomas are Common:** Be familiar with the concept of finding things by chance on scans done for other reasons.
- **Structured Nodule Workup:** Know the TSH -> (RAIU or Ultrasound) -> FNAC pathway. This is standard.
- **History Focus:** Risk factors for thyroid cancer (radiation, family Hx) and local compressive/thyroid dysfunction symptoms.
- **Counseling on Investigations:** Explain *why* each test is done and what the next step depends on. This is key for a management/counseling station.
- **Differentiate Benign vs. Malignant Possibilities:** Acknowledge that nodules can be many things, from benign cysts to cancer, and the purpose of investigation is to clarify.
- **No Diagnosis/Differentials Task (for this specific recall):** The task is *explaining the investigation plan*. While you discuss diagnostic possibilities to justify tests, you are not asked to give a final diagnosis of the nodule's nature to the patient *before* investigations.
- This case tests knowledge of a common endocrine incidental finding and the ability to counsel a patient through a standard diagnostic algorithm.

Unwell- anaphylaxis

AMC Recalls: Unwell Patient - Anaphylaxis Case

I. Case 71: 40 y.o. Lady, "Feeling Unwell," Relative Present, Unstable Vitals (Online Exam Origin)

- **Stem Summary:**
  - 40-year-old lady, clinic.
  - Complaining of "feeling unwell" (sudden onset).
  - Relative is present to provide history (patient too unwell).
  - **Vital Signs (given in stem - indicate instability):** Low Blood Pressure, Tachycardia, Respiratory Rate normal (or can be high), O2 Saturation a little low.
- **Tasks:**
  1. Take history from the relative.
  2. Physical Examination findings (on screen or elicit from examiner).
  3. Explain diagnosis (and differentials) to the relative.
- **A. Initial Brainstorming - Differentials for SUDDENLY Unwell Patient with Unstable Vitals:**
  - **Anaphylaxis (Top of list given this is an anaphylaxis case discussion).**
  - **Cardiovascular:** Acute Myocardial Infarction (AMI), Severe Arrhythmia, Massive Pulmonary Embolism (PE).
  - **Neurological:** Stroke, Subarachnoid Haemorrhage, (Sudden Head Injury).
  - **Infectious (Rapidly Deteriorating):** Sepsis, Meningococcaemia.
  - **Other Catastrophes:** Ruptured AAA (Abdominal Aortic Aneurysm).
- **B. Structured History Taking (from Relative - Focus on Acute Event & Anaphylaxis Clues):**
  - **Tutor's Note on Initial Management in Real Life vs. OSCE:**
    - Real Life: Unstable patient -> DRSABCD, call for help, immediate resuscitation.
    - OSCE: Task is "take history." Acknowledge instability but proceed with task. *"Examiner/Relative, I note the patient is unstable. In a real scenario, I would prioritize immediate resuscitation (DRSABCD). For this OSCE, I will proceed with history taking as requested, but I would want continuous monitoring and a treatment/resuscitation room."*
  2. **Opening & Consent (from Relative):**
     - Introduce self to relative.
     - *"Has [Patient's Name] given you consent to discuss her condition with me?"* (For OSCE, answer will be yes).
     - Open-ended Q: *"Can you tell me what has happened?"*

- (Relative: "She suddenly became unwell, we called the ambulance..."). Address concern.

3. **Explore "Unwellness" (Focus on Acute, Severe Symptoms):**
   - *"Can you describe what you mean by 'unwell'? For example, did she **lose consciousness or faint**? Did she become **drowsy or unresponsive**? Or was she complaining of **severe pain** anywhere?"*
4. **Timing of Onset (Rapid):**
   - *"When did this start exactly?"* (Super acute, e.g., "10 minutes ago").
   - *"Is it getting worse?"*
5. **Trigger Identification (CRITICAL for Anaphylaxis):**
   - *"What was she doing exactly before this happened?"*
   - **Specific Probes for Anaphylaxis Triggers:** *"Was she trying any **new food**? Taking any **new medication**? Or did she possibly have any **insect bites or stings**?"*
6. **Key Medical History (from Relative - Quick Check):**
   - *"Does she have any past medical history of any conditions? Is she on any regular medications? Does she have any history of allergies?"* (CRITICAL for anaphylaxis).
7. **Screening for Differentials (Symptoms related to the broad categories):**
   - **Anaphylaxis Symptoms (Systematic - Skin, Respiratory, CVS, GI, Upper Airway):**
     - Skin: *"Any rashes on her skin? Any itchiness?"*
     - GI: *"Any nausea or vomiting? Complaining of abdominal pain?"*
     - Upper Airway (Angioedema): *"Did you notice any swelling of her lips or tongue? Any change in her voice?"*
     - Lower Respiratory: *"Any noisy breathing (wheezing)? Shortness of breath or difficulty breathing? Cough?"*
     - Cardiovascular/Neurological (Shock): (Dizziness/fainting already asked).
   - **Cardiovascular (AMI/Arrhythmia):** *"Was she complaining of any chest pain before this started? Any racing of her heart?"*
   - **Neurological (Stroke):** (Loss of consciousness asked). *"Any weakness or problems moving her arms or legs? Slurred speech? Problems with walking or balance?"*
   - **Respiratory (PE/Pneumothorax - less likely for this *sudden* collapse unless massive):** (SOB, cough, noisy breathing covered). *"Any recent long travel (for PE)?" "Any choking episodes before this (for airway obstruction)?"*
   - **Infectious (Sepsis/Meningococcaemia):** *"Had she been having any fever or chills before this happened? Any contact with anyone sick?"* (Travel history).
8. **(If time allows, brief family history of atopic conditions for anaphylaxis).**

- **C. Physical Examination Findings (Online Screen Example for Anaphylaxis):**
  - **Visible insect bite on the neck.**
  - **Patient is wheezing.**
  - (May also show urticarial rash, angioedema if present).
- **PEFE Structure (If Eliciting from Examiner):**
  1. **General Appearance:** Level of consciousness (drowsy/unresponsive)? **Rashes (urticaria)? Audible noisy breathing (stridor, wheezing)? Cyanosis?**
  2. **Vital Signs:** (Already in stem - Hypotension, Tachycardia, Low SpO2).
  3. **Anaphylaxis Specifics (Prioritize):**
     - **Airway/Upper Respiratory:** *"Any **swelling of the lips or tongue**? Any **stridor**?"*
     - **Skin:** (Rashes already on GA). *"Do I see a **visible insect sting**? If yes, can I remove it please?"*
  4. **Respiratory Examination:** Air entry? **Wheezing (already noted)? Stridor (already noted)?**
  5. **Cardiovascular Examination:** Heart sounds (S1S2)? Added sounds? (Peripheral perfusion - cap refill).
  6. **Abdominal Examination:** (Bruises, tenderness, masses - for other differentials like AAA).
  7. **Neurological Examination (Brief screen):** Pupils, basic motor/sensory if LOC was impaired.
  - **Office Test: Blood Sugar Level (BSL)** - always rule out hypoglycaemia in an unwell patient.
- **D. Explaining Diagnosis to Relative:**
  1. **Diagnosis:** *"Most likely, she is having a condition called **anaphylaxis**."*
  2. **Brief Explanation:** *"This is a **severe allergic reaction**. In her case, it is most likely because of an **insect bite or sting**."*
  3. **Reasons for Diagnosis (Link to history from relative & PEFE findings):**
     - *"She became unwell very **rapidly/acutely**."*
     - *"She is **wheezing / has noisy breathing**."*
     - *"We found an **insect bite mark on her neck**."*

        - *"And her **vital signs are unstable** (low blood pressure, fast heart rate)."*
        - (Mention other features if present: *"She has a rash / swelling of her lips."*)
    4. **Differentials (Briefly, to show you considered other emergencies):**
        - *"Before concluding this, I was also thinking about other serious possibilities given how suddenly she became unwell:"*
        - *"**Cardiovascular problems** like a heart attack (MI) or a severe abnormal heart rhythm (arrhythmia)."*
        - *"**Neurological problems** like a stroke or a bleed in the brain (intracranial haemorrhage)."*
        - *"**Respiratory problems** like a large clot in the lung (pulmonary embolism)."*
        - *"**Severe infections** like sepsis or meningococcaemia."*
        - *"And other rare but serious things like a ruptured aneurysm."*
        - *"However, the quick onset after a likely trigger (insect bite) and the specific symptoms like wheezing make anaphylaxis the most probable diagnosis."*

II. Recap of Anaphylaxis (from ASCIA Guidelines):

- **Definition:** Acute onset illness with:
    - Skin/mucosal involvement (urticaria, itch, flushing, angioedema) AND AT LEAST ONE OF:
        - Respiratory compromise (dyspnoea, wheeze, bronchospasm, stridor, hypoxia).
        - Reduced BP or end-organ dysfunction (collapse, syncope, incontinence).
    - OR: Acute onset hypotension OR bronchospasm OR laryngeal involvement after exposure to a known/likely allergen, even without skin features.
- **Symptoms (Multi-system):**
    - Respiratory: Noisy breathing (wheeze/stridor), hoarse voice, throat tightness/tingling, SOB, cough.
    - Cardiovascular: Tachycardia/bradycardia (late), hypotension, collapse, dizziness.
    - Neurological (from hypoxia/hypotension): Confusion, dizziness, collapse.
    - GI: Nausea, vomiting, abdominal pain.
    - Skin/Mucosal (Most Common): Urticarial rash (hives), angioedema (swelling of lips, tongue, face, eyes), flushing, itching.
- **Clinical Diagnosis:** Anaphylaxis is a clinical diagnosis. Do not delay treatment waiting for tests if suspected.
- **Emergency Management (Adrenaline is life-saving):**
    1. **Adrenaline (Epinephrine) IM:** 0.01 mg/kg of 1:1000 solution, MAX dose 0.5 mg (0.5 mL for adult). (EpiPen Adult ~0.3mg, EpiPen Jr ~0.15mg). Give into anterolateral thigh.
    2. **Lay Patient Flat** (if not in respiratory distress where sitting up helps breathing; if hypotensive, elevate legs).
    3. **Call for Help (Triple Zero - 000 in Australia).**
    4. Can repeat adrenaline every 5 minutes if no improvement.
    5. Oxygen.
    6. IV fluids for hypotension.
    7. Antihistamines (H1 +/- H2 blockers) and Corticosteroids are adjunctive/second-line, for symptom relief and preventing biphasic reactions, NOT for acute life-saving.
    8. Nebulized adrenaline for stridor (upper airway oedema).
- **Sting Removal:** If a bee sting, gently flick/scrape out the stinger; don't squeeze.