

Management and Prescribing STUDENT SHEET

You are an FY1 doctor working in the emergency department. Patient Henry Walsh D.O.B 19/04/1960 has presented with fever.

The examiner will tell you relevant parts of the history to assist your decision making.

This station will last 10 minutes. During the first 5 minutes you will need to:

- State a differential diagnosis
- Request the appropriate investigations that you think this patient needs
- Interpret the test results
- Re-evaluate your differential diagnosis and formulate a management plan

The second 5 minutes will comprise of you writing an appropriate prescription for this patient.

Management and Prescribing EXAMINER SHEET

DIAGNOSIS: SEPSIS

Please share the following information with the student:

“Henry Walsh is a 62-year-old man presenting to the emergency department with fever. He is very confused so you cannot elicit a full history. He is not orientated to date and time but is confused as to where he is. On observation you can see that Henry looks incredibly unwell, with marked pallor and sweating. Examination reveals a respiratory rate of 37, heart rate of 158bpm, and a blood pressure of 80/37 mmHg.

1. Please state the investigations you would like to request for this patient.

Bedside:

- A → E approach including a fresh set of observations
- Pulse oximetry for oxygen saturations since he is tachypnoeic
- Urine dipstick – UTI is a potential source of the infection
- Catheterise to ascertain urine output

Bloods:

- FBC to assess white cell count and neutrophils as this is suspected sepsis
- CRP to support infective pathology (inflammation)
- ABG – checking respiratory failure and lactate which you would expect to be elevated. Additionally metabolic lactic acidosis.
- U&E's because sepsis can lead to AKI, so U&Es to establish baseline renal function
- LFTs – assess liver baseline as the infection could have arisen from here
- Clotting profile – for DIC which can occur secondary to sepsis
- Blood cultures – assessing for bacteraemia

Imaging:

Chest X-ray to check for respiratory sources of sepsis

2. Please interpret the investigations on the last page and tell me what you see.
 - FBC: elevated white cell count and CRP supporting infection
 - Urine dipstick: elevated white cell count indicative of UTI
 - Blood cultures: gram-negative bacilli – likely *Escherichia coli*
 - ABG: uncompensated metabolic lactic acidosis + hypoxia

3. Considering this information, please state your top differential diagnosis and preferred management plan.
 - **SEPSIS secondary to urinary tract infection**
 - IV fluids – 0.9% bolus of sodium chloride over 15 minutes, keep reassessing BP and repeat up to 2L, then involve ICU/Anaesthetics.
 - Oxygen 15L non-rebreathe mask
 - IV antibiotics according to local guidelines, sensible suggestions such as Meropenem or Tazocin.

4. The diagnosis is E.coli sepsis, please prescribe appropriate fluids to this patient who has a blood pressure of 80/37 mmHg.

Student must prescribe IV 0.9% sodium chloride 500ml bolus to be given immediately, in the correct fluid area. (Note if student writes 'NaCl' then this is not acceptable. SODIUM CHLORIDE must be clearly stated).

		Marks		
Initial Diagnosis	Student states a sensible and likely diagnosis which they can justify from the initial information provided. (1)			
Requesting Investigations	<p>Student requests a range of investigations in a structured order such as bedside, bloods and imaging. (1)</p> <p>Requested investigations must be backed up by sound and specific rationale and not generic comments like 'U&Es to check electrolyte levels' (1)</p> <p>Investigations must be requested to support the theorised differential and rule out other differentials. (1)</p>			

<p>Interpretation</p>	<p>Student interprets more than half of the investigation results correctly and in a systematic and structured order (1)</p> <p>Student interprets all investigations correctly in the context of the differential diagnosis, in a systematic and structured order (1)</p>			
<p>Diagnosis and Management plan</p>	<p>Correct diagnosis made (1)</p> <p>Appropriate management plan outlined in a structured format such as conservative, medical, surgical (1)</p>			
<p>PRESCRIPTION</p>	<p>Patient details and allergy status correctly recorded (1)</p> <p>Medication prescribed in the correct location (1)</p> <p>Medication name in all capitals and correctly spelt with correct dosage and route (1)</p> <p>Date and prescriber details recorded correctly (1)</p>			

Global Rating: Fail Borderline Good Very Good Excellent

Management and Prescribing INTERPRETATION

FBC - Hb (135 – 180 g/L)	145
MCV (82 – 100 fl)	87
Platelets (150 – 400 * 10 ⁹ /L)	167
WCC (4 – 11 * 10 ⁹ /L)	18.3
Neutrophils (2 – 7 * 10 ⁹ /L)	6.8
Lymphocytes (1 – 3 * 10 ⁹ /L)	2.8
CRP (<10 mg/L)	176

ABG - pH (7.35 – 7.45)	7.30
PO ₂ (10 – 14 kPa)	7.8
PCO ₂ (4.5 – 6.0 kPa)	4.6
HCO ₃ (22 – 28 mmol/L)	18.0
Lactate (< 4mmol/L)	6.0

Urine Dipstick - Leucocytes	Elevated
Nitrites	Elevated
Blood	None
Glucose	None
Ketones	None
pH	Normal

Blood cultures grew this species:

