

PRESCRIBING

**Please have the BNF, a
calculator and a drug chart
handy before commencing
the mock station.**

Using Investigations to Prescribe Safely 1 – Notes for Candidate

Using Investigations to Prescribe Safely Station: 10 minutes

Patient: Julie Ward (68F)

DOB: 03/02/1956

E34876502

You are the FY1 on the AMU.

Julie Ward has presented with dyspepsia and abdominal pain for the last 8 weeks.

The station will last 10 minutes.

Please review the notes and observation chart. The BNF and a calculator are available for you to use

You are expected to:

0-5 minutes:

- Summarise the key points in the history and examination and explain the differential diagnosis.
- Suggest appropriate initial investigations, explaining why
- Review the results and confirm your diagnosis

5-10 minutes:

- Prescribe safely and appropriately for this patient, given the information provided in the station.

Using Investigations to Prescribe Safely: Station documents

Clerking notes

HPC:

8/52 history of heartburn, epigastric pain with occasional vomiting. The nausea is worsened after meals and she is often bloated. There is no haematemesis or melaena. No history of fevers, jaundice or diarrhoea. Nil travel history.

No history of weight loss, night sweats or dysphagia.

O/E:

Chest : clear, HS I+II+0

Abdomen: Epigastric tenderness, otherwise soft, non-distended abdomen. BSP. Murphy's negative. No masses.

Calves: SNT

PMH:

Previous peptic ulcers, T2DM, osteoarthritis

DHx: paracetamol, lansoprazole, Gaviscon, metformin

Allergies: penicillin

SHx:

Alcohol 10 units/week, smokes 10 cigs/day

Patient height, weight:

Height: 172cm

Weight: 53kg

NEWS key		FULL NAME			
0	1	2	3		
DATE OF BIRTH		DATE OF ADMISSION			
DATE TIME			DATE TIME		
A+B Respirations <small>Breaths/min</small>	≥25		3		≥25
	21-24		2		21-24
	18-20	●			18-20
	15-17				15-17
	12-14				12-14
	9-11		1		9-11
≤8		3		≤8	
A+B SpO ₂ Scale 1 <small>Oxygen saturation (%)</small>	≥96	●			≥96
	94-95		1		94-95
	92-93		2		92-93
	≤91		3		≤91
SpO₂ Scale 2! <small>Oxygen saturation (%)</small> <small>Use Scale 2 if target range is 88-92%, eg in hypercapnic respiratory failure</small> <small>!ONLY use Scale 2 under the direction of a qualified clinician</small>	≥97 _{on O₂}		3		≥97 _{on O₂}
	95-96 _{on O₂}		2		95-96 _{on O₂}
	93-94 _{on O₂}		1		93-94 _{on O₂}
	≥93 _{on air}				≥93 _{on air}
	88-92				88-92
	86-87		1		86-87
	84-85		2		84-85
	≤83%		3		≤83%
Air or oxygen? <small>O₂ L/min</small> <small>Device</small>	A=Air	●			A=Air
	O ₂ L/min		2		O ₂ L/min
	Device				Device
C Blood pressure <small>mmHg</small> <small>Score uses systolic BP only</small>	≥220		3		≥220
	201-219				201-219
	181-200				181-200
	161-180				161-180
	141-160				141-160
	121-140				121-140
	111-120	↕			111-120
	101-110		1		101-110
	91-100		2		91-100
	81-90				81-90
	71-80				71-80
61-70		3		61-70	
51-60				51-60	
≤50				≤50	
C Pulse <small>beats/min</small>	≥131		3		≥131
	121-130		2		121-130
	111-120				111-120
	101-110		1		101-110
	91-100				91-100
	81-90				81-90
	71-80	●			71-80
	61-70				61-70
	51-60				51-60
	41-50		1		41-50
31-40				31-40	
≤30		3		≤30	
D Consciousness <small>Score by NEWS</small> <small>(No score if drowsy)</small>	Alert	●			Alert
	Confusion				Confusion
	V		3		V
	P				P
	U				U
E Temperature <small>°C</small>	≥39.1°		2		≥39.1°
	38.1-39.0°		1		38.1-39.0°
	37.1-38.0°	●			37.1-38.0°
	36.1-37.0°				36.1-37.0°
	35.1-36.0°		1		35.1-36.0°
≤35.0°		3		≤35.0°	
NEWS TOTAL					TOTAL
Monitoring frequency					Monitoring
Escalation of care Y/N					Escalation
Initials					Initials

National Early Warning Score 2 (NEWS2) © Royal College of Physicians 2017

NOW TAKE A MOMENT TO SUGGEST APPROPRIATE INITIAL INVESTIGATIONS BEFORE SCROLLING DOWN
Come up with a list of differentials.

Investigations

Urine dip:

Negative for nitrites,
leucocytes, ketones, blood

Bloods:

FBC: Hb 135, WCC 9, neuts 6,
plts 350

U&Es: Na⁺ 142, K⁺ 4.1, Ur
5.3, Cr 139,
eGFR 32.7, CrCl: 29ml/min

LFTs: NAD

Bone profile: Adj. Ca 2+ 2.4

Mg²⁺: 0.9

CRP: 19

Urea breath test:

Positive

OGD:

Awaited

Na⁺: 133-146 mmol/L

K⁺: 3.5-5.3 mmol/L

Ca²⁺(adjusted): 2.2-2.6 mmol/L

Mg²⁺: 0.7-1.0 mmol/L

Chloride: 98-106 mmol/L

Phosphate: 0.74 - 1.4 mmol/L

Urea: 2.5 - 7.8 mmol/L

Creatinine:

• ♂ 59-104 μmol/L

• ♀ 45-84 μmol/L

Platelet count: 140 - 400 x10⁹/L

Alkaline phosphatase (ALP): 30-130 U/L

Alanine aminotransferase (ALT):

• ♂ <41 U/L

• ♀ <33 U/L

Aspartate aminotransferase (AST): 1 - 45 U/L

Bilirubin: <21 μmol/L

Haemoglobin (Hb):

• ♂ 130 - 180 g/L

• ♀ 115 - 165 g/L

GGT:

• ♂ <60 U/L

• ♀ <40 U/L

White cell count (WCC):

• Total: 3.6 - 11.0 x 10⁹/L

• Neutrophils: 1.8 - 7.5 x 10⁹/L

Albumin: 35-50 g/L

Using Investigations to Prescribe Safely 1 – Examiner marksheet

MARKING RUBRIC	✓
Assimilation of information <ul style="list-style-type: none"> Confident, accurate approach to reviewing and summarising information 	
Investigations <ul style="list-style-type: none"> Requests appropriate initial investigations and appropriately justifies these 	
Interpretation of results and diagnostic reasoning <ul style="list-style-type: none"> Concise, structured approach to interpretation of results Generates appropriate list of differential diagnoses and uses investigation results to refine this appropriately, giving an appropriate most-likely diagnosis 	
Clearly documented prescription <ul style="list-style-type: none"> Capitals, time, date, signature with block print name Legible, black ink 	
Confident prescriber <ul style="list-style-type: none"> Can prescribe correctly (without using the BNF if it is straightforward) Evidence of having practiced prescribing 	
Prescribes safely (patient details) <ul style="list-style-type: none"> Allergies documented Correct boxes completed, including any special instructions 	
Prescribes safely (Drug) <ul style="list-style-type: none"> Drug name, dose, route, frequency Confident accurate approach Considers relevant investigation results: and makes appropriate adjustments 	

Global Impression:

- Excellent
- Good
- Pass
- Borderline
- Fail

Using Investigations to Prescribe Safely: Example answer

Differential diagnosis:

1. H. pylori infection
2. GORD
3. Peptic ulcers

Prescribing considerations:

H pylori infection warrants 7 days of triple therapy. This includes 1 PPI, and two antibiotics.

First line non-penicillin allergy: PPI + amoxicillin + clarithromycin/metronidazole

BUT patient is penicillin allergic.

So, the following regime must be used:

PPI + metronidazole + clarithromycin

Given the patient has renal impairment, we need to account for dose adjustments.

Lansoprazole: nil adjustment needed.

Metronidazole: nil adjustment needed

For clarithromycin:

Renal impairment

Avoid if severe hepatic impairment also present.

For *modified-release* preparations, avoid if creatinine clearance less than 30 mL/minute.

Dose adjustments

For *immediate-release* preparations, use half normal dose if creatinine clearance less than 30 mL/minute, max. duration 14 days.

For *modified-release* preparations, use half normal dose if creatinine clearance 30–60 mL/minute.

See [Prescribing in renal impairment](#).

Patient's CrCl is 29ml/minute. So the clarithromycin dose must be halved. The following prescription will score full marks:

Prescribed in the regular medications section:

Lansoprazole 30mg BD PO for 7 days

Prescribed in the antimicrobial section:

Metronidazole 400mg BD for 7 days

Clarithromycin 250mg BD for 7 days

NB: any other PPI at the appropriate dose also scores full marks.

OSCE Express – Sumedh Sridhar, Dr Nidhi Agarwal

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