Please have a calculator, paper and a pen handy before commencing the mock station.

Post-Operative Patient on the Ward 3– Notes for Candidate

Post-Operative Patient Station: 10 minutes Patient: Mary Watkins (82F) DOB: 16/11/1940 E15589702

You are the FY1 on the Trauma and Orthopaedic ward.

Mary Watkins is an 82-year-old who underwent a right hemiarthroplasty for a neck of femur fracture.

Her pain is being managed with regular analgesia, and she is now very drowsy and confused. She is nil by mouth.

This is a medical records-based station, there is no simulator present.

The **examiner** will give you information relating to **clinical symptoms and signs if requested.**

The station will last 10 minutes.

You are expected to:

0-5 minutes:

- Review the available documentation
- Explain to the examiner your approach to the patient and describe your plan for improving confusion

5-10 minutes:

- Calculate the patient's fluid balance over the last 24 hours and determine requirements for the next 24 hours. You can use a pen, paper and calculator.
- Assume insensible losses of 600ml per day
- Describe a suitable fluid regime for the next 24 hours. You will be provided with this list:

Three bags of each of the following are available for use:

- Hartmann's 1L
- 0.9% NaCl 500 mL
- 0.9% NaCl 500 mL with 20 mmol KCl
- 0.9% NaCl 1L
- 0.9% NaCl 1L with either 20mmol <u>OR</u> 40 mmol KCl
- Dextrose saline 500 mL
- Dextrose saline 500 mL with 20 mmol KCL
- Dextrose Saline 1L
- Dextrose Saline 1L with either 20 mmol KCl <u>OR</u> 40 mmol KCl
- 5% Dextrose 500 mL
- 5% Dextrose 500 mL with 20 mmol KCl
- 5% Dextrose 1L
- 5% Dextrose 1L with either 20 mmol KCl <u>OR</u> 40mmol KCl

Post-Operative Patient on the Ward 3: Station documents

Clerking notes

HPC:

82F emergency admission for right neck of femur fracture resulting from fall. Precipitated by balance issues related to recent stroke 1 month ago. Patient BIBA, unable to weight bear, pain ++ on mobilising. Note patient also has dysphagia as result of stroke.

Normally NG fed, awaiting PEG tube. Bowels last opened yesterday. Patient otherwise alert, orientated to time, place, person.

Pelvic x-ray: Displaced sub-capital right neck of femur fracture Garden score IV.

Fascia iliaca block administered and listed for right hemiarthroplasty. Anaesthetic assessment passed. No prior surgeries.

<u>O/E:</u>

Chest : clear, HS I+II+0 regular rhythm Abdomen: Soft, non-tender Calves: SNT, no peripheral oedema

R leg shortened, externally rotate. No visible skin breaks or tenting. Pain on performing leg roll. Pulses palpable PT, DP. Warm peripheries. No signs DVT, cellulitis, no oedema.

L leg ROM intact, neuro-vasculature intact. No signs DVT or cellulitis, no oedema.

<u>PMH:</u>

CKD3 Hypertension CVA 1 month ago

DHx:

Ramipril Aspirin Clopidogrel

Allergies: nkda

<u>SHx:</u> Non-smoker, non-drinker

Patient height, weight:

Height: 153cm Weight: 67kg

Operation notes

Patient: Mary Watkins Date: 1/2/2024 (Day 1 as inpatient) Procedure: Right hemiarthroplasty Surgeon: Miss Frances Assistant: Dr. Shah Anaesthesia: General, Propofol

The surgery proceeded uneventfully. NG tube removed prior to anaesthetic induction.

Standard posterior approach to the right hip joint utilised. Intraoperative examination revealed a displaced sub capital femoral neck fracture. Femoral head excised, acetabulum prepared and sized. Modular femoral stem and bipolar hemiarthroplasty head selected to measurements. Fixed with medicated cement.

Stability and range of motion assessed intraoperatively.

Closure: Soft tissues approximated and closed in layers. The surgical incision was closed in layers with absorbable sutures. Sterile dressing applied with local anaesthetic injection.

Miss Frances Electronically signed

Post-operation notes

Patient arrived at post-op recovery 30 minutes after wound closure. The patient tolerated the procedure and anaesthetic well. PCA in situ.

Healthy skin and intact sutures. NG tube reinserted at time of transfer to ward. No active intervention required.

Post-op care and follow-up information handed over to ward staff. For early mobilisation and weight bearing as tolerated.

Dr Claire Holmes CT1 Signed

Day 2 as inpatient (02/02/2024) Post-op review. Ortho-geriatrics.

Patient confused, not orientated to time, place, person. Overnight Mary has been hyperactive and noted to be fiddling with bedside buttons. Pulled out NG tube overnight.

Now lying in bed, drowsy ++ and minimally rousable. Alerted by nurses as scoring high on NEWS chart 7 – respiratory rate and saturations down trending. Commenced on 2L oxygen via nasal cannula now.

Operation site assessed – healthy skin and no signs of infection.

Pain controlled with PCA, IV paracetamol. Unable to take history as patient drowsy. Bowels opened since surgery.

O/E: Chest – clear Abdo – SNT, BS +ve Calves – SNT, no signs DVT or cellulitis





ECG:

Normal sinus rhythm

Bloods (pre-operative):

FBC: Hb 100(115), WCC 9.7(9.5), neuts
7.1(7.4), plts 380(345)
U&Es: Na+ 138(139), K+ 3.8(3.9), Ur
13.3(11.1), Cr 130(115),
eGFR 34, CrCl: 35 ml/min

LFTs: NAD Bone profile: Adj. Ca 2+ 2.0 Mg2+: 0.78 TFTs - NAD CRP: 78(130)

CK pre-op: 1,005

Post-op pelvic x-ray:



Haemoglobin (Hb):

- \$ 130 180 g/L
- ♀ 115 165 g/L

White cell count (WCC):

- Total: 3.6 11.0 x 10⁹/L
- Neutrophils: 1.8 7.5 x 10⁹/L

Platelet count: 140 - 400 ×10⁹/L

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:

- δ 59-104 μmol/L
- ♀ 45-84 µmol/ 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

GGT:

- \$ <60 U/L
- ♀<40 U/L Albumin: 35-50 g/L

Medication chart



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Post-Operative Patient on the Ward 3 – Examiner marksheet

MARKING RUBRIC	STATION SPECIFIC NOTES	\checkmark
 Gathering of information Reviews available documentation (anaesthetic chart, post-operative instructions, drug prescription/IPAD charts, observation chart including fluid balance) Reviews the blood result and interprets in the context of the patient 	 Gathering of information Respiratory depression and confusion related to delirium post-operatively, as well as inappropriate morphine PCA use. Patient has renal impairment. The PCA should be prescribed as per renal dosing. Alternatively use oxycodone to comply with renal impairment. Always follow WHO ladder Monitor for decline in renal function affecting medication levels and/or effects within the body 	
 Review of analgesia Reviews analgesia and anaesthetic charts Indicates how they would assess the patient to determine cause of N&V Identifies that the likely cause is paralytic ileus Addresses the need to manage this Explains the options available (e.g. IV or IM antiemetics, analgesic drug choice change, refers to ladder) 	Review of analgesiaAssess patient in A-E manner, focus onhaemodynamic and hydration status.Reviews analgesia prescriptions and notes:- Patient has PCA in situ- Notes NO morphine basal infusion- Notes bolus doses of 1mg/hour under patientcontrol- Noted renal dosing boluses NOT utilised- Patient also has paracetamol prescribed onnormal drug chart. Prescribed as NG/IV due topatient being NBM.The patient is acutely unwell with delirium andrespiratory depression. The PCA should bestopped.Naloxone administration should be considered ifpatient hedging towards unconsciousness.Alternative, regular analgesia should be used as perWHO ladder.Close monitoring of renal function should beundertaken.	
Calculations for fluid management over the last 24 hours	Fluid IP: 1120ml Fluid OP: 510ml - Consider insensible losses of 600ml - Total OP = 1110ml	

 Reviews the observation chart and confirms that the patient is hypovolaemic Indicates that they would assess the patient to determine hydration status (thirst, CRT, oedema) Calculates individual fluid inputs (oral and IV) Calculates individual fluid outputs (NGT, drain, urine and INSENSIBLE LOSSES [i.e. 800ml]) Calculates total fluid input, output and overall balance over the past 24 hours 	24-hour balance = +ve 10ml	
Calculation of fluid prescription for the	Body weight = 67 kg	
 next 24 hours Correctly calculates the maintenance volume requirements by body weight (30ml/kg) Correctly calculates the normal maintenance K+, Na+, glucose requirements by weight Takes account of ongoing abnormal losses Takes account of blood results Suggests suitable IV fluid regime for the next 24 hours 	Total daily requirements:Water = 2010ml- Fluid excess of 10 = 2000ml total requirement.Na+ = 67mmolK+ = 67mmolGlucose = 50-100gNote electrolytes normal range, so we can replaceideally 60-80mmol each. Example regime I to meet above requirements: 2L x 4% dextrose / 0.18% sodium chloride (dextrosesaline) + 2* 40 mmol K+ each bagTotal content:62 mmol Na+(2*31), 80mmol K+, 142 mmol Cl- (62mmol plus Potassium chloride =2*40mmol), 80g glucose (2*40)	
	Alternative Example regime II: 1L 5% dextrose + 40 mmol K+ 500ml 5% dextrose + 20 mmol K+ 500ml 0.9% sodium chloride + 20 mmol K+ Total content: 77mmol Na+ (500ml of 0.9%NaCl), 80mmol K+, 157mmol Cl-, 75g glucose (1.5 litre dex). Note: Hartmann's 500ml unavailable in the OSCE.	

Clinical reasoning

- Clear communication
- Explains fully the reasons for prescribing the IV fluids
- Explains the need to increase the analgesia

Global Impression:

- Excellent
- Good
- Pass
- Borderline
- Fail

The electrolyte composition of these crystalloid solutions is summarised in the table below. You must know this information – it will <u>not</u> be provided in the Finals OSCE examination.

	[Na ⁺] (mmol/L)	[K ⁺] (mmol/L)	[Cl ⁻] (mmol/L)	Glucose (g/L)
0.9% sodium chloride	154		154	
4% dextrose / 0.18% sodium chloride (dextrose saline)	31		31	40
5% dextrose				50
Hartmann's solution	131	5	111	