

UNIVERSITY HOSPITAL, GEELONG
FELLOWSHIP WRITTEN EXAMINATION

WEEK 25– TRIAL SHORT ANSWER QUESTIONS Suggested answers

PLEASE LET TOM KNOW OF ANY ERRORS/ OTHER OPTIONS FOR ANSWERS

Please do not simply change this document - it is not the master copy !

Question 1 (18 marks)

- a. Define psychosis. (1 mark)
- **Distortion/ loss of contact with reality**
 - **Without any clouding of consciousness**
- b. List the five (5) DSM IV criteria for the diagnosis of Schizophrenia. (5 marks)
- **Symptoms involving at least 2 of:**
 - **Delusions**
 - **Hallucinations**
 - **Grossly disorganised or catatonic behaviour**
 - **Disorganised speech**
 - **Negative symptoms**
 - **Social/ occupational dysfunction**
 - **Duration > 6 months**
 - **Exclusion of Schizoaffective/ mood disorder**
 - **Exclusion of substance abuse/ medical cause**

You are providing medical assistance at triage on a busy Sunday night. A 34 year old man presents to triage. He appears intoxicated, agitated and has pressure of speech. He requests excision of a lesion on his forehead that has been present for over 20 yrs. During the discussion, he suddenly pulls out a knife and declares that if we don't cut out this thing, he'll do it himself. The triage nurse has requested he hand over the knife and he states "You will have to fight me for it".

- c. Define this situation. (1 mark)
- **Code Black or armed threat**
- d. List five (5) features of his presentation that raise concerns about immediate violence. (5 marks)
- **Agitation- motor**
 - **Agitation- verbal**
 - **intoxication**
 - **Pressure of speech- indicator of Mental Health disorder**
 - **Knife**
 - **Stated threat to use knife**
 - **Attitude to assistance**

The patient is disarmed and requires physical and chemical restraint to allow assessment.

- e. List your preferred initial pharmacological treatment with dose range and route of administration in the case of:
- i. Patient being compliant with medication administration: (3 marks)
- NB: appears intoxicated- doses must be safe*
- **Olanzapine 5- 10 mg orally**
 - **Diazepam 5- 10 mg orally**
- ii. Patient being non- compliant with medication administration: (3 marks)
- NB: appears intoxicated- doses must be safe*
- **Midazolam 5-10mg IM or IV**
 - **Lorazepam 1-2 mg IM or IV**
 - **Haloperidol 5-10mg IM or IV**
 - **Droperidol 5-10mg IM or IV**
 - **Ziprasidone 10-20mg +/- lorazepam 1-2mg IM**

Question 2 (12 marks)

With respect to head injury in the Adult trauma patient:

- a. List four (4) risk factors that would lead you to obtain an urgent CT brain (ie within the first 1 hour). (4 marks)
- NB: factor should relate specifically to indications for CTB in CHI- not relating to other significant injuries requiring urgent CT*
- **GCS < 13 on arrival**
 - **GCS < 15 at 2/24**
 - **Suspected open/ depressed skull #**
 - **Sign of BOS#**
 - **Post traumatic seizure**
 - **Focal neurological deficit**
 - **1 episode of vomiting**
- b. List four (4) risk factors that would lead you to obtain a semi-urgent CT Brain (ie within the first 8 hours). (4 marks)
- **LOC/ Amnesia + Age ≥ 65**
 - **LOC/ Amnesia + Hx of bleeding/ clotting disorders**
 - **LOC/ Amnesia + Dangerous mechanism, (Ped/ cyclist vs car, ejection from MVC, fall > 1m / 5 stairs)**
 - **LOC/ Amnesia + 30 min retrograde amnesia of events immediately before CHI**

With respect to head injury in the Paediatric trauma patient:

- c. List four (4) variations when compared to Adult guidelines, in terms of risk factors for which CT Brain is recommended for the Paediatric patient within the first 1 hour. (4 marks)
- **NAI suspicion**
 - **GCS < 14 or < 1 yr old < 15**
 - **Tense fontanelle**
 - **< 1 yr - > 5 cm bruise/ swelling/ lac**
 - **≥2 of: ≥ 3 vomiting episodes/ LOC > 5 min/ dangerous mechanism/ abnormal drowsiness/ Amnesia > 5min**

You should be familiar with the following: APHIRST, NICE, Canadian CTB, New Orleans, CHALICE, CATCH and PECARN. Dunn has a very good summary of each- the original articles are below. You must achieve expert, evidence based practice in this area.

Click on the image below to view the entire PDF (& print/save if necessary)

See next page for summaries of each

1. APHIRST 2. NICE 3. Canadian 4. New Orleans 5. Comparison 6. CHALICE 7. CATCH 8. PECARN



Table 1. Findings used by 7 clinical decision rules for CT scanning in mild traumatic brain injury.

Clinical Finding	Canadian	NOWFNS	New Orleans	NEXUS-II	NICE	Scandinavian
GCS score	<15 At 2 h	<15	<15	Abnormal alertness, behavior	<15 At 2 h	<15
Amnesia	Retrograde >30 min*	Any	Antegrade	—	Retrograde >30 min	Any
Suspected fracture	Open, depressed, basal	Any	Any injury above clavicles	Any	Open, depressed, basal	Basal, depressed, confirmed
Vomiting	Recurrent ≥65	Any	>60	Recurrent ≥65	Recurrent ≥65	—
Age, y	—	Any	—	Any	Any	Any
Coagulopathy	—	Any	—	Any	Any	Any
Focal deficit	—	Any	—	Any	Any	Any
Seizure	—	History	Any	—	Any	Any
LOC	If GCS=14	Any	—	—	—	Any
Visible trauma	—	Any	Above clavicles	Scalp hematoma	—	Multiple injuries
Headache	—	Any	Severe	—	—	—
Injury mechanism	Dangerous*†	—	—	—	Dangerous†	—
Intoxication	—	Abuse history	Drug, alcohol	—	—	—
Previous neurosurgery	—	Yes	—	—	—	Shunt

NOWFNS, Neurotraumatology Committee of the World Federation of Neurosurgical Societies; NICE, National Institute of Clinical Excellence; —, indicates the item is not considered an indication for CT scanning by author(s) of the rule; LOC, loss of consciousness.

*Used to determine medium risk for the Canadian Rule.

†CT scan only if also loss of consciousness or any amnesia.

*Dangerous injury mechanism—ejected from motor vehicle, pedestrian struck by motor vehicle, fall of >3 feet or 5 steps.

Canadian CT Head Rule

CT head is only required for minor head injury patients with any one of these findings:

High Risk (for Neurological Intervention)

1. GCS score < 15 at 2 hrs after injury
2. Suspected open or depressed skull fracture
3. Any sign of basal skull fracture*
4. Vomiting ≥ 2 episodes
5. Age ≥ 65 years

Medium Risk (for Brain Injury on CT)

6. Amnesia before impact ≥ 30 min
7. Dangerous mechanism** (pedestrian, occupant ejected, fall from elevation)

*Signs of Basal Skull Fracture

• Hemotympanum, "raccoon" eyes, CSF otorrhea/rhinorrhea, Battle's sign

**Dangerous Mechanism

• pedestrian struck by vehicle
• occupant ejected from motor vehicle
• fall from elevation ≥ 3 feet or 5 stairs

Rule Not Applicable to:

• Non-traumatic cases
• GCS < 13
• Age < 16 years
• Comatose or bleeding disorder
• Severe open skull fracture

Stoll M, et al. The Canadian CT Head Rule for Patients with Minor Head Injury. *Lancet* 2001;357:1021-26.

Table 13. New Orleans Criteria

Head CT is required for blunt trauma patients with loss of consciousness, GCS 15, a normal neurological examination*, and any of the following:

- Headache
- Vomiting
- Age over 60 years
- Drug or alcohol intoxication
- Deficits in short-term memory
- Physical evidence of trauma above the clavicles
- Seizure

*Normal cranial nerves and normal strength and sensation in the arms and legs, as determined by a physician on the patient's arrival at the emergency department

NICE

Adults: scan <1 hour if:

- GCS <13 on arrival
- GCS <15 at 2h
- Suspected open/depressed #
- Signs of base of skull #
- Post traumatic seizure
- Focal neurology
- >1 episode of vomiting

NICE CG 176 (2014)

Adults: scan within 8 hours if:

- "Some" LOC/amnesia and one of:
- Age 65+
- History of bleeding/clotting disorder
- Dangerous mechanism*
- >30mins retrograde amnesia (for events before the head injury)

*pedestrian/cyclist hit by car, ejection from car or fall >1m (5 stairs)

NICE CG 176 (2014)

Paeds:

NICE

Children: scan <1 hour if:

- Suspicion of NAI
- Post traumatic seizure (no h/o epilepsy)
- GCS <14 on arrival*
- GCS <15 at 2h
- Signs of base of skull #
- Focal neurology
- Suspected open/depressed # or tense fontanelle
- Swelling/bruise/laceration >5cm**

*<15 if <1yr **<1yr

NICE CG 176 (2014)

Children: scan <1 hour if MORE THAN ONE of:

- Witnessed LOC >5mins
- Abnormal drowsiness
- 3+ discrete vomiting episodes
- Dangerous mechanism*
- Amnesia >5mins**

*high speed RTC (pedestrian, cyclist, vehicle occupant, fall >3m, high speed injury from projectile or other object)
**anterograde or retrograde

NICE CG 176 (2014)

CHALICE

The children's head injury algorithm for the prediction of important clinical events rule

A computed tomography scan is required if any of the following criteria are present.

- **History**
 - Witnessed loss of consciousness of >5 min duration
 - History of amnesia (either antegrade or retrograde) of >5 min duration
 - Abnormal drowsiness (defined as drowsiness in excess of that expected by the examining doctor)
 - ≥3 vomits after head injury (a vomit is defined as a single discrete episode of vomiting)
 - Suspicion of non-accidental injury (NAI), defined as any suspicion of NAI by the examining doctor
 - Seizure after head injury in a patient who has no history of epilepsy
- **Examination**
 - Glasgow Coma Score (GCS) <14, or GCS <15 if <1 year old
 - Suspicion of penetrating or depressed skull injury or tense fontanelle
 - Signs of a basal skull fracture (defined as evidence of blood or cerebrospinal fluid from ear or nose, panda eyes, Battle's sign, haemotympanum, facial crepitus or serious facial injury)
 - Positive focal neurology (defined as any focal neurology, including motor, sensory, coordination or reflex abnormality)
 - Presence of bruise, swelling or laceration >5 cm if <1 year old
- **Mechanism**
 - High-speed road traffic accident either as pedestrian, cyclist or occupant (defined as accident with speed >40 m/h)
 - Fall of >3 m in height
 - High-speed injury from a projectile or an object

If none of the above variables are present, the patient is at low risk of intracranial pathology.

CATCH

Box 1: Canadian Assessment of Tomography for Childhood Head injury: the CATCH rule

CT of the head is required only for children with minor head injury* and any one of the following findings:

High risk (need for neurologic intervention)

1. Glasgow Coma Scale score < 15 at two hours after injury
2. Suspected open or depressed skull fracture
3. History of worsening headache
4. Irritability on examination

Medium risk (brain injury on CT scan)

5. Any sign of basal skull fracture (e.g., hemotympanum, "raccoon" eyes, otorrhea or rhinorrhea of the cerebrospinal fluid, Battle's sign)
6. Large, boggy hematoma of the scalp
7. Dangerous mechanism of injury (e.g., motor vehicle crash, fall from elevation ≥ 3 ft [≥ 91 cm] or 5 stairs, fall from bicycle with no helmet)

PECARN

Table 1 Comparison of predictor variables [11,15-17]

CATCH	CHALICE	PECARN <2 years	PECARN ≥2 years
Mechanism of injury			
Dangerous mechanism of injury (eg MVC, fall from elevation ≥3 ft [20.91 m] or 5 stairs, fall from bicycle with no helmet).	High speed RTA as pedestrian, cyclist, occupant (>40 miles/h or >64 km/h). Fall of >3 m in height. High speed injury from projectile or object.	Severe mechanism of injury (MVC with patient ejection, death of another passenger or rollover; pedestrian/bicyclist without helmet struck by motorized vehicle falls >40 m; head struck by high impact object).	Severe mechanism of injury (MVC with patient ejection, death of another passenger or rollover; pedestrian/bicyclist without helmet struck by motorized vehicle falls >15 m; head struck by high impact object).
History			
Witnessed LOC >5 min. Amnesia (antegrade or retrograde) >5 min.	Witnessed LOC >5 min. Amnesia (antegrade or retrograde) >5 min.	LOC ≥5 seconds.	Any/suspected LOC.
23 vomits after head injury (discrete episodes).	23 vomits after head injury (discrete episodes).	Altered mental status.	Altered mental status.
Suspicion of NAI.	Suspicion of NAI.	Not acting normally per parent.	History of vomiting.
Seizure in patient with no history of epilepsy.			
History of worsening headache.			Severe headache.
Examination			
GCS <15, 2 hr after injury.	GCS <14, or <15 if <1 yr.	GCS <15	GCS <15
Irritability on examination.	Abnormal drowsiness (in excess of that expected by examining doctor).	Other signs of altered mental status (agitation, somnolence, repetitive questioning, slow response to verbal communication).	Other signs of altered mental status (agitation, somnolence, repetitive questioning, slow response to verbal communication).
Suspected open or depressed skull fracture.	Suspicion of penetrating or depressed skull injury, or tense fontanelle.	Palpable or unclear skull fracture.	Clinical signs of basilar skull fracture.
Any sign of basal skull fracture (eg haemotympanum, "raccoon" eyes, otorrhea/rhinorrhea of CSF, Battle's sign).	Signs of basal skull fracture.		
Large boggy hematoma of the scalp.	Presence of bruise, swelling or laceration >5 cm if <1 yr old.	Occipital, parietal or temporal scalp hematoma.	

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In each of the three clinical decision rules (CDRs) the absence of all of the above predictor variables indicates that cranial computed tomography is unnecessary.

Note: while the predictor variables are reproduced verbatim, the order in which the variables from each CDR are presented has been altered to

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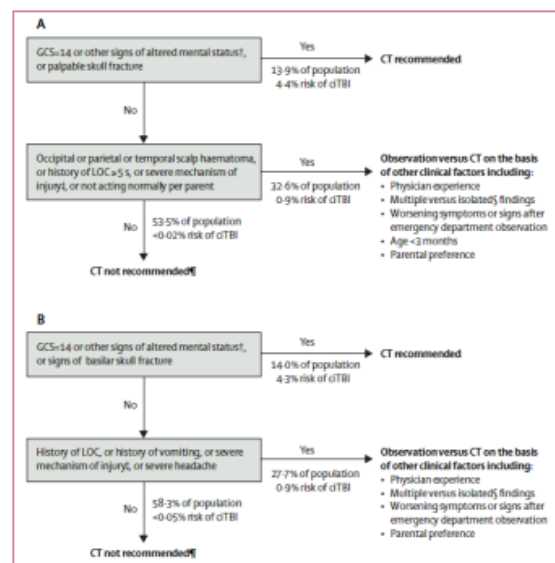


Figure 3: Suggested CT algorithm for children younger than 2 years (A) and for those aged 2 years and older (B) with GCS scores of 14-15 after head trauma*

GCS—Glasgow Coma Scale; cTBI—clinically important traumatic brain injury; LOC—loss of consciousness. *Data are from the combined derivation and validation populations. †Other signs of altered mental status: agitation, somnolence, repetitive questioning, or slow response to verbal communication. ‡Severe mechanism of injury: motor vehicle crash with patient ejection, death of another passenger, or rollover; pedestrian or bicyclist without helmet struck by a motorized vehicle; falls of more than 0.9 m (3 feet) (or more than 1.5 m [5 feet] for panel B); or head struck by a high-impact object. §Patients with certain isolated findings (ie, with no other findings suggestive of traumatic brain injury), such as isolated LOC, isolated headache, isolated vomiting, and certain types of isolated scalp hematomas in infants older than 3 months, have a risk of cTBI substantially lower than 1%. ¶Risk of cTBI exceedingly low, generally lower than risk of CT-induced malignancies. Therefore, CT scans are not indicated for most patients in this group.

Question 3 (12 marks)

- a. What is the Perichondritis of the ear? (1 mark)
- **Infection of the auricular soft tissue overlying the cartilage**
- b. List three (3) causes of perichondritis of the ear. (3 marks)
- **Trauma**
 - **Lacerations**
 - **Burns**
 - **Ear piercing**
 - **Surgical wound**
- c. Other than analgesia, list (3) key components to the management of perichondritis of the ear. (4 marks)
- **Hot soaks**
 - **Oral Abs- Dunns says Fluclox , generally need to cover Pseudomonas- Cipro**
 - **Review in 24-48/24**
- d. What is Chondritis of the ear? (1 mark)
- **Infection involving the auricular cartilage**
- e. What clinical feature differentiates perichondritis of the ear from chondritis of the ear? (1 mark)
- **Deformity of the external ear (auricle)**
- f. List three (3) differences in the management of Chondritis of the ear, as compared to Perichondritis of the ear? (3 marks)
- **IV abs required- fluclox vs tazocin**
 - **Admission required**
 - **Surgical drainage**

This resource is produced for the use of University Hospital, Geelong Emergency staff for preparation for the Emergency Medicine Fellowship written exam. All care has been taken to ensure accurate and up to date content. Please contact me with any suggestions, concerns or questions.

Dr Tom Reade (Staff Specialist, University Hospital, Geelong Emergency Department)

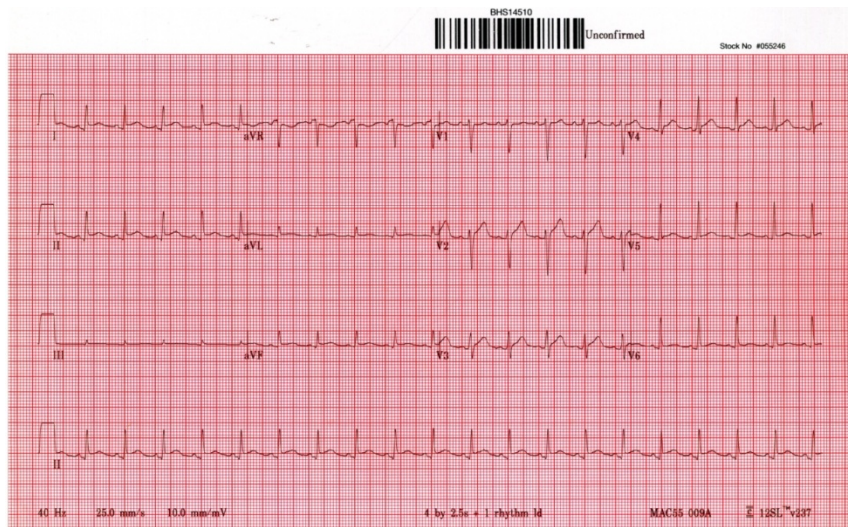
Email: tomre@barwonhealth.org.au

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Question 4 (12 marks)

A 46 year old woman presents with chest pain.

Her vital signs are: BP 130/60 mmHg RR 22 /min Temperature 36.5°C GCS 15



- What is a unifying diagnosis for this patient, based on this ECG? (1 mark)
 - Pericarditis**
- List three (3) abnormalities shown in this ECG that support this diagnosis. (3 marks)
 - Sinus tachycardia- rate 110**
 - PR depression**
 - Widespread STE**
 - (STD aVr)**
- List four (4) key investigations that you would perform. State one (1) justification for each choice. (8 marks)

Investigation	Justification
ECHO	<ul style="list-style-type: none"> Demonstrate amount of pericardial fluid Demonstrate thickened pericardium Assess for evidence of cardiac tamponade (Localised wall motion abnormalities)
FBE	<ul style="list-style-type: none"> Lymphocytosis suggests viral cause WCC <4 > 15 suggests bacterial cause
U+E	<ul style="list-style-type: none"> Uraemia as a cause
Troponin	<ul style="list-style-type: none"> Dx Pancarditis Dx Myocarditis
ESR or CRP	<ul style="list-style-type: none"> Raised levels support inflammatory process Levels can be used to follow disease progress

Question 5 (12 marks)

A 25 year old woman presents following a sting from an unknown animal whilst camping.

- a. List three (3) clinically relevant differences between wasp stings and bee stings. (6 marks)

Feature of sting	Wasp	Bee
Frequency of bites	Much less common	More common
Frequency of anaphylaxis	Much less common	More common
Number	Multiple	1 sting
Serum sickness	N	Y
Massive envenomation:		
Number of stings	> 50 stings	> 20 stings
Haemoglobinuria	N	Y
Rhabdomyolysis	N	Y
Multiple organ failure	N	Y
Haemolysis	Y	N
Myocarditis	Y	N
Hepatitis	Y	N
Death (both due to anaphylaxis)	Much less common	More common

- b. List three (3) clinical features of a bull ant bite. (3 marks)

- **Repeated stings**
- **Local wheal & flare**
- **Anaphylaxis**
- **Death - associated with- prior stings & ACE inhibitor use**

- c. List three (3) clinical features of an Australian scorpion sting. (3 marks)

- **Night time**
- **Uncommon**
- **Minor local effects:**
 - **pain localised, several hrs**
 - **inflammation**
 - **oedema**
 - **paraesthesia**
 - **hyperalgesia**
 - **numbness/ tingling several days**
- **Systemic effects uncommon**
 - **nausea, vomiting, malaise, tachycardia**
- **Not life threatening**

Question 6 (12 marks) (same patient as question 5)

- a. What is the clinical definition of anaphylaxis? (1 mark)

3 components:

- **severe/ life threatening**
- **generalised/ systemic**
- **hypersensitivity/ allergic reaction**

- b. In general, list two (2) indications for a patient to use their own EpiPen. (2 marks)

- **Cutaneous symptoms**
+
- **Sign of another system involvement:**
 - **dizziness/ faintness**
 - **SOB**
 - **chest tightness**
 - **oral swelling/ lump**
 - **voice change**
 - **nausea/ vomit**

- c. Other than the indications for use, list four (4) instructions that you would give a patient with respect to the technique of EpiPen use. (4 marks)

- **How to open**
- **Identify correct end for application**
- **Appropriate site (lateral thigh is recommended)**
- **Force required**
- **Duration of holding in (10 sec)**
- **Call 000 ASAP after EPIPEN use**

The patient experiences anaphylaxis. She has IV access. Adrenaline is given in appropriate doses. She fails to respond to maximum adrenaline therapy.

- d. List five (5) additional medications that you could initiate in this situation. (5 marks)

- **Steroids** (*although of little benefit acutely, use early as duration of anaphylaxis cannot be predicted*)
- **Salbutamol**
- **H1 antagonists**
- **H2 antagonists**
- **Glucagon** (*if pt taking BBLOCKERS*)
- **MgSO₄ IV** (*for refractory bronchospasm*)
- **Ketamine** (*induction agent may improve bronchospasm*)

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Question 7 (12 marks)

During your routine pathology result checking you notice the following result of a patient seen by another doctor in your emergency department two days ago.

The patient records show:

35 year old woman, 15 weeks pregnant with left flank pain and dysuria. No allergies.

Rx trimethoprim. F/U prn.

MICROSCOPY

Leucocytes	> 1000	$\times 10^6/L$ ($< 2 \times 10^6/L$)
Red Blood Cells	220	$\times 10^6/L$ ($< 13 \times 10^6/L$)
Squamous Epithelial Cells	+	

STANDARD BACTERIAL CULTURE

1. Escherichia coli $> 10^9$ cfu/L

SENSITIVITIES:

Ampicillin	S
Augmentin	S
Cefotaxime	S
Cephalothin	S
Cotrimoxazole	S
Gentamicin	S
Nitrofurantoin	S
Trimethoprim	R

a. State four (4) clinical problems with this patient. (4 marks)

- **Clinical features of pyelonephritis + pregnancy = admission and IV Abs in most cases**
- **CI to chosen Abs given (category C) → adverse event**
- **Organism cultured not sensitive → needs Abs change and urgent review**
- **Inappropriate follow up- Should have plan for MSU follow up (not "prn")**
- **Pregnancy with delayed Rx incurs ↑ risk of miscarriage**
- **E Coli associated with significant complications (*Gram -ve sepsis is bad*)**

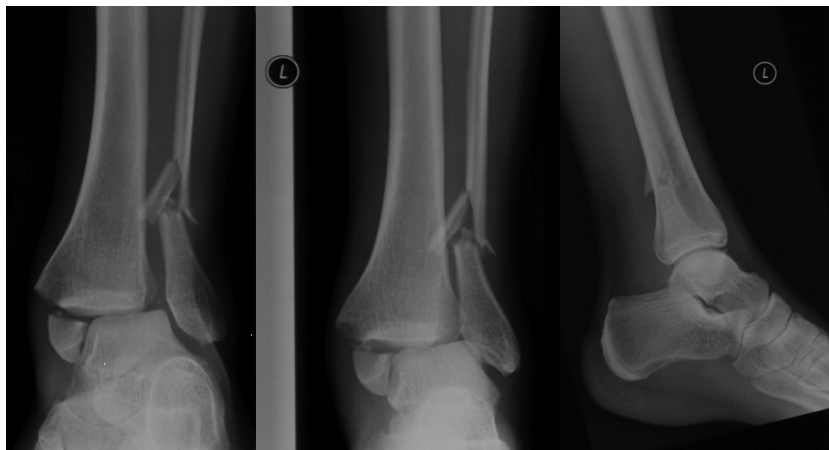
b. List four (4) key steps that you would undertake in this case. State one (1) justification for each step. (8 marks)

NB: this is one time where I would group the "medical care" as one step, seeing there are numerous other steps to cover- ie. Not: 1. Recall pt 2. IV abs 3. IV fluids 4. Admit

Step	Justification
Contact patient	<ul style="list-style-type: none"> • Return ASAP for RV and appropriate Mx
Open disclosure	<ul style="list-style-type: none"> • Best practice • Optimise pt understanding of situation • Reduce future legal process relating to presentation
Clinical reassessment with view to urgent IV abs and admission	<ul style="list-style-type: none"> • Rapid medical admission to delay further adverse effects
Obstetric review	<ul style="list-style-type: none"> • With respect to possibly teratogenic antibiotic- close specialist follow up required
QI- Root cause analysis	<ul style="list-style-type: none"> • ↓ similar future events
Debrief with Dr involved	<ul style="list-style-type: none"> • Identify knowledge gaps/ educate/ support/ supervise
Documentation	<ul style="list-style-type: none"> • Optimise ongoing care for patient/ Legal implications to case

Question 8 (12 marks)

A 34 year old man presents left ankle pain following a fall at a BBQ.



a. State four (4) abnormal findings in these xrays. (4 marks)

- **Comminuted distal fibula fracture (Weber C)**
- **Disruption of the distal tib/fib syndesmosis**
- **Medial malleolar #**
- **Later subluxation of the talus**

He had been drinking beer for several hours prior. He has a Past History of chronic lower back pain. He takes buprenorphine patches for chronic pain. He takes no other regular medications. You have IV access. He has an isolated ankle injury. His PBT is 0.25.

b. State four (4) issues in your approach to his analgesic regime for the first 1 hour. (4 marks)

NB: Not PCA in 1st hour

- **PBT 0.25- Care with haemodynamics & reduction in GCS**
- **As a result of Bup. Patches→ Will be relatively resistant to IV narcotics/ will require high dose morphine**
- **Close/careful observation required post IV analgesia**
- **Strong analgesia will be required- IV 2.5 mg bolus Morphine/ Ketamine IV boluses**
- **Employ non medicinal techniques to ↓ analgesic requirements ASAP- splint/ reduce/ elevate**

It becomes apparent that the patient is a famous footballer.

c. State four (4) techniques that you could employ to maintain the patients' privacy. (4 marks)

- **Alias/ de-identify on computer system**
- **Use cubicle in discrete area**
- **Keep curtain/ door closed**
- **Inform direct RN staff and RN in charge and direct to minimise discussion/ not discuss presence widely at work and when left from work**
- **Inform media liaison officer**
- **Expediate Rx without compromising care to other pt's**
- **Staff training in ethics and pt privacy**

Question 9 (18 marks)

A 3 year-old boy is brought to your department by his mother with abdominal pain and vomiting. The mother is concerned that the child may have ingested some of her Iron (*Ferrogradumet*) tablets. She is sure that there are more than 10 tablets missing from the bottle. Each *Ferrogradumet* tablet contains 105mg of elemental Iron.

- a. List three (3) clinical features that you would seek to assess the risk of toxicity. (3 marks)
- **Weight**
 - 1000mg minimum ingestion assumed
 - likely weight ~ 15 kg → 65mg/kg, if 10 kg → 100mg/kg if 20kg → 50mg/kg
 - < 20 mg/kg: asymptomatic
 - 20-60 mg/kg: GIT
 - 60- 120 mg/kg: systemic
 - 120 mg/kg: potentially lethal
 - **Symptoms of GIT phase (onset 30min- 6/24)**
 - vomiting (vomiting is the most sensitive marker of serious toxicity)
 - diarrhoea
 - abdo pain
 - H+M
 - **Indicators of shock**
- b. What is the role of Serum Iron levels in the treatment of this patient? State (3) points in your answer. (3 marks)
- **Confirm ingestion**
 - **Peak at 4-6/24**
 - **No clear correlation with level and toxicity**
 - **Peak levels > 90 micromol/L thought to be predictive of systemic toxicity**
- c. List four (4) key investigations for this child that will assist with an estimation of severity of toxicity. (4 marks)
- NB: "List" only required- no justification or explanation requested therefore none required*
- **ABG** (AG Metabolic acidosis in severe, metabolic alkalosis from upper GIT losses)
 - **AXR** (Tablets in stomach → indication for WBI)
 - **Glucose** (Per Dunn: > 8 correlates well with toxic serum levels- Tox HB says does not correlate with toxicity)
 - **WCC** (Per Dunn: > 15 correlates with systemic toxicity- Tox HB says does not correlate with toxicity)
 - **Erect CXR** (if abdominal perforation suspected)
 - **Clotting** (Dunn: ↑ INR/ ↑ APTT, Tox HB- no mention)
 - **LFT** (Dunn: hepatotoxicity, Tox HB- no mention)
- d. What decontamination may be of benefit in this ingestion? (1 mark)
- **WBI**
- e. List three (3) indication/s for this decontamination. (3 marks)
- **Symptomatic**
 - **> 60 mg/kg (Dunn says > 20 mg/kg)**
 - **AXR shows tablets**
- f. What specific antidote that may be of benefit in this ingestion? (1 mark)
- **Desferrioxamine**
- g. List three (3) indications for the use of antidote in this patient. (3 marks)
- **Systemic toxicity**
 - Altered conscious state
 - ↓ BP
 - ↑ PR
 - ↑ RR
 - **Serum > 90 micromol/l at 4-6/24 post**