"List" = 1-3 words
"State"= short statement/ phrase/ clause

UNIVERSITY HOSPITAL, GEELONG
FELLOWSHIP WRITTEN EXAMINATION

WEEK 22– 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 10 month old boy is brought to the Emergency Department by his mother via his GP. The child has been unwell for 48 hours with a fever. The GP has not been able to identify a source of fever.
On examination you note: Grizzly child HR 135 bpm RR 22 per min Temperature 38.9°C. No obvious focus of infection.
A nurse has collected a bag urine specimen for this patient.

a. State three (3) cons for the role of a bag urine specimen in this patient. (3 marks)
   - **Urinalysis- Leucocytosis- low sensitivity and specificity (overall low accuracy):**
     - **High false +ve**
     - **High false -ve- (low sensitivity) & high prevalence in this age group means cannot be used as a screening exclusion test**
     - **False +ve- may occur in febrile infants without UTI ∴ cannot treat on the basis of +ve result**
     - **Need to wait for child to PU**
   - **Culture: Contamination- False +ve culture**

b. State three (3) ways in which a white cell count result might influence your management in this case. (3 marks)
   NB: Normal is unhelpful and does not rule out bacteraemia
   - **WCC correlates with bacteraemia**
   - **WCC < 4000 : may indicate severe illness / underlying disease**
   - **WCC > 15000 sensitive and specific for bacteraemia/ WCC > 20, 000 - highly specific for bacteraemia**
   - **Bands > 10% increase the likelihood of serious infection**
   - **Lymphocytosis/ lymhocytopaenia suggests viral**

c. State three (3) pros and three (3) cons for the role of blood cultures in this child. (6 marks)
   Pros:
   - **Gold standard for septicaemia/bacteraemia**
   - **Allows directed Ab therapy**
   - **May be the only confirmatory diagnostic test**
   - **Age - increased risk of "occult" bacteraemia** *(though rare if immunised)*

   Cons:
   - **Invasive/ painful**
   - **Delayed result- does not influence ED empiric Rx**
   - **Low sensitivity: False -ve if insufficient sample**
   - **Low Specificity: False +ve may occur (skin organisms)- results in unnecessary Rx**

Following your complete assessment, the child remains with no focus of infection identified.

d. List six (6) criteria that must be met for you to safely discharge this child. (6 marks)
   - **Must appear well**
   - **Obs within acceptable limits- no oxygen requirement**
   - **No significant comorbidity eg prematurity, congenital disease**
   - **Must be fully immunised**
   - **Hydration satisfactory and intake adequate**
   - **Parental/ carers supports are appropriate- must be coping and have access to follow up**
   - **Follow up plan established/ accepted/ understood- review < 24/24 by LMO/ED**
   - **(Fever controlled)**

Investigations:

Age	Description	Management
<1 month corrected age (or < 3.5 kg in an older child)	Rectal temperature > 38oC	• Discuss with registrar/consultant • Full sepsis work-up: FBE/film, blood culture, urine culture (SPA), LP ± CXR • Admit for empirical antibiotics

1-3 months corrected age	Rectal temperature > 38oC	• Discuss with registrar/consultant
		• Full sepsis workup: FBE/film, blood culture, urine culture (SPA) ± CXR (only if respiratory symptoms or signs) ± LP
		• Discharge home with review within 12 hours if the child is:
		  • Previously healthy
		  • Looks well
		  • WCC 5,000 - 15,000
		  • Urine microscopy clear
		  • CXR (if taken) clear
		  • CSF (if taken) negative
		• If the child is unwell or above criteria are not all satisfied, admit to hospital for observation +/- empiric i.v. antibiotics

Age	Description	Management	
> 3 months	Temperature >38oC and clear focus of infection	child looks well	• Treat as clinically indicated
		child looks unwell	• Discuss with registrar/consultant • Investigate as appropriate for clinical focus • Admit for treatment
> 3 months	Temperature >38oC and no clear focus of infection	child looks well	• If < 12 months boys or <2 yrs girls -urine, can do SPA up to 12 months of age • If > 12 months - Consider Urine m,c,s • Discharge home on symptomatic treatment • Arrange medical review within 24 hr, or sooner if deteriorates
		child looks miserable but is still relatively alert, interactive and responsive	• If < 12 months boys or <2 yrs girls -urine, can do SPA up to 12 months of age • If > 12 months - Consider Urine m,c,s • Discuss with registrar or consultant prior to any investigations
		child looks unwell	• Full sepsis workup: FBE, blood culture, urine culture ± CXR (if respiratory symptoms or signs) ± LP • Admit to hospital for observation +/- i.v. antibiotics

- LP should not be performed in a child with impaired conscious state, focal neurological signs or who is haemodynamically unstable (see Lumbar puncture guideline). In this circumstance, treatment for meningitis/encephalitis can be commenced and an LP can be performed when the patient is stable and there are no other contraindications present.
- Bag urine specimens should never be sent for culture. If the bag specimen is positive for nitrites &/or leukocytes on reagent strip testing, then an SPA or catheter urine should be performed and the sample sent for culture (see UTI Guideline). Note children with negative urine strip testing can still have UTI, so if UTI is suspected take SPA urine sample regardless of strip test result

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

EMA Emergency Medicine Australasia

Emergency Medicine Australasia (2017) 29, 132–135 doi: 10.1111/1742-6723.12745

DON'T FORGET THE BUBBLES

Suspecting and spotting paediatric sepsis

Rebecca JAMES[1,2] and Arjun RAO[1]

[1]Emergency Department, Sydney Children's Hospital, Sydney, New South Wales, Australia, and [2]University of New South Wales, Sydney, New South Wales, Australia

The febrile child is one of the most common presentations to the paediatric ED, accounting for 20% of visits.[1] Most cases are benign, self-limiting viral infections. A small proportion will have a serious bacterial infection (SBI) or evolving sepsis. The consequences of failing to recognise and treat paediatric sepsis in a timely manner are devastating and often fatal.[2] For emergency physicians, missing paediatric sepsis is a commonly held fear.[3] There are often minimal clinical signs to herald a serious infection, while bedside tests are not without limitations. In the post-vaccination era, the prevalence of occult bacteraemia and consequent sepsis in the developed world is remarkably low, with reported rates <1%.[4] In our low-prevalence setting, paediatric sepsis therefore represents a relatively rare syndrome with non-specific clinical signs, no perfect diagnostic test but fatal consequences if missed.

Defining sepsis

Definitions vary. Adult sepsis has traditionally been defined using the systemic inflammatory response syndrome criteria but a recent taskforce has challenged this approach, recognising sepsis as a poorly understood process, unable to be defined by a clear set of clinical criteria.[5] The new guidelines define it as life-threatening organ dysfunction caused by a dysregulated host response to infection incorporating the sequential organ failure assessment score.[6] To compound the challenges of definition, there has been increasing recognition of the need to define paediatric sepsis separately. According to an international consensus conference, paediatric sepsis specifically requires either abnormal temperature (>38.5°C or <36°C) or leucocyte abnormalities (or >10% immature neutrophils).[7]

Challenges of a low-prevalence setting

On a global scale, sepsis remains the leading cause of childhood mortality, accounting for 80% of lost lives per year in childhood.[8] The Global Paediatric Sepsis Initiative (http://www.wfpiccs.org/sepsis) aims to address this global public health crisis.[9–11] In our resource-rich setting, the prevalence of paediatric sepsis and occult bacteraemia is extremely low. In the pre-vaccine era, 10% of children with fever without a source were found to have occult bacteraemia.[12] Following the introduction of haemophilus influenza type B and pneumococcal conjugate vaccine-7 vaccinations, rates of occult bacteraemia have declined to less than 1%.[13–16] Recent epidemiological US data on trends in paediatric sepsis have shown that sepsis in neonates has increased, presumably due to increased survival of premature neonates.[17] Overall sepsis-related mortality has decreased.[18]

While the prevalence of occult bacteraemia and sepsis is low, SBI is relatively common, the majority of which is either pneumonia or urinary tract infections (UTIs). In a large prospective cohort study performed at the Children's Hospital Westmead comprising over 15 000 children, Craig *et al.*[19] found the prevalence of pneumonia and UTIs were 3.4% each. Cases of osteomyelitis, septic arthritis and meningitis were rare, accounting for 12, eight and six cases, respectively.[19]

It is broadly acknowledged that infants under 3 months represent a uniquely high-risk cohort. The risk of neonatal sepsis remains high due to the immaturity of the immune system, with prevalence of SBI up to 10%.[20] The approach to the febrile neonate is relatively standardised, although there is an increasing trend towards less aggressive management of the 1–3 month age group. The more interesting dilemma applies to children in the 3 month to 3 year age group.

Recognition of sepsis

Recognition of sepsis is difficult for clinicians, resulting in a risk of undertreatment. For children aged between 3 months and 3 years, the exceptionally low prevalence of SBI and sepsis compounds the difficulties of diagnosis. Craig *et al.*[19] found that physicians tend to underestimate the likelihood of SBI in young children with fever. They also found that antibiotics were prescribed for only 68% of children with SBI, demonstrating a tendency to undertreat.

Interestingly, there were no adverse health outcomes associated with the decision not to treat with antibiotics, with one-third of the children with SBI recovering spontaneously within the follow-up period. The authors explain this result by either a misdiagnosis of SBI initially, or that the patients' immune response sufficiently cleared the bacteria.

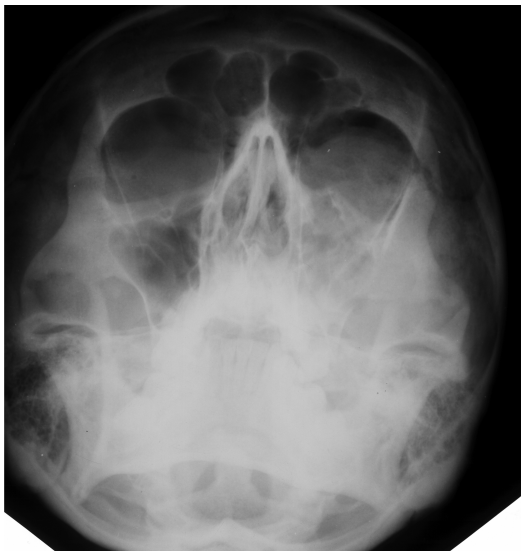
Correspondence: Dr Rebecca James, Emergency Department, Sydney Children's Hospital, High Street, Randwick, NSW 2031, Australia. Email: contactrebeccajames@gmail.com

Rebecca James, MBBS (Hons), BA (Adv), DCH, Paediatric Registrar, Conjoint Associate Lecturer; Arjun Rao, MBBS, MApplSci, FRACP, Paediatric Emergency Physician, Chair of Paediatric Physician State Training Council.

Question 2 (10 marks)

A 25 year old man presents to your emergency department following a motor car accident.

His GCS is 15. After examination he appears to have isolated injuries to his head.



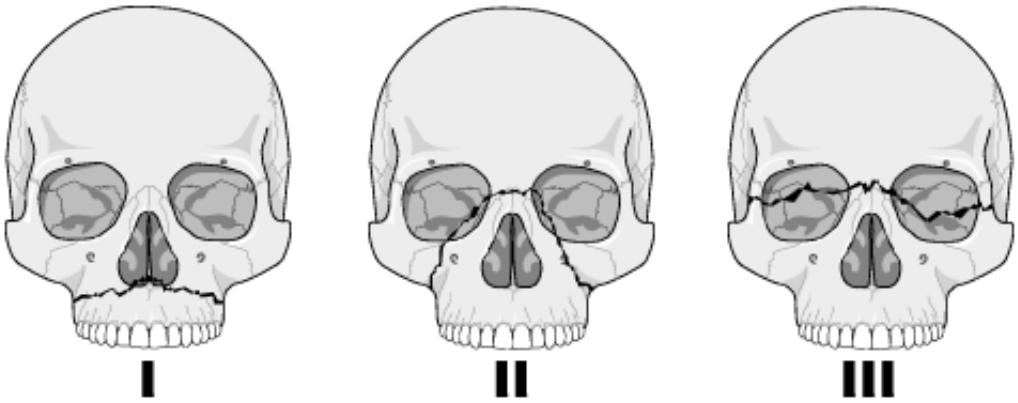
a. State the abnormal findings shown in this x-ray. (4 marks)

- **# L fronto zygomatic suture**
- **# L orbital floor**
- **# L lateral wall maxillary sinus**
- **L Maxillary sinus Opacification**
- **Nasal septum deviation to right**

b. List two (2) indications for lateral canthotomy for this patient. (2 marks)

- **Visual loss**
- **Afferent pupilliary defect**
- **Proptosis**
- **Hard globe on palpation**
- **IOP > 40 mmHg**

c. Define the following terms: (6 marks)



Le Fort type 1

- **horizontal maxillary fracture, separating the teeth from the upper face**
- **fracture line passes through the alveolar ridge, lateral nose and inferior wall of maxillary sinus**

Le Fort type 2

- **pyramidal fracture, with the teeth at the pyramid base, and nasofrontal suture at its apex**
- **fracture arch passes through posterior alveolar ridge, lateral walls of maxillary sinuses, inferior orbital rim and nasal bones**

Le Fort type 3

- **craniofacial disjunction**
- **fracture line passes through nasofrontal suture, maxillo-frontal suture, orbital wall and zygomatic arch**

Question 3 (12 marks)

You have been asked to set up a local research trial investigating the role of the effect of cooling as a neuro-protective strategy in post VF patients in the ED.
The aim of your study is to assess the neuro-protective effects of cooling via rapid IV infusion of 2L of cold Hartmans on post-VF patients in the ED.

a. List six (6) key factors in the scientific design of this study. (6 marks)

Horrible Q! Reason: There is a feeling amongst some FACEMs that many trainees are passing their research component of the process by performing literature reviews or case studies and not actually participating in a research trial. Therefore such a test of knowledge of how to set up a research project is possible in SAQ or SCE form.

- **Define aims**
- **Define study type: RCT most useful**
- **Define control group options:**
  - **None**
  - **Historical**
  - **Norm temp fluid**
- **Determine number needed- sample size/power calculation to define a difference**
- **Blinding of operators not possible**
- **Multi-centre will be probably required for numbers**
- **Collaboration with existing researcher's esp. S.Bernard.**
- **Define outcome measures**
- **Period of study and follow up**

b. List six (6) key steps required to implement this study in your department.(6 marks)

- **Gather personnel (internal and external)**
  - **involve other units: ICU, cardiology**
- **Finance approval/ research fund**
- **Equipment - Fluids, fridge, etc**
- **Ethics and approval: Mandatory. PASS/FAIL Potential difficulty, esp. with lack of pt consent**
- **Data collection- who / where**
- **Data analysis- who**
- **Staff participation, education and compliance**

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


EMA Emergency Medicine Australasia

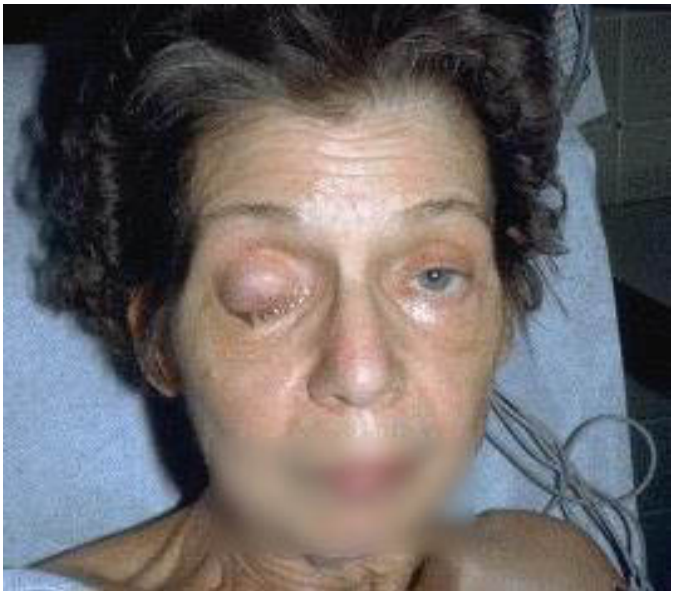
EDUCATION AND TRAINING

Barriers to conducting research: A survey of trainees in emergency medicine

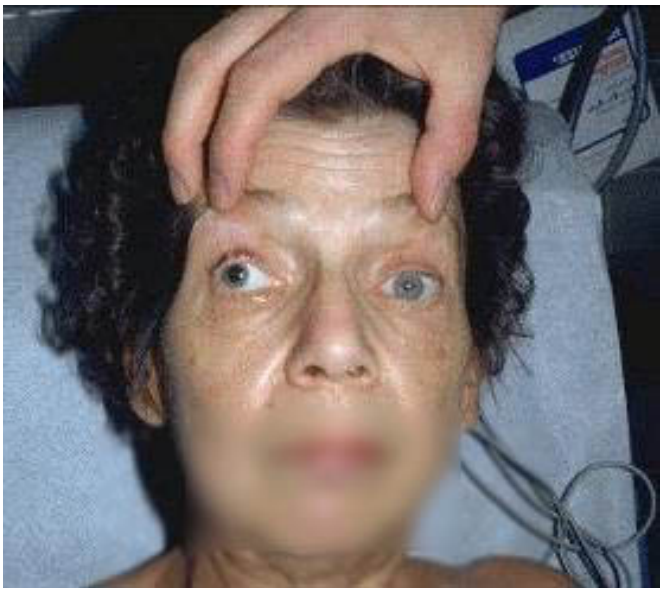
Question 4 (10 marks)

A 75 year old lady presents to your emergency department with headache and blurriness of vision.

Picture 1



Picture 2



a. State one (1) abnormality shown in photo 1. (1 mark)
   - **Complete ptosis right eyelid**

b. State two (2) abnormalities shown in photo 2. (2 marks)
   - **right gaze palsy- right eye deviated laterally (& ? upwards/ downwards difficult to be sure)**
   - **Dilated right pupil**

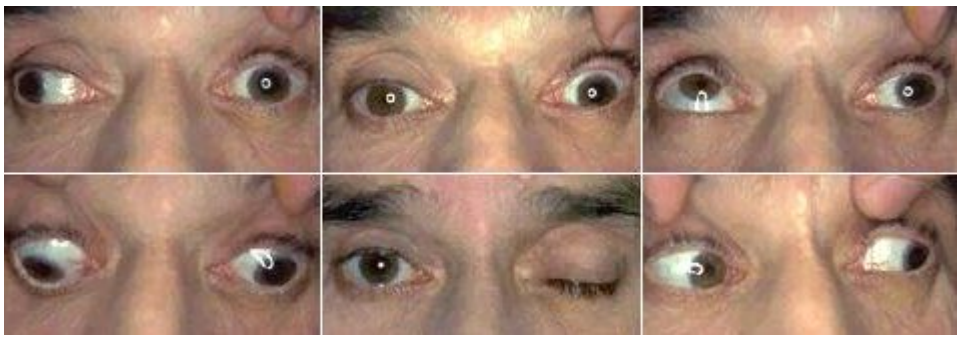
c. List seven (7) underlying causes for this condition. (7 marks)
   - **Aneurysm of posterior communicating artery +/- SAH**
   - **Temporal arteritis**
   - **Midbrain tumour**
   - **Cavernous sinus tumour**
   - **Chronic meningitis**
   - **Stroke**
   - **Base of skull #**
   - **Orbital SOL**
   - **Snake envenomation**

Other possibilities are much less likely given dilated pupil and probably would not get a mark
   - *Demyelination*
   - *Diabetes- mononeuritis (unlikely as pupil is usually spared)*

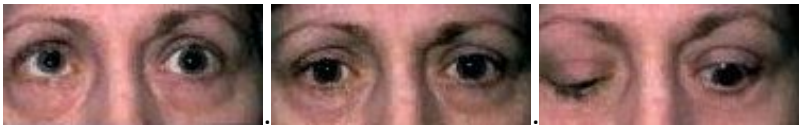
- Oculomotor palsy can arise as a result of a number of different conditions. Non traumatic pupil-sparing oculomotor nerve palsies are often referred to as a 'medical third' with those affecting the pupil being known as a 'surgical third' and therefore much more concerning for a SOL.
- Oculomotor palsy can be of acute onset over hours with symptoms of headache when associated with diabetes Mellitus. Diabetic neuropathy of the oculomotor nerve in a majority of cases does not affect the pupil. The sparing of the pupil is thought to be associated with the microfasciculation of the edge fibers which control the pupillomotor fibers, which control the pupil.

Great link for eye disorders:

http://www.mrcophth.com/commonshortcases/commonshortcasesindex1.html



A patient with left third nerve palsy



A patient with a left aberrant third nerve regeneration.
Note left upper lid elevation on downgaze.

Third nerve palsy has been mentioned in ptosis (refer to ptosis section for questions). Here we will look at the features of ocular motility in third nerve palsy.

In complete third nerve palsy, the patient will have complete ptosis. The eye appears as down and out when the lid is elevated. In isolated third nerve palsy, the functions of the fourth and sixth nerves can be demonstrated by normal intortion and abduction respectively. Note: intortion can be seen by getting the patient to look down. If this is not obvious you may want to examine the patient on the slit-lamp and observe movement of a landmark such as a superior conjunctival blood vessel for intact intortion.

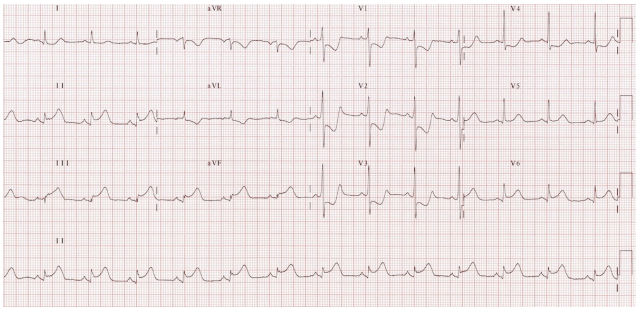
Aberrant regeneration of the third nerve is seen only in compressive lesion and never in medical cause of third nerve palsy. The physical signs are the results of misdirection of the third nerve fibres. The commonest ones being :

a. *Lid-gaze dyskinesis*: the most common one being upper lid elevation on down-gaze (see picture above).
Less commonly there is lid elevation on adduction
b. *Pupil-gaze dyskinesis*: the pupil constricts on down-gaze or adduction.

External Ocular Paralysis			
Muscle	**Direction of pull**	**Result of paralysis**	**Cranial nerve**
Medial rectus	Medially	Lateral	III
Superior rectus	Upwards	Downwards	III
Lateral rectus	Laterally	Medial	VI
Inferior rectus	Downwards	Upwards	III
Superior oblique	Down and out	Up and in	IV
Inferior oblique	Up and out	Down and in	III

Question 5 (11 marks)

A previously well, 74 year old woman presents to your emergency department with chest pain for 2 hours.



a. What is the significance of these findings? Sate three (3) points of significance.(3 marks)
   - **Inf STEMI**
   - **Posterior extension - Deep STD in V2-V3, prominent R waves, T waves upright**
   - **↑size of infarction- ↑ risk of LVF/ Death**

b. What is the most appropriate definitive treatment for this patient? State two (2) justifications for this choice. (3 marks)
   Definitive treatment:
   - **Urgent PCI**

   Justifications:
   - **Definitive directed Rx**
   - **Time dependent minimisation of infarct size**
   - **If available < 90 minutes of 1st medical contact**
   - **If time target unable to be met- thrombolysis**

c. List five (5) features that would suggest successful treatment of this condition in the first 4 hours. (5 marks)
   - **Resolution of pain**
   - **Improvement in haemodynamic instability**
   - **TIMI 3 flow following PCI**
   - **Resolution of ST-segment elevation** *is believed to be an excellent marker of tissue perfusion, and the degree of resolution has proved to be a powerful indicator of short-term (30-day) and long-term (1-year) prognosis. Assessment of ST-segment resolution is also useful for guiding reperfusion therapy: the absence of ST segment resolution during the first 90 minutes after the administration of fibrinolytic medications should prompt consideration of rescue angioplasty. A reduction in ST segment elevation by more than 70 % in the leads with maximal elevation is associated with the most favourable outcomes.*
     In the future, therapies that promote microvascular blood flow in after restoration of blood flow in the infarct artery may become available. The simplicity of assessing ST -segment resolution will probably make this step an important component of the decision to administer such therapies .
   - **T-wave inversion within four hours after the myocardial infarction**. *T-wave inversion that occurs during the first few hours of reperfusion therapy is a highly specific sign of reperfusion. T-wave inversion that develops more than four hours after the start of reperfusion therapy is consistent with the normal electrocardiographic evolution of myocardial infarction and does not indicate that reperfusion has occurred.*
   - **An accelerated idioventricular rhythm** *(defined as a heart rate of up to 120 beats per minute initiated by a late, coupled, ventricular premature depolarization) is a highly specific marker of reperfusion. This rhythm is benign and should not be suppressed with medication*
   - **Isolated ventricular premature depolarisations** *may also be seen with reperfusion*
   - **Polymorphic ventricular tachycardia and ventricular fibrillation** *may be seen with reperfusion but are rare and should raise the suspicion of ongoing arterial occlusion.*

Question 6 (18 marks)

You are the Consultant in an urban Emergency department. You receive ambulance pre-notification about a domestic dispute. They are transporting a patient with shotgun wounds to chest and abdomen. ETA is 10 minutes. A resuscitation bay has been identified as suitable to receive the patient.
A senior doctor will take control of the rest of the department.

a. List four (4) key steps to be performed prior to patient arrival. (4 marks)
    - **Staff- Trauma team activation (should alert Anos/ Sx/ OT/ Radiology/ Path)**
        - **Specific notification of Cardiothoracic Sx** *(ok as separate point as would not be covered by a trauma team activation)*
    - **Equipment- For intubation/ chest tube/ Ultrasound**
    - **Medications- for Haemodynamic unstable RSI- eg Ketamine/ Sux**
    - **Fluids- Activate MTP**

b. What three (3) circumstances must be met for a thoracic gun shot to be managed with ICC alone (ie not require formal surgical intervention)? (3 marks)
    - **No underlying bronchial injury**
    - **Thoracic blood loss < 1000 ml**
    - **< 250 ml/ hr ongoing loss for 4/24** *(as per any penetrating lung injury)*
    - **No missile identified in heart/ IVC or pulmonary artery**

c. What is the significance of a missile fragment appearing blurred on a Chest X-ray? (1 mark)
    - **Missile fragments are moving- ie likely in heart**

d. What is the role of CT tractogram? State one (1) point in your answer. (1 mark)
    - **May exclude peritoneal penetration in tangential abdominal wounds**
    - *Water soluble contrast is injected into the tract by Foley catheter prior to CT*

e. Under what circumstance should abdominal gunshot wounds proceed to laparotomy? State one (1) circumstance in your answer? (1 mark)
    - **All should proceed to laparotomy, except overtly tangential missile paths likely to be extraperitoneal**- *imaging (other than CXR) should not delay surgical intervention*

f. What is the mechanism of death from a high velocity bullet striking the chest? (1 mark)
    - **Shattering of the heart→ instant death**

g. List seven (7) principles of forensic evidence collection for this patient. (7 marks)
    - **Preservation of evidence, chain of evidence**
        - **Storage before hand over: preservation and security**
        - **Hand over to designated member of police**
    - **Collection only by trained personnel, without compromise of emergent clinical care**
    - **Meticulous collection without destroying / contaminating evidence**
        - **Collect clothing and all articles in paper bags**
        - **Do not cut through missile holes in clothing, cut around them**
        - **Gloves**
        - **Preserve any missile fragments**
    - **Documentation**
        - **Label specimens clearly and accurately**
        - **Write in pts words (if able to speak), do not embellish**
        - **Draw pictures to help with recall**
        - **Take photos – yourself +/- Police photographer preferably**

Question 7 (12 marks)

You are asked to review a 24 year old woman who presented 5 days post part partum with per-vaginal bleeding. Her initial Hb was 65 and her initial vital signs were within normal limits. She is receiving her first unit of packed red blood cells.
Her observations are:

BP	60/40	mmHg
HR	120 (thready)	/ min
RR	40	/ min
Temp.	40°C	

Your clinical examination has excluded ongoing vaginal bleeding.

a. List four (4) differential diagnoses for her clinical state. (4 marks)
   - **Acute transfusion reaction - haemolytic or non-haemolytic-ABO incompatibility**
   - **Anaphylactic shock**
   - **Transfusion related non-cardiogenic fluid overload including transfusion related acute lung injury**
   - **Acute septic shock from contaminated blood**
   - **Sepsis- endometritis with septic shower**

b. List eight (8) key actions that you would take in the next 30 minutes. (8 marks)
   - **Cease blood transfusion**
   - **Volume resuscitation- Crystalloids** *although she is anaemic!*
   - **Re-Xmatch-** *Weigh balance between benefit and risks of continuing transfusion*
   - **Return sample to blood bank ASAP**
   - **Inotropes- Noradrenaline, Adrenaline** – *bolus vs infusion- adrenaline preferred as anaphylaxis not responsive to other vasopressor*
   - **Steroids-** *for allergic reaction and to augment vasopressors*
   - **Antihistamines**
   - **Empiric antibiotics**- *Fever more likely to be from acute transfusion reaction, but temp is very high? Sepsis. Choice also based on clinical assessment, eg localising Sxs and signs* Broad spectrum indicated if used
   - **Document reaction**- *but wouldn't do a "Riskman" in the 1st 30 min*

Question 8 (12 marks)

A 65 year old man presents with abdominal pain and vomiting for 24 hours. He is known to have chronic excessive alcohol excess.

Observations on arrival:

BP	110/50	mmHg	
HR	120		beats/ min (regular)
RR	26		/min
SaO2	95		% on air
Temp 37		deg C	
GCS	15		

				Reference range
Na^+	135		mmol/l	134-146
K^+	4.0		mmol/l	3.4- 5.0
Cl^-	85		mmol/l	98- 106
Bicarbonate	12		mmol/l	22- 28
Urea	12.5		mmol/l	2.5- 6.4
Creatinine	0.05		mmol/l	0.05- 0.1
Glucose	6.8	mmol/l		
Lactate	2.0			
Total bilirubin		15	µmol/ L	0- 20
Protein		64	g/L	60- 80
Albumin			31	g/L 33- 47
Alk phosphatase	85	U/L		30- 100
LDH		210	U/L	120- 250
γGT			250	U/L 0-50
AST		90	U/L	0- 35
ALT		50	U/L	0- 40
FWT		Ketones ++		(others normal)

a. State a unifying diagnosis for this patient. (1 mark)
   - **Alcoholic ketoacidosis**

b. List six (6) findings in these investigations that support this diagnosis. (6 marks)
   - **Ketonuria**
   - **Low HCO3- suggesting metabolic acidosis**
   - **High anion gap (38)**
   - **Delta ratio > 2**
   - **Elevated liver enzymes (GGT 5x normal)**
   - **Elevated Ur:Cr**
   - **Normal lactate**
   - **Normal glucose**

c. List five (5) key specific treatment steps that you would commence for this patient. (5 marks)
   - **IV rehydration- NS**
   - **5% Dextrose- until ketosis resolved/ or until patient has adequate oral intake**
   - **Thiamine 300mg IV**
   - **Multivitamin**
   - **Alcohol withdrawal scale**
   - **Monitor electrolytes for refeeding syndrome**
     Refeeding syndrome see LITFL via this link

Question 9 (12 marks)

A 25 year old woman presents following a deliberate quetiapine overdose.

a. Complete the table below to demonstrate your dose related risk assessment. (4 marks)

Dose	Clinical effects
< 3 g	**Mild- moderate sedation** **Sinus tachycardia (often > 120)**
> 3 g	**Increasing CNs depression- delirium- coma** **Hypotension** **Seizures**

b. What is the most common ECG abnormality in significant overdose and what is the significance of this change? (2 marks)
   - **ECG change: prolonged QT (ST is common in all OD mild- severe)**
   - **Significance**: **usually not clinically significant- Torsades has not been reported**

c. Complete the table below by stating the role of decontamination and elimination in this poisoning. (2 marks)

Management task	Role (2 marks)
Decontamination	As sedation occurs early, activated charcoal not indicated unless airway protected
Enhanced elimination	Not clinically useful

d. List four (4) specific circumstances that must be met to safely discharge a patient from the Emergency department following a Quetiapine overdose. (4 marks)
   - **< 3 g**
   - **Not sedated**
   - **Normal ECG**
   - **> 4/24 post OD**

Dr Tom Reade (Staff Specialist, University Hospital, Geelong Emergency Department)
Email: tomre@barwonhealth.org.au