

The Prince Charles Hospital
The Royal Brisbane & Women Hospital
Redcliffe Hospital
Caboolture Hospital

Facility/hospital/clinical service name

Metro North Hospitals ACEM Fellowship Trial Examination

2017.1

Short Answer Questions

SAQ Paper

Questions Only

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ACEM Fellowship Trial Examination

2017.1

Short Answer Questions

SAQ Paper

Booklet one

Examination time: 180 Minutes

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- 1-All questions must be attempted
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- 4-This paper has been divided into 3 parts, each part is to be completed in 60 minutes

Booklet one:	SAQ 1-9
Booklet two:	SAQ 10-18
Booklet three:	SAQ 19-27
Props Booklet:	All props

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SAQ 1 (25 marks) LONG QUESTION

Candidate name:

You are the ED consultant on the morning shift at a large regional hospital. You have taken over care of a 25 year old male who has been intubated in ED overnight for refractory agitation due to presumed methamphetamine use.

The ICU is full, does not anticipate any bed availability in the foreseeable future and asks about the possibility of extubation in, and discharge from the Emergency Department.

Questions:

- 1. List 6 clinical factors that must be considered to evaluate this patient's suitability for extubation in the ED? (6 Marks)**

- 2. List 3 non-clinical factors that must be considered to evaluate this patient's suitability for extubation in the ED? (3 marks)**

3. List 4 complications that may occur with extubation, and for each one list a specific management option in the ED. (8 Marks)

Complications	Management

4. You proceed with a successful extubation of this patient in the ED. Your Director is impressed and asks you to write a departmental extubation protocol suitable for use in all ED extubations.

List 8 features you will include in this protocol. (8 Marks)

Protocol Component (8)

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SAQ 2 (11 Marks)

Candidate name:

A 62 year old man is brought to the ED by ambulance with a decreased level of consciousness. He has vomited several times per day for the last 3 days and has become weak and lethargic. He has a background of Type 2 Diabetes Mellitus and recurrent pancreatitis. He is on Metformin and injectable insulin but has not taken either in the last week.

An ABG is performed

pH 6.91
pCO₂ 13
Na 106
K 6.3
Cl 73
HCO₃ 4
Lact 3.1
Glu 82

Questions:

1. **Describe the 4 key abnormalities shown in this blood gas. Include any calculations performed in your answer. (4 marks)**

2. **What is the likely diagnosis? (2 Marks)**

--

3. List 5 immediate management priorities for this patient:
(5 Marks)

SAQ 3 : (12 marks)

Candidate name:

A 7 year old boy presents to your ED with Right sided testicular pain. You work in a hospital that does not operate on children <10yrs of age.

1. List 4 differential diagnoses other than testicular torsion? (4 Marks)

2. After review of the patient you are concerned that he has a testicular torsion. List your 3 most important management priorities for this patient. (3 Marks)

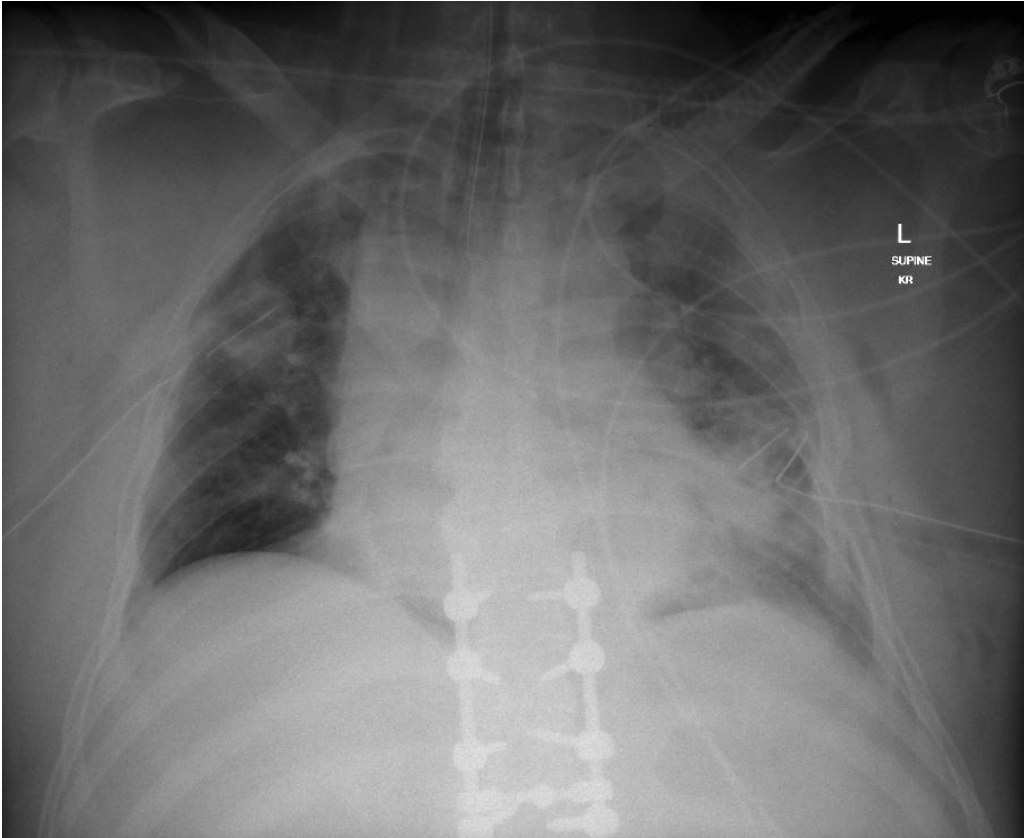
3. The registrar looking after the patient reports back to you that the surgical registrar at the local receiving hospital is refusing to accept the patient because there are no beds in the hospital. What actions will you take to ensure the patient receives appropriate care? (5 Marks)

SAQ 4: (16 marks)

Candidate name:

A 54 year old male is involved in a high speed rollover motor vehicle crash. He was GCS 6 (E1, V1, M4) on scene and was intubated for airway protection due to his reduced conscious state. He underwent bilateral thoracostomies on scene for low blood pressure which have just been formalised with ICC insertion on arrival to the ED by the ED registrar.

His CXR is attached below: **(See props booklet)**



1. List four (4) major abnormalities shown on his chest X-ray. (4 Marks)

2. Whilst in the ED he becomes progressively more difficult to ventilate. List three (3) potential causes for this and state the immediate management of each. (6 Marks)

Cause	Management

3. Outline six (6) key steps in performing a large bore intercostal catheter placement on an intubated patient who has been adequately sedated & paralysed.

(6 Marks)

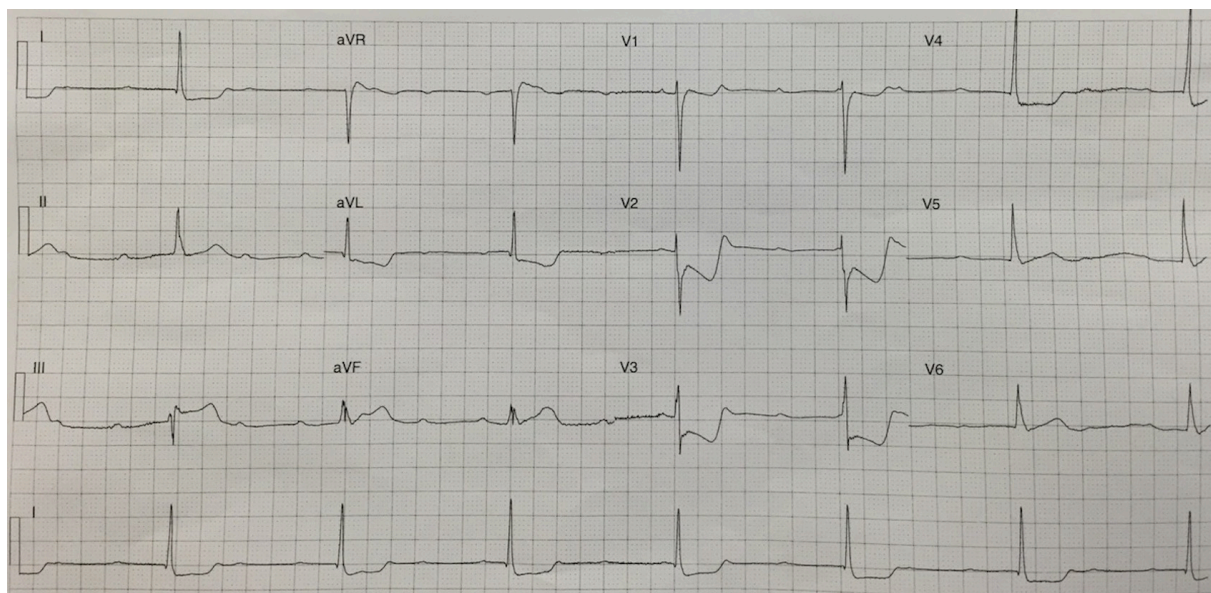
SAQ 5: (16 marks)

Candidate name:

A 64 year old lady presents to your ED with epigastric pain for the last 2 hours.
Her vital signs are:

BP 80/50 mmHg
SpO2 96% RA
Temp 36.6 C
RR 18

Her ECG is shown below: (See props booklet)



1. List four major abnormalities on the ECG and state their significance in the table below. (8 marks)

ECG abnormality	Significance

2. List 8 measures in this patient's Emergency Department management.

(8 marks)

SAQ 6: (19 marks)

Candidate name:

You are called to see a 40 year-old man who was brought into ED by the police after he was found wandering the streets with his shirt off, behaving in a bizarre manner. He has been verbally aggressive and abusive to the police officers and is initially refusing to be assessed in your department.

- 1. List (4) issues that need to be addressed in the assessment of this patient? (4 marks)**

- 2. List 5 potential organic mimics of psychiatric conditions that may be present in this patient. (5 marks)**

- 3. List 5 major features of acute delirium. (5 marks)**

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4. List the steps you would take to manage this patient's aggression. (5 marks)

SAQ 7: (15 marks)

Candidate name:

A 60 year old male patient presents to your emergency department with chest pain. A CT of his chest is performed and a slice has been reproduced below.

His CT is attached below: **(See props booklet)**



1. What is the diagnosis ?

(1 mark)

--

2. List 5 risk factors for this condition.

(5 marks)

3. List 5 radiological features on a plain CXR that may be seen with this diagnosis. (5 marks)

4. List 4 immediate management priorities for this condition. (4 marks)

SAQ 8: (14 marks)

Candidate name:

Your department has experienced an adverse event recently where a patient left without being seen and later was found deceased.

As part of the response to the investigation, your Director has asked you to set up a protocol to ensure the safety of patients who leave prior to being seen by a doctor.

- 1. List (5) key aspects of the protocol you will develop for the risk management of "Did Not Wait" patients in your ED. (5 marks)**

- 2. List (4) strategies that may be implemented within the ED to minimize the number of "Did Not Wait" patients? (4 marks)**

3. List (5) groups of patients who are at high risk for an adverse outcome if they leave without being seen in an Emergency Department?

(5 marks)

SAQ 9: (14 marks)

Candidate name:

You are the ED consultant on the evening shift in a busy tertiary hospital. The following patient is brought in by ambulance after an altercation with a workmate.

His vital signs are as follows:

HR 90/min
SBP 110
SpO2 96% RA
GCS 15/15



1. Describe the key features of this injury.

(2 Marks)

--

2. List (6) signs that would raise concern that this patient's airway is at risk from this injury.

(6 marks)

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3. The patient develops worsening hypoxia and respiratory distress. List (6) immediate actions you would take to manage this? (6 Marks)

Booklet two

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Short Answer Questions

SAQ Paper

Booklet two

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SAQ 10: (28 marks) LONG QUESTION

Candidate name:

An 83 year old man self presents to triage following an accident with his car. He had forgotten to activate the handbrake before exiting the car and it has rolled backwards and hit his left lower leg.

He is complaining of a moderate amount of pain. He explains that he has been taking Warfarin since a heart operation 12 months ago where he had a CABGx2 & AVR.

His leg photo is attached below (**See props booklet**)



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1. List (4) priorities in the initial management of this patient. (4 marks)

2. List and justify (4) investigations would you organise in the ED? (8 marks)

Investigations	Justifications

3. List (3) short term complications that may occur with this injury? (3 marks)

4. List (3) long term complications that may occur with this injury? (3 marks)

5. List (5) steps in your management of this wound? (5 marks)

After a review of previous notes & confirmation by the GP, you determine that the patient has a bio-prosthetic aortic valve replacement, and the Warfarin is for his atrial fibrillation.

His INR today is 2.9.

6. Describe the protocol for reversal of Warfarin in this patient with active ongoing haematoma expansion. (5 marks)

SAQ 11: (16 marks)

Candidate name:

A 33 year old G3P2 lady has been referred to ED by her GP with intermittent cramping lower abdominal pain. She is currently 28/40 gestation. She denies any PV discharge/loss and has had unremarkable antenatal care to date.

Her previous two pregnancies were uncomplicated normal vaginal deliveries. Her first ultrasound scan was done at 14/40 gestation and she was told that she had a single intrauterine pregnancy.

Her GP is concerned about possible pre-term labour.

Her Vital Signs are:

Temp 37.5 degrees

Pulse 95bpm

RR 25 breaths per minute

O2 Sats 99% RA

Questions:

- 1. Apart from pre-term labour, list (5) other differential diagnoses that needs to be considered in this patient. (5 marks)**

2. List (6) risk factors that would increase her risk of pre-term labour with this pregnancy? (6 marks)

3. You have diagnosed pre-term labour as the cause for this patient's pain. List (5) key steps in the management of this patient. (5 marks)

SAQ 12 : (21 marks)

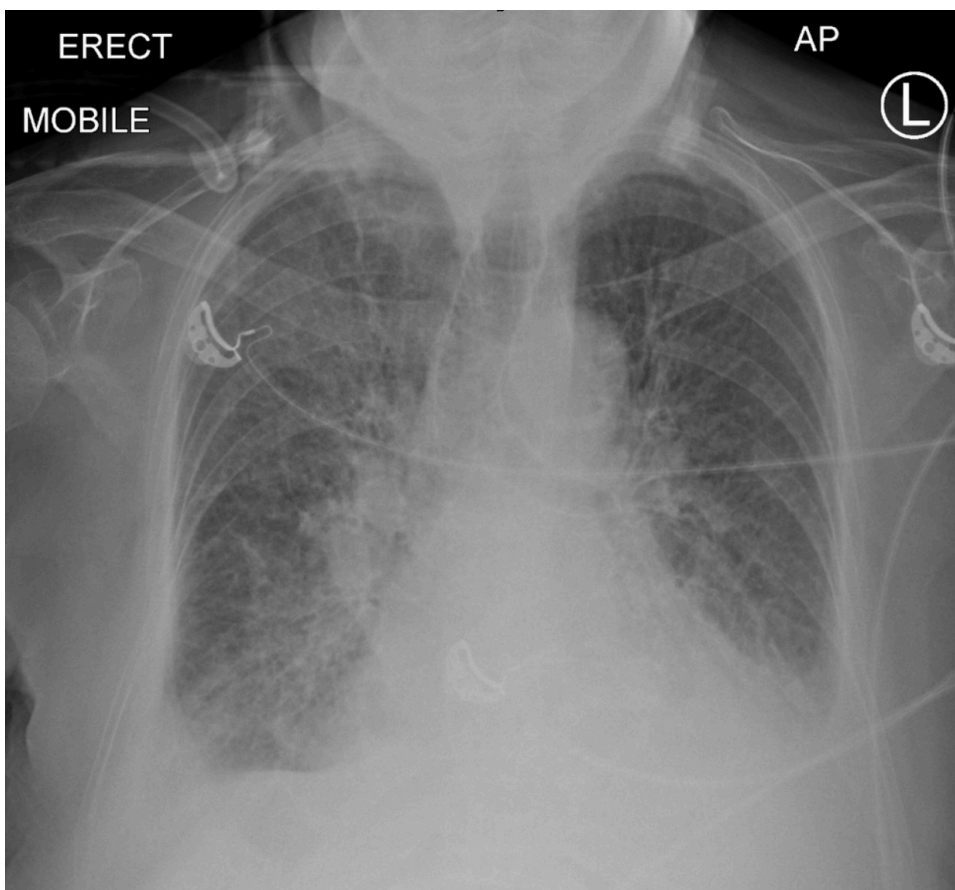
Candidate name:

A 72 year old gentleman presents to the ED with increasing shortness of breath.

His vitals are:

HR 103 bpm
BP 170/90 mmHg
SpO2 92% RA
RR 30
Temp 37.2

A mobile CXR is performed and is reproduced below. **(See props booklet)**



1. What is the most likely diagnosis?

(1 mark)

2. List (4) radiological features on the CXR that support this diagnosis. (4 marks)

3. List (10) potential causes for the above condition. (10 marks)

4. List your (2) main treatments for this condition in this patient, including any relevant doses where necessary, and one contra-indication for each. (6 marks)

Treatment	Dose	Contra-indication

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SAQ 13: (17 Marks)

Candidate name:

A 45 year old man with known HIV positive status presents to your department with fever, non-productive cough, weight loss and mild confusion.

His vital signs are:

PR 105/min
BP 110/70
Sats 94% on room air
Temp 38.6 degrees
BSL 5.4

- 1. List (5) important differential diagnoses to be considered in this patient. (5 marks)**

- 2. List and justify (4) specific investigations that will help in differentiating the cause of this patient's illness (4 marks)**

Investigation	Reason

Your intern has sustained a needle stick injury whilst trying to obtain bloods for investigations and is understandably worried.

3. What factors are associated with a higher risk of seroconversion with a needle stick injury from a HIV positive patient?

(4 marks)

4. List (4) steps in the management of this needle stick incident. (4 marks)

SAQ 14 (10 marks)

Candidate name:

The following data has been compiled regarding your Emergency Department's performance over the past year.

Australasian Triage Category	Percentage Number of attendances	Percentage seen within Performance Threshold	Performance Indicator Threshold
ATS 1	2%	95%	100%
ATS 2	19%	65%	80%
ATS 3	41%	65%	75%
ATS 4	35%	75%	70%
ATS 5	3%	80%	70%
Did Not Wait	4%		

1. List (5) strategies that your department could implement to improve the above data. (5 marks)

2. List (5) effects of long waiting times in the ED. (5 marks)

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SAQ 15: (23 marks)

Candidate name:

A 5 day old neonate is brought in to ED by his mother after being discharged on Day 2 post normal vaginal delivery.

His mother reports that he has been feeding poorly for the last few hours and she has noticed increased yellow discoloration of his skin:

His vital signs are:

HR 160
RR 32
CRT 2 -3 sec
AVPU

The child appears jaundiced.

Questions:

1- List (7) likely causes for his jaundice.

(7 marks)

2- List (6) red flags during history and examination that would warrant admission to the hospital.

(6 marks)

3- List (6) investigations required for this child in the ED and justify each one. (6 marks)

Investigations	Rationale / Justification

This child did not require phototherapy and no serious cause was found for his jaundice.

4- List (4) criteria this child needs to meet in order for a safe discharge to occur. (4 marks)

SAQ 16: (12 marks)

Candidate name:

You are the ED consultant working in a regional base hospital. A patient is brought in by ambulance with SpO₂ 75%, cyanosis and poor respiratory effort. He has a tracheostomy in situ with bloody sputum visible at the tracheostomy site. You suspect that his tracheostomy may be blocked with clot and debris.

1. List the (5) initial steps in your approach to this situation? (5 Marks)

2. Patency of the patient's tracheostomy is achieved, however the bleeding from the site has become significantly worse.

List (2) possible causes of this bleeding? (2 Marks)

3. List (5) priorities in your ongoing management of this situation? (5 Marks)

SAQ 17 (12 marks)

Candidate name:

A 20 year old known asthmatic has presented to your tertiary ED with an acute exacerbation of asthma. She was initially seen by your registrar and has been appropriately treated with supplemental oxygen, salbutamol (5mg X 5) and ipratropium (500mcg X 3) nebulisation and IV hydrocortisone 200 mg.

She has failed to improve after 60 minutes of the above treatment. You have been asked to advise on a further course of action.

- 1. List (4) other treatment options for this patient. (4 marks)**

The patient continues to deteriorate and has become more obtunded with poor respiratory effort. You decide to proceed with intubation.

- 2. List (4) steps you will take to optimise the patient before proceeding with RSI.**

(4 marks)

The patient's BP drops to 80/ 40 immediately post intubation.

3. List (4) immediate measures you will take to manage this. (4 marks)

SAQ 18: (21 marks)

Candidate name:

You are working in a tertiary ED when you are notified about a 35 year old male who is en route (5 minutes away) after his motorcycle collided with a kangaroo.

He was intubated on scene for falling GCS and subsequently developed a dilated left pupil. He has had persisting hemodynamic instability with one PIVC and 250mls saline given by ambulance officers.

- 1. List your top (5) management priorities on arrival of this patient. (5marks)**

You opted to do a FAST scan in the trauma room

- 2. Give (4) Pros and Cons of a FAST scan in this patient. (8marks)**

PROS	CONS

During his ongoing resuscitation the massive transfusion protocol has been activated.

3. Give (8) parameters you will aim for in your ongoing haemodynamic resuscitation of this patient.

(8marks)

Booklet three

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Short Answer Questions

SAQ Paper

Booklet three

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SAQ 19 (Long question 26 marks)

Candidate name:

You are the ED consultant on call at a major tertiary centre. You receive a call from a rural district hospital 200km away requesting advice. The locum GP has inadvertently injected 350mg of Bupivacaine as intravenous regional anaesthesia instead of Prilocaine into a 60yr old woman with a Colle's fracture. The cuff is currently inflated, and the fracture reduced. The patient is 50kg, asymptomatic and has normal vital signs.

Questions:

1. List (3) serious complications which may arise from this event.

(3 marks)

2. List the (4) main priorities of managing this situation?

(4 marks)

3. List (2) retrieval options for this patient, with (2) advantages and (2) disadvantages of each.

(10 marks)

Retrieval Method	Advantage	Disadvantage
1-		

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2-		
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4. List (5) steps you will take to prepare your tertiary ED to receive this patient . (5 marks)

5. List (4) medico-legal issues should be addressed in this case? (4 marks)

SAQ 20: (11 marks)

Candidate name:

A 38 year old man presents to the Emergency Department following a skateboarding accident. There is diffuse swelling of the knee and significant pain. He is unable to weight bear.

An X-ray was arranged and is presented here.



Questions:

1. What is the significant finding on his X-ray?

(1 mark)

2. List (2) possible complications from this injury?

(2 marks)

The patient was reviewed by one of the junior registrars. He was discharged with a diagnosis of knee sprain and given a knee splint and crutches. He was provided with an appropriate plan for analgesia.

He was advised to organise physiotherapy in the community, and follow-up with his GP if there are ongoing concerns.

Two weeks after the initial presentation a complaint is lodged concerning the diagnosis and management.

Your director has asked you to manage this for the department.

3. List (8) steps would you take to investigate and manage this complaint.

(8 marks)

SAQ 21 (14 marks)

Candidate name:

You are working in an emergency department in north Queensland, when you receive a notification from the ambulance service that they are en route with a 31 year old man who was pulled from the surf unresponsive.

Questions:

- 1. List (5) possible differential diagnoses for this man's presentation. (5 marks)**

He arrives to your emergency department with the following observations.

Temp 37.0
HR 160bpm
BP 80/40
RR 10
SpO2 89% 6L HM
GCS 11/15 (E4V2M5) Agitated and combative and appears to be in pain.

He has had no treatment by the paramedic crew due to his combativeness.

A photo of his lower limb is attached (See props booklet):



2. What is the likely diagnosis & state why? (2 marks)

Diagnosis:
Why:

3. What is your initial management of this condition? (4 marks)

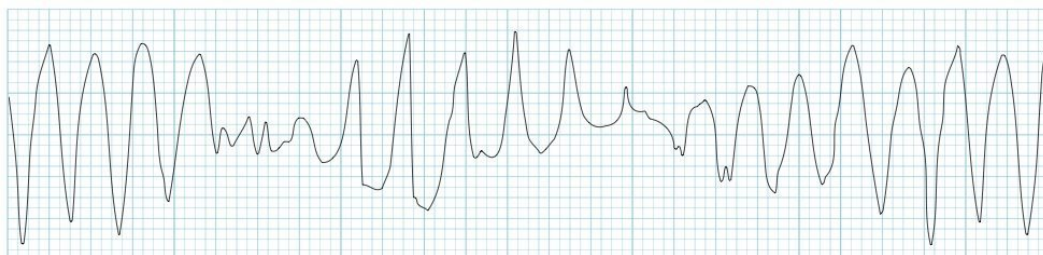
4. List (3) indications for antivenom in this condition? (3 marks)

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SAQ 22: (12 marks)

Candidate name:

A 35 year old female patient presents to the ED following a collapse at work.
A sample of her rhythm strip is below.



1. Name this rhythm:

(1 Mark)

--

2. List (5) drugs that may precipitate this rhythm:

(5 Marks)

3. List (3) non-pharmacological factors that can put patients at risk for this rhythm.

(3 Marks)

4. List (3) treatment options for this arrhythmia.

(3 Marks)

SAQ 23: (19 marks)

Candidate name:

A patient presents to your ED with central chest pain. The ECG on arrival does not show ST elevation.

- 1. List (8) assessment features that would make this patient high risk for an Acute Coronary Syndrome (ACS). (8 marks)**

- 2. List (5) assessment features that would make this patient low risk for ACS. (5 marks)**

3. List (6) causes of ST elevation other than myocardial infarction.

(6 marks)

SAQ 24: (13 marks)

Candidate name:

A 58 year old man riding a pushbike was hit by a car at high speed and is brought into your emergency department.

Upon arrival he undergoes a rapid primary and secondary survey, which shows a tender abdomen and significant lower back pain.

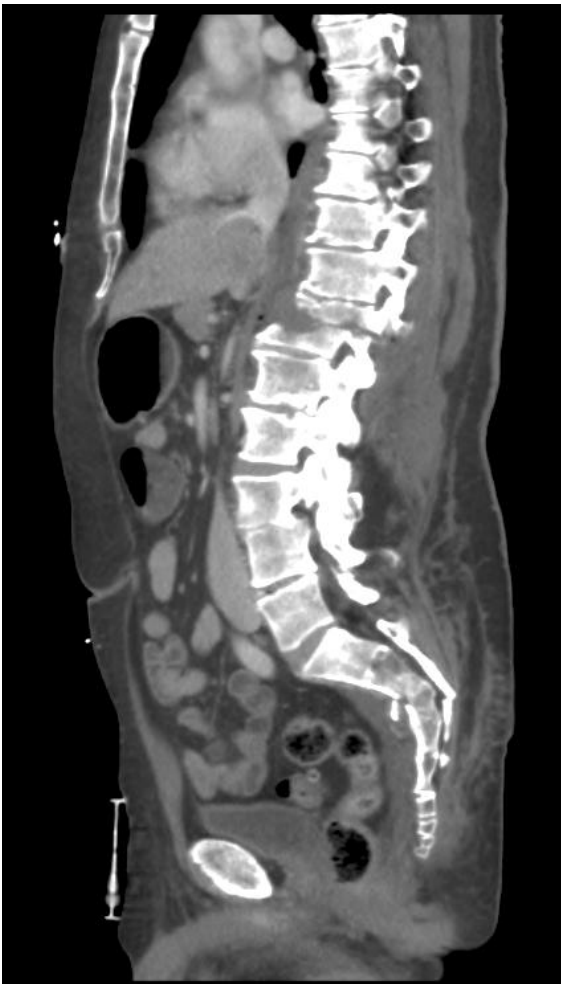
His vital signs are:

GCS 14/15
SBP 75mmHg
HR 80 / min
RR 25
O2 Sat 88% on 15L via NRBM

He has a negative eFAST scan.

The patient has no significant background medical history, is not on any regular medications and has no known allergies.

Below is a single slice CT scan of this patient. **(See props booklet)**



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1. Name the significant finding on this CT image and any relevant associated features. (4 marks)

2. List (4) clinical features you would expect to find in neurogenic shock. (4 marks)

3. List your management priorities for neurogenic shock (5 marks)

SAQ 25: (16 Marks)

Candidate name:

A 61 year old female has been brought into your Emergency Department after experiencing right arm and leg weakness which lasted for 1 hour. At the time of arrival to the ED, the above symptoms have completely resolved.

The patient has a background history of diet controlled Type 2 Diabetes Mellitus and is otherwise well with no regular medications and no allergies. She lives with her husband and works as a secretary. She is a non-smoker.

Your working diagnosis is a transient ischaemic attack (TIA).

1. Complete the following table in regards to risk stratification of TIA patients with the ABCD2 score. (7 marks)

Symptom or risk factor	Score weighting

Shortly after your assessment of the patient, the nurse approaches you and informs you that the patient has deteriorated. You return to the patient to find her with obvious right sided hemiplegia and expressive dysphasia.

All her haemodynamic parameters are within normal limits.

She is rushed to the CT scanner and attached below is a single slice of her CT brain. **(See props booklet)**



(Case courtesy of Dr Prashant Mudgal, Radiopaedia.org)

2. Name the finding seen on this CT image.

(1 mark)

3. List (6) absolute contraindications for thrombolytic therapy for acute stroke.

(6 marks)

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**4. In 2016 the Australasian College for Emergency Medicine commissioned an independent literature review by researchers from the University of Canberra Health Research Institute. What was the conclusion of this review?
(2 marks)**

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SAQ 26: (15 Marks)

Candidate name:

A 5 year old boy is brought in to the Emergency Department with a 3 day history of skin rash and fever. He looks unwell and has bilateral conjunctival injection.

His vital signs are:

HR 100
RR 28
Sat 98% on RA
Temp 38.7C

His photograph is attached:



Questions:

1-What is the most likely diagnosis and list (2) supportive features. (3 marks)

Diagnosis:
Supportive evidence:

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2-List (5) other differential diagnoses for the above skin rash: (5 marks)

3- List (2) investigations that are required to confirm or exclude the likely diagnosis? (2 marks)

4- List (5) possible complications from the above condition. (5 Marks)

SAQ 27: (12 marks)

Candidate name:

A 67 year old woman presents to your urban district Emergency Department with 12 hours of severe left eye pain. The pain started during the previous evening while watching television. She has decreased visual acuity recognising movement only in the left eye.

Your hospital has no ophthalmological service.

A clinical image is attached.



Questions:

- 1. What is the most likely diagnosis and list (2) findings that support this diagnosis? (3 marks)**

Diagnosis:
Supportive evidence:
1-
2-

- 2. How would you confirm the diagnosis? (1 mark)**

--

3. List three (3) potential drugs that can be used to treat this condition and for each briefly describe its therapeutic effect in this scenario. (6 Marks)

Drug	Therapeutic Effect

4. The subspecialty registrar suggests you manage this case in the emergency department short stay unit. How would you respond?

(2 marks)

Good luck