

FEx Net 2022 Collated SAQs:

Anaesthesia and Critical Care Questions

1. Alcohol
2. Alcohol
3. Arrest on Induction
4. Asthma Intubation
5. Asthma ventilation
6. Asthma Ventilation
7. Extubation
8. Floppy Infant
9. Foot Block
10. Hanging
11. Muscular Dystrophy
12. Neck injury
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14. Obese intubation
15. Obese Pneumonia
16. Paed asthma Ventilation
17. Paed blast injury
18. Paed Facial Injury
19. Paed pneumonia
20. Paed sedation
21. Paed Stridor
22. Paed Stridor
23. Paed Tonislectomy
24. Paed Cardiac Arrest
25. Sedation
26. Sedation
27. STEMI RSI
28. Stridor
29. Tracheostomy
30. Ventilated DKA
31. Ventilator

Question 1 (15 Marks)

A 35 year old man has been intubated overnight by the night ED Registrar after ingestion of an unknown quantity of alcohol and methadone.

The indication for intubation was airway protection secondary to low GCS. He had a normal BSL and normal CT brain performed at the time of admission.

He has spent the night in ED as no ICU beds were available. You decide to extubate him in the ED.

His vital signs are:

HR 80
BP 120/80
Spo2 100% on FiO2 40%
Temp 37.2C

1--- What clinical criteria must be met to ensure this patient is a candidate for extubation in the ED? (6 marks)

2--- What non---clinical criteria must be met to ensure it is safe to extubate this patient in the ED? (5 marks)

3--- List the key equipment you would have immediately available prior to extubation of this patient in the ED. (4 marks)

Question 2 (18 Marks)

A 35-year-old man has been intubated in your department overnight after ingestion of an unknown quantity of alcohol and methadone.

The indication for intubation was airway protection secondary to a low GCS. He has a normal BSL, and a CT brain performed shortly after intubation has also been reported as normal.

He has spent the night in the ED as no ICU beds were available. You are considering extubation of the patient in your department.

1. List 6 clinical criteria that must be met to ensure this patient is suitable for extubation in the ED?
(6 marks)
2. List five non-clinical criteria must be met to ensure safe extubation of this patient in your department.
(5 marks)

3. List three pieces of equipment you would have immediately available prior to extubation of this patient in the ED. (3 marks)

The patient is successfully extubated. He currently has adequate respiratory function and is GCS 15. 4.

State your 4 subsequent steps in the management of this patient. (4 marks)

Question 3 (12 marks)

Precipitous deterioration can occur around the time of intubation in several specific situations.

- [illegible]

- iii. Explain the pathophysiology of the cardiovascular collapse that can occur at induction, intubation and ventilation of a **severe asthmatic** (4 marks)

Question 4 (12 Marks)

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)

Question 5 (20 Marks)

A 28 year old male has just been intubated in your ED for severe asthma. One of the RN's approaches you after you place the patient on the ventilator, and says "Can I adjust the alarm settings, as the high airway pressure alarm keeps on going off?"

1. Explain your initial approach to this scenario, and what your initial steps should be to diagnose this problem: (4 marks)

2. Can you list up to 3 potential equipment problems and 3 potential patient problems that may have resulted in this alarm, and outline the initial steps to manage those problems?

(12 marks)

<u>EQUIPMENT PROBLEM</u>	<u>MANAGEMENT</u>
<u>PATIENT PROBLEM</u>	<u>MANAGEMENT</u>

3. Outline the principles behind ventilating a person with severe asthma:

(4 marks)

Question 6 (12 Marks)

A 40 year old woman was just intubated in your department following a severe exacerbation of her asthma. She weighs approximately 60kg. Your registrar comes to you seeking advice as the ventilator keeps alarming.

The patient's vital signs are:

HR 120 bpm
BP 90/60 mmHg
Sats 100%

You find the ventilator settings below

Tidal Volume 600ml
Pressure support 10
PEEP 10
FiO2 100%
Rate 16
I:E ratio 1:2

- I. Which ventilator settings would you alter from the above settings?
(4 marks)

Ventilator settings	Alterations

- II. List two (2) other steps you could perform to optimize her ventilation

(2 marks)

The patient becomes hypotensive with a BP 80/50 mmHg ten minutes after intubation

III. What is your immediate action? (1 mark)

IV. List five (5) possible reasons for the hypotension (5 marks)

Question 7 (25 Marks)

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)

Question 8 (14 Marks)

A 4 week old term baby is brought to the Emergency Department with difficulty breathing and floppiness.

Her vital signs are:

HR	170	/min
BP	60/35	mmHg
RR	24	
Sat	87	% on air
Temp	37.6	°C
CRT	4	seconds

She is lethargic and unresponsive.

Questions:

- 1 List 6 broad categories of illness that could account for her presentation.

(6 Marks)

- 2 List your treatment priorities in sequential order.

(4 marks)

3--- You decide to intubate this baby.
What 2 sizes of ETT will you prepare?
List your drug selection with dosage:

(4 marks)

Question 9 (12 Marks)

A 16 year old male patient presents to your ED with a laceration to the plantar surface of the heel of his L foot sustained whilst walking in a freshwater creek bed.

The wound was heavily soiled with mud and has been superficially cleaned on arrival to ED.

There is no visible foreign body on X---ray.

He has no known allergies and is unvaccinated.

Your junior doctor has attempted to infiltrate with local anaesthetic but the skin is very thick and this has been unsuccessful.

You decide to perform regional anaesthesia to allow washout and laceration repair.



- I. List the type of block and the landmarks you would use to perform a regional nerve block for this patient? (4 marks)

Name of block:
Landmarks:

- II. List the drug and dose you would use for the regional block for this patient. (2 marks)

- III. State the details of your preferred method of wound closure in this patient. (2 marks)

- IV. List 4 treatments you would prescribe in the ongoing management of this patient. (4 marks)

Question 10 (13 marks)

A 40 year old man is brought to your tertiary ED after being found unconscious in a police watch house cell. It appears he hanged himself with a belt, tied to a ceiling beam. Ambulance personnel report the following at handover:

GCS 5

Temp 37 deg C

P 110, BP 180/90

RR 16, spontaneous respirations, with stridor

i. Outline 4 key issues in the immediate management of this patient (4 marks)

ii. List 4 prognostic indicators for this patient's outcome (4 marks)

- iii. The patient is successfully intubated and ventilated, but develops high airway pressures a short time later. List 5 possible causes (5 marks)

Question 11 (12 marks)

Question 11 (12 marks)

You have just started working as a junior consultant on a temporary contract in a metropolitan emergency department, hoping that your contract will become permanent. You are helping in the resuscitation of a patient where the team leader in this resuscitation is one of your senior FACEM colleagues who has worked at this emergency department for over 20 years, is an ACEM examiner and is very well respected.

The patient is a 9-year-old male with Duchenne's muscular dystrophy who has pneumonia and is in respiratory failure. Your colleague has told the team that the decision has been made to intubate this patient. He asks the nurse to draw up ketamine and suxamethonium for the intubation.

- a) What is your response to the choice of these drugs? (1 marks)
- b) How would you communicate this to your senior colleague? (2marks)
- c) State two barriers to effective communication with your colleague in this situation? (2 marks)
- d) List the next steps of your communication strategy in this situation should your senior colleague not respond favourably to your initial communication? (2 marks)

e) List 3 principles of harm minimisation. (3 marks)

f) What is the study of human factors? (2 marks)

Question 12 (13 Marks)

A 25 year old man is brought to your emergency department following a work place injury. He was cleaning equipment with a high pressure hose that snapped, striking him in the throat. He is seated upright on the ambulance stretcher, drooling and not talking. On examination he has a soft but audible stridor. His observations are all within the normal range.

1. List five (5) pieces of equipment you would like available for immediate management of his airway.

2. Describe pros and cons for three (3) different options for securing his airway.

Airway intervention	Pros	Cons

3. Describe five (5) steps in your preferred first option for securing his airway. Include drugs and doses.

Question 13 **(12 marks)**

A 78 year old gentleman presents to your major metropolitan Emergency Department after slipping over whilst putting out the bins. X-Rays reveal a left sided sub-capital fractured neck of femur, however, fortunately there are no other injuries.

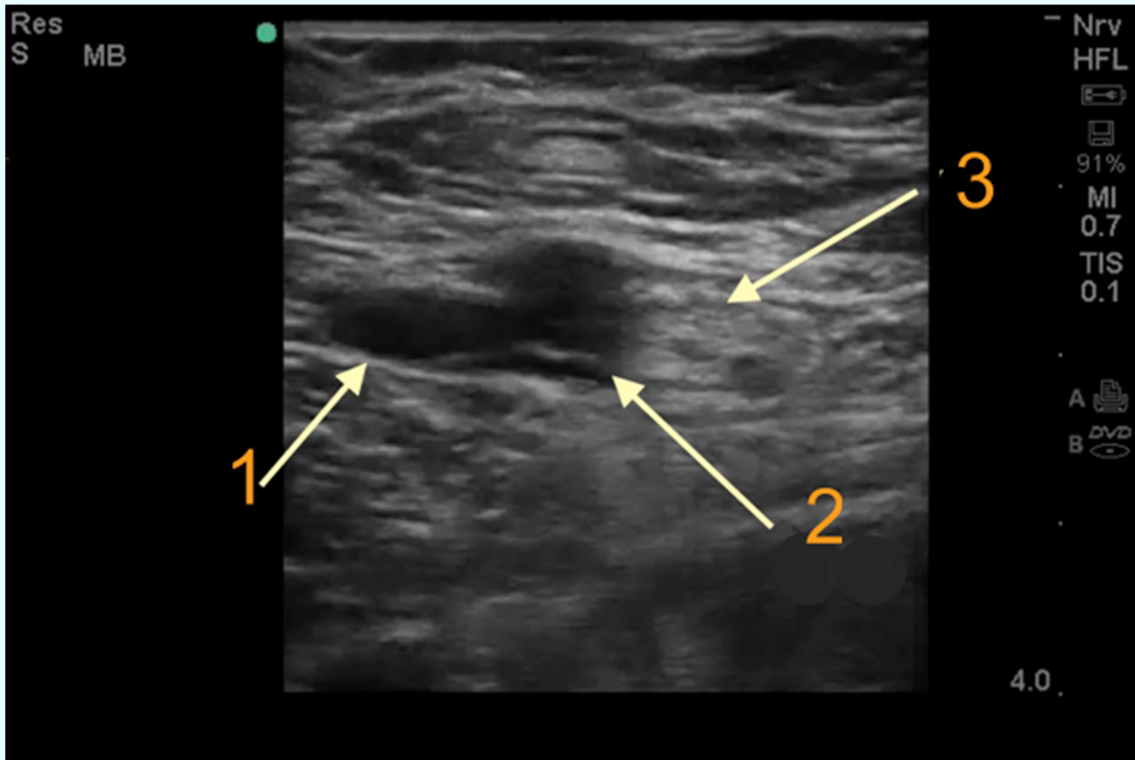
Your registrar decides to use an ultrasound guided femoral nerve block to help manage the patient's pain and asks for your help supervising.

- a. Using the US image obtained (**see below**) name the numbered structures in the table below (3 marks)

Structure 1	
Structure 2	
Structure 3	

- b. Which structure is most lateral? (1 mark)

- c. List the steps involved in performing an ultrasound guided femoral nerve block (8 marks)



Question 14 (15 Marks)

You are the consultant on call overnight, when your registrar calls you to tell you he would like you to attend. The patient is an 180 kg male who presents with Acute Respiratory Failure in the context of Bilateral Pneumonia.

The registrar states that this person needs intubation, and you agree when you hear the following observations:

HR 120
BP 90/
RR 45
SaO₂ 91% on 15L via NRBM

He has asked you to attend because he has limited anaesthetic experience, and is anticipating a difficult airway

Questions:

- 1. List up to seven (7) steps you would tell your registrar to do in preparation, to facilitate intubation when you arrive:**

2. You were successful in intubation. Despite 100% O₂, you are still inadequately oxygenating the patient. The ETT has been confirmed in the correct place.

Please outline up to 4 possible causes for Hypoxia in this case and identify a treatment to deal with this:

(8 marks)

<u>CAUSE FOR HYPOXIA</u>	<u>MANAGEMENT</u>

Question 15 (13 Marks)

A 33 year old woman is being managed in your ED with severe community acquired pneumonia. She is morbidly obese, with an estimated weight of 180kg and height of 160cm.

Her vital signs are:

GCS	15	
Pulse	140	/min
BP	90/45	mmHg
RR	40	/min
O2 sats	90%	15L/min O2 via non-rebreather mask
Temp	38.5	degrees

The patient is becoming tired and you have assessed her as requiring intubation to maintain adequate oxygenation.

1. In the section below, list 4 difficulties that you may encounter during the peri-intubation period. For each difficulty, briefly describe how you will aim to minimise the problem. (8 marks)

Difficulty: _____

Solution: _____

Difficulty: _____

Solution: _____

Difficulty: _____

Solution: _____

Difficulty: _____

Solution: _____

2. Give the ventilator settings you would initially institute by completing the table.
(5 marks)

	YOUR SETTING
FiO ₂	
Respiratory rate	
Tidal volume	
Positive end-expiratory pressure	
Peak pressure limit	

Question 16 (27 Marks)

An 8 year old girl is brought to the Emergency Department by ambulance, with worsening asthma for the last 4 hours.

Her vital signs are:

RR	60 /min,
HR	160/min
O2 Sat	89% on RA.
GCS	15/15

Questions:

1-What are 6 cardinal features of life threatening asthma? (6 marks)

2- On examination, she is unable to speak in full sentences and has marked use of accessory muscles.

List your immediate management, including any drug doses. (4 marks)

3- List 4 complications that may ensue during this scenario.

(4 Marks)

4- Despite appropriate escalation of treatment, the child's condition deteriorates over several hours and she has been intubated in the ED.

State your ventilation settings and provide appropriate justification.

(10 marks)

Parameter	Setting	Justify
RR		
Tidal volume		
Peak inspiratory pressure		
PEEP		
I:E ratio		

5- After connecting to the ventilator the patient suddenly deteriorates becoming progressively hypotensive and tachycardic.

Give three possible causes.

(3 marks)

Question 17**(12 marks)**

You are the consultant in charge of the paediatric section of a rural emergency department. A 5-year-old boy presents via the ambulance following an accident with a home barbecue, thirty minutes ago. The ambulance reports the family was cooking lunch on the barbecue which was set up inside the house due to rainy weather when the gas bottle exploded and started a fire.

On assessment the boy has considerable soot on his face and there is severe swelling to his cheeks, lips, and eyelids.

His vital signs are:

SaO ₂	89% on 15L oxygen via non-rebreather
Pulse	120 bpm
Cap refill	3 seconds
Resp rate	28 breaths/min

You decide to intubate the patient for airway protection. You perform a rapid-sequence induction but are unable to visualise the cords using video laryngoscopy. You are unable to ventilate the child with a bag-valve mask or a laryngeal mask airway. The on-call anaesthetist is on the way but is still more than ten minutes away.

a). State your immediate management. (5 marks)

b). List three (3) causes of impaired oxygenation in this patient, and their causes. (3 marks)

The anaesthetist arrives and successfully intubates the patient.

c). List your ventilator settings with a justification for this patient. (4marks)

Question 18 (14 marks)

A five-year old boy has been kicked in the face by a horse and has been brought to your rural base hospital by ambulance. He is unconscious, has extensive facial injuries and partial airway obstruction.

Vital signs:

HR 140

SBP 80

GCS 3

Sats 85%

At laryngoscopy the view is obscured by anatomical derangement, massive tongue swelling, blood and debris and he cannot be oro-tracheally intubated.

- i. Explain why partial/complete upper airway obstruction is a relative contraindication to percutaneous transtracheal ventilation (3 marks)

- ii. Describe a method for connecting a bag-valve device to a 16-gauge catheter that has been inserted successfully through the cricothyroid membrane (3 marks)

- iii. Outline the ventilation parameters you would use if a commercially available jet ventilation device with variable-flow oxygen is available (3 marks)

- iv. List 5 complications of percutaneous transtracheal ventilation (5 marks)

Question 19 (12 Marks)

A 3 year old girl has been brought to the ED by her parents with cough and fever for 3 days. The child has become increasingly lethargic.

Your assessment is consistent with severe community acquired pneumonia requiring urgent intubation.

There are no obvious anatomical factors that would complicate intubation.

The child's vital signs are:

Temperature	39.5	degrees
Pulse	170	/min
BP	65/40	mmHg
RR	50	/min
O2 saturation	85%	6L O2 via Hudson
Weight	15	mask kg

1. List 2 main difficulties you will encounter in safely intubating this patient. For each, provide 3 strategies you will employ to manage the difficulty. (8 marks)

Difficulty	Strategies

2. List your initial ventilator settings. (4 marks)

Tidal volume (mL)	
Respiratory Rate (/min)	
FiO2 (%)	
Inspiratory Pressure Limit (cm H2O)	

Question 20 (15 Marks)

A 12 year old boy has been brought to your ED after falling off a swing and injuring his wrist. The child weighs 40kg. Your assessment has revealed a dorsally angulated fracture of the distal radius. The fracture needs manipulation and placement in a plaster cast. You have decided to perform this procedure in the ED.

1. Give three different methods of procedural sedation for this patient. For each method, give two advantages and two disadvantages. Give doses where appropriate. (15 marks)

Method 1

Advantages

Disadvantages

Method 2

Advantages

Disadvantages

Method 3

Advantages

Disadvantages

Question 21 (35 Marks)

You are the Emergency Consultant on call overnight. You receive a phone---call from your ED registrar, stating that they have a 2 year---old boy with severe croup who has just been brought in by their parents. Your registrar is concerned that she may have to intubate the boy. Anaesthetics are not on site overnight.

1. List six (6) possible causes for stridor in paediatric population (other than croup): (6 Marks)

2. State five (5) indications for intubation in this scenario. (5 marks)

3. As you make your way hurriedly into the department, you advise the registrar to prepare for rapid sequence induction and intubation.

Please complete the following information. Please provide doses and sizes for any drug or equipment used. (Total 13 marks)

Preparation of patient: (4 Marks)

Equipment (7 marks)

RSI Drugs (2 marks)

4. The patient is successfully intubated in your ED. As you prepare the patient for transfer to the Paediatric ICU, the ventilator starts alarming that the airway pressures are high.

List six (6) causes of high airway pressures in this patient.

(6 marks)

5. List five (5) anatomical airway difference in paediatric population in comparison with adult airway:

(5 Marks)

Question 22 (18 Marks)

A 5 month old baby presents to ED with a history of increasingly noisy breathing. His vital signs are:

GCS	15 E4 V5 M6
Pulse	170 beats/min 2
CRT	seconds
BP	90/50mmHg
O ₂ Sats	99%FiO ₂ 0.21
Temp	36.4 °C
BSL	4.2 mmol/l

1. List 5 differences between adult and paediatric airways (5 marks)

2. List three (3) causes of stridor and DESCRIBE the nature of the stridor that would be associated with each cause (3)

Cause	Description of noise

Question 23 (12 Marks)

A 9 year old boy has been brought to the ED with bleeding from his mouth. He underwent tonsillectomy at your hospital 6 days ago.

- 1. In order of increasing invasiveness, state four methods you could employ to reduce the amount of bleeding from the surgical site. (4 marks)**

After a short time in the ED, his bleeding has increased in volume.

The patient has become agitated and is having trouble managing his airway, with continuous coughing and choking episodes.

You have decided to intubate the patient to facilitate further safe management.

2. List 4 issues you would anticipate during the period around his intubation. For each, state how you will aim to manage the problem. (8 marks)

Issue	Management

Question 24 (24 marks)

Ambulance officers are bringing a 5-month old baby to your ED, in cardiac arrest. You have a few minutes to prepare your drugs and equipment.

- i. Complete the table below (10 marks)

	Formula/calculation	Answer
Estimated weight		
ETT size		
DC shock joules		
Adrenaline dose		
10% glucose dose		

- ii. Complete the table below identifying the recommended compression:ventilation ratio for each group (3 marks)

Group	Ratio
Neonatal	
Paediatric	
Adult	

iii. Briefly explain the rationale for different compression ratios in these populations (2 marks)

iv. Briefly explain why the ratio recommended for lay provider BLS is constant across age groups (1 mark)

v. The child regains spontaneous circulation but is agitated and requires a rapid sequence induction. Please list the drugs you will choose, including doses (6 marks)

Drug	Dose/kg	Dose

vi. Increasingly cuffed endotracheal tubes are used in paediatric intubations. Briefly explain why, historically, uncuffed tubes were preferred (2 marks)

Question 25 (15 marks)

A 36 year old man fell off his skateboard while going to work. He presents to the emergency department with a closed forearm fracture. Your registrar comes to you and tells you that she plans to do a procedural sedation for a closed reduction in ED.

What is the minimal level of monitoring would you require, in order to conduct a safe procedural sedation? (3 marks)

Your registrar plans to use Ketamine as her agent of choice for the procedural sedation.

Please complete the following table regarding this medication (8 marks)

Ketamine	
Onset of effect	IM – IV –
Dose	IM – IV –
Duration of effect	IM – IV –
Adverse effects	1. 2.

List four (4) factors which will predict difficult bag-mask ventilation (4 marks)

During the procedure, the patient becomes apnoeic. Your initial attempts to ventilate the patient via bag-valve-mask have been unsuccessful.

3. List 4 interventions you might perform in managing this man's airway. Provide the indication for each intervention. (4 marks)

Question 27 (11 Marks)

A 64 year old woman has presented with 3 hours of chest pain.

She has a history of type 2 diabetes mellitus and hypertension.

Her ECG is reproduced below

1. List 4 key findings on her ECG. (4 marks)

2. Give your interpretation of this ECG and its clinical relevance. (2 marks)

Upon your assessment the patient looks pale and sweaty. She has full field crackles on lung auscultation.

Her vital signs are:

GCS	13	E3 V4 M6
Pulse	70	/min
BP	75/40	mmHg
O2 saturation	88%	15L O2 via non-rebreather mask

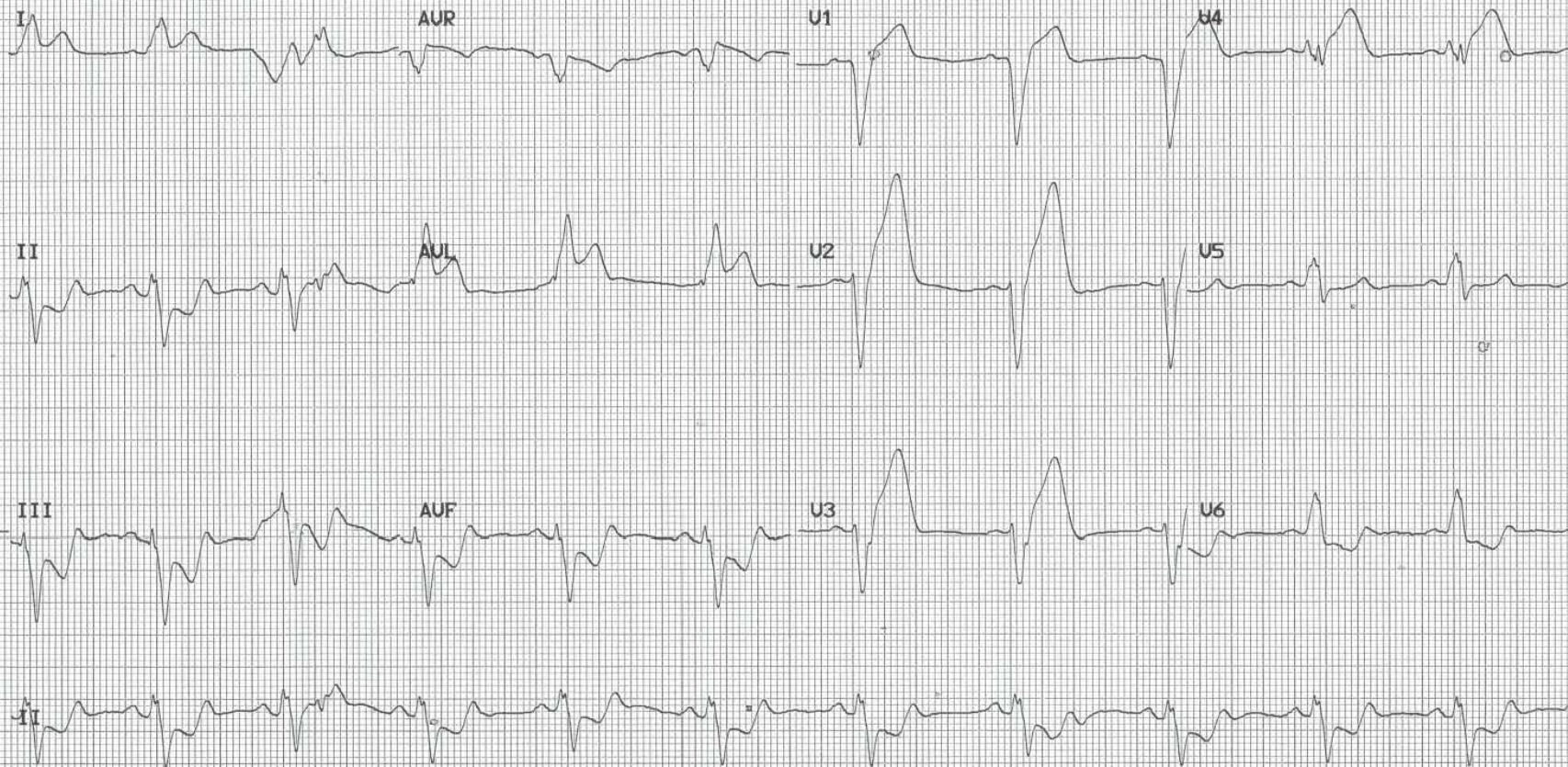
You have decided that the patient needs intubation as part of her ongoing management.

3. List 5 modifications to a standard RSI that you would employ in this patient. (5 marks)

Order. Physician :
Technician :

III +90 II
aVF

Unconfirmed report.



Cart# 1 Site# 1
27. Dec. 2008 01:10:24

25mm/s 10mm/mV ADS 50Hz 0.08 - 40Hz 4x2.5R1 12 Lead U5.21 121 (2) 12SL00231

Question 28**(12 marks)**

A 48-year-old man presents to your regional Emergency Department with 24 hours of dysphagia and fevers, and new respiratory distress. He has no past medical history and is not on any medications. On arrival, he is sitting upright and is reluctant to lie back on the bed. He is having difficulty swallowing his secretions and also has a mild stridor with a hoarse voice.

His vital signs are:

BP 140/80 mmHg
HR 90 bpm
SpO2 99% room air
Temp 37.8 degrees Celsius
RR 24 breaths/min

The nearest tertiary centre is a 2 hour drive away by road. You obtain a lateral neck x-ray, shown in the Props Booklet (Figure 8).

a). State the likely diagnosis and name the relevant positive finding on this radiograph (2 marks)

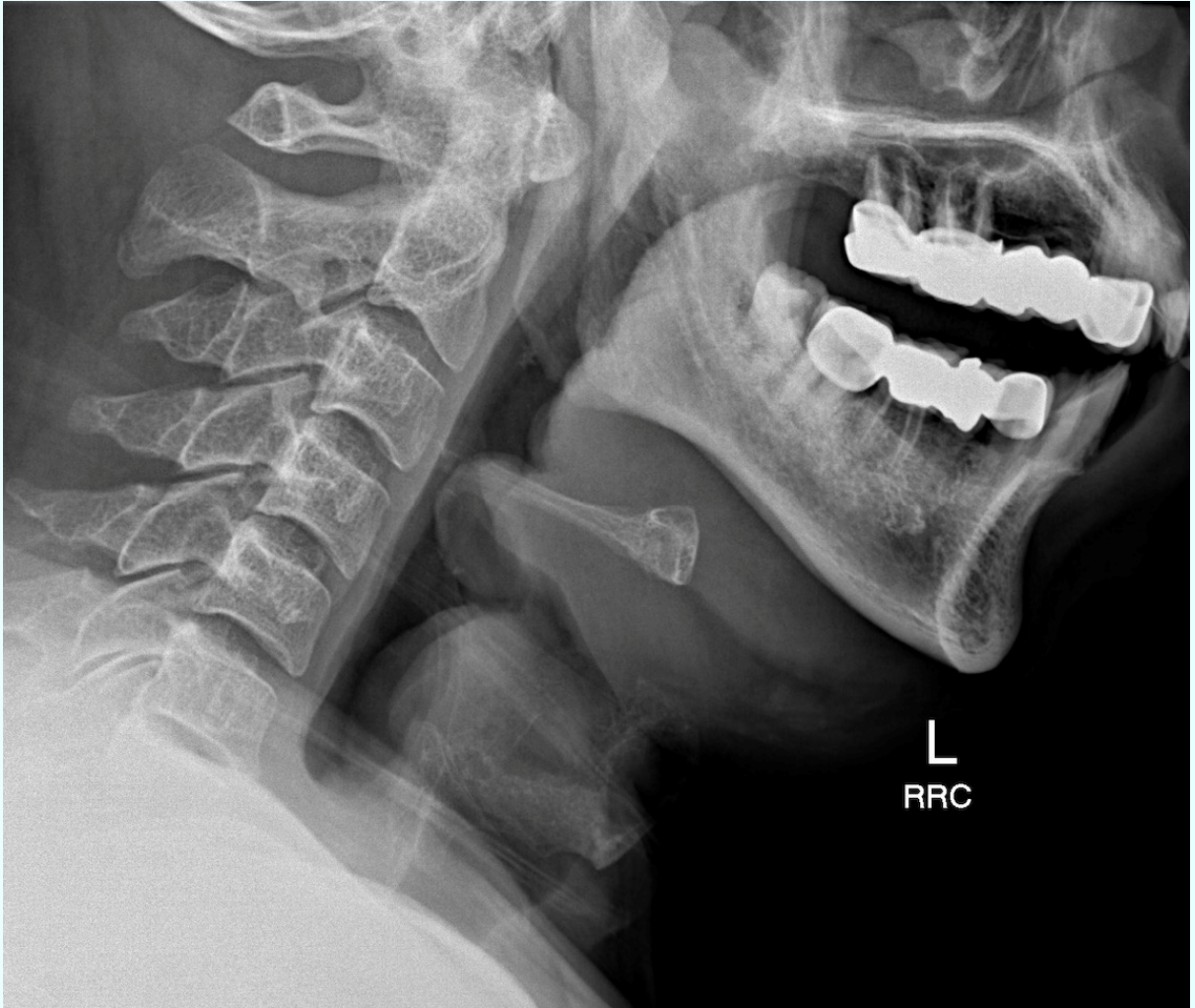
b). What is the most common causative organism for this patient's diagnosis? (1 mark)

c). What would be your anti-microbial of choice for this patient? (1 mark)

The patient develops worsening stridor and distress within 20 minutes of arrival at your department. He is becoming increasingly agitated and his oxygen saturations start to drop. You make the decision to intubate the patient in the ED. There is no anaesthetist available.

d). Complete the following table, listing the issues you might face during the intubation of this patient and how you would address these problems. (8 marks)

Factor	Anticipated problem	Proposed solution



Question 29 (12 marks)

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)

Question 30 (15 Marks)

Your registrar has called you to resus to help with a patient. An 18 year old male presented in diabetic ketoacidosis, complicated by a prolonged generalised seizure. He has been intubated for airway protection and is currently being sedated and mechanically ventilated, awaiting ICU review. His weight is 80kg.

A blood gas is provided below

1. Complete the following table for calculations that can be made from the above blood gas. (10 marks)

Variable	Formula Used	Result	Clinical Implication in this case
Expected CO ₂			
A-a gradient			
Anion Gap			
Delta Ratio			
Corrected Sodium			

Your registrar asks for guidance to address his respiratory status.

Currently the ventilator is set as follows:

Mode	SIMV-VC	
FiO ₂	1.0	
TV	400	mls
Resp Rate	12	breaths/min
PEEP	5	cm H ₂ O cm
PSupp	5	H ₂ O

You notice the patient is making some spontaneous respiratory efforts which are triggering the high pressure alarms.

2. Give your strategy **for improving this patient's ventilation**, stating your desired end-points. (5 marks)

Question 30 continued

Your registrar has called you to resus to help with a patient. An 18 year old male (body weight 80kg) presented in diabetic ketoacidosis, complicated by a prolonged generalised seizure. He has been intubated for airway protection and is currently being sedated and mechanically ventilated, awaiting ICU review.

An arterial blood gas, taken with FiO₂ 1.0, is provided.

	Result		Reference
pH	7.02		7.35-7.45
PCO ₂	60	mmHg	30-40
PO ₂	200	mmHg	60-100
HCO ₃	11	mmol/L	22-31
BE	15		-3 – +3
Hb	155	mmol/L	120-165
Na	125	mmol/L	135-145
K	6.5	mmol/L	3.5-5.0
Cl	86	mmol/L	98-110
Gluc	35	mmol/L	3.5- 5.5
Lactate	2.5	mmol/L	<2

Question 31 (16 Marks)

A 30 year old man has been brought to the ED after falling down a staircase while intoxicated with alcohol.

He was intubated on scene due to a decreased level of consciousness.

He has no pre-existing medical problems.

Your registrar is having trouble ventilating the patient. The ventilator is sounding an alarm for high airway pressures and terminating inspiration at 150mL tidal volume each breath.

You suspect that the patient has significant aspiration lung injury.

1. List 5 other potential causes for this problem. (5 marks)

2. List your initial actions that will determine the cause of the problem. (5 marks)

You have determined that severe aspiration lung injury is the cause of the problem.

The patient's current vital signs are:

Pulse	110	/min
BP	110/70	mmHg
O2 saturations	88%	

Arterial blood gas has shown:

pO2	55	mmHg
pCO2	65	mmHg

The patient's current ventilator settings are:

Volume control

FiO2	1.0	
TV	500	mL
RR	12	/min
PEEP	5	cm H2O
Pressure limit	35	cm H2O
I:E ratio	1:2	

3. List 3 changes to the ventilator settings that will improve the patient's oxygenation.
For each change, give a potential adverse effect of the change. (6 marks)

Change in ventilator setting	Potential adverse effect