

"List" = 1-3 words

"State" = short statement/ phrase/ clause

UNIVERSITY HOSPITAL, GEELONG
FELLOWSHIP WRITTEN EXAMINATION

WEEK 1– 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) 9 minutes

A 40 year old male presents to the ED with fever and confusion for 24 hours. He has just returned from one month back- packing through Papua New Guinea and Indonesia.

His observations are: PR 120 bpm BP 130/80 mmHg RR 16 bpm Temp 39.5°C GCS 13 (V3)

- a. List four (4) likely differential diagnoses for this presentation. For each diagnosis list the expected incubation period prior to clinical features. (8 marks)

NB: GCS ↓

Don't pick a DDx for which you have no idea of incubation period!

Differential diagnosis (5 marks)	Expected incubation period (5 marks)
Malaria- Cerebral/ Falciparum MANDATORY	Falciparum: 6–30 days (98% onset within 3 months of travel) Vivax: 8 days to 12 months (almost ½ have onset > 30 days after completion of travel)
Typhoid fever- MANDATORY	8-14 days (3 days- 1 month)
Japanese encephalitis (endemic area)	3–14 days (1–20 days)
Enteric fever	7-8 days (3-60 days)
Scrub Typhus	6-20 days
Leptospirosis (wild rodents/ water)	7-12 days
Dengue (not usually ACS)	4-8 days (3-14)
Meningitis- bacterial	Hours- days
Pneumonia	Hours- days
Viral encephalitis	3–14 days (1–20 days)

- b. List four (4) key investigations that you may perform to assist with the diagnosis. (4 marks)

NB "to assist with the diagnosis"

- Blood films- T&T
- Blood cultures
- Serology- Dengue
- Serology-- viral
- CTB

- c. List two (2) specific medications that you would consider as empiric treatment prior to obtaining confirmatory tests for this patient. For each, list your dose and route. (6 marks)

	Medication (2 marks)	Dose (2 marks)	Route (2 marks)
1	Ceftriaxone	2g	IV
2	Artesunate (1 st line severe malaria) OR (if parenteral artesunate is not immediately available) quinine dihydrochloride	2.4 mg/kg 20 mg/kg	IV

You should know the features/ Dx/ Mx of : Malaria, Dengue, Typhoid, Yellow fever, Travellers' Diarrhoea & Schistosomiasis



9: Infections in the returned traveller

David F M Looker and Jennifer M B Robson

Remember to consider serious yet treatable diseases, such as malaria

STUDIES SHOW that almost 50% of travellers returning to Europe and North America from the tropics experience health problems related to their travel, and that 8% consult doctors either abroad or on return.¹ Figures are not available for Australian travellers but are probably similar. The most common diseases in travellers to the tropics are travellers' diarrhoea (35% incidence per month of travel), followed by acute respiratory infections (1.4%), giardiasis (0.7%) and other infections (including hepatitis, amoebiasis and gonorrhoea).¹ Australian travellers increasingly visit tropical and developing countries and may present with infections that are rare in Australia.

Pre-travel health assessment and planning can prevent or ameliorate some of these problems (Box 1). Useful information about travel-related infections can be found at the websites of the World Health Organization (www.who.int/ith), United States Centers for Disease Control and Prevention (www.cdc.gov/travel) and the Department of Public Health and Tropical Medicine at James Cook University, Townsville (www.jcu.edu.au/school/phtm/PHTM/putravel.htm).

Clinical presentations

Over 90% of infections related to short-term travel present within six months of return. Diseases with long latent periods or potential for lifetime persistence are rare after short-term travel, but more common in those who have lived abroad or were born overseas. The usual presentation of a returned traveller is with a particular syndrome — fever, respiratory infection, diarrhoea, eosinophilia, or skin or soft tissue infection — or for screening for asymptomatic infection.

When assessing a returned traveller, it is important to obtain:

- a complete travel history, including dates and places visited, and potential exposures to exotic diseases (eg, travel to rural areas, freshwater exposure, insect bites and sexual contacts); and

Abstract

- The usual presentation of a returned traveller is with a particular syndrome — fever, respiratory infection, diarrhoea, eosinophilia, or skin or soft tissue infection — or for screening for asymptomatic infection.
- Fever in a returned traveller requires prompt investigation to prevent deaths from malaria; diagnosis of malaria may require up to three blood films over 36–48 hours.
- Diarrhoea is the most common health problem in travellers and is caused predominantly by bacteria; persistent diarrhoea is less likely to have an infectious cause, but its prognosis is usually good.
- While most travel-related infections present within six months of return, some important chronic infections may present months or years later (eg, strongyloidiasis, schistosomiasis).
- Travellers who have been bitten by an animal require evaluation for rabies prophylaxis.

MJA 2002; 177: 212–219

- time of symptom onset in relation to travel, which may help eliminate diseases with different incubation periods (eg, fever beginning over 10 days after departure from an endemic area is unlikely to be dengue, which has a short incubation period). Incubation periods of common travel-related infections are shown in Box 2.

Fever

Between 2% and 12% of travellers suffer from a febrile illness while away or on return.^{1,2} Malaria is the most common diagnosis^{3–5} and is particularly frequent in travellers to West Africa who have taken no prophylaxis (2%).¹ Among people arriving in Australia, the incidence of malaria is highest in those who have been in Nigeria (1.3%), the Solomon Islands (1.1%), Ghana (0.6%) and Papua New Guinea (0.4%).⁶ Other causes of fever are shown in Box 3. Younger travellers are more likely to have an exotic infection than the elderly, as their travel tends to be more adventurous. Older travellers are more likely to have a febrile complication of underlying disease, such as endocarditis or pneumonia.

Evaluation and initial management of fever in a returned traveller is outlined in Box 4. It is important to exclude falciparum malaria, which is potentially fatal but treatable. Once this is excluded, patients require hospital admission only if severely ill. Viral haemorrhagic fevers (eg, Lassa fever, and Marburg and Ebola virus infections) usually present as undifferentiated fever, but are rare in returned travellers. If suspected (recent travel to an African country with endemic

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Question 2 (8 marks) 6 minutes

A 59 year old obese man receives 5 mg of intravenous morphine for analgesia for abdominal pain. Thirty minutes later, his GCS has fallen to 12 and investigations are performed.

		Reference Range
FiO2	0.21	
pH	7.24	7.35-7.45
pCO2	92 mmHg	35-45
pO2	45 mmHg	80-95
Bicarbonate	49 mmol/L	22-28
Base excess	10	-3 - +3
O2 saturation	78 %	> 95
Lactate	1.2 mmol/L	< 1.3
Na+	142 mmol/L	134-146
K+	3.8 mmol/L	3.4-5
Cl-	86 mmol/L	98-106
Glucose	11.4 mmol/L	3.5-5.5
Haemoglobin	184 g/L	135-180
Carboxy Hb	7 %	< 6%

a. Provide two (2) calculations to help you to interpret these results.

Derived value 1: A-a gradient = $150 - (1.25 \times 92) - 45 = -10$ therefore non A-a gradient

Derived value 2: Expected HCO_3^- =

ACUTE: for every increased in 10 of CO_2 above 40, HCO_3^- \uparrow by 1 from 24 = $24 + 5 = 29$

CHRONIC: for every \uparrow in 10 of CO_2 above 40, HCO_3^- \uparrow by 4 from 24 = $24 + (5 \times 4) = 44$

Therefore full compensation with superimposed metabolic alkalosis

Simple respiratory alkalosis:

Acute $\downarrow \text{HCO}_3^-$ 2 in 10 min every 10 mmHg $\downarrow \text{PCO}_2$.

Minimum of 18 $\therefore < 18$ highly suggestive of metabolic acidosis (pCO_2 values cannot be negative)

Chronic $\downarrow \text{HCO}_3^-$ 5 if sustained for 2-3 days

b. Using the scenario and the derived values, define the primary abnormality/s. (2 marks)

- **Respiratory acidosis:**
 - Acute on chronic
- **Superimposed metabolic alkalosis not accounted for by compensation for respiratory acidosis**
 - secondary to vomiting in setting abdominal pain

c. Using the scenario and the derived values, define the secondary abnormality/s. (2 marks)

- **Metabolic alkalosis as compensation for chronic Resp acidosis**

d. Provide a unifying explanation for these results. (2 marks)

- **Chronic resp acidosis secondary to possible hypoventilation from obesity, +/- obstructive sleep apnoea**
- **Respiratory depression and hypercapnia exacerbated by opioids -> life threatening hypoxia**
- **Acute deterioration secondary to depression central respiratory drive from administration opioids with no evidence of underlying V/Q mismatch**
- **Metabolic alkalosis in setting of abdominal pain and possible vomiting/GI losses**

Question 3 (12 marks) 6 minutes

A 42 year old female presents via private car to the ED with severe right flank pain.

Her observations are: BP 70 PR 150 RR 16 Temp 37°C GCS 15

- a. List four (4) likely differential diagnoses for this scenario. (4 marks)

*NB: Dx needs to explain obs which show shock. ie "ectopic pregnancy" is not correct
Ruptured ovarian cyst may cause this picture but most cystic bleeding is usually contained*

- **Intra-abdo/retroperitoneal bleed**
- **Ruptured ectopic pregnancy with haemorrhage shock**
- **Pyelonephritis with sepsis- eg G-ve**
- **Renal colic with obstruction & sepsis**
- **Ruptured appendicitis with peritonitis and sepsis**

- b. List four (4) investigations that you would perform to assist with the diagnosis. State one (1) justification for each choice. (8 marks)

*NB: "to assist with the diagnosis"
"straight to theatre" is not an investigation*

Investigation	Justification
FAST scan	Rapidly diagnose intraperitoneal bleed/fluid as cause for shock
CT abdo/pelvis	Diagnose retroperitoneal bleed or free fluid, hydronephrosis/perinephric stranding, aorta, biliary disease, intraperitoneal gas etc
CTKUB	Dx obstructed kidney/ renal calculi Only if Contrast CI as would expect a contrast scan
βhCG	Supports Dx pregnancy/ectopic
FWT	Screen for UTI

Question 4 (14 marks) 6 minutes

A 72 year old male presents to ED with extreme shortness of breath. He has a history of COPD and is otherwise well. He is 70kg. He has not been given any medications.

His observations are: BP 130 PR 120 RR 36 Temp 38.2°C GCS 15

- a. List three (3) medications that you would consider using for his initial treatment. List dose and route of administration. (9 marks)

Drug (3 marks)	Delivery (3 marks)	Dose (3 marks)
Ventolin	Neb (use air if sats > 88%)	5-10mg (careful with overdosing)
Steroid:		
Prednisolone	Oral	50 mg
Dexamethasone	IV	10 mg
Hydrocortisone	IV	250 mg
Antibiotic:		
Penicillin	IV	2.4 g
Ceftriaxone	IV	1 g

He does not respond to your treatment and requires intubation.

- b. State your initial ventilator settings. (3 marks)

	Ventilator settings
Rate	Low 8-10
Tidal volumes	6-8 ml/kg
I:E rate	Low eg 1:4 (prolonged expiratory phase)

- c. State two (2) reasons for your choice of these ventilation settings. (2 marks)

- **Controlled/ Permissive hypercapnia**- allow long expiration and prevent dynamic hyperinflation with permissive hypercapnia
- **Reduce IPs**
- **Lung protective ventilation/ sedation**
- **Prevent dynamic hyperinflation/barotrauma** by allowing for long exhalation and low I:E
- **Minimise risk of volutrauma**

Question 5 (12 marks) 6 minutes

A 6 year old boy presents with 1 day of this rash.



a. List five (5) diagnostic features of this rash. (5 marks)

- **Target lesions**
- **Well demarcated/ discrete initially**
- **Coalesce with more advanced disease**
- **Central area usually slightly off centre**
- **Centre area may be pale/ erythematous/ dark red/ purple**
- **Widespread, no spared areas (mild tends to be peripheral)**
- **Varying sizes**

b. List 5 likely causes for this rash. (5 marks)

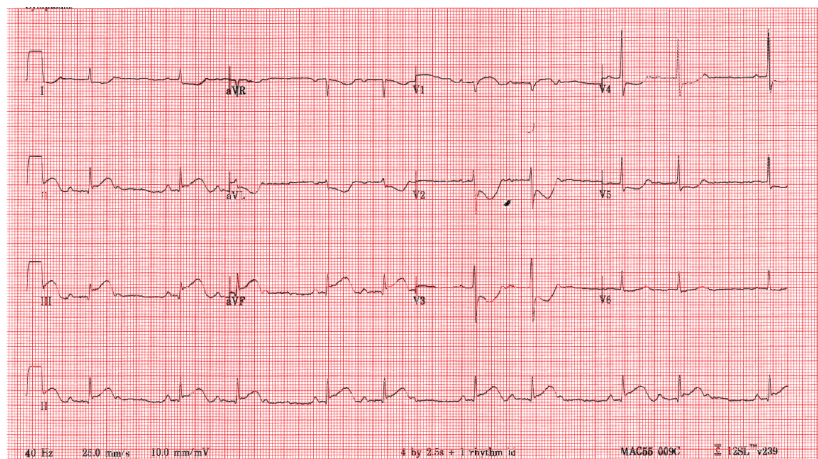
Herpes simplex virus	Mycoplasma	Drugs sulphas, penicillins NSAID's phenothiazines anticonvulsants
Viruses Varicella CMV Adeno Hepatitis Viral immunisation	Collagen Vascular Disease Protozoan Infection Fungal Infection Skin Allergies	

c. List two (2) features of this disease that differentiates mild to severe disease. (2 marks)

- **Epithelial loss→ absent →E Multiformae present→ SJS vs TEN**
- **% BSA involved < 10%→ SJS > 30%→ TEN**

Question 6 (14 marks) 6 minutes

A 52 year old male presents to ED with chest pain. His ECG is shown.



- a. State four (4) abnormalities shown on this ECG. (4 marks)
 - **Wenckebach type, Mobitz type 1 2nd degree HB**
 - **STE II, III, aVF (1mm, 2mm, 2mm respectively)**
 - **STD V2-V6, I, aVL**
 - **Biphasic T waves I, aVL, V2, V3**
- b. State four (4) significant implications of these findings. (4 marks)
 - **Inf STEMI -meets criteria for urgent reperfusion Rx**
 - **Likely posterior involvement**
 - large infarct
 - care with Morph/GTN & fluid load if ↓BP
 - **Anticipate further bradycardia/ block / -ve chronotropic instability**
- c. List two (2) specific complications that you may anticipate for this patient within the first 30 minutes of your care. State one (1) specific treatment for each complication (4 marks)

Complication (3 marks)	Specific treatment (3 marks)
Cardiogenic shock with hypotension	Fluids Urgent PCI (better outcomes in cardiogenic shock cf thrombolysis)
CHB/ bradycardia	Atropine- 300-600 mcg Pace Adrenaline (care with +ve Chronotropes) Isoprenaline (AV node supplied by RCA 90%)
Ventricular arrhythmias esp VT/VF-	DCR
↑ Pain	Urgent PCI Fentanyl for ongoing pain

Question 7 (13 marks) 6 minutes

- a. Complete the following statement with five (5) statements. (5 marks)

A person gives valid informed consent if they:

- **have capacity** to give informed consent to the treatment or medical treatment proposed
- have been given **adequate information** to enable the person to make an informed decision
- have been given a reasonable **opportunity** to make the decision
- have given consent **freely** without undue pressure or coercion by any other person
- have **not withdrawn** consent or indicated any intention to withdraw consent

- b. List three (3) circumstances in which a patient can be legally held against his/her wishes. (3 marks)

- In situations in which urgent treatment is required to prevent morbidity or mortality and:
- The patient is a:
 - Minor
 - Recommended under the Mental Health act
 - Medical Power of Attorney exists and agrees to detainment
 - Abnormal mental state
 - Significant physiological derangement
 - Under the influence of alcohol/drugs
 - Behaviour inconsistent with personality (from family, friends, GP, old notes)

- c. Define medical "negligence". (1 mark)

- Negligence is a failure to take reasonable care to avoid causing injury or loss to another person

- d. List the four (4) legal conditions required to prove negligence. (4 marks)

- **a duty of care** exists
- **breach of duty** - that the behavior or inaction of the defendant in the circumstances did not meet the standard of care which a reasonable person would meet in the circumstances
- **damage**- that the plaintiff has suffered injury or loss which a reasonable person in the circumstances could have been expected to foresee
- **causation**- that the damage was caused by the breach of duty

NB: Mental Health acts vary across Aus & NZ- the act below is presented to give some guidelines and explanations

An excerpt from Mental Health Act 2014 (Vic)

The informed consent of a person must be sought before treatment or medical treatment is given to the person under the *Mental Health Act 2014*.

All people are presumed to have capacity to give informed consent to treatment or medical treatment regardless of their age or legal status under the Mental Health Act.

The Mental Health Act sets out:

- the requirements for informed consent
- the circumstances in which treatment can be provided to a **patient** without the patient's informed consent and the process that must be undertaken before providing that treatment
- the process for providing medical treatment to a patient who does not have capacity to give informed consent to medical treatment.

Informed consent

The informed consent of a person must be sought before treatment or medical treatment is given to a person in accordance with the Mental Health Act.

A person gives informed consent if they:

- have capacity to give informed consent to the treatment or medical treatment proposed
- have been given adequate information to enable the person to make an informed decision
- have been given a reasonable opportunity to make the decision
- have given consent freely without undue pressure or coercion by any other person
- have not withdrawn consent or indicated any intention to withdraw consent.

Capacity

The person seeking informed consent of another person to a treatment or medical treatment must presume that the other person has the capacity to give informed consent.

This means that everyone must be presumed to have capacity to make decisions about their treatment or medical treatment, regardless of their age (e.g. young people or older persons) or whether they are a patient under the Mental Health Act.

The Mental Health Act contains a number of guiding principles to assist a person who is required to determine whether a person has capacity to give informed consent.

Adequate information

A person has been given adequate information to make an informed decision if:

- they have been given an explanation of the proposed treatment or medical treatment, including the purpose, type, method and likely duration of the treatment or medical treatment
- they have been given an explanation of the advantages and disadvantages of the treatment or medical treatment including information about the associated discomforts, risks and common or expected side effects of the treatment or medical treatment
- they have been given an explanation of any beneficial alternative treatments that are reasonably available, including any information about the advantages and disadvantages of these alternatives
- they have received answers to any relevant questions that the person has asked and any other relevant information that is likely to influence the person's decision
- they have been given the relevant statement of rights and had that statement explained to them in a manner that the person is most likely to understand.

Reasonable opportunity

A person has been given a reasonable opportunity to make a decision if:

- the person has been given a reasonable period of time to consider the matters involved in the decision
- the person has been given a reasonable opportunity to discuss the decision with the registered medical practitioner or other health practitioner proposing the treatment or medical treatment
- the person has been given a reasonable amount of support to make the decision
- the person has been given a reasonable opportunity to seek any other advice or assistance in relation to the decision.

Given consent freely without undue pressure or coercion

Informed consent must be freely given. A person must not feel they have to give informed consent simply because the clinician believes it is necessary for their treatment or in their best interests or to please a family member or carer.

Have not withdrawn consent

A person can withdraw consent at any time. A person can withdraw consent verbally or in writing.

A person can withdraw consent before the treatment starts or during a course of treatment. If the person withdraws consent, the treatment must stop.

A person withdraws consent if they say or indicate by their behaviour that they do not consent to the treatment.

Providing treatment when a patient does not give informed consent

The Mental Health Act requires that patients are given treatment for their mental illness.

Only the patient can give or refuse informed consent to treatment. No other person or body authorised by law to make decisions for the patient can give or refuse informed consent to treatment. This means that a guardian or a person responsible under the *Guardianship and Administration Act 1986* or an agent under the *Mental Treatment Act 1988* cannot give or refuse informed consent on behalf of a patient.

However, the Mental Health Act *permits* an authorised psychiatrist to make a treatment decision for a patient who:

- does not have capacity to give informed consent to the treatment proposed by the authorised psychiatrist or
- has capacity to give informed consent to the treatment proposed by the authorised psychiatrist but has not given informed consent to that treatment.

The authorised psychiatrist can make a treatment decision for the patient if the authorised psychiatrist is satisfied that there is no less restrictive way for the patient to be treated other than the treatment proposed by the authorised psychiatrist.

The Mental Health Act does not permit an authorised psychiatrist to make a treatment decision about electroconvulsive treatment or neurosurgery for mental illness for a patient. See electroconvulsive treatment and neurosurgery for mental illness for more information.

Determining the least restrictive treatment

In determining whether there is no less restrictive way for the patient to be treated, the **authorised psychiatrist** must have regard, to the extent this is reasonable in the circumstances, to all of the following:

- the patient's views and preferences about treatment of his or her mental illness and any beneficial alternative treatments that are reasonably available and the reasons for those views and preferences, including any recovery outcomes that the patient would like to achieve
- the views and preferences of the patient expressed in his or her advance statement
- the views of the patient's nominated person
- the views of the guardian of the patient
- the views of a carer, if the authorised psychiatrist is satisfied that the treatment decision will directly affect the carer and the care relationship
- the views of a parent of the patient, if the patient is under the age of 16 years
- the views of the Secretary to the Department of Human Services if the person is the subject of a custody to Secretary order or a Guardianship to Secretary order
- the likely consequences for the patient if the proposed treatment is not performed
- any **second psychiatric opinion** that has been given to the authorised psychiatrist.

Providing medical treatment to a patient who does not have capacity

Medical treatment can be administered to a patient if the patient gives informed consent to the medical treatment. A patient with capacity can refuse medical treatment.

The requirements for informed consent to medical treatment are the same as the requirements for treatment.

Substitute consent to medical treatment

The Mental Health Act sets out requirements for who can provide substitute consent for patients 18 years or above and patients under 18 years of age.

Adult patients

Medical treatment may be administered to a patient 18 years or older who does not have capacity to give informed consent to medical treatment, with the consent of the first person of the following listed below who is reasonably available, willing and able to make a decision about the proposed medical treatment:

- a person appointed by the patient under section 5A of the Medical Treatment Act (the patient's medical agent or guardian)
- a person appointed by the Victorian Civil and Administrative Tribunal to make decisions concerning the proposed medical treatment

- a person appointed under a guardianship order within the meaning of the Guardianship and Administration Act with power to make decisions concerning the proposed medical treatment (the patient's guardian)
- a person appointed by the patient (before the patient became incapable of giving informed consent) as an enduring guardian within the meaning of Guardianship and Administration Act with power to make decisions concerning the proposed treatment (the patient's enduring guardian)

Patients under 18 years of age

Medical treatment may be administered to a young patient under 18 years of age who does not have capacity to give informed consent to medical treatment, with the consent of:

- a person who, in relation to the patient, has the legal authority to consent to medical treatment and who, in the circumstances, is reasonably available, willing and able to make a decision about the proposed medical treatment or
- the authorised psychiatrist.

A medical treatment decision may be made by the first person who is 'reasonably available, willing and able' to make a decision about the patient's medical treatment.

The authorised psychiatrist may consent to medical treatment being administered to a patient who does not have capacity to give informed consent if the authorised psychiatrist is satisfied that the medical treatment would benefit the patient.

Making a substituted medical treatment decision

The Mental Health Act requires the authorised psychiatrist to have regard to the following matters to the extent that is reasonable in the circumstances when determining whether a medical treatment would benefit a patient:

- the patient's views and preferences about medical treatment and any beneficial alternative medical treatments that are reasonably available and the reasons for those views and preferences, including any recovery outcomes that the patient would like to achieve
- the views of the patient's nominated person
- the views of the guardian of the patient
- the views of a carer, if the authorised psychiatrist is satisfied that the treatment decision will directly affect the carer and the care relationship
- the views of a parent of the patient
- the views of the Secretary to the Department of Human Services if the person is the subject of a custody to Secretary order or a Guardianship to Secretary order
- if the medical treatment is likely to remedy the condition or lessen the symptoms of the condition
- the likely consequences for the patient if the medical treatment is not performed
- any second opinion of a registered medical practitioner that has been given to the authorised psychiatrist.

If the authorised psychiatrist is of the opinion that a patient who does not currently have capacity to give informed consent to medical treatment is likely to have capacity to give informed consent within a reasonable period of time, the authorised psychiatrist must not consent to the medical treatment unless the delay in administering or performing the medical treatment could result in serious harm to, or deterioration in, the mental or physical health of the person.

Urgent medical treatment

The Mental Health Act permits a 'health practitioner' to perform medical treatment on a patient who does not have capacity to give informed consent to the medical treatment where the medical treatment needs to be performed as a matter of urgency.

A matter of urgency means where medical treatment needs to be performed:

- to save the patient's life or
- to prevent serious damage to the patient's health or
- to prevent the patient suffering or continuing to suffer significant pain or distress.

There is no requirement that the health practitioner seek the consent of any other person who is legally permitted to give consent to medical treatment on behalf of the patient where the health practitioner is satisfied that the medical treatment is required as a matter of urgency. However, if such a person is reasonably available, willing and able to give consent to the urgent medical treatment, that person's consent should be sought as a matter of good clinical practice. There is no requirement that the 'health practitioner' be registered under the *Health Practitioner Regulation National Law (Victoria) Act 2009*.

A health practitioner who in good faith carries out or supervises the carrying out of medical treatment in the reasonable belief that the requirements for urgent medical treatment have been complied with is not:

- guilty of assault or battery
- guilty of professional misconduct or unprofessional conduct
- liable in any civil proceedings for assault or battery.

This protection from liability does not affect any duty of care owed by the health practitioner to a patient.

Question 8 (13 marks) 6 minutes

A 62 year old female presents to ED with massive haematemesis. She has a history of alcohol dependence.

Her vital signs on presentation are: GCS 15 BP 70 PR 150 RR 16 Temp 37°C

a. List five (5) likely differential diagnoses for the cause of her bleeding. (3 marks)

NB: "Massive" "alcohol dependence" & she is in shock

- **GO Varices**
- **PUD**
- **Oesophagitis**
- **Alcoholic gastropathy**
- **DU**
- **MW tear**
- **Coagulopathy + gastritis/ any of above**
- **Aorto-enteric fistula**
- **Angiodysplasia**

b. List three (3) indications for urgent (< 1 hour) gastroscopy. (3 marks)

- **Known varices and ongoing massive haematemesis/ haemodynamic instability**
- **Persistent haemodynamic instability despite appropriate resuscitation**
- **Ongoing massive haematemesis**

c. Other than endoscopy, list three (3) steps in the management of her haemodynamic state. List one (1) detail for each step. (8 marks)

Management (3 marks)	Detail (3 marks)
Fluids	IV normal saline bolus 250ml Reassess with plan for early blood products Aim for permissive hypotension e.g. SBP 80-90mmHg
Blood- activate MTP	Evidence haemorrhagic shock, start with O- if delay, then aim ration XM blood PRBC:FFP:platelets 1:1:1
Octreotide	50mcg bolus then infusion 50mcg/hr 48hrs Decreases bleeding via increased intragastric pH (no evidence)
Reverse coagulopathy	FFP 2-4 units, <u>prothrombin X 20-50IU/kg</u> ????, vitamins K 10mg IV
Pantoprazole	80mg IV then infusion 8mg/hr ↓ LOS ↓ need for endoscopic therapy does not reduce transfusion req, re-bleeding, need for surgery or death at 30d

NB: May combine fluids and blood into 1 point

Question 9 (13 marks) 9 minutes

A 2 year old female presents to ED after accidental ingestion of 2 x 400mg rapid release carbamazepine tablets.

- a. List three (3) mechanisms of possible toxicity from this exposure. (3 marks)
- **Na channel blocker**
 - **NA reuptake inhibitor**
 - **Anticholinergic - muscarinic and nicotinic**
 - **Inhibits central NMDA adenosine receptors**
- b. List two (2) ECG findings that would suggest significant toxicity from this ingestion. (2 marks)
- **1st degree HB**
 - **QRS prolongation**
 - **Sinus tachycardia**
 - **Dominant R wave aVR > 3 mm**
 - **R/S ratio in aVR > 0.7**
- c. List two (2) methods of decontamination or elimination. State one (1) indication for use in this patient for each method. (4 marks)

Method (2 marks)	Indication (2 marks)
AC	Early & asymptomatic < 50mg/kg : all ingestions if > 50mg/kg: only after intubated as need airway protection
MDAC	ETT & BS present
Haemodialysis	Prolonged coma > 48/24 haemodynamic instability high serum levels after 48/24

- d. List four (4) criteria, specific to this exposure, that need to be met to allow safe discharge. (4 marks)

NB: "specific to this exposure"- safe environment probably ok, "clinically well" probably not- too broad and applicable to any OD

- **Observe for > 8/24**
- **Daylight hour**
- **No sedation**
- **No anticholinergic effects**
- **Safe environment**

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.

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