This report is circulated to:

- candidates – successful and unsuccessful
- examiners involved in the examination – written, clinical and observers
- DEMTs across Australasia
- official observers (listed on Page 2)
- clinical site organisers
- Board of Education
- Fellowship Examination Committee

The report is not confidential and its wide dissemination is encouraged.

The questions alone (without examiner comments or answers) are published in Past Papers and can be accessed on the ACEM website. Recent previous examination reports are also available on the ACEM website.

1. INTRODUCTION

The 2013.1 examination was held on 20 February (written sections – all regions) and on 4 & 5 May (clinical sections – Sydney). The clinical sections were held at three sites (Royal North Shore Hospital, Royal Prince Alfred Hospital and Concord Repatriation Hospital for Long Cases and Short Cases, and Royal North Shore Hospital for the Long Cases, Short Cases and SCEs).

134 candidates sat the written component of the examination. Of these candidates, 72 (53.7%) were invited to the clinical section. The overall pass rate for this examination was 63/134 (47%).

2. EXAMINERS

Examining in the Fellowship Exam is a substantial commitment in time. All of the examiners are thanked for their efforts. The examiners were:

**Writtens only**

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<tr>
<th>Name</th>
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<tr>
<td>Peter Aitken</td>
<td>Deanne Crosbie</td>
<td>Paul Pielage</td>
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<tr>
<td>Shalini Arunanthy</td>
<td>Wayne Hazell</td>
<td>David Richards</td>
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<td>Michael Bastick</td>
<td>Tony Lawler</td>
<td>Mark Smith</td>
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<td>Sally McCarthy</td>
<td>Janet Talbot-Stern</td>
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<td>Betty Chan</td>
<td>Paul Mark</td>
<td>Kim Yates</td>
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<td>James Collier</td>
<td>Leo Marneros</td>
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<td>Bhavani Peddinti</td>
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Clinicals only
Philip Aplin           David Lightfoot
Jennifer Brookes       Stephen Priestley
Sheila Bryan           Matthew Chu

Writtens and Clinicals
Neil Banham            Trevor Jackson          Yuresh Naidoo
Tony Brown             Philippa Keir          Tonia Nicholson
Bill Croker            Fergus Kerr            Debra O’Brien
David Cruse            Diane King             Nadi Pandithage
Jennifer Davidson      Tony Lawler            Michael Ragg
Gina De Cleene         Sean Lawrence          Drew Richardson
David Eddey            Debbie Leach           Philip Richardson
Diana Egerton-Warburton Victor Lee    Ian Rogers
Lou Finnel             David Lewis-Driver       Pam Rosengarten
Bernard Foley          Greg McDonald           Andrew Singer
Mark Gillett           John Maguire            Ian Summers
Barry Gunn             Jennie Martin           David Symmons
Ruth Hew               Mark Miller             James Taylor
Anna Holdgate          David Mountain          Graeme Thomson
Craig Hore             Richard Mulcahy         Eric Van Puymbroeck
Chanh Huynh            Lindsay Murray          Garry Wilkes

Peer Support Examiners
Tony Brown, Matthew Chu, Diane King, Greg McDonald, Ian Rogers, Pam Rosengarten, Graeme Thomson

3. OBSERVERS
The official observers were Doctors:
Shahina Braganza       (Gold Coast Hospital)
Anthony Cross          (Box Hill Hospital)
Rodney Ellis           (Fremantle Hospital)
Hiten Patel            (Rockingham Hospital)
Kate Porges            (Gosford Hospital)
Jessamine Soderstrom   (Royal Perth Hospital)

4. MULTIPLE CHOICE QUESTIONS
117/134 (87.3%) candidates passed the MCQ section of the exam. To achieve this, a candidate must pass 33/60 questions (55%). The mean score obtained was 38.10 (SD ± 4.93). The grade frequencies were:

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5. SHORT ANSWER QUESTIONS

66/134 (49.3%) candidates passed the SAQ section of the exam. To achieve this, a candidate must pass 5 or more of the 8 questions with a total mark of at least 40/80. The grade frequencies were:

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<td>3</td>
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SAQ 1

A 72 year old man is brought into the emergency department by ambulance following a house fire. He was found on the couch in his living room surrounded by flames with an over-turned bar-heater that had set alight the carpet.

His vital signs are:

- GCS 11 (E2, V4, M5)
- HR 120 /min
- BP 110/75 mmHg
- RR 25 /min
- O₂ Saturation 92% on room air

He has extensive burns to his entire face, anterior chest and circumferential burns to both upper limbs.

Describe your management of this patient (100%)

The overall pass rate for this question was 58/134 (43.3%)

**Features of successful answers**

Candidates were required to address the following issues to pass:

1. Intubation - details of the intubation needed to convey that it would occur early and that there was preparation undertaken in anticipation that this may be a potentially difficult airway.
2. Circulation - an attempt at calculating the total burns surface area and details of fluid management that included use of the Parkland formula.

3. Consider the potential for bilateral upper limb escharotomies.

4. Management of burn wounds - candidates were required to address at least two of the following three points:
   - early cooling of the burns;
   - wound cover appropriate to depth of the wounds;
   - thermal regulation.

5. Consider the potential for carbon monoxide toxicity.

6. Oxygenation

7. Analgesia

8. Referral to a Burns Unit

Higher scoring answers provided additional details within the above management.

**Features of unsuccessful answers**

Candidates that were unsuccessful generally did not adequately address more than one of the above management issues; however there were a small number of candidates that were unsuccessful on the basis of missing one of the pass / fail criteria (generally, from issues 1-5).

Whilst there were a relatively large number of pass / fail criteria, it was felt that this was a topic area designated as requiring an 'expert' level of knowledge and the question itself put forward a scenario that demanded a number of issues be addressed in managing this patient satisfactorily.

**SAQ 2**

A 72 year old woman is brought to your emergency department from a shopping centre where she had a witnessed collapse.

By the time of her arrival in the emergency department she has returned to her normal level of function. She currently lives independently alone in her own home.

On examination there is no evidence of trauma.

Her vital signs are:

<table>
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<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>GCS</td>
<td>15</td>
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<tr>
<td>HR (bpm)</td>
<td>74</td>
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<tr>
<td>BP (mmHg)</td>
<td>143/78</td>
</tr>
<tr>
<td>RR (bpm)</td>
<td>13</td>
</tr>
<tr>
<td>Temperature</td>
<td>37.1°C</td>
</tr>
</tbody>
</table>
a) Outline the investigations you would perform, and explain their utility, in this patient (50%)

b) Outline the factors you will consider in determining her disposition (50%)

The overall pass rate for this question was 114/134 (85.1%)

**Features of successful answers**

**Investigations (part a):**
- Using vital signs, history and examination for guidance
- Most useful (and simple to perform):
  - ECG – arrhythmias, conduction abnormalities, ischaemia
  - FBC (particularly Hb/Hct) – anaemia, infection
  - BSL – hypo- or hyperglycaemia
- Less useful, or only if Hx/Ex suggestive:
  - Urinalysis – UTI
  - CT brain – SAH, ICH, SOL, stroke
  - CXR – CCF, infection
  - EUC – dehydration, renal impairment
  - Troponin - ischaemia
  - EEG – seizure
  - CTPA – PE

**Factors affecting disposition (part b)**
Appropriate risk stratification based on acuity of condition and potential treatment:
- Abnormalities in any Ix requiring further acute Ix or Rx
- Mental state
- Social supports and hour of day
- Ability to self care and ambulate
- Available follow-up

**Desirable**
- Understanding of validated syncope rules:
  - SFSR – abnormal ECG (not NSR or new changes), SOB, Hct <30, SBP <90 mm Hg
  - OESIL – age >65, Hx of CV disease, syncope without prodrome, abnormal ECG (any arrhythmia, AV blocks, LVH/RVH, LAD, old MI, ST-T ischaemic changes)
  - Note limited sensitivities and low specificities of both rules and different outcomes (7-day adverse event or representation for SFSR, 12 month mortality for OESIL)
- Structured/progressive approach guided by history and examination
- Not “over-investigating” in low yield situation
- Logical approach in disposition decision

**Features of unsuccessful answers**
Candidates that were unsuccessful generally did not adequately address the investigations and disposition noted above.

SAQ 3
A 25 year old woman presents to your rural emergency department in advanced labour with the baby’s head on view, and delivery is imminent. She is known to be 38/40 pregnant. There are no obstetric or paediatric in-patient services at your hospital.

Outline your management
(100%)

The overall pass rate for this question was 82/134 (61.2%)

Features of successful answers
Candidates were expected to make reasonable attempts at describing each phase of management of a normal delivery. This includes:

- Preparation including finding experienced staff and assembling delivery and neonatal equipment;
- Second Stage including controlled delivery of the head, expecting delivery to be normal but anticipating shoulder dystocia;
- Neonatal Care, expecting a normal baby but anticipating resuscitation;
- Third Stage including controlled delivery of the placenta and anticipation of PPH;
- Later - Transfer to an obstetric unit.

Features of unsuccessful answers
Candidates that were unsuccessful had major omissions in any section noted above. Other causes were overly aggressive treatment. Such errors included:

- Inadequate or a lack of management of the second stage.
- Treating this as a major resuscitation problem and were too aggressive.
- Unfamiliarity with obstetrics leading to serious errors, particularly with aggressive management of the second stage or with cord clamping and cutting.
- Opiate administration without acknowledgement or balance of benefit versus risk of potential for sedation in neonate.

SAQ 4
The emergency call alarm alerts you to a problem in a monitored cubicle in your department.

On entering the room you find a junior registrar and nurse performing CPR on a 65 year old woman. They had been performing a femoral nerve block to provide analgesia for a fractured neck of femur. The patient was administered 30mls of bupivacaine 0.5%. The patient is attached to a cardiac monitor which shows a broad complex tachycardia at 180 beats per minute.

Describe your resuscitation and subsequent management of the patient (100%)
The overall pass rate for this question was 83/134 (61.9%)

Features of successful answers

- Assume leadership
- Call for help
- Commence the shockable VF/VTALS algorithm
- Outline the basic steps of CPR including compression rate and compression to ventilation ratio
- Recognise this was possibly related to LA toxicity

A high level answer would include:

- Intralipid
- Therapeutic cooling
- Quality improvement loop
- Recognise this was possibly related to LA toxicity by either prolonged resus and/or use of intralipid and/or consultation with a toxicologist.

Features of unsuccessful answers

- Giving Lignocaine
- Failure to follow appropriate ALS protocol
- Failure to realise it would be a long resuscitation
- Failure to recognise the LA toxicity aspects

SAQ 5
Describe the assessment of a 3 year old boy who presents with a limp (100%)

The overall pass rate for this question was 85/134 (63.4%)

Features of successful answers

Differential diagnosis included:

- Trauma – fracture / soft tissue injury
- Septic arthritis (SA)
- Transient synovitis (TS)
- Osteomyelitis (OM)
- Consider NAI

History:

- History of trauma
- Fever, systemic symptoms
- Onset acute – V insidious eg SA / OM / trauma V perthes
- Severity pain / discomfort
- Previous injuries - NAI

Examination:

- Fever and general appearance – toxic increase SA / OM
- Signs of trauma – recent / old / localised / generalised
- Assess gait, Examination of limb(s) to localise site problem - pain, tenderness, swelling, deformity, erythema, range of movement etc
• Generalised examination as directed by Hx and examination

Investigations:
• Depend upon presence / absence systemic signs and symptoms / history of injury
• May not be required
• FBE ESR CRP
• Imaging as directed by Hx and exam
• X-ray
• Ultrasound hip

Features of unsuccessful answers
• Omission of pass criteria noted above (many candidates omitted osteomyelitis in ddx – however if this was the only omission and answer was otherwise of a high standard – were able to attain a pass).

SAQ 6
After your routine morning handover you are approached by one of your night registrars who reports that another of your hospital’s emergency department specialists was seen overnight in the emergency department after a suspected recreational drug overdose. The specialist discharged himself against medical advice after a few hours in the emergency department. A urine toxicology sample obtained overnight was positive for the presence of amphetamines and benzodiazepines.

Describe how you would deal with this situation (100%)

The overall pass rate for this question was 50/134 (37.3%)

Candidates needed to consider that the impaired physician is a highly trained individual in a position of authority and responsibility with a duty of care, who is at risk and poses a risk to the public in his position. The candidate’s aim is to protect the public, protect the physician from further harm, provide intensive counselling, treatment and support through a multidisciplinary specialist team, monitor the progress, and successfully rehabilitate so that the physician can undertake unrestricted practice in the future. This question also involves mandatory reporting to the hospital and registering authority but avoid involving the Law.

Features of successful answers
• Maximise privacy/confidentiality
• Ensure safety of physician
• Don’t handle alone- ED director, (if you are the Director inform chief medical officer, senior HR, program head, hospital legal team etc
• Handle registrar and senior nurse night staff- obtain information, investigate and debrief
• Mandatory reporting issues- relevant registration authorities.

Better marks
• Documentation of everything
Medical board will provide drug and alcohol Mx long term with internal hospital support
Psych/suicide risk and competence to discharge at own risk
Safety of patients if he was on the evening shift prior
Roster and workload of investigation - get help to cover the floor
Cover future shifts for physician immediately
Limit rumors while debriefing staff directly involved
A caring approach and intervention (not alone)
Consider that this may be a known issue for this physician- consult supervisors/director
Was another physician involved overnight, they should have been recalled? If not why not?
Appropriate Ix to ascertain if this was one off or was a chronic use problem that was missed and reasons for such.
The multidisciplinary team, psychologist, drug rehabilitation
Plan for re-induction in the service with restrictions (supervision, restricted prescribing rights and regular drug testing as required)

Features of unsuccessful answers
- Neglecting to include features noted above.
- Calling Police to report drug use unless required to recall for patient safety/psych risk

SAQ 7

A 75 year old man presents with 30 minutes of severe crushing central chest pain radiating through to the interscapular region.

His vital signs are:

BP 205/115 mmHg
HR 85 regular
O₂ Saturation 96 % on air

He is complaining of difficulty co-ordinating movement of his right arm and leg. Of note in his preliminary investigations are a creatinine of 130 μmol/L (urea 13 mmol/L) and a PA CXR showing a mediastinal width of 9.0 cm.

a) Discuss the use of imaging to confirm the suspected diagnosis (50%)

b) Investigation confirms a type A dissection. Outline your emergency department management to optimise his condition prior to definitive management (50%)

The overall pass rate for this question was 67/134 (50%)

Features of successful answers

Part a)
- Consider pros and cons of:
  - TTE,
  - TOE,
- CT,
- Arch Aortogram;
- Consider strengths and weaknesses of each
- Deployment according to clinical stability

Part b)
- Demonstrate understanding of use of B-blockers before vasodilators and requirement for early cardio-thoracic surgical consultation.
- “Time critical” nature of process
- Resuscitation team response with invasive monitoring and monitoring of renal function
- Use of analgesia.

Features of unsuccessful answers

Part a)
- Limited understanding of imaging alternatives; often only one modality was mentioned in unsuccessful answers. While the question asked candidates to “discuss the use of imaging to confirm the suspected diagnosis” it is possible that some candidates answered a different question namely “discuss the use of imaging to confirm the suspected diagnosis IN THIS PATIENT”.

Part b)
- “Generic resuscitation” style answers; in particular unsuccessful candidates failed to demonstrate understanding of importance of use of B-blockers before vasodilators and the importance of urgent preparation for surgical management.

SAQ 8
You are working in a tertiary referral centre that houses the local hyperbaric chamber. You are contacted by a GP working in a remote GP staffed medical centre located 150 km away. They have a 30 year old male diver with suspected decompression illness and suspected aspiration. The GP is requesting advice and your retrieval of this patient.

Current observations:

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<tr>
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<td>Temperature</td>
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<tr>
<td>O₂ Saturation</td>
<td>92</td>
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</table>

8L/min Oxygen by Hudson mask

a) Outline your instructions for patient management prior to your arrival (30%)

b) Describe the important steps in the retrieval of this patient (70%)
The overall pass rate for this question was 94/134 (70.1%)

**Features of successful answers**

Pass overall required a satisfactory statement on or adequate response to:

- Instructions to the GP on initial management of decompression illness including:
  - Manage patient supine and flat,
  - Optimise airway, 100% oxygen,
  - Optimise circulation,
  - Restore normothermia

- Consideration of the special retrieval issues specific to decompression illness

- Description of the possible modes of retrieval transport with some consideration of the necessity to minimise time of transport while avoiding altitude.

- Description of generic issues pertinent to retrieval e.g. team, equipment and the actual process of retrieval

**Features of unsuccessful answers**

- Failed to mention or discuss use of 100% oxygen and to rewarm.
- Failed to discuss issue of sea level pressurisation.
- Failed to communicate adequately with GP/ ICU/ hyperbaric team.

6. **VISUAL AID QUESTIONS**

45/134 (33.6%) candidates passed the VAQ section of the exam. To achieve this, a candidate must pass 5 or more of the 8 questions with a total mark of at least 40/80. The grade frequencies were:

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**VAQ 1**

A 40 year old female motorcycle rider involved in a crash and has been brought to your ED. She has a painful left shoulder.

Her observations are:

<table>
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<tr>
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<tr>
<td>HR</td>
<td>110</td>
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</tbody>
</table>
BP 115/65 mmHg
RR 18 /min
O₂ Saturation 95 % on room air
Temperature 36.5 °C

a) Describe and interpret the image (50%)
b) Outline the potential complications (50%)

[X-ray available on ACEM website]

The overall pass rate for this question was 85/134 (63.4%)

Features of successful answers

PART A
- Identify clavicle / scapular / rib #s
- Interpret high risk potential for associated injuries

PART B
- Neuro-vascular (NV) complications: at least one vessel / one nerve
- Lung complications: at least one
- At least one chronic / delayed complication.

Features of unsuccessful answers
- Failure to associate this high mechanism injury with NV complications
- Seeing injuries that are not there e.g. > 2 rib #’s in >2 places.
- Brief responses or when insufficient time was allocated to complete the questions (particularly part b - complications) with enough detail.

VAQ 2
A 16 year old boy with a congenital heart problem presents to your ED with syncopal episodes.

An ECG is taken.

a) Describe and interpret his ECG (100%)

[ECG available on ACEM website]

The overall pass rate for this question was 61/134 (45.5%)

Features of successful answers
Consultant level description including:
- Pacemaker failure
- Period of ventricular standstill
- Ventricular escape beats (or underlying CHB)
- Likely cause of syncope
- More than one possible cause of PM failure eg. lead breakage, fibrosis, electrolyte abN or inferred eg. needs check threshold PM.

**Features of unsuccessful answers**
- Generic approach to ECG or basic errors in ECG.
- Not recognising ventricular standstill.

**VAQ 3**
A 30 year old man presents to your ED with a 24 hour history of increasing weakness.

An arterial blood gas and electrolytes are performed:

a) Describe and interpret his results (100%)

**Arterial Blood Gas**

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<tr>
<td>pO₂</td>
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<td>HCO₃⁻</td>
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<tr>
<td>BEXS</td>
<td>-13 mmol/L</td>
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**Electrolytes**

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<td>K⁺</td>
<td>1.8 mmol/L</td>
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<td>Cl⁻</td>
<td>116 mmol/L</td>
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<td>Urea</td>
<td>7.8 mmol/L</td>
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<td>Creat</td>
<td>86 mmol/L</td>
<td>(45-85)</td>
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<tr>
<td>Glucose</td>
<td>4.0 mmol/L</td>
<td>(3.0-5.5)</td>
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<tr>
<td>CK</td>
<td>1975 U/L</td>
<td>(&lt;150)</td>
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<tr>
<td>Trop T</td>
<td>20 ng/L</td>
<td>(&lt; 30)</td>
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The overall pass rate for this question was 62/134 (46.3%)

**Features of successful answers**

In the description:
- Profound hypokalaemia
- Non-AG metabolic acidosis with respiratory compensation
- Increased CK
- Normal renal function

In the interpretation:
- Hypokalaemia most likely cause of weakness
- CK rise not excessive, unlikely cause of weakness
- Causes
  - RTA must be mentioned
  - Plus at least one other NAG MA with rationalisation for inclusion / exclusion

**Expected features of better answers**
- Increased Cl- noted and used in DDx
- Causes of CK in the range of this result (mild)
- Commentary regarding pO2 +/- A-a gradient
- Interpretation of Non-AG MA causes focused /relevant to stem, not overly inclusive list without qualification

**Features of unsuccessful answers**

- Candidates scored poorly largely due to poor interpretation. Comparing a parameter to a normal range and then stating “high”, “low” or “normal” is not interpretation and scores very little as description. Candidates should always try to interpret the results in light of the clinical situation described.
- Several candidates did calculations for expected CO2 or A-a grad, but then made no or little comment on the result. A calculation is only useful if the result is correctly interpreted. Interpretation requires specific comment from the candidate. Marks are scored for clinical correlation of the result, not the actual calculation.
- Many candidates failed to interpret the results in light of the stem of the question. In particular, many patients missed the association between the patient’s very low potassium and his weakness.
- Many candidates failed to adapt their answers to the question and interpret “on the run”. An example of this is the AG calculation. Many recognised the metabolic acidosis but didn’t quantify the type of acidosis until much later in their answer as they did not perform the AG calculation until later. A better approach would be to perform the appropriate calculation at the appropriate time. This demonstrates a better understanding of concepts.
- Some candidates failed to appreciate that all calculations have a margin of error (often +/- 1-2). In many cases, this led to the erroneous assumption that resp compensation was either not complete or over-exaggerated. This caused candidates to erroneously assume there was also a primary respiratory problem.
- Several candidates performed delta gap calculations incorrectly. Again this led to erroneous interpretation. (Most experts would suggest that delta gap should only be performed in setting of HAGMA).
- The CK was poorly interpreted by many. Whilst elevated, a CK of 1975 is not likely to cause significant Rhabdomyolysis.
- Candidates who scored poorly often wrote contradictory information in their lists eg. rhabdomyolysis and renal failure as a cause of high CK, after saying that renal function was normal in their description.
A 55 year old woman presents to your ED following a collapse with loss of consciousness. On arrival in the emergency department she is vomiting and has a GCS of 7 (E1, V2, M4). She is intubated prior to transfer to CT. Her observations on return from CT are as follows:

HR 60 /min
BP 190/120 mmHg
O₂ Saturation 100 % on 100% FiO₂
Temperature 37 ℃

A single slice of her non contrast CT head is shown.

a) Describe and interpret her CT (50%)

b) Outline your management priorities (50%)

The overall pass rate for this question was 55/134 (41%)

Features of successful answers
The expectation is that all of these issues need to be mentioned for a pass. The words may not be the same but the concept should be conveyed.

Description and interpretation:
- Presence of extensive subarachnoid and intraventricular blood
- Source likely to be an aneurysmal bleed
- Extensive or high grade subarachnoid
- CT appearance and clinical signs indicate raised intracranial pressure

Management priorities:
- Prevention of secondary brain injury by multiple means
- Urgent neurosurgical and ICU consultation with reasons stated for this consult
- Mention of guarded prognosis (may instead be in the “interpretation” section)
- Discussion with family re prognosis or establishing limits of care

Features of unsuccessful answers
Part A:
- Some candidates described the haemorrhage as intracranial or intracerebral but not as an SAH.
- Many candidates did not list that an aneurysm was the likely cause of the bleed.
- Some candidates did not appreciate that the clinical stem and the CT indicated raised ICP.
Part B:
- Not including discussion with the patient’s family
- Not mentioning the poor prognosis

**VAQ 5**
A 5 year old boy presents to your ED after falling and striking his neck on the edge of a table. He is alert, his face is swollen and he is unable to speak. There is a soft stridor.

His observations are:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>HR</td>
<td>110/min</td>
</tr>
<tr>
<td>BP</td>
<td>95/60 mmHg</td>
</tr>
<tr>
<td>RR</td>
<td>40/min</td>
</tr>
<tr>
<td>O₂ Saturation</td>
<td>100% on high flow O₂ via Hudson mask</td>
</tr>
</tbody>
</table>

A chest X-ray is taken.

a) Describe and interpret his chest X-ray (50%)

b) Outline your management (50%)

[X-Ray available on ACEM website]

The overall pass rate for this question was 86/134 (64.2%)

**Features of successful answers**

Part A:
The description **must** identify:
- *Subcutaneous emphysema* – extensive (face, neck and chest bilaterally)
- *Pneumomediastinum* - better responses will also name pneumopericardium
- *Right pneumothorax* (or at least suspicion thereof)

Improved results were gained for more detailed description and recognition of limitations of supine CXR.

The interpretation:
- Must interpret injury to upper airway (larynx; trachea) as the likely cause of these findings.

Part B:
The Management:
- Must include a safe approach to airway management that requires urgent input from other specialties (anaesthesia; paediatrics; ENT – depending on resources available) and is undertaken in the appropriate environment (e.g. OT).
- Appropriate resources need to be at hand in the ED in the event of deterioration (e.g. airway trolley; ICC trolley).
Outline criteria to immediately intervene in the ED (e.g. complete airway obstruction; loss of consciousness; tension pneumothorax)

Improved results were gained when responses included a general approach to the sick and frightened child with potential for rapid deterioration (e.g. keep calm; with parents; position of comfort; avoid distress)

Features of unsuccessful answers

- Must NOT immediately intervene in the ED with intubation and/or ICC given that the child is alert, maintaining an airway, has O2 saturations of 100% and an acceptable BP (Fail criteria).
- Failing to address one or more of the criteria given above. In general, it was the management section that unsuccessful candidates handled poorly.
- Not specifying in the interpretation that an injury to the upper airway was the likely reason for the x-ray findings.
- Not showing that Part B required a safe approach to airway management utilising the most appropriate resources available.
- Not contextualising the approach in light of the risks of aggressive intervention in the ED.

VAQ 6

A 20 year old man is brought to your ED by ambulance after being found collapsed at home following a large polypharmacy drug overdose that included Venlafaxine. He has been intubated and received 500mls of normal saline prior to arrival. The time of ingestion is not known.

Observations:

BP 80/60 mmHg
O₂ Saturation 100% on 100% O₂
Temperature 38.5 °C

An ECG is performed.

a) Describe and interpret his ECG (30%)

b) Outline your treatment (70%)

[ECG available on ACEM website]

The overall pass rate for this question was 68/134 (50.7%)
Features of successful answers
ECG:
- Broad complex tachycardia with differential of VT and possible Na channel blockade. May pass if Na blockade not mentioned but management includes appropriate use of NaHCO3.

Treatment:
- Hyperventilation (patient intubated, key initial therapy) or ventilation strategy to achieve this
- Use of NaHCO3 with initial bolus of minimum 50 mmol (though this is less than optimal)
- Fluid loading with minimum 1 litre stat (in view of initial 500 ml bolus, further min 500ml required though more ideal)

Features of higher level answers
ECG:
- Description of ECG features supporting VT.
- Recognition of potential Na Channel blockade/ coingestion (eg TCA).
- Recognition that atypical for Venlafaxine.
- Consideration of hyperkalaemia

Treatment
- Aggressive management of possible Na channel blockade with alkalinisation
- Hyperventilation of intubated patient. pH 7.50-7.55
- NaHCO3 (100mmol or 2 mmol/kg repeated to end points of ECG, cardiovascular stability, pH)
- Description of measures to improve BP (fluids + 2nd line of pressors) + endpoints
- DCCV likely ineffective. Appropriate to delay until after NaHO3, hyperventilation, fluids.
- Recognition of hyperthermia, concern for serotonin syndrome. Initial and further management (taking into account initial T 38.5). Sedation with benzodiazepines, probable paralysis, simple cooling measures, core temp. Escalating treatment if T rising. Consideration possible differential for this re other causes (other toxicodromes, sepsis, aspiration etc)
- Recognition of significant seizure risk due to Venlafaxine with mention of management with benzodiazepines 1st line, and consideration of monitoring implications.
- Consideration of co-ingestants, hyperkalaemia, rhabdomyolysis, renal failure etc.

Features of unsuccessful answers
- Inappropriate use of anti-arrhythmics. Class I agent use is contraindicated and dangerous (=Fail).
- Use of amiodarone is also inappropriate as 1st line = fail if used prior to hyperventilation, NaHCO3, DCCV.
- Not mentioning hyperventilation or an appropriate ventilation strategy
- Failing to appreciate that the patient was already intubated and thus hyperventilation an easy and important initial step to improve outcome.
- Failing to make any mention of the appropriate use of further fluid loading given the patient’s hypotension.
- Displaying no significant knowledge of the management of an unstable broad complex tachyarrhythmia in a toxicological setting (managing along standard ALS lines with no use of NaHCO3 or hyperventilation).
- Although it was not a pass-fail criteria a large number of candidates failed to appreciate or make any mention of the patient’s elevated temperature or the potential for serotonin syndrome or other possibilities. Many of those who mentioned it made no further reference to observation/potential treatment options.
VAQ 7

A 3 year old boy presents to your ED with a week of increasing lethargy and malaise. Other than a recent bout of gastroenteritis from which he seemed to be recovering he has no significant past medical history.

His observations are:

- **GCS**: 15
- **HR**: 120 /min
- **BP**: 100/60 mmHg
- **O₂ Saturation**: 95 % on room air
- **Temperature**: 36.5 °C

His biochemistry is as follows:

### Electrolytes

<table>
<thead>
<tr>
<th>Electrolyte</th>
<th>Value</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na⁺</td>
<td>131 mmol/L</td>
<td>(132-143)</td>
</tr>
<tr>
<td>K⁺</td>
<td>6.3 mmol/L</td>
<td>(3.5-5.0)</td>
</tr>
<tr>
<td>Cl⁻</td>
<td>95 mmol/L</td>
<td>(101-112)</td>
</tr>
<tr>
<td>HCO₃⁻</td>
<td>14 mmol/L</td>
<td>(17-30)</td>
</tr>
<tr>
<td>Glucose</td>
<td>4.8 mmol/L</td>
<td>(3.0-5.5)</td>
</tr>
<tr>
<td>Urea</td>
<td>29.1 mmol/L</td>
<td>(1.1-5.7)</td>
</tr>
<tr>
<td>Creatinine</td>
<td>430 umol/L</td>
<td>(23-37)</td>
</tr>
<tr>
<td>Hb</td>
<td>92 g/l</td>
<td>(115-135)</td>
</tr>
<tr>
<td>WCC</td>
<td>12.1 x10⁹/L</td>
<td>(6.1-11.0)</td>
</tr>
<tr>
<td>Plt</td>
<td>323 x10⁹/L</td>
<td>(150-450)</td>
</tr>
</tbody>
</table>

- **Hb**: 92 g/l
- **WCC**: 12.1 x10⁹/L
- **Plt**: 323 x10⁹/L

**Reference range**

a) Describe and interpret his results (100%)

[Photograph available on ACEM website]

The overall pass rate for this question was 101/134 (75.4%)

**Features of successful answers**

- Acute renal failure
- Hyperkalaemia
- High anion gap metabolic acidosis
- Anaemia.
- At least 3 DDx for renal failure with explanations: pre-renal, renal, post-renal, haemolytic uraemic syndrome, dehydration etc.
Must be recognition that the information provided including observations, clinical scenario and limited pathology DO NOT PROVIDE A DEFINITIVE DIAGNOSIS. A number of causes of the renal failure could be present and would require consideration. Words above not required but the concept must be.

Specifically we require that there be at least three causes of renal failure that might cause the clinical picture described. This MUST include pre renal failure of some relevant cause. The other two causes for minimum requirements may be either obstructive or renal in origin and include such possibilities as HUS, sepsis, toxic or poisoning effects of various things, GN.

To score above the minimum marks we are looking for the bracketed details of the pathology as above as well as relevant negatives (BSL and Platelet normal, normal BP, pulse and temp etc). The interpretation should include not only describing differential but explanation of why some diagnoses are more likely or less likely (eg HUS is a cause of renal failure in this age group and history of diarrhoea but there is no thrombocytopenia), The child is not febrile nor obs indicating shock - the Creat is relatively high compared with the BUN etc. There should be a connection between the findings provided and the diagnosis.

Features of unsuccessful answers

Failure in interpretation section to declare/infer that renal failure was the most relevant finding and that the other findings on vital signs and pathology were likely related to that.

VAQ 8

This 28 year old man presents to your rural/regional ED after being punched in the face an hour earlier. Brisk epistaxis from the right nostril commenced soon after this photo was taken. The closest ENT service is 4 hours away by road.

Observations:

GCS 15
HR 80 /min
BP 110/70 mmHg
O₂ Saturation 98 % on room air

a) Describe and interpret his photograph (30%)
b) Outline your management (70%)

Photo shows a young man with a compound # of the nasal bone with gross deviation of the septum.

The overall pass rate for this question was 44/134 (32.8%)

Features of successful answers

The description and interpretation to include:
- Compound fracture nose
- Deviation
- No other apparent facial injuries

**Discriminators:**
- Bridge of nose
- Bone on view
- No C spine precautions visible

Management / treatment should include:
- Attend ABCD
- Analgesia
- Control epistaxis – candidate must outline an appropriate method
- Look for septal haematoma and arrange appropriate urgent treatment if present
- Antibiotics – appropriate to cover Staph
- Tetanus prophylaxis
- IV access – indication that IV access has been established (can be implied eg through mention of IV analgesia, antibiotics, fluids)

Disposition
- ENT Consultation to discuss transfer for definitive treatment

**Discriminators:**
- Potential spinal injury
- Role of urgent reduction of fracture
- Supportive Care
  - Positioning patient
  - Ongoing monitoring of ABCD
  - Dressing to wound

**Documentation**
- Medico-legal
- Transfer

**Features of unsuccessful answers**
- Insufficient notation of above items.

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7. **CLINICAL EXAMINATIONS**

These were held in Sydney on Saturday 4 May and Sunday 5 May 2013.

The Clinical examination site coordinators were John Kennedy and Marcello Gizzi at Royal North Shore Hospital, John Hayman and Evangelie Polyzos at Royal Prince Alfred Hospital, and Rochelle Facer, Richard Paoloni and Andrew Dwyer at the Concord Repatriation Hospital.

7.1. **LONG CASES**

64/72 (88.9%) passed the long cases. The pass mark is 5/10. The grade frequencies were:

<table>
<thead>
<tr>
<th>Grade ( / 10)</th>
<th>Frequency (N)</th>
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<tbody>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
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<tr>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
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</tbody>
</table>
7.2. SHORT CASES
67/72 (93.1%) passed the short cases. The pass mark is a mark of 5/10, which can be obtained by passing 3 cases with an aggregate of 15-18/40 inclusive or at least 2 of 4 cases with an aggregate of 19/40 or more. The grade frequencies were:

<table>
<thead>
<tr>
<th>Grade ( / 10)</th>
<th>Frequency (N)</th>
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<tbody>
<tr>
<td>8</td>
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<tr>
<td>7</td>
<td>11</td>
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<tr>
<td>6</td>
<td>26</td>
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<tr>
<td>5</td>
<td>28</td>
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<tr>
<td>4</td>
<td>5</td>
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</table>

7.3. SCEs
69/72 (95.8%) passed the SCEs. To pass, a candidate needs to score 30/60 and pass at least 4 stations. The grade frequencies were:

<table>
<thead>
<tr>
<th>Grade ( / 10)</th>
<th>Frequency (N)</th>
</tr>
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<tbody>
<tr>
<td>10</td>
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<td>9</td>
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<td>5</td>
<td>10</td>
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SCE 1
A 60 year-old man presents with 2 hours of severe central chest pain.

- What is your differential diagnosis for a serious non-ischaemic cause for this patient’s pain? What are the key features in your history and examination that would discriminate these causes?
- The patient becomes hypotensive with a systolic BP of 80mmHg before investigations have been performed. Resuscitation is commenced. How will you investigate this unstable patient?
- The patient remains persistently hypotensive despite initial fluid resuscitation. Bedside echo shows a dilated RV, dilated IVC, and features of a massive pulmonary embolism (PE). Outline your management of this.
- The patient stabilised and was admitted under the Cardio-Thoracic team. It is brought to your attention that the patient was seen in your ED 2 days ago and admitted to CCU under Cardiology. He was discharged after a negative exercise stress test. Describe your response to this.

Overall pass rate for this question was 67/72 (93.1%)

This SCE was core knowledge and candidates were required to demonstrate a good understanding of investigations for an unstable patient. It was done quite well.
SCE 2
A 30 year-old man was working at a Silicon Chip factory when hydrofluoric acid was spilt onto a hot surface and caused chemical burns to his arms and chest. Decontamination was performed at the scene and he has been brought in by ambulance, complaining of severe pain.

- What are the important features in your history and examination?
- Outline your initial management.
- A 12-lead ECG is performed. Describe and interpret the ECG.
- Blood tests confirm hypocalcaemia and he has approximately 10% BSA cutaneous burns involving his arms and chest. There are no other injuries. Outline your ongoing management.
- What other options are there for the administration of calcium for pain refractory to topical gels, in dermal HF acid burns. (ECG)

Overall pass rate for this question was 66/72 (91.7%)

This SCE examined specific detailed knowledge about a relatively uncommon but important presentation. Candidates were required to have a clear understanding of the importance of ongoing pain and the principles of management.

SCE 3
A 30 year old woman with known type I diabetes presents with vomiting and abdominal pain for two days. Her vital signs are HR 138/ minute, BP 112/69, Afebrile, GCS 14, RR 24/ minute.

Describe and interpret her ABG

Arterial blood gases (ABG)

- pH 6.95 (7.35-7.45)
- PaO₂ 165 mmHg (80-100 mmHg)
- PaCO₂ 10 mmHg (35-45 mmHg)
- HCO₃⁻ 2 mmol/L (22-28 mmol/L)
- Base Excess -30 mEq/L (-2 - +2 mEq/L)
- Glucose 32 mmol/L (3.0-7.7 mmol/L)
- Na 132 mmol/L (135-145 mmol/L)
- K 5.8 mmol/L (3.5-5 mmol/L)
- O₂ Saturation 100% (95-100%)

- Describe the key features in your assessment of this patient
- Outline your specific management in the first 2 hours in the ED
- After 2 hours in the ED she wants to discharge herself. Outline your approach.
- If / when requested last BSL is 12 and her most recent VBG has a pH 7.1
- Her vital signs are HR 110/ min, BP 120/ 85

Overall pass rate for this question was 66/72 (91.7%)

Candidates were required to have a good level of knowledge of the treatment of DKA particularly with respect to insulin and K. Candidates failed when they were unsure of the specifics of management of K.
SCE 4
An 84 year old lady is brought to your ED by her daughter, who is frustrated with her mother because she cannot mobilise today. The patient appears unwell, frail and markedly underweight. She has a hot, swollen, painful right leg. She has mild dementia, and lives with adult daughter, who is her carer.

Her vital signs at triage are T 38.6°deg, P 120 bpm, BP 95/60 mmHg, RR 22, O2 sat 97% on air

- Outline your immediate management of this patient
- Describe your goals of treatment and endpoints in this patient.
- The patient does not respond well to treatment. The family say that they want “everything” done. What is your response?
- During your interaction with the patient and her daughter you become concerned about the possibility of “Elder Abuse”.
- In general, what features would you look for to support your suspicions?

Overall pass rate for this question was 63/72 (87.5%)

This SCE presented a common scenario with a very sick elderly patient. Unsuccessful candidates did not address important management issues or failed to consider patient competence/consent.

SCE 5
A 30 year-old woman presents by ambulance to your ED following a generalised seizure at home. Just prior to arrival, she suffered a further seizure, which continues. The patient weighs 140kg. Her past medical history is unknown.

- Outline your initial treatment of this patient.
- Her seizure is successfully terminated. She appears post-ictal with no focal neurological deficit and these are her vital signs (HAND SHEET TO CANDIDATE): (PR 125/min (SR), BP 190/110, Sats 100% on oxygen, RR 18, T 37.2. Her BSL is normal.)
- List and justify your investigations
- You determine that she is in advanced pregnancy and she has a further seizure. Describe your management now.
- Her seizures are controlled. Your hospital has no obstetric service. Transfer is suggested by the obstetric service at a nearby hospital. Outline how you would proceed.

Overall pass rate for this question was 64/72 (88.9%)

This SCE required candidates to list and justify their investigations and then manage eclampsia. Candidates who failed did so because of a failure to justify their investigations as asked or lacked organisation in their answers.

SCE 6
You are the consultant in a regional Emergency Department. A 6 year-old boy re-presents having been discharged 2 hours ago.

He was assessed during the previous presentation for a head injury, sustained from a fall off a tree. No investigations were performed.

- Outline the indications for CT scan of brain in this child.
- A CT Brain is performed. Describe and interpret the CT scan.
- The child deteriorates to a GCS of 5. Outline your management.
- Concerns regarding the management at the initial presentation are brought to your attention. Outline the issues raised and actions required.
Overall pass rate for this question was 64/72 (88.9%) 

This SCE was a surprisingly good discriminator. Candidates failed if they misinterpreted the CT scan or made significant management errors.

8. SUMMARY PASS RATES

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<table>
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<tbody>
<tr>
<td>MCQ</td>
<td>117/134 (87.3%)</td>
<td></td>
</tr>
<tr>
<td>SAQ</td>
<td>66/134 (49.3%)</td>
<td></td>
</tr>
<tr>
<td>VAQ</td>
<td>45/134 (33.6%)</td>
<td></td>
</tr>
</tbody>
</table>

72/134 passed 2 or more sections and were invited to the clinicals

<p>| | | |</p>
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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>LC</td>
<td>64/72 (88.9%)</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>67/72 (93.1%)</td>
<td></td>
</tr>
<tr>
<td>SCE</td>
<td>69/72 (95.8%)</td>
<td></td>
</tr>
</tbody>
</table>

63 of the 72 candidates (87.5%) passed the clinical section of the examination.

The overall pass rate for this examination was 63/134 (47%)

9. ACKNOWLEDGEMENTS

The Fellowship examination is a huge logistical undertaking, and I would like to acknowledge and express my gratitude to the many people involved. Specifically I would like to thank my colleagues on FEC and its subcommittees for the development of the written exam and the SCEs. I would also like to thank the multiple site organisers of the written examination and to all written and clinical examiners.

I would particularly like to thank John Kennedy, Marcello Gizzi, John Hayman, Evangelie Polyzos, Rochelle Facer, Richard Paoloni and Andrew Dwyer, the site coordinators of the clinical sections. They capably headed teams of their colleagues, nurses, clerical staff and orderlies with the resulting examination proving to be an efficient and successful event.

Finally I wish to highlight the meticulous work throughout with regards to conduct of the examination at the College secretariat level. I wish to especially thank the Fellowship Assessment Team comprising Jo D’Arcy, Sarah Aldridge, Philippa Henderson and Pam Donaghy for their logistical support and efficient administration enabling this examination to reach a successful conclusion.

Dr Bernard Foley
Chair, Fellowship Examination Committee