



AUSTRALASIAN COLLEGE FOR EMERGENCY MEDICINE 38th FELLOWSHIP EXAMINATION August/October 2006

This report is circulated to:

- candidates – successful and unsuccessful
- examiners involved in the exam – written, clinical and observers
- members of the Fellowship Examination Committee
- DEMTs across Australasia
- Board of Censors (as part of their next meeting agenda)
- official observers (listed on Page 2)
- clinical site organisers for this exam

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

The questions alone (without examiner comments or answers) are published in Past Papers, which are available to all trainees from the College. Recent previous exam reports are available on the college website.

1. INTRODUCTION

The 2006.2 exam was held on 9 August (written sections – all regions) and on 21 and 22 October (clinical sections – Sydney). To spread the workload the clinicals were held at 2 sites (Westmead Hospital for the Long Cases, Short Cases and SCEs, and Liverpool Hospital for Long Cases and Short Cases).

Overall, 43 candidates passed the examination from the 57 who sat the written sections (overall pass rate 75.4%). More detailed analysis of pass rates is included in subsequent sections of this report.

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

Sylvia Andrew-Starkey	Peter Cameron	Craig Hore	Anne-Maree Kelly
David Mountain	Lindsay Murray	Scott Pearson	Bhavani Peddinti
Paul Pielage			

Clinicals only

Jenny Brookes	Neil Banham	Betty Chan	Matthew Chu
Diana Egerton-Warburton	Bernard Foley	Christopher Gavaghan	Anna Holdgate
Trevor Jackson	Tony Joseph	David Lewis-Driver	Lewis Macken
Jennie Martin	Pam Rosengarten		

Writtens and Clinicals

Peter Aitken	Michael Bastick	Gary Browne	Sheila Bryan
Adam Chan	Bill Croker	Linda Dann	Steve Dunjey
David Eddey	Diane King	David Lightfoot	Paul Mark
Greg McDonald	Debra O'Brien	Drew Richardson	John Roberts
Ian Rogers	Irene Rotenko	Andrew Singer	James Taylor
Graeme Thomson	Bryan Walpole	Gary Wilkes	

Peer Support Examiners

George Braitberg Allen Yuen

3. OBSERVERS

The official observers were Doctors:

Andrew Maclean and Liam Walsh (Box Hill Hospital)
Jonathon Karro (St Vincent's Hospital)**4. MULTIPLE CHOICE QUESTIONS**

46/57 (80.7%) candidates passed the MCQ section of the exam. To achieve this a candidate has to pass 33/60 questions (55%). The mean score obtained was 36.6/60 (SD ± 4.8). The grade frequencies were:

Grade (/ 10)	Frequency (N)
10	0
9	0
8	4
7	10
6	12
5	20
4	10
3	1
2	0

5. SHORT ANSWER QUESTIONS

45/57 (78.9%) candidates passed the SAQ section of the exam. To achieve this a candidate has to pass 5 or more of the 8 questions with a total mark of at least 40 / 80. The grade frequencies were:

Grade (/ 10)	Frequency (N)
10	0
9	1
8	1
7	9
6	15
5	19
4	10
3	1
2	0
1	1

SAQ 1

- What are the symptoms and signs of lithium toxicity? (30%)
- Describe the specific treatments for lithium toxicity including their indications. (70%)

The overall pass rate for this question was 48/57 (84.2%).

The examiners felt that this was overall a very good question which would be anticipated to be well answered by the majority of candidates. A number of candidates struggled to obtain high marks by failing to address the specifics of the question. Candidates who did not pass the question failed to differentiate acute from chronic toxicity and the differing symptoms and signs. Poor answers also proposed using activated charcoal without mention of co-ingestants and had no specific indications for therapy. Of particular concern was candidates advocating dialysis therapy based on specific serum levels in the absence of any clinical correlation.

SAQ 2

In a patient with major pelvic trauma, describe the factors you would consider in deciding to use interventional radiology. (100%)

The overall pass rate for this question was 39/57 (68.4%).

Examiners considered that this was an excellent, consultant level question in that it tested a clinical situation where considerable clinical judgement was required. Most candidates provided very basic answers to pass level but few excelled in this question. In particular, few candidates discussed the important issues of the impact on bleeding of fracture location/ type nor the timing of angiography

SAQ 3

Describe the use of amiodarone in the emergency department, including its indications and limitations. (100%)

The overall pass rate for this question was 37/57 (64.9%).

Examiners considered that this question worked well as it tested a widely used Emergency Department drug. Candidates were expected to show good knowledge of currently accepted indications and acute toxicity. Extra marks were allocated for those showing knowledge of recent clinical trials and for discussing areas of clinical controversy. Candidates who failed the question did not address all the standard indications, showed poor knowledge of common problems with acute use and did not state appropriate dosing schedules.

SAQ 4

An angry man is at triage demanding analgesia for severe leg pain. He states that he was in the emergency department 2 days earlier for a broken leg. You notice he has a below knee plaster with swollen, white coloured toes. You suspect a compartment syndrome.

Describe your management of this situation. (100%)

The overall pass rate for this question was 46/57 (80.7%).

Examiners felt that this was a straight forward question requiring response at several levels. Firstly candidates needed to recognise the potentially limb threatening situation, put in place an adequate evaluation and manage the condition. Candidates also were required to implement adequate analgesia and address the gentleman's concerns. Finally, recognition was required of the potential medicolegal and QA issues for the department. Unsuccessful candidates for this question failed to address more than one of the above issues. Overall the majority of responses were thought to be competent with few candidates excelling at what was a fairly basic question.

SAQ 5

A 55 year old man has just undergone endotracheal intubation for severe asthma. Immediately post intubation, his systolic blood pressure falls to 80 mmHg.

- a. Outline the causes of post intubation hypotension in this man. (50%)
- b. Describe your ventilation strategy for this man. (50%)

The overall pass rate for this question was 54/57 (94.7%).

The examiners felt that this was a core emergency medicine question pitched at the right level for this examination. Overall most candidates performed well on this question. Part (a) required a discussion of possible causes which needed to include drugs, effects of PPV, barotrauma, hypoxia of various causes, cardiac events, dehydration and allergy. Part (b) required a structured approach to the problem addressing all the above mentioned conditions. In particular detail was required on the

optimal ventilation settings for a patient with this presentation. Candidates failed to pass this question if they missed a number of the key points above.

SAQ 6

A 6 year old child with no significant past history presents with diabetic ketoacidosis.

Describe your management of this case. (100%)

The overall pass rate for this question was 41/57 (71.9%).

Examiners felt that this was an excellent question which seemed to discriminate between those who had actually dealt with paediatric DKA and those who had not. Key issues which needed to be addressed in this question included adequate fluid resuscitation, electrolyte replacement, insulin therapy, treatment of precipitating factors and disposition. Inadequate answers did not suggest appropriate fluid and electrolyte regimens for children or were overly aggressive in inserting invasive monitoring lines.

SAQ 7

List and justify the investigations you would consider in a 79 year old woman who presents with poorly localised abdominal pain. (100%)

The overall pass rate for this question was 51/57 (89.5%)

The examiners felt that this question was not a strong discriminator. Candidates needed to put forward a logical and escalating series of tests taking into account bedside tests, laboratory tests and various imaging modalities. The question required reasoned justification for each test that was mentioned. Candidates failed if they focused on one area of investigation (eg imaging) at the expense of others or if through their choice of investigations seemed to not recognise the large number of clinical conditions which may present in this fashion.

SAQ 8

The table shown describes the performance by Australasian Triage Scale (ATS) of your emergency department over a one month period.

Triage Category	Percentage Number of Attendances	Percentage seen within Performance Threshold	Average Wait Time
	%	%	Minutes
1	2	100	1
2	19	72	9
3	41	38	54
4	35	47	79
5	3	58	95
Did Not Wait	11		
Total	100	49	53

- Describe the performance of your emergency department in this month with reference to the Australasian College for Emergency Medicine's recommended performance indicator thresholds. (30%)
- What measures could be used to improve your emergency department's performance in relation to the data presented above. (70%)

The overall pass rate for this question was 38/57 (66.7%).

Examiners expected that candidates would know the ACEM ATS threshold percentages in order to adequately describe the emergency department performance in part (a). Part (b) required a structured approach to identifying the large number of factors which may impact on waiting times plus some reasonable strategies to attempt an improvement. Failed candidates did not show knowledge of triage category benchmarks and failed to put forward more than one or two strategies to improve performance.

6. VISUAL AID QUESTIONS

48/57 (84.2%) candidates passed the VAQ section of the exam. To achieve this a candidate has to pass 5 or more of the 8 questions with a total mark of at least 40 / 80. The grade frequencies were:

Grade (/ 10)	Frequency (N)
10	1
9	0
8	2
7	9
6	16
5	20
4	7
3	2
2	0
1	0

VAQ 1

A 78 year old man is brought to your emergency department after being found on the floor of his home. His only past medical history is of congestive cardiac failure, and he is unable to remember his medications.

An ECG has been taken.

Describe and interpret his ECG. (100%)

ECG showing Mobitz type 2 AV block (2:1) with RBBB and R axis deviation.

The overall pass rate for this question was 41/57 (71.9%).

The examiners felt that this question was not well done by the candidates overall, especially as this was regarded as a straight forward ECG. In order to pass, candidates needed to exhibit a systematic approach to ECG interpretation and identify pass/fail criteria of 2:1 AV Block, Right BBB and Right Axis Deviation plus a number of secondary changes. Better candidates were able to put the ECG findings into the given clinical context. Candidates who scored poorly failed to meet the basic pass/fail criteria above.

VAQ 2

A 47 year old man is brought to the emergency department with fever, throat pain and difficulty swallowing.

- Describe and interpret his lateral neck X-ray. (30%)
- Outline your management. (70%)

Lateral neck X-ray showing significant pre-vertebral soft tissue swelling.

The overall pass rate for this question was 55/57 (96.5%).

The examiners felt that this was a fairly easy question at this level. The diagnosis of a pre-vertebral swelling was straight forward and most candidates recognised this and suggested reasonable diagnostic possibilities. Part (b) required a consultant level discussion of airway management options and antibiotic choices. Candidates who failed to score well mostly did so because of a poor discussion of the airway options.

VAQ 3

A 69 year old woman is sent to your emergency department by her LMO after a one day febrile illness. Her chest X-ray reveals lobar pneumonia.

Her observations are:

HR	120	/min
BP	110/60	mmHg (supine)
Temperature	38.5	°C
SaO ₂	90%	(room air)

Blood tests are performed.

- Describe and interpret her blood test results. (70%)
- Describe and justify your antibiotic choice. (30%)

			Reference Range
Haemoglobin	63	gm/L	115 - 160
WCC	0.60	x 10 ⁹ /L	4 - 11
Platelets	8	x 10 ⁹ /L	150 - 400
Red cell count	1.99	x 10 ¹² /L	3.80 – 5.80
Haematocrit	0.18		0.37 – 0.47
Mean Cell Volume	92	fL	80 - 100
Neutrophils	0.38	x 10 ⁹ /L	2.0 – 7.5

The overall pass rate for this question was 44/57 (77.2%).

The examiners felt that this was a very appropriate question however few candidates did very well. A number of candidates passed part (a) but failed part (b). Pass/fail criteria were based on a descriptive of the severity of the abnormalities, putting forward an adequate interpretation (differential diagnosis) and a reasonable choice of antibiotics.

VAQ 4

A 30 year old man has had his right leg run over by a car. Resulting in isolated right lower limb injuries. He is in considerable pain. There are open wounds at his right ankle and his right foot is pale.

- Describe and interpret his X-ray. (50%)
- List your management priorities. (50%)

X-ray of complex fracture dislocation of ankle.

Overall pass rate for this question was 48/57 (84.2%)

The examiners felt this was a good question. Pass/fail resolved around a detailed descriptive of the fractures, plus management of vascular insufficiency of the open wounds, and analgesic/antibiotic issues.

VAQ 5

An 8 year old boy has been brought to the emergency department with a fever of 38 degrees Celsius and a painful right ear.

- a. Describe the photographs of this boy. (30%)
- b. What features would you seek in your examination? (70%)

Clinical photograph of unilateral facial swelling and erythema around mastoid region.

The overall pass rate for this question was 51/57 (89.5%).

The examiners felt that this was an adequate question but with low discriminating capacity. Pass/fail criteria were a detailed description of the involved region and a focused examination related to the possible differential diagnosis.

VAQ 6

A 70 year old diabetic man presents to the emergency department complaining of painful feet.

Describe and interpret his photograph. (100%)

Clinical photograph of diabetic feet showing changes consistent with infection and vascular insufficiency.

Overall pass rate for this question was 42/57 (73.7%).

The examiners felt this question was based on an excellent image. Pass/fail criteria were recognition of likely vascular insufficiency plus necrotising infection plus likely underlying causes.

VAQ 7

A 64 year old woman presents with acute chest pain, dyspnoea at rest and palpitations.

Her observations are:

BP	90/65	mmHg (supine)
HR	96	/min
SaO ₂	89%	O ₂ via Hudson mask at 6 L/min
Temperature	37	°C

- a. Describe and interpret her ECG. (50%)
- b. List your treatment priorities. (50%)

ECG showing paced rhythm.

Overall pass rate for this question was 40/57 (70.2%).

The examiners felt this was a challenging question and was an excellent discriminator. Pass/fail criteria were a reassured description of paced rhythm and comprehensive approach to hypotension in the setting of paced rhythm.

VAQ 8

A 15 month old girl is brought to your emergency department by her nanny with burns isolated to the area shown in this photograph. The history is that the toddler accidentally pulled a cup of hot coffee from the bench down on herself.

- a. Describe and interpret her photograph. (30%)
- b. Outline your management. (70%)

Clinical photograph of burns of variable thickness to arm and shoulder of child.

Overall pass rate for this question was 43/57 (75.4%).

The examiners were surprised that a fairly straightforward, appropriate burns question was answered poorly by a large number of candidates. Pass/fail criteria included an assessment of burns depth and area plus a standard approach to burns management

7. CLINICAL EXAMINATIONS

These were held in Sydney on Saturday October 21st and Sunday October 22nd.

Clinical exam coordination at the Westmead site was by the team of Shalini Arunanthy, Kavita Varshney, Daniell Unwin and Rob Edwards and at the Liverpool site was by Justin Bowra. A total of 49 candidates were invited to the clinical section.

7.1. LONG CASES

43/49 (87.8%) passed the long cases. The pass mark is 5/10. The grade frequencies were:

Grade (/ 10)	Frequency (N)
9	2
8	7
7	10
6	11
5	13
4	3
3	3
2	0

7.2. SHORT CASES

44/49 (89.8%) 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:)

Grade (/ 10)	Frequency (N)
8	0
7	10
6	14
5	20
4	5
3	0

7.3. SCEs

44/49 (89.8%) passed the SCEs. To pass, a candidate needs to score 30/60 and pass at least 4 stations. The grade frequencies were:

Grade (/ 10)	Frequency (N)
10	4
9	1
8	8
7	16
6	8
5	7
4	4
3	0
2	1

SCE 1

The emergency department junior doctor seeks your advice regarding a 19 year old girl he has just assessed. She presents with her mother with a 2 day history of fever, rapidly progressive shortness of breath, cough, and anorexia. She has no past medical history. She is on no medications. The junior doctor has performed a CXR and seeks your opinion. Her initial observations are: GCS 15, BP 110/80, HR 120, RR 30, SpO2 88% oxygen 6 LPM, temperature 40.5o C

- Please describe and interpret her chest x ray (X-ray showing severe pneumonia)
- What are the markers of severe pneumonia in adult patients?
- How could you optimise her oxygenation?
- Outline how you would assess her airway prior to possible intubation
- Describe your additional management of her pneumonia?
- These are her arterial blood gases. Please describe and interpret these results.
ABG on 6 LPM - pH 7.43 / pCO2 30 / pO2 53 / sO2 88 / BE -3 / BIC 20]

Overall pass rate for this question was 46/49 (93.9%).

The examiners felt that this question did not require high level knowledge to pass and as such was a low level discriminator only. The best discriminator was a detailed knowledge of the assessment of pneumonia severity. SCE flow may have been improved by having the X-ray outside the room.

SCE 2

You attend an elderly man, brought to your emergency department by ambulance, having been referred by a locum GP.

The referral letter reads as follows:

“To the ED doctor,

Thank you for managing this 78 year old man, who has been increasingly aggressive towards staff at his hostel for the last 2 days. He complains of generalised abdominal pain, but it is difficult to assess him, as he refuses to be examined and appears confused.

His PHx includes ischaemic heart disease, hypertension and atrial fibrillation.

Medications: Haloperidol 0.5 mg nocte and prn, Aspirin 100mg/day, Digoxin 125 mcg/day.

Regards,

Dr John Smith”

On initial assessment the patient is confused and uncooperative when disturbed.

His vital signs are:

Blood pressure	180/70	mmHg
Heart rate	100	per minute
Respiratory rate	26	per minute
SpO ₂	97%	room air
Temperature	37.5	oC

- What clinical features would help you differentiate delirium from dementia in this man? (This question was given outside the room)
- What clinical features would suggest mesenteric ischaemia in this man?
- What is the value of CT scan for investigating possible mesenteric ischaemia?
- What issues do you consider regarding chemical sedation of this patient for CT scan.
- What other measures do you take to ensure safe sedation of this man for CT scan?
- What non pharmacological measures may help reduce this man's agitation?

Overall pass rate for this question was 43/49 (88%).

The examiners felt that this was a mid level discriminator. Candidates failed this SCE on the basis of overall poor knowledge of this topic and poor drug dosing in the chemical sedation section.

SCE 3

A 19 year-old primigravida woman presents to your emergency department with central abdominal pain.

She is 30 weeks pregnant and has no past medical history.

Her initial observations are:

GCS 15, BP 170/110mmHg, Heart rate 100 per minute, Respiratory rate 24 per minute, SpO₂ 99% room air, Temperature 37 degrees C

- What differential diagnoses do you consider for her abdominal pain? (This question was given outside the room)
- What are the diagnostic criteria for pre-eclampsia?
- You diagnose preeclampsia. How would you manage this patient?
- What are your (other) options for managing her blood pressure?
- These are her pathology results (provide result sheet). Describe and interpret these results.

PATHOLOGY RESULTS

Hb	84	g/l	(115 - 165)
Platelets	88	x 10 ⁹ / l	(150 - 400)
WBC	12.7	x 10 ⁹ / l	(4.0 - 11.0)
Bilirubin	44	umol/l	(2 - 20)
ALT	300	u/l	(<45)
AST	270	u/l	(<40)
GGT	42	u/l	(<50)
ALP	96	u/l	(40 - 110)
LDH	518	u/l	(110 - 250)

Overall pass rate for this question was 44/49 (89.8%).

The examiners felt that this was a good discriminator at the mid-high level. As such it was viewed as a very good consultant level question. Although most candidates passed this station, those who failed to do so showed failure to appreciate the severity of the illness, incorrect interpretation of the investigations and incorrect treatments including inappropriate drug dosages.

SCE 4

A 78 year old man is brought to your emergency department by ambulance after a syncopal event. He experienced some dizziness and chest pain prior to collapsing. He has a history of ischaemic heart disease, but cannot recall his usual medications. His observations on arrival are: Pale and clammy, unable to sit up. GCS 15, BP 80/55 mmHg, RR 20, SpO2 97% (room air). Afebrile.

- Describe and interpret his ECG. (This question was given outside the room)
ECG shows 3rd degree AV block
- Discuss your options for treating his bradyarrhythmia.
- Describe how you would undertake transcutaneous pacing in this man.
- This is a rhythm strip after pacing has commenced. (Pacing strip is shown) (MG you will need to give some interpretation here)
- What does this show and how would you manage this?
- Now that effective pacing is established what is your further management?

Overall pass rate for this question was 40/49 (81.6%).

The examiners felt that this was a low-mid level discriminator. Poor responses typically failed to adequately interpret the ECG and/or provide consultant level management options for a high level cardiac conduction problem with evidence of hypoperfusion. There was debate amongst the examiners as to the utility of the photograph of the transcutaneous pacing device in this type of question.

SCE 5

A 72 year old female is brought to your emergency department by ambulance. She has been found at home, following a simple fall where she fell backwards onto the floor. She has been lying at home for two hours, until help arrived. She has a past history of RA, osteoporosis, COPD and CCF. Her only complaint is of severe bilateral hip pain. Her observations on arrival are GCS 15, HR 110, BP 110/75, RR 24, SpO2 99% on oxygen 6 LPM, afebrile.

- Please describe her xray. (This question was given outside the room) (
X-ray shows bilateral femoral shaft fractures.
- What are the possible complications of these fractures?
- Assuming that bilateral fractures of the proximal femur are the only injuries, describe your management of this
- Describe your procedure for femoral nerve block in this patient.
- What are your indications of blood transfusion in this lady?

Overall pass rate for this question was 47/49 (95.9%).

The examiners felt that this was a low level discriminator. Candidates who failed to do well did so on the basis of poor X-ray interpretation and failure to appreciate the degree of possible blood loss.

SCE 6

A 2 month old infant boy is rushed to the resuscitation room of your emergency department. He was found unresponsive by his mother, who alerted the ambulance immediately.

On assessment you find the infant:

Unresponsive and peripherally cyanosed

Heart rate	190	beats per minute
Capillary return	>4	seconds
Respiratory rate	60	per minute

It is difficult to obtain peripheral non-invasive oxygen saturation.

- Describe your management of this infant. (This question was given outside the room)
- The infant now has a generalised seizure. How will you proceed?
- Despite this management, the infant deteriorates and becomes pulseless.
- The monitor shows VF. Describe your management now.
- Despite expert management, the child remains in cardiac arrest. What factors determine cessation of resuscitation in this infant?
- Further resuscitation is considered futile, outline the main aims of your communication with the family.

Overall pass rate for this question was 44/49 (89.8%).

The examiners felt that this was a good mid level discriminator. Failed candidates failed to put forward an ordered approach to each segment of the SCE. In particular, drug dosage schedules were poorly presented in failed candidates.

8. SUMMARY PASS RATES

MCQ	46 /57	(80.7%)
SAQ	45 /57	(78.9%)
VAQ	48 /57	(84.2%)

49/57 passed 2 or more sections and were invited to the clinicals

LC	43 /49	(87.8%)
SC	44 /49	(89.8%)
SCE	44 /49	(89.8%)

At the examiners meeting, of the 49 candidates at the clinicals

- 43 candidates passed automatically
- none were discussed
- meaning 43 / 49 (87.8%) of those attending the clinicals passed.

So the overall pass rate was 43 / 57 (75.4%)

9. ACKNOWLEDGEMENTS

As always the Fellowship exam is a huge logistical undertaking and the effort required in running it should not be underestimated. Acknowledging the help provided by all of the many doctors, nurses, clerical staff and orderlies in running the exam is best done in this exam by noting that this was a real team effort. I would like in particular to thank Drs Shalini Arunanthy and Justin Bowra for their work as the site coordinators.

I wish to acknowledge the tireless and meticulous work with regards to the logistics of the exam at the College secretariat level. In particular I wish to thank our Fellowship Exam Officer, Virginia Cunsolo for her tireless activity in bringing this examination to a successful conclusion. I would also like to acknowledge our college Chief Executive Officer Jenny Freeman and our Director of Education Martin Sweeney for all the support they have given me in the lead up to and running of this examination

Dr Mark Gillett
Chair, Fellowship Examination Committee