



AUSTRALASIAN COLLEGE FOR EMERGENCY MEDICINE
39th FELLOWSHIP EXAMINATION
REPORT
February/May 2007

This report is circulated to:

- members of the Fellowship Examination Committee
- Board of Censors (as part of their next meeting agenda)
- candidates – successful and unsuccessful
- examiners involved in the exam – written, clinical and observers
- DEMENTs across Australasia
- 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 2007.1. exam was held on 21 February (written sections – all regions) and on 5 and 6 May (clinical sections – Melbourne). The clinicals were held at 3 sites (Austin and Box Hill Hospitals for the Long and Short Cases and St Vincent's for the SCEs)

Overall, 33 candidates passed the examination from the 55 who sat the written sections (overall pass rate 60%). 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

Diana Egerton-Warburton

Colin Myer

John Roberts

Clinicals only

Tony Brown

Matthew Chu

Chris Curry

Debbie Leach

Lewis Macken

Kim Yates

Writtens and Clinicals

Peter Aitken

Sylvia Andrew-Starkey

Neil Banham

Simon Brown

Peter Cameron

Adam Chan

Tim Gray

Richard Harrod

Craig Hore

Trevor Jackson

Diane King

David Kirkpatrick

John Maguire

Paul Mark

Jennie Martin

Greg McDonald

David Mountain

Lindsay Murray

Debra O'Brien

Scott Pearson

Bhavani Peddinti

Stephen Priestley

Ian Rogers

Pam Rosengarten

Irene Rotenko

Mark Smith

Andrew Singer

James Taylor

Graeme Thomson

Jeff Wassertheil

Bryan Walpole

Mark Webb

Allen Yuen

Peer Support Examiners

Ian Rogers

Bryan Walpole

Pam Rosengarten

3. OBSERVERS

The official observers were Doctors:

Melissa Nelligan	(Flinders Medical Centre)
Jack Wearne	(Royal Adelaide Hospital)
Don Liew	(Royal Melbourne Hospital)
Meredith Borland	(Princess Margaret Hospital for Children)

4. MULTIPLE CHOICE QUESTIONS

49/55 (89.1%) 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 39.1/60 (SD \pm 7.4). The grade frequencies were:

Grade (/ 10)	Frequency (N)
8	11
7	17
6	14
5	7
4	3
3	2
0	1

5. SHORT ANSWER QUESTIONS

34/55 (61.8%) 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)
9	2
8	4
7	3
6	9
5	16
4	14
3	5
2	1
0	1

SAQ 1

A 5 year old boy is brought to your major referral emergency department by his mother, who states he has been bitten on his ankle by a snake while playing in their back yard one hour previously. He has a pressure immobilization bandage in place. He is currently asymptomatic with the following vital signs:

PR	90	per min
BP	95/55	mmHg
RR	20	per min
O ₂ Sat	99%	room air

- a. What features on assessment would indicate evenomation? (50%)

One hour later the child is asymptomatic. Initial investigations are normal. The pressure immobilization bandage is still in place.

- b. List the criteria which need to be met for the child to be discharged. (50%)

The overall pass rate for this question was 32/55 (58.2%).

The examiners felt that this was a straight forward question in an area designated as “Expert” in the curriculum. Overall the responses were considered disappointing. Candidates who scored poorly on this question exhibited inadequate overall knowledge. In particular there was poor knowledge of the haematological and neurological sequelae of snake envenomation plus poor appreciation of the role of SVDK. Additionally, criteria for discharge from the emergency department were inadequately discussed by some candidates. A small number of candidates also failed to answer the specific question set.

SAQ 2

A 22 year old woman with a past history of asthma, presents with a spontaneous right pneumothorax estimated to be around 25% of lung volume.

Discuss your management options in this patient. (100%)

The overall pass rate for this question was 41/55 (74.5%).

Overall, the examiners considered that this was a good question which was poorly answered by a significant number of candidates. Candidates who performed poorly in this question did not emphasise the concurrent presence of asthma in the patient, incorrectly sized a pneumothorax as small and failed to identify the correct site of intercostal catheter insertion.

SAQ 3

A number of staff have been assaulted over the last 6 months in your emergency department.

Outline strategies to improve staff safety from violence in your emergency department. (100%)

The overall pass rate for this question was 46/55 (83.6%).

This question was rated highly by the examiners as it covered a common emergency department problem. Good candidates were able to identify the important issues early and developed appropriate strategies to solve the problem. Poorly performing answers failed to discuss issues such as precipitating factors for violence, emergency department guidelines/policies for violent behaviour, staff education, security systems and the audit process.

SAQ 4

Compare and contrast the cardiac arrest algorithm for asystole between adults and children older than one year. (100%)

The overall pass rate for this question was 22/55 (40.0%).

The examiners felt that this was an excellent core knowledge question on a topic recently overviewed in widely discussed consensus statements (ILCOR/AHA/ARC). It was thought to have been overall answered very poorly by most candidates. Good responses identified the differences in pathophysiology (and hence, priorities) in children, highlighted the potential reversible causes and exhibited knowledge of the recently published algorithms in this area. Common errors in answering this question were incorrect drug doses, incorrect CPR ratios/rates, failure to mention intraosseous vascular access techniques and disregard of the differing pathophysiology.

SAQ 5

A 60 year old presents with a painful red eye. There is no history of trauma.

- a. How would you distinguish between anterior uveitis and acute angle closure glaucoma? (50%)
- b. Outline your management of acute angle closure glaucoma. (50%)

The overall pass rate for this question was 43/55 (78.2%).

This was considered a straight forward question on an important topic which was well answered by most candidates. Satisfactory answers identified differentiating symptoms and signs plus presented a rationale management for acute angle closure glaucoma. Failed candidates either did not provide adequate detail or suggested incorrect/dangerous management strategies.

SAQ 6

A 19 year old woman presents with a 12 hour history of right iliac fossa pain and tenderness.

- a. List your main differential diagnoses. (30%)
- b. Compare and contrast the utility of computerised axial tomography and ultrasound for these conditions. (70%)

The overall pass rate for this question was 50/55 (90.9%).

The examiners felt that this was a very basic question lacking high level discriminative capacity which was done satisfactorily by most candidates. Impressive responses presented a full differential diagnosis and in part B considered logistical issues, risks, reliability and utility in specific conditions. The majority of inadequate responses were failure to address the issues in part B as above.

SAQ 7

Discuss the utility of laboratory investigations in a one year old child with a high fever, who appears well, and has no focus of infection on history and examination. (100%)

The overall pass rate for this question was 38/55 (69.1%)

This was considered by the examiners to be an appropriate question looking at the assessment of febrile infants with a view to excluding bacterial infection. Poor responses failed to take into account pre-test probability of infection, inadequate discussion of the major tests and lack of specific detail.

SAQ 8

An 18 year old intoxicated man is brought to your emergency department after diving into shallow water. He has examination findings consistent with a complete C6-C7 cord lesion. He has no other injuries.

Describe your management. (100%)

The overall pass rate for this question was 28/55 (50.9%).

Examiners considered this another core question which was overall done quite poorly. Good responses identified major issues of airway control, potential deterioration in transport and secondary spinal injury. Poor answers failed to deal with the issues mentioned or inappropriately used a standardized trauma template to this specific case. There was little discussion re the pros and cons of steroid therapy in this scenario.

6. VISUAL AID QUESTIONS

36/55 (65.5%) 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)
8	4
7	5
6	3
5	24
4	8
3	8
2	1
1	1
0	1

VAQ 1

A 54 year old man presents with one hour of severe central chest pain.

His initial observations are:

BP	80/60	mmHg supine
O2 saturation	97%	room air

His 12 lead ECG is shown, with three additional right-sided praecordial leads.

- Describe and interpret the ECGs. (50%)
- Outline your treatment of his hypotension. (50%)

ECG showed changes of Infero-postero-lateral AMI

The overall pass rate for this question was 38/55 (69.1%).

This question was regarded as highly discriminative by the examiners. Good answers provided a systematic approach to the ECG and a good discussion of fluid loading and reperfusion strategies. Failed responses failed to adequately interpret the ECG and/or mention reperfusion.

VAQ 2

An 8 month old child presents with one day of vomiting and abdominal distension.

His observations are:

HR	160	/min
BP	80/55	mmHg supine
Temperature	36.8	⁰ Celsius

His abdominal X-ray is shown.

- Describe and interpret this child's X-ray. (50%)
- Outline your management. (50%)

X-ray showed small bowel dilatation with fluid levels in the L upper quadrant and soft tissue shadowing in the R lower quadrant suggestive of an intussusceptum within the bowel lumen.

The overall pass rate for this question was 32/55 (58.2%).

The examiners felt that this was an excellent question. Poor responses failed to describe the image adequately and/or featured poor management options.

VAQ 3

An 85 year old woman is in your emergency department awaiting a surgical ward bed for treatment of a bowel obstruction. After becoming increasingly tired and breathless, the following investigations are performed.

Describe and interpret the results of her investigations. (100%)

Clinical Chemistry showed a mixed acid–base abnormality (resp acidosis and low Chloride metabolic acidosis) plus evidence of hypoperfusion/dehydration (raised lactate and urea with N creatinine)

The overall pass rate for this question was 40/55 (72.7%).

This question was regarded as a good mid-level discriminator with a wide spread of marks allocated. Poor responses failed to show an understanding of mixed acid/base disturbances, the causes of metabolic alkalosis and compensatory responses to this condition. Better responses calculated secondary values for anion gap and A-a gradient plus discussed possible causes for the renal impairment and elevated lactate.

VAQ 4

A 25 year old man sustains facial injuries in a high speed motor vehicle crash in which he was the unrestrained driver.

His observations are:

GCS	15	
HR	100	/min
BP	130/75	mmHg supine
O ₂ saturation	97%	room air

- Describe and interpret his photograph. (50%)
- List the risks to his airway. (50%)

Photo showed a badly swollen face with bilateral periorbital bruising and a haemoserous nasal discharge.

Overall pass rate for this question was 44/55 (80.0%)

The examiners felt that this was a good image with multiple findings to discuss. The area of concern for the markers was a lack of appreciation by many candidates of the difficulty that might accompany the need to intubate such a patient.

VAQ 5

A 7 year old child has had these lesions on his legs for seven days. His 4 year old sister has the same skin eruption.

- Describe and interpret his photograph. (30%)
- Outline your management. (70%)

Photo showed multiple pustular lesions on the shin typical of impetigo.

The overall pass rate for this question was 35/55 (63.6%).

Examiners agreed that this a good image of a common paediatric skin infection. Candidates failing the question failed to make the diagnosis of impetigo and/or discuss directly relevant treatment options.

VAQ 6

A 52 year old woman presents to your emergency department with gradually increasing breathlessness over the preceding three days. It is one week since her last chemotherapy treatment for cancer.

Her observations are:

BP	130/70	mmHg supine
RR	28	/min
O ₂ saturation	90%	room air
Temperature	36.8	⁰ Celsius

- a. Describe her Chest X-ray. (50%)
- b. Outline your differential diagnoses (50%)

X-ray showed a large left pleural effusion, multiple discrete lung parenchymal lesions typical of metastatic lung disease and a PIC line.

Overall pass rate for this question was 39/55 (70.9%).

This was a high discrimination question in the opinion of the examiners. Good responses provided a good description of the radiograph and a reasoned discussion of the possible diagnoses. Candidates failed because of poor use of x-ray descriptives, lack of a systematic technique and vague/ inadequate differentials.

VAQ 7

A 49 year old woman presents to your emergency department with central chest pain.

Her observations are:

BP	110/70	mmHg supine
O ₂ saturation	97%	room air

- a. Describe and interpret her ECG. (50%)
- b. How might echocardiography aid in clarifying her diagnosis? (50%)

ECG showed widespread T wave inversion, concave up ST elevation and PR depression inviting in this clinical context a discussion re a number of differentials.

Overall pass rate for this question was 32/55 (58.2%).

This was viewed as a difficult but relevant ECG which was satisfactorily interpreted by most candidates. The discussion re echocardiography was generally superficial and was the major reason for poor scores.

VAQ 8

A 4 year old boy arrives at your urban district emergency department one hour after falling from a playground slide. He opens his eyes to speech, uses inappropriate words and obeys commands (GCS 12). The nearest neurosurgical service is twenty minutes away by road ambulance.

An image from his head CT scan is shown.

- a. Describe and interpret his CT scan. (30%)
 b. List the pros and cons of endotracheal intubation for this transfer (70%)

Scan showed a large L extradural haematoma with mass effect.

Overall pass rate for this question was 40/55 (72.7%).

The examiners felt that this was an excellent question backed by a high quality image. The CT scan description was generally well done. Major reason for poor scores on this question was failure to provide adequate reasons pro and con intubation in this case. Writing was particularly problematic to the examiners in interpreting the answers.

7. CLINICAL EXAMINATIONS

These were held in Melbourne on Saturday May 5th and Sunday May 6th 2007

Clinical exam coordination at the Jamie Hendrie (Austin), Liam Walsh (Box Hill) and Sandra Neate (St Vincents). A total of 43 number candidates were invited to the clinical section.

7.1. LONG CASES

36/43 (83.7%) passed the long cases. The pass mark is 5/10. The grade frequencies were:

Grade (/ 10)	Frequency (N)
9	3
8	5
7	14
6	5
5	9
4	4
3	3

7.2. SHORT CASES

40/43 (93.0%) 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)
7	2
6	15
5	23
4	3

7.3. SCEs

36/43 (83.7%) 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	4
8	5
7	9
6	8
5	6
4	4
3	1
2	1
1	0
0	1

SCE 1

You are Consultant in charge of an Urban District ED at 2100hrs on a weekday.

Your registrar asks you about a 34yo man who presented with severe, unstable asthma. He states that the patient may require urgent endotracheal intubation.

As you are talking to him, a distressed nurse comes to you, reporting that she has just sustained a needlestick injury, trying to care for a confused, combative 70yo man.

- Outline your approach to the key issues in this situation.
- The asthma patient is now intubated. What ventilation settings would you use on this patient, and why?
- What are the pros and cons of volume versus pressure-controlled ventilation in asthma?
- Outline your approach to the Nurse who sustained the needle stick injury?
- The nurse (recipient) asks about HIV post-exposure prophylaxis. What issues do you consider?

Overall pass rate for this question was 33/43 (76.7%).

This was considered to be a good SCE, with excellent flow and discriminatory ability. It portrayed a realistic situation of multiple competing demands in an ED; high-performing candidates identified and prioritized key issues well. Poorly performing candidates demonstrated little knowledge about ventilation, or failed to take a consultant approach to questions.

SCE 2

As the Duty Consultant, you are called in for a trauma case. The patient is 15 year-old female passenger involved in a high-speed car crash. She is pale and diaphoretic. Other observations are:

GCS 14/15 (E4 V5 M5)

HR 119 / min

BP 101/74 mm Hg

RR 28 / min

O₂ Sats 93% (O₂ 6 LPM via Hudson mask)

You lead a team of two registrars, who show you the patient's chest x-ray. *Q1, but not CXR, included in stem.*

Prop - CXR: Multiple fractured ribs, left sided pneumothorax, left sided surgical emphysema, ruptured left diaphragm, left lung contusion.

- Describe and interpret the CXR.
- Describe your priorities in management now.
- The patient is stabilized. Describe your technique for inserting an intercostal catheter
- What are the potential complications of chest tube insertion in this patient?
- You decide to intubate this patient. How would her injuries influence your approach?

Overall pass rate for this question was 36/43 (83.7%).

This SCE, with obviously abnormal props and relatively straightforward topics, was considered less discriminatory. High-level responses were requisites for passing. Candidates failed because of poor approach to test interpretation, trauma management or a core procedural technique.

SCE 3

A 35yo woman is referred by her local doctor to your tertiary ED with an accompanying letter:

“Dear Doctor

This lady was seen twice in your ED in the last 2 days, and each time she was sent home with a diagnosis of chest wall pain. I’m concerned she may have a pulmonary embolism.”

Observations at triage:

Pulse 108/min; RR 40/min; BP 100/60 mmHg. Oximetry 96% on room air.

Prop - VQ Scan: Multiple large subsegmental perfusion defects bibasally; mismatched defects.

- Describe how you would determine the clinical probability of pulmonary embolism in this patient.
- Discuss the options for imaging in this patient.
- In general, outline how you would manage unplanned returns to your ED?
- You perform a VQ scan, and films are available for viewing. Describe and interpret these films.

Overall pass rate for this question was 38/43 (88.4%).

Considered to be a mid-level discriminator. A relatively straightforward and common topic required high-level responses. Poorly-performing candidates failed to take a comprehensive, consultant-level approach to the administration question (3), or provided only superficial discussion about risk-stratification for PE.

SCE 4

A 3 year-old boy is brought to your department by his mother with abdominal pain and vomiting. The mother is concerned that the child may have ingested some of her Iron (*Ferrogradumet*) tablets. She is sure that there are more than 10 tablets missing from the bottle.

Each *Ferrogradumet* tablet contains 105mg of elemental Iron.

- How would you clinically assess the risk of toxicity for this child?
- List and justify your investigations in this child.
- Discuss the options for decontamination in this child.
- Describe your *specific* Rx for Fe toxicity in this case.
- These are the patient’s arterial blood gases. Describe and interpret them.

<i>pH</i>	<i>7.30</i>
<i>pCO₂</i>	<i>28 mmHg</i>
<i>pO₂</i>	<i>120 mmHg</i>
<i>Bicarbonate</i>	<i>16 mmol/l</i>

Overall pass rate for this question was 37/43 (86.0%).

Considered to be a mid-to-high level discriminator, with a uni-faceted topic. Very detailed knowledge for question 4 was not required to pass, but that, and question 3 were discriminatory. Candidates failed because of insufficient knowledge, or a poor approach to test interpretation.

SCE 5

You are asked by your registrar to assist in the case of a 35yo woman, who injured her right ankle at a nightclub, and was brought in by ambulance. It's evident that she's intoxicated with alcohol. Her injured ankle is shown in the photographs.

Photos, and Q1 included in stem.

*Props - 3 Clinical Photographs: Right ankle. Visible deformity. Postero-lateral displacement
Tibia is prominent anteriorly. Probable fracture-dislocation of ankle.*

Props – AP and Lateral views of post-reduction x-rays: In POP backslab. Tri-malleolar fracture; diastasis of distal tibio-fibular joint; subluxation of talus.

- Describe and interpret the photos
- What are the key features in HISTORY, when assessing this patient?
- You decide to perform an urgent reduction of the ankle in the ED. What factors are important when considering procedural sedation in this patient?
- What is your preferred agent for procedural sedation in this case, and why?
Prompt for dose, pros/cons of their agent.
- You reduce the ankle injury. Post-procedure x-rays are taken.
Describe and interpret these films.

Overall pass rate for this question was 38/43 (88.4%).

High-performing candidates demonstrated a consultant-level approach to questions in this SCE. Questions 3 to 5 were considered discriminatory; it was acknowledged that questions 2 and 3 required similar responses. Candidates failed because of poor interpretation of props, or insufficient knowledge.

SCE 6

An 84 yo woman is brought by ambulance to the emergency department. She lives independently at home and has a past history of cardiac failure. She complains of one week of vomiting, weakness and diminished coping abilities at home. Her medications are Frusemide 40 mg orally daily, and oral potassium supplements. Her observations on arrival are: GCS 15, BP 150/90 mmHg, RR 24 /min, SpO2 99% on room air, Temp 37°C. A registrar shows you her ECG. (Question 1 and ECG outside)

Prop - ECG: Bradycardia; Broad QRS > 120 ms; tall peaked T waves V5, V6; ST segment elevation / approaching sine wave appearance. Consistent with hyperkalaemia.

- DESCRIBE and INTERPRET her ECG.
- These are her pathology results. Please DESCRIBE and INTERPRET them.
- OUTLINE your TREATMENT of her HYPERKALEMIA.
- Soon after treatment has commenced, the charge nurse NOTIFIES YOU that the patient was GIVEN 100 units of INTRAVENOUS INSULIN IN ERROR. DESCRIBE YOUR MANAGEMENT NOW.
- What factors may have contributed to this error occurring?

PATHOLOGY RESULTS

Sodium	136	mmol/L	(135 - 145)
Potassium	8.0	mmol/L	(3.5 – 5.0)
Chloride	94	mmol/L	(92 - 107)
Bicarbonate	20	mmol/L	(20 - 34)

Urea	14.0	mmol/L	(3.1 – 8.3)
Creatinine	0.15	mmol/L	(0.07 – 0.11)
Glucose	5.1	mmol/L	(3.6 – 7.7)

Overall pass rate for this question was 36/43 (83.7%).

This SCE was considered to be an excellent discriminator, covering several issues around a scenario. Poorly performing candidates were found to be deficient in knowledge, a consultant approach (especially for questions 4 and 5), prop interpretation, and management of a critically unwell patient.

8. SUMMARY PASS RATES

MCQ	49/55	(89.1%)
SAQ	34/55	(61.8%)
VAQ	36/55	(65.5%)

43/55 passed 2 or more sections and were invited to the clinicals

LC	36/43	(83.7%)
SC	40/43	(93.0%)
SCE	36/43	(83.7%)

At the examiners meeting, of the 43 candidates at the clinicals

- 33 candidates passed automatically
- none were discussed
- meaning 33 / 43 (76.7%) of those attending the clinicals passed.

So the overall pass rate was 33 / 55 (60.0%)

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 Jamie Hendrie, Liam Walsh and Sandra Neate for their work as the site coordinators.

I wish to further 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 for her support in the lead up to and running of this examination

Dr Mark Gillett
Chair, Fellowship Examination Committee