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REGISTRARS

Mastering your Fellowship

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Abstract

The series, "Mastering your Fellowship", provides examples of the question format encountered in the FCFP(SA) examination. The series aims to help family medicine registrars and their supervisors prepare for this examination. Model answers are available online.

Keywords: FCFP(SA) examination, family medicine registrars

Introduction

This section in the *South African Family Practice* journal is aimed at helping registrars prepare for the FCFP (SA) Final Part A examination (Fellowship of the College of Family Physicians) and will provide examples of the question formats encountered in the written examination: Multiple Choice Question (MCQ) in the form of Single Best Answer (SBA - Type A) and/or Extended Matching Question (EMQ – Type R); Modified Essay Question (MEQ)/Short Answer Question (SAQ), questions based on the Critical Reading of a journal (evidence-based medicine) and an example of an Objectively Structured Clinical Examination (OSCE) question. Each of these question types is presented based on the College of Family Physicians blueprint and the key learning outcomes of the FCFP programme. The MCQs will be based on the ten clinical domains of family medicine, the MEQs will be aligned with the five national unit standards and the critical reading section will include evidence-based medicine and primary care research methods.

This month's edition focuses on **orthopaedics and surgery**, and is based on unit standard 1 (critically appraising quantitative research), unit standard 2 (evaluating and managing a patient according to the bio-psycho-social approach), unit standard 4 (teaching and training others) and unit standard 5 (conduct all aspects of health care in an ethical and professional manner).

We suggest that you attempt answering the questions (by yourself or with peers/supervisors), before finding the model answers online: http://www.safpj.co.za/.

Please visit the Colleges of Medicine website for guidelines on the Fellowship examination:
https://www.cmsa.co.za/view_exam.aspx?QualificationID=9

We are keen to hear about how this series is assisting registrars and their supervisors in preparing for the FCFP (SA) examination. Please email us your feedback and suggestions.

1. MCQ (multiple choice question: single best answer)

A 17-year-old boy approaches you for a circumcision for religious reasons. As a family physician, who performs such procedures under local anaesthesia, you provide a detailed explanation of the nature and method of the procedure, the potential risks and complications. The patient agrees to the procedure being performed on him. The next most appropriate step is to:

a. Perform the procedure with the patient's written informed consent.
b. Refer the patient to a practitioner of the patient's own religion.
c. Request the patient to get written assent from his father.
d. Request to counsel his father for written assent.
e. Request to see his father for written informed consent.

Correct answer: c)

Circumcision "campaigns" have become common events in the public healthcare sector in South Africa as it has been considered a fairly effective measure in the prevention of HIV transmission. Mass campaigns occur regularly across the country and many junior doctors are taught to perform the procedure under local anaesthetic. It is therefore important to consider the ethical and legal requirements when performing such procedures and this is extensively covered in the 2016 South African National Guidelines for Male Medical Circumcision.

In terms of the Children's Act 38 of 2005 (as amended by the Children's Amendment Act 41 of 2007) children under 18 are not capable of giving consent for surgical procedures without the assistance of their parents. Adolescents 18 years and older can give written informed consent independently for circumcision and can be circumcised for any reason. Boys aged above 16 years (but younger than 18) may also undergo circumcision for any reason, provided that the boy consents to the circumcision after being appropriately counselled, but he needs to be assisted by the parent or legal guardian. The parent or legal guardian

should make the decision in the best interests of the child. The skills needed for providing such counselling are outlined in the guideline and include using empathy, active listening, using open ended questions, probing appropriately, affirming, clarifying, correcting false information and summarising.

Boys younger than 16 years require written informed consent of parents or legal guardians before circumcision can be performed. The parent or legal guardian also needs to be present on the day of the circumcision. Male circumcision may only be carried out on a boy less than 16 years if it conforms to religious practices or is medically necessary. Consent must be in writing. Circumcision for social or cultural reasons must only be carried out if the boy is aged 16 years or older and with his written consent and the signed assent of a parent or guardian. The Regulations in the Children's act further stipulate that Form 2 needs to be filled when consent for circumcision is being sought for religious or cultural reasons. This form articulates the requirement of parental assent which requires the parent/guardian to confirm that the child is of sufficient maturity to understand the risks and benefits of the circumcision and that the child has been given the opportunity to refuse the procedure.

All boys, regardless of age, have the right to refuse circumcision.

Further reading:

- National Department of Health, South Africa. South African National Guidelines for Medical Male Circumcision (2016). Pretoria: NDoH, 2016.
- South Africa. Children's Act No. 38 of 2005. Regulations: General Regulations Regarding Children. Form 2. Pretoria: Government Gazette No. 33076, Notice No. 261, 2010.

2. SAQ (short answer question): the family physician's role as consultant

A medical officer (MO) in the emergency department approaches you for advice. He administered blood to an unconscious patient without obtaining consent. It was a polytrauma patient with a blood pressure of 40/20 mmHg and a pulse of 180 bpm, and a ward haemoglobin of 8 g/dl. While putting up the blood the family arrived and informed the MO that patient is a Jehovah's Witness. They insist that the blood must be taken down.

2.1 Does the patient meet the conditions for medical intervention without consent to be legal? Justify your answer. (4 marks)

2.2 Identify the ethical dilemma(s) and describe the steps involved in analysing the dilemma(s). (10 marks)

2.3 What would you advise the medical officer to do? (4 marks)

2.4 How will you approach debriefing your team about this incident? (2 marks)

Model answer:

2.1 Does the patient meet the conditions for medical intervention without consent to be legal? Justify your answer. (4 marks)

- Yes, as there must be an emergency which necessitates the intervention.
- Yes, as the patient must be incapable of consenting to the intervention.
- The intervention must not be against the patient's will. This is less clear in this situation, as the patient's will cannot be proven at this point, especially in the absence of a legal and properly informed advance directive.
- Yes, as the intervention must be to save the patient's life or protect his/her health.

2.2 Identify the ethical dilemma(s) and describe the steps involved in analysing the dilemma(s). (10 marks)

- **Step 1:** Identify the moral dilemma. In this scenario, autonomy conflicts with beneficence. The patient is unable to give consent, but his family convey the message that this was his wish, however in the absence of an advance directive one must act in the best interest of the patient in an emergency.
- **Step 2:** Establish all necessary information. In an emergency it is difficult to establish the patient preferences in a cognitively impaired patient. One acts out of necessity in terms of the National Health Act and in the best interest of the patient. The difficulty in this scenario is the duty to act immediately versus the duty to comply with the patient's family wishes, patient preferences, medical, legal, ethical and political norms and standards, as well as the family practitioner's own value system.
- **Step 3:** Analyse the information obtained. If there is no advance directive, one of the following surrogates (in the order of precedence listed below) may make decisions on the patient's behalf:
  1. A proxy mandated in writing by the patient to make decisions on his or her behalf.
  2. A person authorised by law or a court order.
  3. The patient's spouse or partner.
  4. Parent.
  5. Grandparent.
  6. Adult child.
  7. Brother or sister.

  If none of the above surrogates exists, or can be contacted, the healthcare professionals responsible for the patient's care must decide how best to proceed using the "best interests" principle.
- **Step 4:** Formulate possible solutions/take action.
- **Step 5:** Implement the necessary policies/action.

2.3 What would you advise the medical officer to do? (4 marks)

- Advise the medical officer that he/she is within his/her right to continue with the blood transfusion. This is justified, as in the case of an **unconscious Jehovah's Witness**, where a legal '**advance directive/living will' is absent** (i.e. the need for a competent patient's future anticipatory refusal of consent, which must be properly informed consent with risks and benefits fully explained, and includes the patients right to autonomy to refuse unwanted medical treatment, but must be without external influence), the **doctor is within his/her right to preserve life** and administer the necessary blood products in an **emergency situation**. (1 mark)
- The complexity results from the fact that were the patient conscious he/she would most likely refuse the blood transfusion in line with his/her **right to autonomy**, and

this may be a testing point in law. However, it would be **difficult to prove and confirm** that the patient is actually a Jehovah's Witness, other than from family in this situation, and the doctor would not be penalised for refusing the family in a situation **where informed consent from the patient cannot be obtained** for a life saving measure. (1 mark)

- **Good record keeping** is required, noting the emergency situation and inability to obtain informed consent against a life saving measure. Open and **good communication** should be maintained with the family throughout. (1 mark)
- If **alternatives** are available, safe and effective, these may be considered in preference – e.g. Hemopure. (1 mark)

2.4 How will you approach debriefing your team about this incident? (2 marks)

Assemble my teammates, discuss and review what happened, what went well and what specifically could be done better next time.

Further reading:

- Hardcastle TC. The ethical and medico-legal issues of trauma care. South African Journal of Bioethics and Law. 2010;3(1):25-7.
- Van Oosten FCC. The legal liability of doctors and hospitals for medical malpractice. S Afr Med J. 1991;80:23-7.
- Moodley Keymanthri (ed). Medical ethics, Law and Human rights, 1st ed. Pretoria. Van Schaik Publishers; 2011:Chapter 11.
- Garner R. Introduction to debriefing. Seminars in perinatology. 2013(37):166-74.

3. Critical appraisal of research

Read the accompanying article carefully and then answer the following questions (*total 30 marks*). As far as possible use your own words. Do not copy out chunks from the article. Be guided by the allocation of marks with respect to the length of your responses.

Skinner DL, den Hollander D, Laing GL, Rodseth RN, Muckart DJ. Severe blunt thoracic trauma: differences between adults and children in a level I trauma centre. South African Medical Journal. 2015;105(1):47-51. Obtainable from: http://www.samj.org.za/index.php/samj/article/view/8499/6491.

3.1 Explain the scientific background and rationale for the study reported. (3 marks)

The authors situated the issue of blunt chest trauma within the context of trauma being a major burden of disease in South Africa, as well as within the context of a resource-constrained health system where patients with such injuries require significant resources in their diagnostic and therapeutic work-up. The authors highlighted the perceived differences in presentation and associated injuries in the paediatric population and wished to compare the incidence and outcome of blunt chest trauma among adults and children, as this represented a research gap.

3.2 Would you classify this study design as descriptive or analytic? Justify your answer. (5 marks)

This was a retrospective observational study. Observational studies investigate and record exposures (such as interventions or risk factors) and observe outcomes (such as disease) as they occur. Such studies may be purely descriptive or more analytical.

This study was descriptive in nature. An *analytic* study attempts to quantify the relationship between two factors, that is, the effect of an intervention (I) or exposure (E) on an outcome (O). A *non-analytic* or *descriptive* study does not try to quantify the relationship but tries to give us a picture of what is happening in a population.

The study aimed to describe the incidence and outcomes (descriptive), but also aimed to contrast or compare the incidence and outcomes between adult and paediatric patients. However, the main exposure here was blunt thoracic trauma, which was sustained by the whole study population.

The well-known PICO question relates to analytic studies, where the population of interest (P) is divided into intervention (I) and control (C) groups which are compared in terms of the outcome (O) of interest. In this descriptive, non-analytic study, there were no intervention and comparison groups, as all patients were exposed to blunt thoracic trauma.

This means that the population (P) of interest includes both adult and paediatric patients who were treated at this level 1 trauma unit over the 6-year period. Here the exposure (E) could be described as blunt thoracic trauma; there is no comparison group, however, as the population was not divided between exposed and control/comparison groups. The outcome (O) of blunt thoracic trauma, however, was compared by age group (younger or older than 18 years).

Therefore, the question is rather a PO question, as there were no intervention (I) nor control (C) groups.

3.3 Critically appraise the authors' description of the study setting and study period. (4 marks)

The authors described the setting as a trauma ICU (TICU) within a central hospital in the capital city of the KwaZulu-Natal province. This 10-bed TICU serves a large drainage area population of about 11 million. The procedure and routes for admission are described. The authors did not specify whether this TICU serves only the public sector and whether this population is equal to the provincial population. The term level 1 is used in the title of the paper, which may be unfamiliar to the reader (how many different levels of trauma centres are available and does level 1 mean the highest or lowest level?) This information may require further expansion for the non-South African reader. The service pressure on these ten beds is implied, however.

In terms of the study period, the time frame is not justified. It is unclear whether this was selected based on convenience or based on available data. It might be that the trauma unit database and hospital information systems' data availability were the limiting factor. The time frame ended two years

before the study was published and five years before the present date, which may influence the applicability of the study findings.

3.4 Discuss the method of selecting the participants. (3 marks)

All patients who presented to the trauma ICU (TICU) with blunt chest trauma during the 6-year period were selected. The only exclusion criteria were penetrating chest trauma, blunt injury with no chest involvement and those who presented as dead on arrival in the resuscitation area. No form of sampling was applied. Patients were admitted to the TICU via the resuscitation area and received diagnostic work-up and surgical intervention(s) prior to TICU admission.

3.5 Discuss the authors' choice of variable selection and how it links with the outcomes of the study. (5 marks)

The variables selected included: (i) patient demographics: age, gender, mechanism of injury, injury severity score (ISS) and site of referral (scene or inter-hospital transfer); (ii) initial lactate value; (iii) presence of rib fractures (single and multiple fractures were included), pulmonary contusion, flail segments, sternal fracture or blunt aortic injury; (iv) other system injuries, which were divided into head, face, spine, abdomen, limb (either single or multiple) and external; (v) length of stay in the TICU; and (vi) in-hospital mortality and cause of death.

These variables were linked to the outcomes of the study, as follows:

The primary aim of this study was to examine the outcomes of critically ill patients with blunt thoracic trauma: in-hospital mortality, cause of death and length of stay were the variables identified for this primary aim. One may have argued that it would have been useful to assess morbidity-related variables (functional status), but these data points may not have been available.

A secondary aim was to describe the types of thoracic trauma in both children and adults and to document their differences. Here the authors selected patient demographic variables (age, gender), as well as relevant variables to describe the underlying mechanisms of injury, the injury severity score, site of referral, as well as other types of associated injuries. These associated injuries had clear diagnostic criteria based on objective definitions, which helped to ensure robust data classification.

3.6 Explain how quantitative variables presented in Table 1 were handled in the analyses. (3 marks)

Table 1 shows how the demographic variables for adult and paediatric patients were compared in keeping with the secondary aim of the study. Gender is a categorical variable (male vs. female) and the chi-squared test ($\chi 2$ test) was likely used for this analysis. The injury severity score (a continuous variable) was presented as a median value with interquartile range, which denotes a nonparametric distribution and, hence, a nonparametric test for comparison between adults and children, the Mann-Whitney *U*-test. Referral from scene (as opposed to inter-hospital transfer) represented another categorical variable (two options). Lactate level at presentation is a continuous variable, presented as a mean with standard deviation, which signifies a parametric distribution suitable for a parametric test, the Student's *t*-test.

3.7 Describe the clinical significance of the analyses presented in Table 5, "Number of body regions injured in addition to thoracic injury". (2 marks)

Only 31 (7.5%) patients were admitted with isolated thoracic trauma, the majority of patients sustaining injury to two or more systems. Although the comparison between the adult and paediatric sub-groups did not reach statistical significance, the clinical take-home message should be that patients with blunt thoracic trauma should be treated as polytrauma patients requiring a thorough primary and secondary survey according to ATLS principles, in order not to miss the associated injuries.

3.8 Discuss the generalisability (external validity) of the study results. (5 marks)

External validity is the validity of applying the conclusions of a scientific study outside the context of that study. In other words, it is the extent to which the results of a study may be generalised to other situations and to other people. External validity is an important property of any study, as the aim is to facilitate making general conclusions of value to the clinicians and patients in similar contexts.

The model answer here would be constructed around the external validity for the family physician working in the district health system. The study setting differs considerably (trauma ICU in urban central hospital, compared to district hospital or community health centre in either urban or rural settings). However, the authors highlight the fact that adults and children sustain complex multiple system trauma (polytrauma) during motor vehicle accidents and that blunt chest trauma is rarely an isolated event. This study described some differences in associated injuries for children (associated head injury) compared to adults when sustaining blunt chest trauma. The authors highlighted the need for highly skilled providers and equipment to manage these children, resources which are often not available in rural settings. This lead to their motivation to stress the need to prevent these complex injuries (primary prevention), which falls within the domain of the primary care team with a community-oriented outlook and a responsive public health system which articulates well with other government departments in providing a multi-sectoral approach, to ensure road safety and pedestrian supervision (especially children).

Further reading:

- Pather M. Chapter 13: Continuing professional development. In: Mash B (ed). Handbook of Family Medicine. 3rd ed. Cape Town: Oxford University Press Southern Africa; 2011: p. 406-29.
- Studying a study and testing a test. How to read the medical evidence. 5th ed. Richard K. Riegelman. Lippincott Williams &

Wilkins; 2005.

- Resources. Centre for Evidenced Based Health Care [homepage on the Internet]. c2018. Available from URL: http://www.cebhc.co.za/teaching-resources/.
- Greenhalgh T. How to read a paper: The basics of evidence-based medicine. 5th ed. Wiley & Blackwell; 2014.
- The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. EQUATOR network. Available from URL: http://www.equator-network.org/reporting-guidelines/strobe/ (accessed 10 Oct 2018).

Question 4

The following key elements should be available to the supervisor/examiner who is facilitating the station.

4.1 Instructions for the candidate

You are leading the post-intake ward round at a district hospital. The junior medical officer (MO) presents a patient to you.

Please teach this MO how best to manage patients with this clinical problem.

You are not expected to examine the patient yourself – the MO's exam findings are accurate.

4.2 Objective of station

This station tests the candidate's ability to teach a junior medical officer how to diagnose and manage a patient with possible gastric ulcer.

This is an integrated consultation type of station.

4.3 Instructions for the examiner

This is an integrated consultation station in which the candidate has 14 minutes.

Familiarise yourself with the assessor guidelines which details the required responses expected from the candidate.

No marks are allocated. In the mark sheet, tick off one of the three responses for each of the competencies listed. Make sure you are clear on what the criteria are for judging a candidate's competence in each area.

This station is 15 minutes long. The candidate has 14 minutes, then you have 1 minute between candidates to complete the mark sheet and prepare the station.

Please switch off your cellphone.

Please **do not** prompt the student.

Please ensure that the station remains tidy and is reset between candidates.

Marking template for consultation station

Exam number of candidate:			
Competencies	**Candidate's rating**		
	Not competent	**Competent**	**Good**
1. Establishes and maintains good intercollegial and doctor-patient relationships Comments:			
2. Gathering information: history, clinical examination, investigations (if any) Comments:			
3. Clinical reasoning: synthesising all relevant information into a working diagnosis Comments:			
4. Explaining: condition of patient and baseline of junior MO Comments:			
5. Management: evidence-based plan for patient; learning plan for MO Comments:			
Overall comments:			
Examiner's name:	**Examiner's signature:**		

4.5 Guidance for examiner

SOME GENERAL DESCRIPTORS OF COMPETENCIES

(Competency is defined as the desired outcome of that domain, achieved in a manner that is effective and safe. Please also provide the relevant clinical guidelines in their respective domains.)

Establishes a good intercollegial and doctor-patient relationships: Shows genuine respect, compassion, sensitivity, rapport, empathy, establishes trust, and attends to patient's comfort.

Gathering information - history, clinical findings, and investigations: elicits relevant and sufficient information from MO that allows him/her to make a differential diagnosis, while also assessing the baseline knowledge of the MO.

The good candidate elicits this information in a systematic and efficient manner, showing a structured approach to clinical management and teaching.

Clinical judgement: is able to synthesise information into a differential diagnosis; and makes an assessment of the MO's current knowledge/skill level.

Explaining: Explains the clinical assessment to the MO and patient. Also explains the MO's current learning needs.

The good candidate does this in a student-centred, interactive manner, encouraging the MO to participate in the assessment process at all times.

Management: decides on an evidence-based, financially feasible and acceptable management plan for the patient to manage the current condition and reach a definitive diagnosis and subsequent management – intervention guarantees a safe and timeous outcome for patient. Decides on a learning plan for the MO, using multiple resources (clinical guidelines, articles, UpToDate, clinical governance activities, etc).

The good candidate involves the patient and MO in decision-making in an interactive, non-threatening manner.

Guidance regarding the clinical management of this scenario:

The differential diagnosis in this patient includes: alcoholic hepatitis; alcoholic gastritis; alcoholic pancreatitis.

Obtain erect abdominal and chest x-rays to detect air-fluid level or air under diaphragm.

Arrange an ultrasound to visualise and measure the pancreas and liver – though not definitively diagnostic.

Order appropriate laboratory investigations:

- Renal and hepatic function to assess acute damage (Urea +

Creatinine; AST + ALT + GGT).

- Pancreatitis: lipase. Important also to measure serum calcium (risk of hypocalcaemia).
- Point of care Haemoglobin test.

Arrange gastroscopy: allows visualisation and rapid urease test (*H. pylori*) and biopsy.

Provide supportive treatment:

- Fluids – input and output monitoring.
- Electrolyte monitoring.
- Analgesia – can consider morphine intravenous/intramuscular.
- PPI (proton pump inhibitor) – if gastritis/PUD (peptic ulcer disease) strongly suspected.
- *H. pylori* eradication as per gastroscopy findings (not empirically) – [Amoxicillin 1gram 12-hourly X 7 days / Azithromycin 500mg daily x 3 days] + Metronidazole 400mg 12-hourly X 7 days.

Follow-up plan:

- Alcohol use assessment and intervention.
- Any other relevant intervention based on findings.

4.6 Instructions to role player/standardised patient

Doctor

You are a community service medical officer (MO) in a District Hospital – you were on call last night and admitted Mr Jacobs. You are handing over to the Family Physician in the general ward. You just finished your internship at a large academic hospital where you did ward work most of the time. This is the first month that you're doing MO calls on your own.

Appearance: appropriate for a post-call ward round, calm.

Opening statement

"This 46-year old man came in last night with abdominal pain and vomiting. He seemed to be dehydrated, so we thought it best to admit him for rehydration."

History

Open responses: He reports that he had a heavy night of drinking and the next day started feeling like this. It is the first time that it has been so bad – other times, he just uses over the counter medications. No medical or surgical history of note.

Closed responses:

Examination findings: see attachment.

Investigations: none done (not available after hours) – if the candidate mentions an investigation, ask how it would help you with this patient.

Ideas, concerns and expectations

- I don't know what is wrong – maybe it's just because he drank too much?

Patient: you feel too sick to talk, and only feel a little better than last night.

Patient's notes/Examination findings

- Vital signs on admission: P 110/min; BP 145/95; RR 16/min; T 36.5^{0}C.
- Vital signs this morning: P 98/min; BP 130/95; RR 15/min; T 36.2^{0}C.
- Respiratory exam: clear, specifically no signs in the right lower lobe.
- Abdominal exam: generalised tenderness over the upper abdomen, allowing deeper palpation of the lower abdomen. Clinically, no masses felt, but difficult to make a call.
- Urine dipsticks: not done.
- No x-rays or ultrasound available after hours.
- No blood tests taken as yet.

Further reading:

- Essential Drugs List and Standard Treatment Guidelines - Hospital (Adult) (2015 Ed). Chapter 1. Pages 1.2-1.6. Available online from: http://www.kznhealth.gov.za/edl.htm. Also available as a mobile application.

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