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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); 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 is based on unit standard 1 (critically appraising qualitative research and leading clinical governance activities), unit standard 2 (evaluate and manage a patient according to the bio-psycho-social approach) and unit standard 4 (facilitate the learning of others). The theme for this edition is child health.

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 three-month-old child, HIV exposed, with a negative birth HIV PCR presents to the emergency centre with cough and dyspnoea. His Z score is +1 and he has no feeding problems. The respiratory rate is 56/minute, heart rate = 110/minute, and oxygen saturation in room air is 97%. The child has lower chest wall indrawing. Chest auscultation reveals scattered crepitations. The most appropriate antibiotic/s for this child is/are:

a. Intravenous ampicillin
b. Intravenous ampicillin and gentamycin plus oral cotrimoxazole
c. Intravenous ampicillin plus gentamycin
d. Oral amoxicillin
e. Oral amoxicillin and cotrimoxazole

Answer:

e) Oral amoxicillin and cotrimoxazole

This presentation is common in many public healthcare institutions. One needs to ensure adherence to the antimicrobial stewardship programme and the Hospital Level National Department of Health Paediatric Guidelines (Standard Treatment Guidelines) when managing this child. These guidelines make provision for the classification of pneumonia in children as non-severe, severe and very severe based on the criteria presented in Table 1.

Based on the criteria outlined in Table 1, the child will be classified as severe pneumonia and treated with high dose amoxicillin 45 mg/kg/dose for 5 days. In an HIV-exposed child less than one year old one would add cotrimoxazole to the child's treatment and follow this by confirming the HIV status of the child with an HIV PCR test. In many instances such children are admitted and placed on intravenous antibiotics which can be quite traumatic for the family. Table 2 outlines the antibiotic choices.

Table 1: Classification of pneumonia in children

Non severe pneumonia	Tachypnoea	< 60 days old > 60/min
		2-12 months old > 50/min
		1-5 years old > 40/min
Severe pneumonia	As for non-severe PLUS one of the following	
	Lower chest wall indrawing	
	Nasal flaring	
	Grunting	
Very Severe Pneumonia	As for severe PLUS one of the following	
	Oxygen saturation < 90%	
	Inability to feed	
	Convulsions or altered level of consciousness	
	Severe chest wall indrawing	
	< 60 days old	
Criteria for admission	All children younger than 2 months	
Children > 2 months with	Impaired level of consciousness	
	Inability to drink or eat	
	Cyanosis	
	Stridor in calm child	
	Grunting	
	Room air SaO2 ≤ 92% at sea level	
	Severe malnutrition	
	Family unable to provide appropriate care	
	Failure to respond to ambulatory care or clinical deterioration	

Table 2: Antibiotic choices for pneumonia in children

	Ambulatory management	**Inpatient management**
Non-severe pneumonia	Amoxicillin - oral high dose	
Severe pneumonia	Amoxicillin - oral high dose	If child is unable to swallow or is vomiting: Ampicillin, IV (change to oral as soon as able).
Very severe pneumonia		Ampicillin IV and aminoglycoside IV, or Ceftriaxone IV; Switch to oral as soon as there is a response: Amoxicillin/clavulanate, oral
HIV	Add cotrimoxazole if PJP is suspected in an HIV-exposed child less than a year and in any HIV-infected child not taking PJP prophylaxis.	
	Add an aminoglycoside to all hospitalised children known to be HIV-infected.	
Staph Aureus	S. aureus should be suspected in children who fail to respond to therapy within 48 hours or those with suggestive CXR changes, add cloxacillin.	
M. pneumoniae and Chlamydia spp.	Suspect if no clinical response to a β-lactam within 48 hours of starting treatment, or if there is wheezing in children older than 5 years of age, add azithromycin.	

Further reading:

- Zar HJ, Jeena P, Argent A, Gie R, Madhi SA. Diagnosis and management of community-acquired pneumonia in childhood-South African Thoracic Society Guidelines. S Afr Med J 2005;95(12):5977-990. Part 2: Dec 2005.
- South African Department of Health. Hospital Level Paediatric Standard Treatment Guidelines and Essential Medicines List. Pretoria: National Department of Health 2017.

2. SAQ (short answer question): The family physician's role as leader and champion of clinical governance within the domain of child health

As a district family physician, you have seen the need in the district to ensure that children below six years are tested for tuberculosis for their appropriate management.

2.1 As a clinical leader overseeing clinical governance in the district, discuss how you would coordinate the relevant team members, indicating the role of each to address this need? (3 marks)

2.2 Describe how you would explain the pitfalls in the performance and interpretation of the various Mantoux test results to your clinicians. (7 marks)

2.3 One of the domains of the South African National Core Standards addresses Patient Safety, Clinical Governance and Clinical Care. Briefly outline five (5) relevant aspects whereby you would demonstrate your clinical leadership in the setting. (10 marks)

Total: 20 marks

Model answers

2.1 As a clinical leader overseeing clinical governance in the district, discuss how you would coordinate the relevant team members, indicating the role of each to address this need? (3 marks)

The following team members should be considered:

a. Clinicians in all categories (registrars in family medicine, MOs, community service doctors and interns) and nurse clinicians. Ensure collaboration of the team with clear roles; frequent scheduled meetings to monitor progress and address challenges. The skill to execute and interpret the screening test (Mantoux) to be mastered by all clinicians and not relegated to the nurse fraternity.
b. Pharmacy department ensuring equipment and medical supplies - in this case: the Mantoux test kits (alcohol swabs, syringes and needles). Consistency in stock availability to be ensured.
c. Involvement of facility management (CEO and clinical manager) to ensure administration logistics and human resources: ensuring staff complement.

2.2 Describe how you would explain the pitfalls in the performance and interpretation of the various Mantoux test results to your clinicians. (7 marks)

- The results should be read within 48-72 hours after administrating the injection, but closer to the 72 hours to avoid a false negative reading.
- It should be the horizontal induration (hard swelling) that is measured, not just the visible skin change.
- The PPD result of less than 5 mm, though implies a negative result, could also mean recent TB infection not yet detectable by the test. It could also mean severe immunosuppression leading to failure to mount an immune response (severe malnutrition, corticosteroid therapy, cancer therapy, infections (HIV, including severe TB). In a child who is ill, a negative test does not exclude infection with TB.
- In severe immunosuppression, a PPD result of 5 mm or greater can be considered positive.
- A false positive PPD test can result from a previous natural infection with M. tuberculosis, cross-reaction from non-tuberculous mycobacteria or the BCG vaccine.
- False negatives in up to 20% of people may result from immunosuppression, live vaccination from e.g. measles, polio within the last four weeks, recent or current viral infections and poor administration technique.

2.3 One of the domains of the South African National Core Standards addresses Patient Safety, Clinical Governance and Clinical Care. Briefly outline five (5) relevant aspects whereby you would demonstrate your clinical leadership in the setting. (10 marks)

The parameters of patient safety, clinical governance and clinical care in the National Core Standards are outlined as:

a. Implementation of patient care guided by protocols designed to meet patients' needs. Proper screening of children younger than six years is mandatory if they present with symptoms and/or signs suggestive of TB, have a positive contact history or leads to a high index of suspicion among health workers, including those with loss of weight and respiratory infections including pneumonia.
b. Clinical management of priority health conditions – entailing national priorities, including the United Nations SDGs for maternal and child health, HIV and tuberculosis. Proper screening of children for TB and other infections leads to an increase in pick up rate, timeous management and reduction of mortality and morbidity.
c. Clinical leadership provided by the health workers (in this case the Family Physician and his/her team and the support systems) is aimed at improving patient care.
d. Management of clinical risks and implementation of preventive intervention, identification of patients with special needs or at high risk, e.g. pregnant women, children and the mentally ill. In this case, children below six years are the high risk group for TB infection.
e. Infection prevention and control – which entails implementing the Infection Prevention and Control Program to reduce e.g. the spread of respiratory infections, including TB.

Further reading:

- Mash B, Blitz J (Ed). South African Family Practice Manual. 3rd ed. Pretoria: Van Schaik Publishers, 2015.
- Mash R, Blitz J, Malan Z & Von Pressentin K. Leadership and governance: learning outcomes and competencies required of the family physician in the district health system. South African Family Practice. 2016;1(1):1-4.
- National Department of Health. National Core Standards for Health Establishments in South Africa. Abridged version.

3. Critical appraisal of qualitative research

Read the accompanying article carefully and then answer the following questions (total 35 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.

Naidoo S, Naidoo D, Govender P. Community healthcare worker response to childhood disorders: Inadequacies and needs. Afr J Prm Health Care Fam Med. 2019;11(1), a1871.

Obtainable from: https://phcfm.org/index.php/phcfm/article/view/1871/3090.

3.1 Explain the concept of the "scientific value" of a study? (2)

3.2 How do the authors argue for the scientific value of this study? (2)

3.3 Explain the importance of giving a "thick description" to the trustworthiness of qualitative research.
(2 marks, any two) (2)

3.4 Critically appraise the extent to which the authors offer a "thick description". (2 marks, any two) (2)

3.5 Critically appraise the approach to sampling and sample size. (4)

3.6 The authors mention the concepts of "credibility,

dependability and confirmability" to describe the trustworthiness of the study. What do you understand by these terms? (3)

3.7 Critically appraise the authors' argument for the trustworthiness of the study in terms of credibility, dependability and confirmability. (6)

3.8 Critically appraise how the researchers account for the limitations of their study. (2 marks, any two) (2)

3.9 The researchers make a number of recommendations such as the need to train CHWs in "sign language, physiotherapy exercises, epilepsy, mental health and how to assist a blind person." How and why might you obtain further information to quantify these learning needs? (2 marks, any two) (2)

(Total: 25 marks)

Suggested answers:

3.1 Explain the concept of the "scientific value" of a study? (2)

The scientific value of a study is based on the new knowledge that the study adds to what is already known. The authors must therefore summarise what is already known (1) in order to argue for what is not known (the knowledge gap) and what this study will contribute to the body of scientific evidence.(1)

3.2 How do the authors argue for the scientific value of this study? (2)

The aim of the study was to determine "the training needs of CHWs in respect of childhood disorders and disabilities in eThekwini". The authors argue that a number of research studies show deficiencies and variability in the training of CHWs, although looking at the references none of these focuses on childhood disorders specifically.(1) They argue that CHWs can make an important contribution to child health and that South African health policy acknowledges this potential contribution, however, no studies have specifically investigated their training needs in this area.(1)

No marks should be allocated for summarising the argument for the social value of the study. The argument for the social value of the study established the importance or relevance of the study to society and the health system.

3.3 Explain the importance of giving a "thick description" to the trustworthiness of qualitative research (2 marks, any two). (2)

The idea of a "thick description" is related to the concept of transferability of the study findings.(1) In order for readers to decide if the findings can be transferred or applied to their own context, the authors must give a sufficiently detailed description of the context of the study (1) and profile of the respondents.(1) If the reader understands who was interviewed and what their context was, then this helps them to decide if this is sufficiently similar to their own context.

3.4 Critically appraise the extent to which the authors offer a "thick description". (2 marks, any two) (2)

The authors do not provide a detailed description of the study context. The health services, communities and CHWs are not fully described under the "setting".(1) The respondents who were interviewed are described in some detail.(1) The authors appear to be confused as they equate providing a "thick description" with the provision of quotations to support the findings.(1)

3.5 Critically appraise the approach to sampling and sample size. (4)

The authors state that they used criterion-based "purposive sampling", which is an appropriate approach to sampling in a qualitative study.(1) The criteria listed, however, are so broad that most of the CHWs would presumably meet the criteria. It is difficult to judge this as the total number of CHWs available is not described in the setting. The criteria are more like broad inclusion criteria to define the study population. How these 28 CHWs were selected on the basis of pre-existing criteria from the total pool is not clarified. (1) A similar critique can be made for the key informants.(1) (2 marks, any two)

It is not clear in the section on "sampling strategy" how many people the researchers planned to interview initially and how they planned to make decisions on the sample size.(1) It is just stated how many people were included in the study. Later on under the "analysis" it is stated that after the fifth focus group they decided to stop as saturation of their data appeared to have been reached.(1) No such explanation is given for the key informant interviews.(1) (2 marks, any two)

3.6 The authors mention the concepts of "credibility, dependability and confirmability" to describe the trustworthiness of the study. What do you understand by these terms? (3)

Credibility is concerned with the validity of the conclusions that are drawn from the data and how these conclusions match the reality being reported on.(1)

Dependability refers to the extent to which similar findings would be obtained if the study were repeated.(1)

Confirmability refers to the degree of objectivity of the researcher in data collection and reporting.(1)

3.7 Critically appraise the authors' argument for the trustworthiness of the study in terms of credibility, dependability and confirmability. (6)

The researchers argue that their study is credible because they audio-taped the participants.(1) They also imply that interviewing people with "various experiences" added to its credibility.(1) This seems a somewhat superficial argument and the credibility would depend on the scientific validity of all the methods.(1) Specific techniques that can add to the credibility of the methods might include, for example, prolonged engagement, peer briefing, triangulation and member checking.(1) This study has the potential to

triangulate data that was collected using different interview techniques and from different types of respondents; how or if this was done is not mentioned by the authors.(1) (2 marks, any two)

The researchers argue that "dependability was ensured through keeping a record of the processes of data collection and methods of analysis."(1) This refers to what is often called an audit trail. In other words, an external auditor could follow the trail of how data was collected through to how it was analysed step by step.(1) The process of data collection and analysis is fairly clearly defined. Aspects that are less clear include how or if data was translated as well as transcribed and if any software was used to assist the analysis.(1) Triangulation can also improve the dependability of the findings.(1) (2 marks, any two)

The researchers argue that "to ensure confirmability (that the view of the participant was represented rather than the view of the researcher), bracketing was completed by the principal author data collection and analysis process."(1) The sentence has some grammatical hiccoughs, but more importantly seems to assert that "bracketing was completed" without any explanation of how this was actually done. (1) How did the researchers account for and handle their own preconceived ideas, expectations, judgements and prejudices?(1) This is also referred to as one "reflexivity".(1) (2 marks, any two)

3.8 Critically appraise how the researchers account for the limitations of their study. (2 marks, any two) (2)

It is standard practice when reporting on original research to discuss the methodological limitations of your study in the discussion section.(1) In this article there is no such discussion.(1) The authors appear to tangentially discuss the transferability of their findings in the conclusion, where they state that the findings are contextualised to three communities in one district in SA. However they do not directly argue further for the transferability of the findings to other contexts.(1)

3.9 The researchers make a number of recommendations such as the need to train CHWs in "sign language, physiotherapy exercises, epilepsy, mental health and how to assist a blind person." How and why might you obtain further information to quantify these learning needs? (2 marks, any two) (2)

Qualitative research is good at exploring the range of possible learning needs when these are not known. Qualitative research, however, cannot quantify the extent to which these needs are shared by all CHWs in the study population.(1) A descriptive survey of CHWs could measure the extent to which the learning needs are experienced by the whole population.(1) In exploratory mixed methods a qualitative phase to explore a phenomenon is then followed by a quantitative phase to quantify the issues raised.(1) The researchers do not consider the need for further research in the discussion.(1)

Further reading:

- Mabuza LH, Govender I, Ogunbanjo GA, Mash B. African Primary Care Research: Qualitative data analysis and writing results. African journal of primary health care & family medicine. 2014;6(1):1-5.
- Kuper A, Lingard L, Levinson W. Critically appraising qualitative research. BMJ. 2008;337:a1035.
- CASP Checklists. Critical Appraisal Skills Programme [homepage on the Internet]. c2018. Available from URL: https://casp-uk.net/casp-tools-checklists/.
- The Center for Evidence-Based Management. Critical Appraisal of a Qualitative Study. Resources and Tools. [homepage on the Internet]. c2018. Available from URL: https://www.cebma.org/resources-and-tools/.

4. OSCE scenario: Child Health

Objective of station:

This station tests the candidate's ability to identify and respond to psychosocial complexity and counsel a mother on the in-hospital treatment of severe acute malnutrition.

Type of station

Integrated consultation – clinical management, complex consultation.

Equipment list:

1. Role player – young adult female
2. Road to Health Book information:
   - NVD at term; good APGARs; birth weight in normal range
   - HIV unexposed
   - MUAC < 11.5 cm; Weight for Height z-score < -3 (marasmic)
   - Normal growth up to 6 months
   - All immunisations up to date
3. Manikin: baby, wrapped up

Instructions for candidate

History / context

On the ward round in the Emergency Centre of the District Hospital, you see an 8-month-old baby girl with a lower respiratory tract infection and Severe Acute Malnutrition (SAM). You instruct the medical officer to manage and admit the baby.

Please consult with this mother, explaining the treatment plan for her baby, and address any further issues that arise.

Instructions for the examiner

Objectives: This station tests the candidate's ability to:

1. Identify and respond to psychosocial complexity
2. Counsel a mother on the in-hospital treatment of severe acute malnutrition

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.

Please switch off your cell phone.

Please do not prompt the student.

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

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.

Reference:

- Essential Medicine List, Paediatrics (2017). Chapter 2, Pages 60-70.

Marking template for consultation station

Exam number of candidate:			
Competencies (delete what is not applicable)	**Candidate's rating**		
	Not competent	**Competent**	**Good**
1. Establishes and maintains a good doctor-patient relationship Comments:			
2. Gathering information Comments:			
3. Clinical reasoning Comments:			
4. Management Comments:			
5. Explaining and planning Comments:			
Overall Comments:			
Examiner's name:	**Examiner's signature:**		

Guidance for examiner

Competency is defined as the desired outcome of that domain, achieved in a manner that is effective and safe.

1. **Establishes a good doctor-patient relationship:** The competent candidate displays good communication skills, putting the mother at ease and responding to her concerns. The good candidate empathically engages with her, bringing the well-being of the child as the key focus, and reinforces the role of the mother in the therapeutic team.
2. **Gathering information:** the competent candidate gathers sufficient information to identify the mother's psychosocial issues. The good candidate explores the link between these psychosocial concerns and this presentation.
3. **Clinical judgement:** the competent candidate recognises the ongoing risk to the child and persists with the admission. The good candidate also recognises that the mother is at risk.
4. **Management:** the competent candidate addresses all key aspects of managing SAM. The good candidate also identifies the opportunity to intervene in the psychosocial issues while the baby is admitted.
5. **Explaining and planning:** the competent candidate ensures that the mother understands the diagnosis and rationale for the in-hospital management plan. The good candidate also engages the mother on the psychosocial risks she is facing.

Key issues to consider for examiner (see EML for detail):

1. **Doctor-Patient relationship**: clues in role-player presentation – good communication skills needed
   - Mother is reluctant to consider admission
2. **Gathering information:**
   - Intimate partner violence by substance-abusing partner
   - Severe financial constraints – no grants in place
3. **Clinical judgment:**
   - the child's safety and health are of prime importance
   - identifying the psychosocial areas for intervention potentially improves the home environment, preventing relapses
4. **Management:**
   - Refer to the EML for details – candidate should mention all important criteria (10-step plan, page 62) – details of dosing not needed
   - Candidate should know how in-patient course is monitored (daily weighing) and discharge criteria (page 70)
   - Not expected that candidate should reel off list of psychosocial interventions, rather just identify the opportunity to intervene
5. **Explanation:**
   - Is the candidate able to bring the mother 'on board' with the admission?
   - Is the candidate able to make the link between the clinical presentation and the psychosocial issues explicit without alienating the mother?

Role play – Instructions for actor

You are a 19-year-old mother who brought your baby to the hospital because the nurse at the clinic said the child is 'undernourished'. Now the doctor has said the child must stay in hospital. You are not happy with this because you have responsibilities at home.

Opening statement

"Doctor, I know that my child is sick, but why does she need to stay in hospital? I need to look after my house."

If asked, tell the doctor:

Your concerns:

- *You need to be at home – your boyfriend will return from work soon and be angry if you are not there.*
- *What will they do in the hospital that you can't do at home? Insist that you want to understand why the hospital admission is needed.*
- *When will your baby be discharged?*

Your baby:

- *Unplanned, but the pregnancy was normal – you gave birth at the local clinic; she is the most important thing to you, and you will do anything for her.*
- *Baby has been well, but in the last two weeks, she has been irritable and tired, then she started coughing and breathing funny a week ago.*
- *All her immunisations are up to date.*
- *You were breastfeeding, but then your milk dried up 3 months ago. You've been giving the baby porridge (mealie meal), sometimes with water, sometimes with milk.*

Your life circumstances:

- *You are unemployed, and financially dependent on your boyfriend. You live in his shack.*
- *Sometimes when he is drunk, he beats you.*
- *Your mother kicked you out when she found out that you were pregnant in Grade 11 last year – you did not finish school.*

Patient's notes

S: *Young mother, brought 8-month-old child with referral from PHC clinic for 'coughing and fast breathing'.*

O: *Thin, wasted female child. Awake and responsive, but irritable. Signs of wasting - marasmus.*

Temperature 37.7 ^{0}C. No skin rashes, no meningism.

Peripheral pulses easily palpable. Heart rate 128 beats/minute.

Tachypnoea, respiratory rate 44/minute. Oxygen saturation on nasal prongs: 97%.

Intercostal recession, good air entry bilaterally, with course crepitations left mid-zone.

Hemoglucose test: 4.6 mmol/L.

Haemoglobin: 9.8 g/L.

Some fall-off on growth charts – see RTHB: MUAC < 11.5cm; Weight for Height z-score < -3.

A: *Lower respiratory tract infection + SAM.*

P: *1. Admit paediatrics ward – SAM protocol.*

2. Start antibiotics – amoxicillin, gentamicin.

3. Review in ward.