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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 written examination, Part A of the FCFP(SA) examination. The series aims to help Family Medicine registrars 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) 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) and/or Extended Matching Question (EMQ), Modified Essay Question (MEQ) and Critical Reading paper (evidence-based medicine). Each of these question types is presented according to a theme. 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. We suggest that you attempt answering the questions (by yourself or with peers/tutors), before finding the model answers online: http://www.safpj.co.za/.

Please visit the Colleges of Medicine website for guidelines on the Fellowship examination: http://www.collegemedsa.ac.za/view_exam.aspx?examid=102

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 (single best answer question)

Theme: Paediatrics

A 26-month-old male child was admitted to the paediatric ward at your district hospital for pneumonia and HIV. He had a weight of 11 kg and a mid-upper arm circumference (MUAC) of 11 cm on admission. He has been slowly gaining weight in the ward for the last four days and now weighs 11.1 kg. The next step in his management is to:

a) Change him to a catch-up feed such as F100

b) Feed with a stabilisation feed such as F75

c) Prescribe iron supplementation daily

d) Prescribe a multi-vitamin syrup daily

e) Prescribe folic acid daily

2. MEQ (modified essay question): the family physician's role as leader of clinical governance

You are working as a family physician within a peri-urban sub-district, which has a dependant population of 140 000 people. The health services consist of a 90-bed district hospital and 15 clinics (including mobile and satellite clinics). You are tasked to prepare for a review of perinatal deaths at the next Morbidity and Mortality (M&M) meeting. You notice an increasing trend in the stillbirth rate over the past 24 months as captured in the routinely collected data (District Health Information System), as well as the Perinatal Problem Identification Programme (PPIP). The stillbirth rate increased from 18 to 19.5 deaths per 1 000 total births (the district average was 17.2 and the provincial average was 20.7 deaths per 1 000 total births for the same financial year).

2.1 The nursing manager suggests that you only invite the hospital staff to the M&M meeting, as the proposed date will not suit the clinic-based managers. How would you explain the rationale for including the clinic-based as well as the hospital-based staff in the discussion? (3 marks)

2.2 The review of the stillbirths reporting practices within your sub-district highlighted data discrepancies between the routinely collected data (including PPIP data) and the vital statistics reported by Statistics South Africa (Stats SA). Discuss the key reason which may account for underreporting by Stats SA and why accurate data is required. (3 marks)

2.3 A review of 32 stillbirths over the past financial year reveals the following findings based on data captured in the Perinatal Problem Identification Programme (PPIP). Please answer the questions with reference to the data in Table 1 and Figure 1.

2.3.1 What is the value of comparing the stillbirth and early neonatal death rates (SB:ENND rate)? Please comment on the risk of making this comparison. (3 marks)

2.3.2 What is the clinical relevance of comparing the data of the fresh and macerated stillbirths? (3 marks)

2.3.3 An analysis of the avoidable factors identified for the 32 stillbirths reveals 27 patient-associated factors, two provider-associated factors and one administration-associated factor. A breakdown of the 27 patient-associated factors is provided in Figure 1. How would you interpret Figure 1 and how will you use this to facilitate a discussion during the M&M meeting around addressing these factors as well as improving the PPIP audit process at your facility? (8 marks)

Table I: Analysis of Perinatal Problem Identification Programme data in your sub-district

Indicator	Values for the past financial year
SBR (all)	19.5/1000
SBR > 1 kg	14.9/1000
SB:ENND rate	3.1:1
Number of fresh SB (%)	12 (37.5)
Number of macerated SB (%)	20 (62.5)

Abbreviations: perinatal mortality rate (PNMR), stillbirth rate (SBR), stillbirth (SB), early neonatal death (ENND)

3. Critical appraisal of research

Please answer the questions related to the following article:

Van Deventer C. Integration of non-communicable chronic diseases and HIV/AIDS and mental health care through the involvement of chronically ill patients using empowerment evaluation. SA Fam Pract. 2015;1(1):1-10.

3.1 What is the argument for the social value of the study? (3 marks)

3.2 What is the argument for the scientific value of the study? (3 marks)

3.3 What core features of participatory action research does empowerment evaluation illustrate as described in the methods section? (4 marks)

3.4 Reflect on how well the article describes the strengths and limitations of their participatory action research process. (14 marks)

3.5 In the methods section, the article mentions the intention for a before-and-after evaluation as well as a comparison with another group of clinics in the district that had not used empowerment evaluation. Critically appraise the article in terms of these aspects of the study design. (4 marks)

3.6 Apply the READER formulation to deciding whether to read and apply this study in your own practice. (12 marks)

Model answers to the questions

Question 1

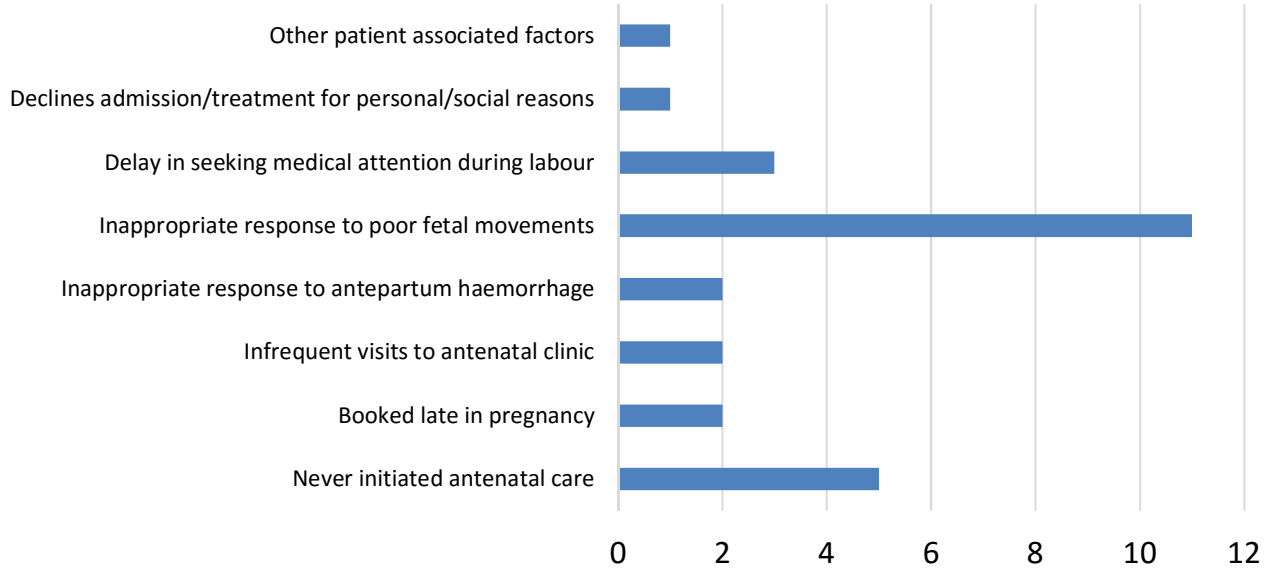
Short answer: b)

Long answer: Managing severe acute malnutrition (SAM) is a core competency of a family physician and is included in the FCFP (SA) curriculum. One should routinely inspect the road to health book of young children and plot the current weight of the child. A child aged 6 to 60 months is considered to have SAM if s/he has any of the following:

- Weight for height less than the -3 z-score
- MUAC of less than 11.5 cm
- Bilateral oedema
- Visible wasting.

The World Health Organisation (WHO) ten steps in the management of SAM are also used in South Africa. Figure 2 depicts the treatment timeline and summarises the ten WHO steps, which address the stabilisation, transition and recovery periods.

Figure 1: Patient-associated modifiable factors identified during the stillbirth audit



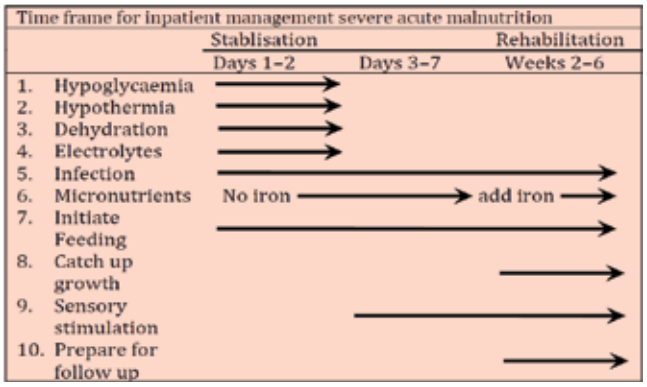


Figure 2: Time frame for the inpatient management of SAM

It is essential to recognise the various management phases as this determines the intervention needed. During the stabilisation phase, the child should be cautiously fed using a nutritional feed that has low carbohydrate and protein content (e.g. F75) in order to stabilise the "fragile homeostatic state." Iron supplementation is only needed after day seven when the child is on F100 and this can be stopped when the child is on the full dose of the ready to use therapeutic feed (RUTF). It is important to check ferritin levels in a HIV positive child before supplementing iron. Folic acid is only given as a stat dose on day one. Both folic acid and multivitamin supplementation is not needed if the child is on F75, F100 and RUTF. F100 is used during the transition phase as a catch-up feed and contains more energy and protein. Both feeds have minerals of different concentrations based on the physiological requirements of the child. The dosing of the feeds is also important as one needs to start with small amounts and titrate to the recommended amount based on the child's weight. The RUTF is available in South Africa and is used during the rehabilitation phase. It is also an important feed used in primary care for the outpatient management of moderate acute malnutrition. RUTFs are high-energy, lipid-based food used in many cultural settings around the world and may be the only source of food in vulnerable settings. Managing SAM requires a multi-disciplinary approach which should involve the community, the community healthcare worker, the nutritional advisor at the PHC clinic, a dietician, a social worker, the PHC nurse and the clinician.

Further reading:

- World Health Organization. WHO child growth standards and the identification of severe acute malnutrition in infants and children: a Joint Statement by the World Health Organization and the United Nations Children's Fund. Geneva: World Health Organization. 2009.
- South African Department of Health. Primary Health Care standard treatment guidelines and essential medicine list. Pretoria: National Department of Health 2013.
- KwaZulu-Natal Department of Health. KZN Guidelines on the integrated managment of acute malnutrition 2014 [Accessed: 7 September 2016]. Available from: http://www.kznhealth.gov.za/family/MCWH/KZN-IMAM-Guidelines.pdf
- Ashworth A, Schofield EC, Khanum S, Jackson A. Guidelines for the inpatient treatment of severely malnourished children. 2003.

Question 2

Model answer

2.1 The nursing manager suggests that you only invite the hospital staff to the M&M meeting, as the proposed date will not suit the clinic-based managers. How would you explain the rationale for including the clinic-based as well as the hospital-based staff in the discussion? (3 marks)

The stillbirth rate (number of babies born dead per 1 000 total births) is a good indicator of care during antepartum period (specifically, the third trimester) and intrapartum period. It is one of the key indicators for maternal, newborn, child and women's health (MNCWH) as it is a reflection of foetal, maternal and health system factors. The causes of stillbirths are inseparable from the causes of maternal and neonatal deaths. A 2016 Lancet Stillbirths Series focuses on prevention of stillbirth by scale-up of care for mothers and babies at the health-system level, with an emphasis on emergency obstetric care, as well as quality antenatal care (syphilis detection, arranging induction for post-term pregnancies, and detection and management of hypertensive disease, foetal growth restriction, and gestational diabetes). This explains the rationale for including the PHC clinic-based staff involved with antenatal care in the discussion. It also supports having the maternity ward staff present, as emergency obstetric care is one of 13 cost-effective interventions proposed recently to impact the rates of stillbirth and neonatal and maternal mortality.

The need to prioritise family planning is another sound reason to involve the whole team which spans PHC and district hospital care.

Furthermore, the team approach is necessary to address the increase in the stillbirth rate in your community. This M&M meeting will be the ideal opportunity to get everyone on board to decide on a targeted intervention, such as a quality improvement cycle.

2.2 The review of the stillbirths reporting practices within your sub-district highlighted data discrepancies between the routinely collected data (including PPIP data) and the vital statistics reported by Statistics South Africa (Stats SA). Discuss the key reason which may account for underreporting by Stats SA and why accurate data is required. (3 marks)

Stats SA derives its data from the vital registry informed by death notifications. A number of factors may contribute to inadequate death notifications: inadequate completion of the death notification form (BI-1663), uncertainty about the definition of stillbirths (weight or gestation cut-off), or financial cost for proper burial of stillborn babies (which may result in no BI-1663).

A number of reports, such as the South African Health Review and Saving Babies Report, highlight the discrepancies between DHIS data, PPIP data and the vital statistics. Data from health and demographic surveillance systems continue to add to our understanding of child mortality. Data can also help to set priorities for interventions and health service planning.

2.3 A review of 32 stillbirths over the past financial year reveal the following findings based on data captured in the Perinatal Problem Identification Programme (PPIP). Please answer the questions with reference to the data in Table 1 and Figure 1.

2.3.1 What is the value of comparing the stillbirth and early neonatal mortality rates? Please comment on the risk of making this comparison. (3 marks)

The stillbirth to early neonatal death ratio gives an idea of the standard of health care in a community. In an affluent community with good antenatal, intrapartum and early neonatal care (perinatal care), the stillbirth and early neonatal mortality rates are similar giving a stillbirth to early neonatal death (SB:ENND) ratio of about 1. However, in a poor community, with inadequate antenatal care, the stillbirth rate is usually at least double the early neonatal death rate, i.e. the SB:ENND ratio is 2 or more. In this data set, the ratio was 3.1:1, which could indicate inadequate antenatal care.

However, examining the individual stillbirth and early neonatal death rates is more important that simply looking at the SB:ENND ratio. If the standard of neonatal care is very poor, the neonatal mortality rate may rise markedly and the stillbirth and early neonatal mortality rates may again become similar, giving a SB:ENND ratio of about 1. In addition, very good neonatal care may result in a high SB:ENND ratio. Therefore, the SB:ENND ratio must not be looked at in isolation.

2.3.2 What is the clinical relevance of comparing the data of the fresh and macerated stillbirths? (3 marks)

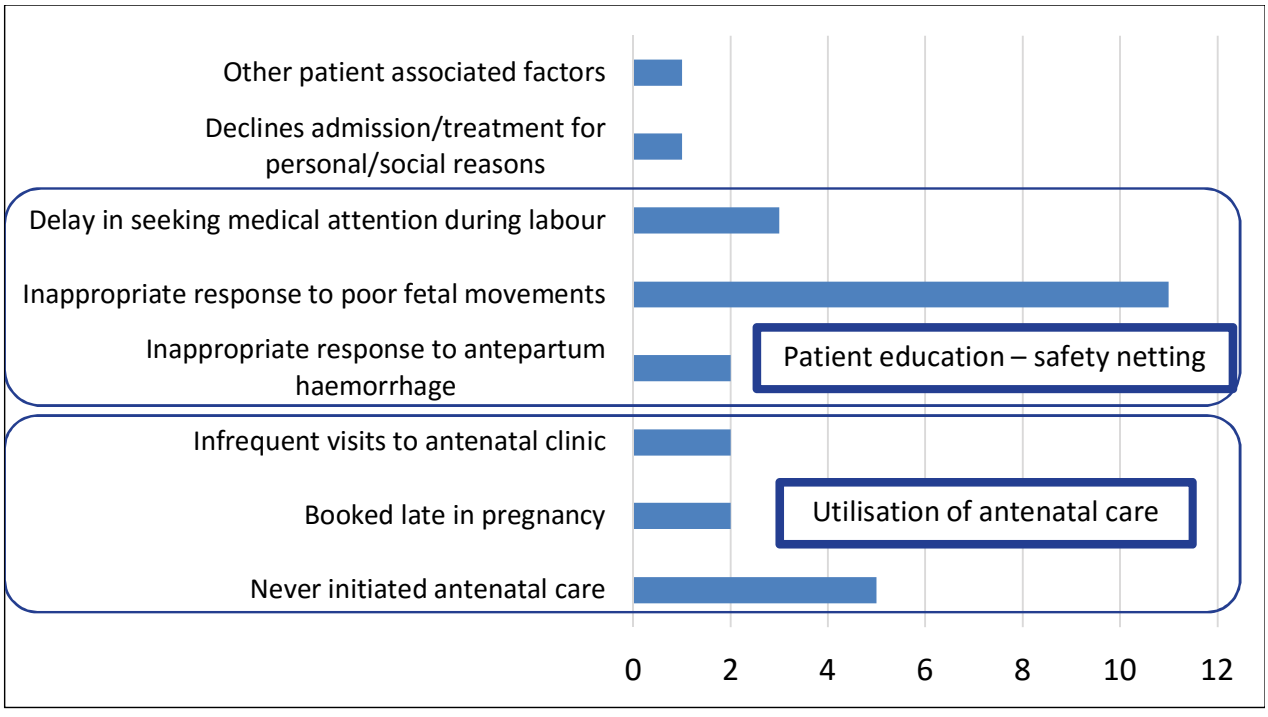
Maceration is the result of the infant being dead for at least 12 hours. Macerated stillborn infants are assumed to have died before the onset of labour. Fresh stillbirths show no sign of maceration and have usually died during labour or shortly before the onset of labour. Therefore the presence or absence of maceration helps to decide when the infant died. Fresh stillbirths usually reflect the quality of intrapartum care, while macerated stillbirths reflect the quality of antenatal care.

In this dataset, 62.5% of stillbirths were macerated. This supports the rationale for including PHC and community-based care colleagues in the M&M discussion, as these stillbirths may be due to deficiencies in pre-hospital, antenatal care.

2.3.3 An analysis of the avoidable factors identified for the 32 stillbirths reveal 27 patient-associated factors, two provider-associated factors and one administration-associated factor. A breakdown of the 27 patient-associated factors is provided in Figure 1. How would you interpret Figure 1 and how will you use this to facilitate a discussion during the M&M meeting around addressing these factors, as well as improving the PPIP audit process at your facility? [8 marks]

Figure 3 below (as adapted from Figure 1) highlights two main focus areas: a delay or inappropriate response to the warning symptoms and poor utilisation of antenatal care services. Failing to book early and then regularly attend antenatal care is the commonest patient related factor associated with perinatal death. Because of poor antenatal clinic attendance,

Figure 3: Analysis of the 27 patient-associated modifiable factors



complications of pregnancy such as hypertension, intra-uterine growth retardation and syphilis may be missed. The quality of health counselling and safety netting during the antenatal care process requires review. Consider ways of improving access to care when pregnant women experience warning symptoms (antepartum bleeding, abdominal pain and reduced foetal movements). Review the health messaging provided during antenatal care. Consider strategies for improving the educational and health status of women of childbearing age in your community. Remember to identify women at risk of high-risk pregnancies (women of advanced age with medical co-morbidities). Ensure the availability of family planning services and explore community-orientated strategies to improve the utilisation of these family planning services. These community-orientated strategies aimed at improving family planning and antenatal care utilisation should include the community health workers. These community health workers may assist in identifying pregnant women and linking them to antenatal care, as well as educating pregnant women about the danger signs during their pregnancy. Invite the community-based services coordinator of your sub-district to be part of the M&M discussion.

These missed opportunities to provide quality antenatal care require an open discussion within the M&M meeting. As family physician, you will be tasked to facilitate this discussion. Encourage a non-blaming culture, as PHC and maternity staff may feel protective of their respective arena. The PPIP review process requires a shift in focus from "blaming the patients" (only identifying patient-associated factors) to considering the role of provider-related and health system-related modifiable factors. This mature process of analysing each perinatal death and stillbirth requires leadership which encourages a blame-free organisational culture, in order to achieve ongoing care improvement. Review the process of how the PPIP forms are completed for every perinatal death, as this is the best opportunity to complete the form as accurately as possible. Ideally, the most experienced health professional should examine the deceased baby and its placenta. Ensure that the perinatal death review process is part of the monthly review process, by engaging with the managers, clinicians and information management office in your sub-district. It is also a good idea to involve the paediatrician and obstetrician at your referral hospital, as well as the women and child health programme coordinator in your district office. The routine data indicators are used to plan health services and determine the allocation of resources. Furthermore, a culture of using locally-collected data locally to improve the health of the local community by the local health team should be established.

Further reading:

- Michalow J, Chola L, McGee S, Tugendhaft A, Pattinson R, Kerber K, Hofman K. Triple return on investment: the cost and impact of 13 interventions that could prevent stillbirths and save the lives of mothers and babies in South Africa. BMC pregnancy and childbirth. 18 February 2015;15(1):1.
- Van Schaik N. Chapter 4: Delivery. In: Massyn N, Peer N, Padarath A, Barron P, Day C E. District Health Barometer 2014/15. Health Systems Trust; October 2015. p. 68-97.
- Burger EH, Groenewald P, Rossouw A, Bradshaw D. Medical certification of death in South Africa – moving forward. SAMJ. January 2015;105(1):27-30.
- Perinatal Problem Identification Program, PPIP v3 [Internet]. [Cited 17 September 2016]. Available from: http://www.ppip.co.za/.
- Woods DL, Pattinson RC, Greenfield DH (editors). Saving Mothers and Babies. Perinatal Education Programme. [Cited 17 September 2016]. Available from: http://bettercare.co.za/learning-programmes/saving-mothers-babies/.

Question 3

Model answer

3.1 What is the argument for the social value of the study? (3 marks)

South Africa has a strong commitment to improving primary health care. Primary health care re-engineering policy and the national core standards include a commitment to more patient engagement in the services, as well as the integration of care for chronic illnesses. There is evidence that engagement with patients in quality improvement activities can lead to improved outcomes.

3.2 What is the argument for the scientific value of the study? (3 marks)

In South Africa most patient engagement in quality improvement has been superficial, involving assessment of patient satisfaction only. Additional benefit is seen when patients are partners in the process. Barriers and enablers to patient engagement have been identified in a systematic review. Empowerment evaluation is one method that enables a collaborative partnership. Little work has been done locally on evaluating patient engagement in quality improvement.

3.3 What core features of participatory action research does empowerment evaluation illustrate as described in the methods section? (4 marks)

- The process involved a team of people (5–12 patients, community health workers and staff) who collaborate or participate together in the process.
- The process is ongoing and cyclical with both action and reflection-on-action. A typical PAR cycle includes planning, action, observation and reflection.
- There was a research or reflective component – evaluating the current situation, creating a vision of the future, assessing progress, planning change and documenting all learning.
- There was an action component which attempted to change the clinical or facility practice through implementation of action plans.
- Both quantitative and qualitative data collection techniques are planned as part of the cyclical process.

3.4 Reflect on how well the article describes the strengths and limitations of their participatory action research process? (14 marks)

Key quality issues to consider are:

Quality of the PAR process	Reflections on the article
Alignment with purpose – how well did the groups maintain their focus on the purpose of integrating and improving the quality of chronic care?	It appears that the groups were facilitated by the researcher who maintained a clear focus on the purpose and process.
Ownership of the process – how much did people in the groups see this as their work or something they were doing for the researcher?	It appears that the groups engaged with the process in order to take stock of their current situation, create a vision and implement action plans. It is not clear how consistently people attended the groups.
Development of reflectivity – how well did the group develop the ability to reflect on their actions and learn from their experience?	It is not clear to what extent the groups created new propositional knowledge about how to integrate chronic illness and improve the quality. This level of reflection appears to be mostly from the researcher.
Democratic and collaborative group dynamics and facilitation – how well did the group enable people to participate equally in the process?	The groups had significant power hierarchies and language barriers between professional nurses, community health workers and patients.
Commitment to practical action and experience – how well did the groups engage with the actions they had planned?	It seems that the groups were quite motivated and able to implement many of the actions they planned (23 out of 37 interventions were implemented).
Documentation of the process – how well did the group document their learning and the process as a whole?	The article provides a lot of evidence for documentation of the action with examples of the matrix, vision, innovations and assessment. The article is less clear as to how reflections and learning were documented.
Transferability – how easily can the findings be transferred to other settings?	This requires an in depth description of the health system, the communities served and the people involved in the research. For a reader outside of South Africa, the description of the context and site of study may not be sufficient.

3.5 In the methods section the article mentions the intention for a before-and-after evaluation as well as a comparison with another group of clinics in the district that had not used empowerment evaluation. Critically appraise the article in terms of these aspects of the study design. (4 marks)

- The third objective – to measure the effect of the integration process on waiting times, patient satisfaction, file audits and patient flow in a before and after study – is not presented in the article; some conclusions are offered without the supporting findings in details.
- The fourth objective – to compare the traditional quality improvement process with the empowerment model in a type of quasi-experimental study – is also not fully described and no detailed results are presented; again some conclusions are made without the supporting findings. Convenience sampling would not be ideal for selecting sites in such a study.
- A separate article may be needed to describe the quasi-experimental study in which it would be better to stick to a description of the empowerment evaluation process with the actions and learning that emerged from it.
- The design alludes to a comparison between nine clinics in this study (integration with empowerment evaluation) and nine clinics in a government initiative (integration without empowerment evaluation), although this type of quasi-experimental design is not fully described and no actual results are presented. Instead, the study is more a description of the empowerment evaluation process.
- Not all of the objectives were fully addressed in the article. For example, no results on waiting times, patient satisfaction, file audits or patient flow were presented. The conclusion states that there was no difference in outcomes between the clinics with and without patient engagement, although the effect may have been quicker in those with patient engagement – however, no data were presented to support this conclusion.

3.6 Apply the READER formulation to deciding whether to read and apply this study in your own practice (12 marks).

Relevance:

The article is clearly set in primary care and is relevant to the discipline of family medicine. Integration of comprehensive services, chronic care and quality are all key dimensions of effective primary health care.

Education:

The article is usefully challenging in that it introduces a new methodology for patient engagement in quality improvement and outlines practical solutions that were developed.

Applicability:

The study was performed in the North West Province in the public sector and therefore should be applicable to similar public sector settings where registrars and family physicians are working.

Discrimination:

As a participatory action research process, there are some limitations (see question 4) particularly in terms of the engagement in and documentation of reflection and new propositional knowledge by the whole group, and the extent to which people contributed equally across hierarchies and professional or cultural barriers. Not all the objectives listed

are tackled fully in the article (see question 3.5). The structure of the article is also difficult at times with the process of empowerment evaluation described in different sections.

Evaluation:

Despite the methodological limitations, the article does illustrate a useful new approach to patient engagement and provides convincing evidence that this can lead to useful solutions that are implementable. The article is less convincing as to whether this approach was better that the traditional quality improvement. The key learning on how to integrate chronic care for HIV/AIDS, NCDs and mental health is not specifically addressed.

Reaction:

The article should be read in depth in order to understand how empowerment evaluation might enable patient engagement in quality improvement in one's own setting.

Further reading:

- Mash B. African primary care research: participatory action research. Afr J Prm Health Care Fam Med. 2014;6(1), Art. #585, 5 p. http://dx.doi.org/10.4102/ phcfm.v6i1.585
- Pather M. Continuing professional development. In Mash, B, editor. Handbook of Family Medicine.3rd ed. Cape Town: Oxford University Press, 2011: 406-429.