



# CMSA

The Colleges of Medicine of South Africa NPC

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**JOHANNESBURG OFFICE**  
**EXAMINATIONS & CREDENTIALS**

**June 2020**

**THE COLLEGE OF PAEDIATRICIANS OF SOUTH AFRICA**

**SPECIAL REGULATIONS**

**FOR THE FS 2020 MODIFIED CLINICAL/PRACTICAL/ORAL EXAMINATION FOR THE  
POST-SPECIALISATION**

**SUB-SPECIALTY CERTIFICATE**

IN

**CARDIOLOGY**

**Cert Cardiology(SA)**

**1.0 ELIGIBILITY TO TAKE THE EXAMINATION**

In order to be eligible to enter for this examination, the candidate:-

- 1.1 must comply with the requirements for registration as a medical practitioner, as prescribed by the Medical, Dental and Supplementary Health Services Act.
- 1.2 must be registered as a specialist Paediatrician

**2.0 ADMISSION TO THE EXAMINATION**

(to be read in conjunction with the Instructions)

The following are the requirements for admission to the examination:

- 2.1 registration as a specialist Paediatrician
- 2.2 certification of having completed at least 24 months as a subspecialty trainee in an accredited subspecialty unit in a teaching hospital, registered and approved by the Health Professions Council of South Africa. Training duration before full registration = 3 years.
- 2.3 submission of a written report from the head of the institution/programme in which he or she trained indicating satisfactory completion of all training requirements
- 2.4 submission of a satisfactorily completed portfolio and logbook
- 2.5 presentation or acceptance for presentation of an original first author research poster or paper at a local or international congress OR submission or acceptance for publication of an original first or co-authored manuscript in a peer reviewed journal.
- 2.6 Training is valid for a period of three years from the date of completion in a numbered subspecialty training post. Candidates who do not successfully complete the subspecialty examination within the period must motivate with support from their HOD to the College of Paediatricians for a once off extension.

**3.0 SYLLABUS AND TRAINING**

See Appendix A

**4.0 FORMAT AND CONDUCT OF THE EXAMINATION**

See Appendix B

## APPENDIX A

### 1.0 CURRICULUM

#### A. Basic knowledge:

- **Embryology:** detailed knowledge of cardiac embryology
- **Anatomy:** Cardiac and vascular anatomy, including anatomic variants and congenital abnormalities
- **Genetics:** understanding of principles with special attention to current understanding of aetiology
- **Epidemiology of Congenital heart disease**
- **Physiology:** Basic circulatory physiology, fetal and transitional circulations, myocardial blood flow regulation, myocardial physiology and metabolism. Detailed knowledge of the physiology of shunts, parallel circulations, single ventricle
- **Vascular biology and pathology:** Normal vascular structure and function, response to injury, mechanisms of pulmonary vascular disease
- **Haemostasis:** Intrinsic and extrinsic coagulation cascade and platelet physiology
- **Pathophysiology:** Cyanosis, myocardial ischaemia and infarction, myocardial reperfusion, circulatory shock, anaphylaxis, cardiac arrhythmias and bypass injury
- **Pharmacology:** Anticoagulants, antiplatelet drugs, X-ray contrast agents, myocardial inotropes, vasopressors, vasodilators, anti arrhythmic drugs and affecting lipid metabolism
- **Radiology imaging and radiation safety:** Principles of X-ray imaging, operation of cinefluorographic equipment, operation of digital video imaging systems, and radiation protection
- **Ultrasound:** Principles of ultrasound imaging including Doppler studies
- **Limited knowledge of new developments in cardiology** including Magnetic Resonance Imaging, fetal echocardiography, 3-D echocardiography and contrast echo

#### B. Clinical cardiac conditions and management strategies – congenital heart disease:

- Congenital heart disease including recognition, diagnosis, natural history and management – a thorough and in depth knowledge as covered in one of the standard texts
- Grown up congenital heart disease including management of the transition to adult care

#### C. Clinical cardiac conditions and management strategies – acquired heart disease:

- Rheumatic heart disease and valve lesions
- Endocarditis
- Pericardial disease
- Cardiomyopathies and cardiac failure
- Arrhythmias and conduction defects
- Syncope
- Cardiac tumours
- Vasculitides – Takayasu and Kawasaki disease
- ‘Office’ cardiology including preventative care, chest pain, hyperlipidaemia, long distance referral and telemedicine

#### D. Resuscitation and advanced cardiac life support including care of the patient with a duct dependent circulation

#### E. Diagnostic cardiac catheterisation:

- Indications/complications/preparation/premedication
- Haemodynamic monitoring and derivation of data

#### F. Percutaneous interventions:

- Valvuloplasty
- Angioplasty
- PDA occlusion
- Rashkind septostomy
- Stent implantation
- Retrieval of intravascular foreign bodies
- ASD/VSD occlusion
- Pericardiocentesis

**G. Echocardiography:**

- Transthoracic echo (TTE)
- Transoesophageal echo (TEE)
- Fetal echo

**H. Cardiac Imaging:**

- Evaluation of chest X-ray
- CT of the heart
- MRI of the heart
- Nuclear cardiology techniques
- Angiography

**I. ECG evaluation:**

- Resting ECG
- Holter ECG

**J. Exercise Testing****K. Electrophysiology:**

- Indications for EPS
- Applications including tilt testing

**L. Pacemakers:**

- Knowledge of criteria for implantation
- Knowledge of pacemaker selection
- Placement of temporary transvenous pacemakers
- Application of external pacemakers
- Placement of permanent pacemakers
- Testing of pacemakers

**M. Principles of post operative management including haemodynamic monitoring and the use of inotropes and vasodilators**

## APPENDIX B

### 1.0 FORMAT AND CONDUCT OF THE EXAMINATION

#### 1.1 Evaluation of Competence

- 1.1.1 Evaluation of overall competence of the trainee will be based on:
- an appraisal by the Head of Unit/Division/Department of the institution where training was undertaken
  - an examination under the auspices of the Colleges of Medicine of South Africa (CMSA).
  - research project completed as specified by CMSA.<sup>1</sup>

### 2.0 PORTFOLIO

- 2.1 A portfolio is a mandatory requirement for entry to the examination.
- 2.2 The portfolio for the sub-specialty is available on the CMSA website.
- 2.3 The portfolio includes six-monthly formative assessments (as a minimum) made by the supervisor/divisional head, which is signed by both candidate and trainer. These assessments should, however, be kept confidential and should not be submitted to the CMSA.
- 2.4 Each candidate will be expected to submit their portfolio/logbook to the CMSA by 15 May or 15 November of each year (for the relevant first or second semester examination).
- 2.5 The Convenor is responsible for reviewing each portfolio.
- 2.6 A portfolio may be judged as being unsatisfactory if any of the required minimum number of identified activities have not been satisfactorily completed.
- 2.7 An unsatisfactory portfolio may result in disqualification from participation in the current examination.

### 3.0 EXAMINATION CONVENORS

- 3.1 A list of potential convenors will be provided by the College of Paediatricians (hereafter referred to as the "College").
- 3.2 The College will select convenors for each examination.
- 3.3 In the case of a convenor from each examining centre not being represented on the convenors' list, the College Council may at its discretion appoint a convenor from another centre for a particular examination.

### 4.0 CONVENOR RESPONSIBILITIES

#### The Convenor will:

- 4.1 Recommend an examiner's panel from the approved list of examiners supplied by the College.
- 4.2 Be sensitive to the following issues in selecting examiners:
- Rotation of examiners (representation from different centres)
  - Exposure of junior sub-specialists (new examiners)
  - Representation from different centres in South Africa (must have representation from three different centres, except in exceptional circumstances)
  - The CMSA's transformation goals.
- 4.3 Forward the recommended examiners' panel to the College for approval
- 4.4 Recommend a moderator for the examination to the College.
- 4.5 Forward a copy of the draft written paper to the College for review by the moderator.
- 4.6 Submit a written report to the College Council after each examination outlining the conduct of the examination, marks achieved, success rates, problems identified and recommendations for future examinations. This report will also be sent to the Head of each training centre and the CMSA Examinations office.

### 5.0 EXAMINER SELECTION

- 5.1 Examiners will be appointed by the College following recommendation by the convenor.
- 5.2 A Certificate examiner must be registered with the Health Professional Council of South Africa (HPCSA) as a sub-specialist, and should be at least two years post his or her certification examination or registration as a sub-specialist.
- 5.3 Use of a non-specialist examiner or one from an allied subspecialty must be motivated for in writing to the College.

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<sup>1</sup> Effective SS 2020

- 5.4 The examination panel will consist of three examiners, including the convenor. This number of examiners is considered fair to the needs of the candidate and the CMSA.
- 5.5 Any request to alter the examiner numbers for an individual examination must be motivated in writing to the College.
- 5.6 The written and oral/OSCE examinations will be conducted by the same set of examiners.
- 5.7 An examiner will not necessarily be excluded if he/she is the trainer/supervisor of the candidate.
- 5.8 Ideally, no more than one examiner will be chosen from any single centre in South Africa for each examination.
- 5.9 The selection of Certificate examiners will be independent of the FC Paed(SA) Part II examiner selection process.
- 5.10 Whenever possible the same examiner should not be involved in a Certificate examination and a FC Paed(SA) Part II examination simultaneously.
- 5.11 The CMSA Academic Office will be responsible for notifying examiners about their selection for an individual examination.

## **6.0 MODERATORS**

- 6.1 In order to adhere to CMSA standards and for quality assurance, a process of 'moderation' of each examination is considered necessary.
- 6.2 A moderator shall be appointed by the College for the Certificate examination. This individual will ideally be a senior member of the sub-specialty.
- 6.3 Prior to the conduct of the written examination, the moderator will check that the examination questions and marking memorandum reflect a fair spread of the curriculum (reliability), match the curriculum (validity), and that the mark allocation of the questions is fair and appropriate.
- 6.4 The moderator will complete a report and return this to the College and the CMSA at the end of each examination. The College will formally review the report.

## **7.0 STRUCTURE OF THE EXAMINATION**

- 7.1 The Certificate examination has two components:
- A written component
  - A oral/OSCE/OSPE/clinical component.
- 7.2 Each of the two components contributes 50% to the overall mark
- 7.3 The pass mark for the overall exam is 50%.
- 7.4 A sub-minimum pass mark of 50% is expected for each of the two (written and the oral/OSCE/clinical) components of the examination.
- 7.5 There is no sub-minima for individual papers, questions or sub-sections of the OSCE/oral/clinical examination.

## **8.0 EXAMINATION CENTRE**

- 8.1 Ideally the centre/region hosting the FC Paed(SA) Part II examination will be the host centre for each Certificate examination.
- 8.2 The Convenor of the examination will preferably, but not necessarily, originate from that centre/region.
- 8.3 Exceptions may be granted where there is no suitable Convenor based at that centre/region or the sole candidate in an examination is from the host centre.

## **9.0 WRITTEN EXAMINATION**

- 9.1 Certificate examinations will comprise of two three-hour written papers.  
Paper I will consist of 4 long questions or scenarios (may contain sub-parts), worth 25 marks each (each examiner shall submit 2 such questions to the Convenor).  
Paper II will consist of 10-12 short questions, worth 10 marks each (each examiner to submit 5 such questions to the Convenor).
- 9.2 A marking memorandum – a basic outline to the expected answer - will be provided, by each examiner at the time of question acceptance, including an indication of the allocation of marks for each section/part answer.
- 9.3 The language of written papers will follow College recommendations.

**10.0 FORMAT OF THE MODIFIED CLINICAL/PRACTICAL/ORAL EXAMINATION**

10.1 There will be a Structured Oral Examination (SOE) conducted as follows:

The examination will comprise of :

3 stations of 15 minutes duration each

- The examination material will include ECGs, echocardiograms and angiograms.
- The examination material may be presented as a PowerPoint presentation
- The examination will be conducted remotely using Zoom-based IT link(s) with examiner(s).

**11.0 MARKING OF THE EXAMINATION:**

11.1 A Score of 50% or more will be deemed an overall pass score for each component of the examination.

11.2 A memorandum with mark allocation per question will be used for each component of the examination.

11.3 The marks for the Structured Oral Examination will be combined to obtain an average score

11.4 The final mark

Written paper	50%
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Structured Oral Examination	50%
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**11.0 RESPONSIBILITY OF THE COLLEGE IN THE EXAMINATION PROCESS**

11.1 Selection of Convenors, examiners, and moderators.

11.2 Monitoring of the conduct of each Certificate examination.

11.3 Reviewing all aspects of each examination on completion.

11.4 Tracking performance and success rates in individual examinations.

**12.0 APPEALS PROCESS**

12.1 The CMSA has an appeals process that will be followed.