



SUB-SPECIALTY CERTIFICATE IN ENDOCRINOLOGY AND METABOLISM OF SOUTH AFRICA

1.0 INFORMATION FOR CANDIDATES

1.1 ELIGIBILITY TO TAKE THE EXAMINATION

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

- 1.1.1 Must comply with the requirements for registration as a medical practitioner, as prescribed by the Medical, Dental and Supplementary Health Services Act.
- 1.1.2 Must be registered as a specialist Physician.
- 1.1.3 Training time must be considered valid.

1.2 VALIDITY OF TRAINING

- 1.2.1 Training is valid for a period of three (3) years from the date of completion in a numbered sub-speciality training post.
- 1.2.2 In exceptional circumstances candidates who do not successfully complete the examination within this period may motivate, with support from their HOD, to the College of Physicians for a once off extension.

1.3 ADMISSION TO THE EXAMINATION

The following are the requirements for admission to the examination:

- 1.3.1 Registration as a specialist Physician
- 1.3.2 Certification of having completed at least eighteen months as a subspecialty trainee in an accredited specialist department(s)/division(s)/unit(s) of Endocrinology and Metabolism, registered and approved by the Health Professions Council of South Africa.
- 1.3.3 Submission of the prescribed logbook, filled in up to date, and certified by the head(s) of the department(s)/division(s)/unit(s) in which the candidate trained. The logbook must be evaluated every 6 months.
- 1.3.4 Submission of a research component/publication in a peered review journal/presentation (oral or poster) at a local or international meeting in the field of Endocrinology and Metabolism
- 1.3.5 A written report(s) from the head/s of the institution/s in which he or she trained.

1.4 FORMAT OF THE EXAMINATION

- 1.4.1 The examination will be in written format and will consist of one written theory paper and one written objective test examination.
- 1.4.2 The written paper
 - 1.4.2.1 Will address the principles and practice of endocrinology and metabolism, including anatomy, normal physiology, pathophysiology, biochemistry, pharmacology, molecular biology, clinical investigation, diagnosis and treatment.
 - 1.4.2.2 180 minutes (3 hours) in duration
 - 1.4.2.3 The paper is composed of 12 questions.
 - 1.4.2.4 Marks:
 - 1.4.2.4.1 Total: 180
 - 1.4.2.4.2 Each question: 15.
 - 1.4.2.5 The spectrum of questions will widely cover the curriculum, of which approximately 25% will cover diabetes
 - 1.4.2.6 25% of all questions will cover relevant aspects of the basic sciences.

- 1.4.3 The objective paper
 - 1.4.3.1 Will include the interpretation of laboratory data, dynamic tests, short case-histories and other material as problem-solving exercises Is 120 minutes (2 hours) in duration
 - 1.4.3.2 The paper is composed of 10 questions.
 - 1.4.3.3 Marks
 - 1.4.3.3.1 Total: 120
 - 1.4.3.3.2 Each question: 12
 - 1.4.3.4 Each question will be based on clinical information or case vignettes, laboratory data, radiologic or other investigations
- 1.4.4 There will be no clinical or oral examination.

1.5 **PASSING THE EXAMINATION**

A Candidate will be deemed to have passed the examination provided they have passed

- 1.5.1 at least 8 out of 12 questions with a minimum overall of 50% for the theory paper
and
- 1.5.2 the objective test with a minimum of 50%

1.6 **GUIDELINES FOR TRAINING AND EDUCATION**

Training will include:

- 1.6.1 Six-monthly assessment of competence by the Head of the Endocrinology & Metabolism Training Unit.
- 1.6.2 Assessment of a logbook kept by the candidate recording the details of all patients seen
- 1.6.3 Details of research undertaken and manuscripts accepted or submitted for publication in the field of endocrinology & metabolism
- 1.6.4 Exit examination under the auspices of the CMSA consisting of a written paper and an objective test as stipulated above

2.0 **ENDOCRINOLOGY AND METABOLISM SUBSPECIALITY TRAINING ACADEMIC PROGRAMME**

A broad experience in general (internal) medicine is considered essential for the practice of endocrinology & metabolism

2.1 **The management of outpatients:**

- 2.1.2 Attendance at specialist clinics is obligatory. To ensure that outpatient training is implemented effectively an optimal number of new (n=1-2) and follow-up (n=6-8) patients will be seen at each clinic under supervision and review. Sufficient patients with common and rarer endocrine and metabolic disorders must be seen to provide adequate personal experience
- 2.1.2 A logbook must be kept to record all out-patients for whom the trainee has assumed responsibility

2.2 **The management of inpatients:**

- 2.2.1 The management of inpatients must also be supervised and reviewed
- 2.2.2 A logbook must be kept to record all inpatients for whom the trainee has assumed responsibility. (Patients with very rare conditions, seen and discussed, should be added separately)
- 2.2.3 A logbook record of all dynamic tests performed by the trainee must be kept
- 2.2.4 Active participation at official ward rounds and organised academic activities such as journal club, research meetings and seminars is mandatory
- 2.2.5 Contact with other departments relevant to endocrinology, such as Chemical Pathology, Histopathology, Radiology, Neurosurgery and Surgery (Endocrine) is encouraged

2.3 Research:

- 2.3.1 A research protocol in the field of endocrinology and metabolism should be submitted within the first 9 months of appointment
- 2.3.2 Completion of a research project is essential prior to registration with the HPCSA and can include
 - 2.3.2.1 An oral or poster presentation of an endocrinological nature at a national or international scientific meeting
 - 2.3.2.2 Publication of an endocrine paper (or proof that a paper has been unconditionally accepted for publication) in a peer reviewed journal
 - 2.3.2.3 Completion of a Masters Degree (eg MMed, MPhil) or higher degree (PhD) on an endocrinology topic

2.4 Conference attendance and rotation to other centres:

- 2.4.1 Active participation at scientific meetings (local and international) is encouraged
- 2.4.2 Rotation to other research centres (local and international) for a specific purpose and time period is encouraged, if possible

2.5 AWARDING OF THE CERTIFICATE

- 2.5.1 The certificate will be awarded to those candidates who have both successfully completed the written examination and fulfilled one of the following criteria in relation to a research project:
 - 2.5.1.1 Presented an oral or poster presentation of an endocrinological nature at a national or international scientific meeting
 - 2.5.1.2 Published an endocrine paper (or have had such paper unconditionally accepted for publication) in a peer reviewed journal
 - 2.5.1.3 Completed a Masters Degree (eg MMed, MPhil) on an endocrinology topic
- 2.5.2 Upon award of the Certificate, the trainee may apply to the Health Professions Council of South Africa for sub-specialty registration.

2.6 RECOMMENDED READING

2.6.1 Books:

- 2.6.1.1 It is recommended that trainees should read a modern but relatively short and manageable textbook of Endocrinology in the first 3-6 months of training (eg. Greenspan and Baxter: Basic and Clinical Endocrinology; Lavin: Manual of Endocrinology and Metabolism – updated every 2-3 years).
- 2.6.1.2 Modern reference textbooks on Endocrinology, Metabolism and Diabetes should be readily available (eg. de Groot: Endocrinology; Williams Textbook of Endocrinology, Oxford Textbook of Endocrinology).
- 2.6.1.3 Paediatricians: eg. Bertrand, Rappoport, Sizonenko – Paediatric Endocrinology

2.6.2 Journals:

A range of general medical and endocrinology and diabetes journals are essential reading. Suggested journals include:

- 2.6.2.1 Journal of Clinical Endocrinology and Metabolism
- 2.6.2.2 Endocrine Reviews
- 2.6.2.3 Clinical Endocrinology
- 2.6.2.4 Diabetes Care
- 2.6.2.5 Diabetic Medicine
- 2.6.2.6 Diabetologia
- 2.6.2.7 Journal of Paediatric Endocrinology
- 2.6.2.8 New England Journal of Medicine
- 2.6.2.9 Lancet

3.0 Curriculum and competence

It is expected that completion of the curriculum will result in demonstrable competence at consultant level in the following areas:

- 3.1 **Knowledge of Endocrine and Metabolic Disorders.** This will require a thorough theoretical knowledge of the endocrine and metabolic diseases. It will include knowledge of the epidemiology, aetiology, pathogenesis, pathology, clinical features and management of these diseases
- 3.2 **Clinical contact with the patient.** This will require the trainee to be able to take a history and perform a clinical examination of a patient with an endocrine or metabolic disorder to include special details and methods outlined in the training record
- 3.3 **Demonstrate experience of endocrine and metabolic disease through the age spectrum.** It is envisaged that this experience could be obtained over the two years by contact with appropriate patients and by attendance at Paediatric Endocrinology clinics or specific courses
- 3.4 **Endocrinology and Metabolic emergencies.** Gain experience with the endocrinological and metabolic emergencies as shown in the full curriculum (Appendix A)
- 3.5 **Selection of appropriate laboratory tests.** This will require knowledge of the metabolic changes, and changes that accompany endocrine or metabolic disease
- 3.6 **Knowledge of the place of imaging techniques and ultrasonography in the investigation of endocrine disease.** This will require knowledge of the place of these investigations in the diagnosis, and in following the progression of disease
- 3.7 **Understand the pharmacology of drugs used in the endocrine and metabolic diseases.** This will require knowledge of the drugs used in the management of endocrine disorders as well as knowledge of hormone replacement therapy
- 3.8 **Appreciate the role of patient education and staff management in endocrine and metabolic diseases.** This will require knowledge of the wide field of patient education required in the endocrine and metabolic disorders and the concept of the team approach to patient management
- 3.9 **Special Skills**
- 3.10 **Performance and interpretation of dynamic endocrine tests.** The trainee will be required to demonstrate competence in performing dynamic tests of endocrine function and be able to interpret the results of these tests. A logbook record of all dynamic tests performed by the trainee
- 3.11 **Teaching experience.** The trainee should be able to demonstrate the ability to teach medical and paramedical staff by experience and specific courses if necessary
- 3.12 **Develop research experience.** This will include training in the analysis of data and an understanding of the principles and practice of clinical research. The trainee must complete a successful research project and eventually should be able to promote and supervise research in endocrinology and metabolism. Publication in a peer-reviewed journal or presentation of research project at a scientific meeting

4.0 Endocrine/Metabolic Laboratory Investigation. Knowledge of the methodology of common biochemical assays and the interpretation of results is essential.

4.1 General Principles

The radioimmuno-assay

The radioreceptor-assay

ELISA assays

Chromatographic assay

Mass Spectrometry

Molecular endocrinology: DNA extraction, PCR amplification, SSCP, DNA sequencing

4.2 Measurement

Peptide hormones

Steroid hormones

Important substrates (glucose, lipids)

Other (eg HbA1c)

4.3 Dynamic tests.

Knowledge of the common dynamic tests used in endocrinology is required. Practical experience is essential and must be documented in the logbook. Competence in the performance and interpretation of the following tests is required:

ACTH stimulation test

HCG stimulation test

Glucose tolerance for diabetes and acromegaly

Glucagon stimulation tests

Insulin Tolerance Test

Dexamethasone suppression tests

Sodium loading test for primary hyperaldosteronism

Posture / Captopril test for primary hyperaldosteronism

Water deprivation test

Prolonged fasting for hypoglycaemic disorders

“Glucose-clamp” and other tests for insulin secretion/sensitivity