April 2008

THE COLLEGE OF PHYSICIANS OF SOUTH AFRICA

R E G U L A T I O N S

FOR ADMISSION TO THE EXAMINATION FOR THE POST-SPECIALISATION

SUB-SPECIALTY CERTIFICATE

IN

ENDOCRINOLOGY AND METABOLISM

Cert Endocrinology and Metabolism(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 Physician

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 Physician

2.2 certification of having completed at least eighteen months as a subspecialty trainee in accredited specialist department(s) / division(s) / unit(s) of Endocrinology and Metabolism, registered and approved by the Health Professions Council of South Africa.

2.3 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.

2.4 submission of research component (see Appendix B:2.1)

2.5 a written report/written reports from the head/s of the institution/s in which he or she trained.

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3.0 SYLLABUS AND TRAINING

See Appendix A

4.0 FORMAT AND CONDUCT OF THE EXAMINATION AND CONFERRING OF CERTIFICATE

See Appendix B

5.0 RECOMMENDED READING

See Appendix C

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A P P E N D I X A

1.0 SYLLABUS

1.1 **Emergencies:**
Diabetes-related comas
Thyrotoxic crisis and myxoedema coma
Hyper- and hypcalcemic crises
Addisonian crisis
Hypopituitary crisis
Hyper- and hyponatraemia
Hyper- and hypokalaemia

1.2 **Diabetes Mellitus**
Diagnosis
Aetio-pathogenesis]
Epidemiology]
Clinical manifestations]
Complications] Including diabetes in children
Therapy]
Intercurrent states (pregnancy, surgery)
Insulin resistance metabolic syndrome
Rare genetic syndromes

1.2.1 **Hypoglycaemia**
Insulinoma
Other syndromes

1.2.2 Other pancreatic endocrine disorders (gastrinoma etc)

1.3 **Lipid Disorders**
Hypertriglyceridaemia
Hypercholesterolaemia
Mixed dyslipidaemia
Secondary dyslipidaemia
Dyslipidaemia and atherosclerosis

1.4 **Thyroid Disorders**
Graves' disease
Graves' ophthalmopathy
Multinodular goitre
Toxic adenoma
Toxicosis without hyperthyroidism
Thyroiditis
Primary thyroid neoplasms
Thyro- and trophoprivic hypothyroidism
Sub-clinical hyper-hypo-thyroidism
Goitrous hypothyroidism
Iodine deficiency disorders
Iodine-induced thyroid disease
Thyroid hormone homeostasis in non thyroidal illness
Euthyroid goitres
Thyroid nodules

1.5…/

1.5 **Pituitary Disorders**
Prolactinoma
Acromegaly
Cushing's disease
Glycoprotein-secreting adenomas
"Non-secretory" adenomas
Craniopharyngioma
Other sellar masses
Hypopituitarism
Hyper- and Hypo- natraemic syndromes (including Diabetes Insipidus and SIADH, etc)

1.6 **Adrenal Disorders**
Adrenal glucocorticoid and mineralocorticocoid hyper- and hypofunction
Congenital adrenal hyperplasias
Pharmacological use of glucocorticoids
Phaeochromocytoma
Adrenal "incidentaloma"

1.7 **Parathyroid Disorders**
Hyper- and hypoparathyroidism

1.8 **Metabolic Bone Disease**
Primary and secondary osteoporosis
Rickets and osteomalacia
Paget's disease
Abnormalities of vitamin D metabolism

1.9 **Endocrine Hypertension**
Endocrine participation in essential hypertension
Renin-angiotensin hypertension
Mineralocorticoid-induced hypertension
Endocrine/metabolic sequelae of therapy

1.10 **Growth and Pubertal Disorders**
Short stature
Growth failure
Tall stature
Delayed puberty
Precocious puberty/pseudo-puberty
Virilisation and feminisation
Intersex

1.11 **Ovarian Disorders**
Infertility
PCOS/hirsutism
Hormone replacement therapy
Menopause

1.12 **Testicular Disorders**
Infertility
Hypogonadism
Androgen resistance
Androgen replacement therapy
Andropause (the aging male)

1.13.../

1.13 **Nutritional Disorders**
Obesity
Anorexia nervosa

1.14 **Endocrine disorders in systemic diseases**

1.15 **Multi-endocrine Disorders**
MEN syndromes
Polyglandular syndromes
Disorders of vasodilator hormones
"APUD" syndromes

1.16 **Breast Disorders**
Galactorrhoea
Gynaecomastia

1.17 **Endocrine Oncology**
Endocrine responsive tumours (Ca breast, prostate)
Para-neoplastic endocrine and metabolic manifestations
Thyroid cancer

1.18 **Renal Stones and Hypercalcaemia**

1.19 **Other**
Epidemiology of common endocrine & metabolic conditions
Age-related changes in endocrine function
Fertility control and complications
Sexual dysfunction
Exercise physiology
Endocrine/Metabolic effects of drugs
Receptor/second messenger abnormalities and hormone resistance syndromes
HIV infection and the endocrine system

1.20 **Guidelines for training and education**

1.20.1 This will include:

1.20.1.1 6 monthly assessment of competence by the Head of the Endocrinology & Metabolism Training Unit.

1.20.1.2 assessment of a logbook kept by the candidate recording the details of all patients seen

1.20.1.3 the details of research undertaken and manuscripts accepted or submitted for publication in the field of endocrinology & metabolism

1.20.1.4 exit examination under the auspices of the CMSA consisting of a written paper <u>and</u> an objective test

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1.21 **Endocrinology & metabolism subspeciality training – academic programme**

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

1.21.1 The management of out-patients:

1.21.1.1 attendance at specialist clinics will be obligatory. To ensure that out-patient training is implemented effectively an optimal number of new (n=1-2) and old (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

1.21.1.2 a logbook must be kept to record all out-patients for whom the doctor has assumed responsibility

1.22 **The management of in-patients:**

1.22.1 the management of in-patients must also be supervised and reviewed

1.22.2 a logbook must be kept to record all in-patients for whom the doctor has assumed responsibility. (Patients with very rare conditions, seen and discussed, should be added separately)

1.22.3 a logbook record of all dynamic tests performed by the trainee

1.23 Active participation at official ward rounds and organised academic activities such as journal club and research meetings and seminars will be mandatory

1.24 Contact with other departments relevant to endocrinology, such as Chemical Pathology, Histopathology, Radiology, Neurosurgery and Surgery (Endocrine) should be encouraged

1.25 A research protocol in the field of endocrinology and metabolism should be submitted within the first 6 months of appointment

1.26 Active participation at scientific meetings (local and international) will be encouraged

1.27 Rotation to other research centres (local and international) for a specific purpose and time period may be possible

1.28.../

1.28 **Curriculum**

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

1.28.1 **Knowledge of Endocrine and Metabolic Disorders**

1.28.1.1 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

1.28.2 **Clinical contact with the patient**

1.28.2.1 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

1.28.3 **Demonstrate experience of Endocrine and Metabolic disease through the age spectrum**

1.28.3.1 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

1.28.4 **Endocrinological and Metabolic emergencies**

1.28.4.1 Gain experience with the endocrinological and metabolic emergencies ***(Appendix A:1.1)***

1.28.5 **Selection of appropriate laboratory tests**

1.28.5.1 This will require knowledge of the metabolic changes, and changes that accompany the endocrine or metabolic disease

1.28.6 **Knowledge of the place of imaging techniques and untrasonography in the investigation of endocrine disease**

1.28.6.1 This will require knowledge of the place of these investigations in the diagnosis, and in following the progression of disease

1.28.7 **Understand the pharmacology of drugs used in the endocrine and metabolic diseases**

1.28.7.1 This will require knowledge of the drugs used in the management of endocrine disorders as well as knowledge of endocrine hormone replacement therapy

1.28.8 **Appreciate the role of patient education and staff management in endocrine and metabolic diseases**

1.28.8.1 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

1.29 **Special Skills**

1.29.1 **Performance and interpretation of dynamic endocrine tests**

1.29.1.1 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 ***(Appendix B)***

1.29.1.2 A logbook record of all dynamic tests performed by the trainee

1.29.2 **Teaching experience**

1.29.2.1 The trainee should be able to demonstrate the ability to teach medical and paramedical staff by experience and specific courses if necessary

1.29.3 **Develop research experience**

1.29.3.1 This will include training in the analysis of data and an understanding of the principles and practise 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

1.30 **Endocrine/Metabolic Laboratory Investigation**

1.30.1 **General Principles**
The radioimmuno-assay
The radioreceptor-assay
ELISA assays
Molecular endocrinology: DNA extraction, PCR amplification, SSCP, scanning, sequencing

1.30.2 **Measurement of:**
Peptide hormones
Steroid hormones
Important substrates (glucose, lipids)
Other (eg HbA1c)

1.30.3 **Stimulatory Dynamic Tests**
Hypothalamic-pituitary
Pituitary
ACTH
HCG
Glucose tolerance
Glucagon

1.30.4 **Suppression Dynamic Tests**
Hypothalamic-pituitary
T3/T4
Dexamethasone
Sodium loading test for Primary Hyperaldosteronism

1.30.5 **Other Dynamic Tests**
Water deprivation
Prolonged fasting
Posture / Captopril Priming
“Glucose-clamp”
Tests for insulin secretion/sensitivity

A P P E N D I X B

1.0 FORMAT OF THE EXAMINATION

1.1 The examination will be in written format and will consist of one written theory paper and one objective test examination.

The written theory paper will address the principles and practice of endocrinology and metabolism, including anatomy, normal physiology, pathophysiology, biochemistry, pharmacology, molecular biology, clinical investigation, diagnosis and treatment. The objective test will include the interpretation of laboratory data, dynamic tests, short case-histories and other material as problem-solving exercises.

Approximately one quarter of both the written paper and objective test will be devoted to questions of the basic science nature.

1.2 There will be no clinical or oral examination.

2.0 AWARDING OF CERTIFICATE

2.1 The certificate will be awarded to those candidates who have both successfully completed the examination and fulfilled one of the following criteria in relation to a research project:

- Presented an oral or poster presentation of an endocrinological nature at a scientific meeting
- Published an endocrine paper (or have had such paper unconditionally accepted for publication) in a peer review journal
- Completed a Masters Degree (eg MMed) on an endocrinological topic

2.2 Upon award of the Certificate, the trainee may apply to the Health Professions Council of South Africa for subspeciality registration.

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A P P E N D I X C

1.0 RECOMMENDED READING

1.1 Books

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).

Modern reference textbooks on Endocrinology, Metabolism and Diabetes should be readily available (eg. de Groot: Endocrinology; Williams Textbook of Endocrinology).

For Paediatricians: eg. Bertrand, Rappoport, Sizonenko – Paediatric Endocrinology

1.2 Journals

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

- Journal of Clinical Endocrinology and Metabolism
- Endocrine Reviews
- Clinical Endocrinology
- Diabetes Care
- Diabetic Medicine
- Diabetologia
- Journal of Paediatric Endocrinology

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