



CURRICULUM OF THE PSEM FELLOWSHIP TRAINING PROGRAM

PSEM FELLOWSHIP TRAINING PROGRAM CURRICULUM

Aim: The PSEM Fellowship program aims to produce a competent specialist in the field of Endocrinology.

General Objective: At the end of Fellowship training, the graduate should display clinical competence in the diagnosis & management of endocrine diseases & their complications.

Specific Objectives:

- To provide the knowledge, professional skill & competence in the diagnosis & management of endocrine diseases & their complications (EXCELLENT CLINICIAN)
- To provide the knowledge & awareness of the preventive aspects of endocrine diseases (PUBLIC HEALTH ADVOCATE)
- To develop future trainers in Endocrinology (EDUCATOR/MENTOR)
- To instill skill & confidence in conducting investigative researches and make optimal use of best evidence in making decisions about the care of patients (ASTUTE RESEARCHER)
- To provide experience in administrative functions & responsibilities in managing an Endocrine service program in a specialty or general hospital setting (COMPETENT MANAGER)
- To promote professional & ethical practice of endocrinology (PROFESSIONAL & ETHICAL SUBSPECIALIST)

Outline of Competencies: (pages 2-47)

1. Diabetes, its Complications and Co-morbidities (pp 2-22)
2. Endocrinology (pp 23-39)
 - a. Hypothalamus and Pituitary (pp 23-26)
 - b. Growth and development (p. 26-27)
 - c. Thyroid Disorders (pp. 28-30)
 - d. Adrenal glands (pp. 30-32)
 - e. Gonads (pp. 32-33)
 - e. Disorders of Parathyroid Glands, Calcium Disorders & Bone (p. 33-34)
 - f. Appetite and weight (pp. 34-35)
 - g. Miscellaneous Endocrine and Metabolic disorders (pp 36-37)
 - h. Imaging Techniques (pp. 38-39)
3. Common Competencies (40-47)

Teaching and Learning Activities, Evaluation, Skills and Diagnostic Tests (pages 48-50)

1. Diabetes

Subject Area	Objectives	Learning activities	Resources	Evaluation
1.1 Diagnosis and General Management of Diabetes Mellitus Diagnosis and general management of people with, or at increased risk of, diabetes mellitus	Demonstrate Knowledge of: <ul style="list-style-type: none"> The diagnostic criteria for diabetes mellitus & identify the different types The diagnostic criteria for pre-diabetes The underlying basis of metabolic disturbances and principles of management The principles of lifestyle management including adequate knowledge of nutrition (including carbohydrate counting –ex GI and serving sizes) and physical activity & exercise, and healthy living; Characteristics of the range of oral antidiabetic drugs available and identify appropriate use in the clinical setting The characteristics of the range of insulins available and define their use in intensive insulin management The systems used to monitor blood glucose including continuous glucose monitoring systems The principles of structured education in the management of diabetes Appropriate strategies for the prevention & detection of DM Appropriate preventive strategies / treatments for micro & macrovascular complications of diabetes National (evidence based) therapeutic targets Cultural and religious considerations in 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Didactic conferences Case Conferences Journal Club Inter-hospital conference Diabetes Clinic Multidisciplinary conferences 	<ul style="list-style-type: none"> Patients Charts Consultants Textbooks Internet resources Journals Clinics Audio-visual materials Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient Conference Evaluation Quarterly written and bi-annual oral examinations

	<p>the management of diabetes</p> <ul style="list-style-type: none"> • <i>The use of technology in diabetes such as diabetes databases and the use of meter / pump downloads ** (nice to know)</i> 			
Subject area	Objectives	Learning activities	Resources	Evaluation
<p>1.1 Diagnosis and general management of people with, or at increased risk of, diabetes mellitus (cont)</p>	<p>Skills</p> <ul style="list-style-type: none"> — Elucidate an appropriate history and interpret tests done to differentiate various types of diabetes — Be able to contribute to and support a programme or strategy designed to prevent or delay the onset of DM — Educate patients in the use of insulin delivery devices including syringes, pens and pumps — Educate people in the use of home blood glucose monitoring systems — Give advice on the indications for insulin therapy in type 2 diabetes — Make appropriate insulin dose adjustments including different regimens for intermittent insulin therapy and insulin pump therapy — Give appropriate advice about dose adjustment in response to blood glucose levels, exercise, alcohol etc — Identify complications of diabetes and perform annual screening for complications — Identify patients appropriate for psychological intervention — Give appropriate advice about employment, driving, exercise, alcohol, weight management, smoking and family planning 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Conferences e.g. DECT (Diabetes Extremity Care Team) meetings, Multidisciplinary conferences, Case conferences • Lay lectures on diabetes and pre-diabetes 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject area	Objectives	Learning activities	Resources	Evaluation
1.1.Diagnosis and general management of people with, or at increased risk of, diabetes mellitus (cont)	Attitudes <ul style="list-style-type: none"> — Understand the implications and concerns arising from a diagnosis of diabetes and provide advice in a non-judgmental manner — Recognise the central role of the patient in the management of their diabetes — Understand the cultural and educational barriers to good glucose control — Recognise the impact of diagnosis of diabetes on careers and their role in the management of diabetes — Ability to understand and personalise treatments and targets to the individual patient's circumstances 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Conferences e.g. DECT (Diabetes Extremity Care Team) meetings, Multidisciplinary conferences, Case conferences • Lay lectures on diabetes and pre-diabetes 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.2 Management of Delivery of Diabetes Care Management of Delivery of Diabetes Care with regard to patients and carers, other health care professionals and relevant organisations	Knowledge: <ul style="list-style-type: none"> — The different settings in which diabetes care can be delivered & the different models of diabetes care delivery (i.e. primary, intermediate care and secondary care) “Triaging” — Which aspects of diabetes care can be appropriately delivered in different clinical settings — <i>The role of information technology in integrating care across different providers **</i> — <i>The role of diabetes networks and advisory groups in the organisation of care **</i> 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Conferences eMultidisciplinary conferences, Case conferences • Lay lectures on diabetes and pre-diabetes 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject area	Objectives	Learning activities	Resources	Evaluation
	Skills <ul style="list-style-type: none"> Identify appropriately patients who can be managed in different settings such as primary care, intermediate care and multidisciplinary (sub-speciality) specialist care Interact with different providers of care to develop cohesive local pathways for delivery of care 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Diabetes Clinic 		<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> Recognise the importance of multidisciplinary team working Recognise the importance of primary secondary care interface in mgt Recognise the importance of hospital management support in care delivery Understand economic and cultural barriers to the delivery of integrated diabetes care 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Diabetes Clinic 		<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.3 Diabetic Emergencies Manage hyperglycaemic metabolic emergencies and severe hypoglycaemia and advise about future prevention.	Knowledge: <ul style="list-style-type: none"> Diagnose and distinguish between the types of diabetic hyperglycaemic metabolic emergency Understand the underlying basis of metabolic disturbances and principles of management Diagnose and manage severe hypoglycaemia and advice about future prevention Identify patients with hypoglycaemia unawareness and advise them appropriately 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Didactic conferences Case Conferences Journal Club Multidisciplinary conference Diabetes Clinic 	<ul style="list-style-type: none"> Patients Charts Consultants Textbooks Internet resources Journals Clinics Audio-visual materials Teaching pamphlets 	<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient Conference Evaluation Quarterly written and bi-annual oral examinations

Subject area	Objectives	Learning activities	Resources	Evaluation
	Skills <ul style="list-style-type: none"> — Identify and differentiate between different hyperglycaemic emergencies — Formulate appropriate plan for investigation and management, including identifying appropriate patients for escalation of treatment to critical care — Identify factors that may have contributed to hyper or hypoglycaemic emergencies — Give advice about future prevention of hyper and hypoglycaemic emergencies — Prepare and properly order and titrate Insulin drip* (nice to know/do) 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Multidisciplinary conference • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Quarterly written and bi-annual oral examinations :
Subject area	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> — Recognise and judge the urgency and severity of the emergency — Anticipate possible complications of the treatment and disease process* — Communicate with other health care professionals and convey management plans — Recognise the impact of hypoglycaemia unawareness on the lifestyle of patients, their families and their carers 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Case Conferences • Journal Club • Multidisciplinary conference 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject area	Objectives	Learning activities	Resources	Evaluation
1.4 Management of Patients with Diabetes during Acute Illness or Surgery	Demonstrate Knowledge of: <ul style="list-style-type: none"> — The impact of acute illness on glycaemia and it's effects / implications on current management — The impact of other treatments such as steroids / parenteral nutrition/dialysis/chemotherapy on glycaemia — The metabolic requirements of patients with diabetes during surgery — The implications of glucose control during other illnesses such as cardio- and cerebro-vascular illnesses — Recognition and management of in-patient hyperglycemia — Insulin drip protocols (ex. Yale, Modified Yale, or Modified Portland)* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject area	Objectives	Learning activities	Resources	Evaluation
1.4 Management of Patients with Diabetes during Acute Illness or Surgery (cont)	Skills <ul style="list-style-type: none"> — Adjust therapy in the short term to manage glucose control during acute illness — Manage diabetes appropriately in patients on steroids or parenteral nutrition — Manage diabetes appropriately in peri-operative patients — Supervise and advise other health care professionals in the management of patients with diabetes who are under their care — Prescribe an appropriate nutrition plan for during acute illness or surgery — Prescribe/order and titrate an insulin drip protocol* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject area	Objectives	Learning activities	Resources	Evaluation
1.4 Management of Patients with Diabetes during Acute Illness or Surgery (cont)	Attitude <ul style="list-style-type: none"> — Recognise the importance of multidisciplinary team working — Recognise the need for specialist diabetes care in different clinical environments — Awareness of the importance of glucose control in patients who are acutely unwell 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.5 Conception and Pregnancy in Diabetes Manage pre-conception, conception and pregnancy in the diabetic woman in order to optimise outcome	Demonstrate knowledge of: <ul style="list-style-type: none"> — The importance of glucose control in pre-conception and during pregnancy and the need for family planning in fertile women of all ages — The effect of diabetes on the pregnant woman and her fetus, and strategies for their amelioration — The effect of pregnancy on diabetes management and glycaemia — The risk factors for gestational diabetes and current diagnostic criteria and appropriate screening strategies — Appropriate management of gestational and pre-gestational diabetes including nutrition and indication for insulin — Describe the different available methods of contraception 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject area	Objectives	Learning activities	Resources	Evaluation
Manage pre-conception, conception and pregnancy in the diabetic woman in order to optimise outcome (continuation)	Skills <ul style="list-style-type: none"> — Discuss the importance of diabetes in pregnancy and the need for family planning in fertile women of all ages — Advise women about the importance of pre-conception care and potential risks of diabetic pregnancy, including progression of complications — Advise women with diabetes regarding contraception — Optimise glycaemic and blood pressure control prior to and throughout pregnancy — Diagnose and manage gestational diabetes — Deliver antenatal care in the setting of a joint obstetric clinic — Manage glycaemia during labour and delivery — Manage intercurrent illness and events such as administration of steroids — Monitor glycemic control, maternal, fetal & neonatal outcomes* — Manage maternal postpartum glycemic control and metabolic syndromes * — Prescribe appropriate nutritional plan for gestational and pre-gestational diabetics* — Prescribe appropriate insulin therapy for pre-gestational and gestational diabetics as indicated* 	Supervised Patient care Clinical teaching rounds Diabetes Clinic (Gestational DM Clinic)	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets/flip charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject area	Objectives	Learning activities	Resources	Evaluation
1.5 Conception and Pregnancy in Diabetes	Attitude <ul style="list-style-type: none"> — Exhibit a non judgemental attitude to women who have difficulty in achieving glycaemic targets prior to conception or during pregnancy and support their efforts to do so. — Communicate and work with obstetric and midwifery colleagues in the joint management of diabetic pregnancy 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • (Gestational DM Clinic) 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.6 Age-related Conditions and Diabetes 1.6.1 Young People Ability to provide care to young people with diabetes in transition to adult services	Demonstrate Knowledge of: <ul style="list-style-type: none"> — The effects of diabetes on normal growth and development in children — The physiological, psychological and social factors affecting glycaemic control in adolescence — Approved indications for pharmacologic agents in children* 	<ul style="list-style-type: none"> • Supervised patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject area	Objectives	Learning activities	Resources	Evaluation
1.6.1 Young People Ability to provide care to young people with diabetes in transition to adult services	Skills <ul style="list-style-type: none"> — Provide care to young persons with diabetes in transition to the adult service — Recognise common risk taking behaviour in young persons and its effects on diabetes — Recognise the potentially negative effects of adolescent behaviour on 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	diabetes and the impact it may have on family and personal relationships		<ul style="list-style-type: none"> • Audio-visual material • Teaching pamphlets 	
Subject area	Objectives	Learning activities	Resources	Evaluation
1.6.1 Young People Ability to provide care to young people with diabetes in transition to adult services	Attitude <ul style="list-style-type: none"> — Exhibit a non judgemental attitude in addressing the problems of a young patient with diabetes and demonstrate preparedness to change behaviour in response to feedback and reflection — Respond to the physiological, psychological and social problems of maintaining glycaemic control in adolescence and the concerns and anxieties of parents / carers — Adopt a patient focused approach that acknowledges values that may not be shared by the trainee 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Thyroid Clinic • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.6.2 Elderly People Provide care for and manage elderly patients with diabetes	Demonstrate Knowledge of: <ul style="list-style-type: none"> — The potential effects of co-morbidities associated with ageing on diabetes treatments and control — The effects of aging including associated disability on access to healthcare — Contraindications and safety issues ie. polypharmacy among elderly diabetics* — Individualized glycemic and other cardio-metabolic targets for elderly diabetics* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations :

Subject area	Objectives	Learning activities	Resources	Evaluation
1.6.2 Elderly People Provide care for and manage elderly patients with diabetes (cont)	Skills <ul style="list-style-type: none"> — Adapt therapeutic targets and diabetes treatment regimens to the individual patient taking account of co-morbidities — Manage the specific social and medical needs of elderly patients with diabetes in the community — Assess and advise so as to minimise risk especially for elderly vulnerable patients 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
1.6.2 Elderly People Provide care for and manage elderly patients with diabetes (cont)	Attitude <ul style="list-style-type: none"> — Adopt a patient centred approach recognising that diabetes management and therapeutic targets may need adjustment in elderly patients with disability, social isolation and co-morbidity — Adopt a team approach in co-ordinating, in some cases leading but always acknowledging, the efforts of agencies and individuals managing older patients with diabetes 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7 Complications of Diabetes 1.7.1 Screening for the Complications of Diabetes Understand the principles and practice of screening for diabetic complications Knowledge	Demonstrate Knowledge of: <ul style="list-style-type: none"> — The principles and practice of screening — The metabolic and pathophysiologic mechanisms of diabetic complications 	<ul style="list-style-type: none"> • Supervised patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.1 Screening for the Complications of Diabetes Understand the principles and practice of screening for diabetic complications	Skills <ul style="list-style-type: none"> — Practice effective strategies in the implementation of a screening programme for diabetes complications 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.1 Screening for the Complications of Diabetes Understand the principles and practice of screening for diabetic complications	Attitude <ul style="list-style-type: none"> — Recognise the criteria for urgent referral to appropriate services when diabetic complications are identified 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Objectives	Learning activities	Resources	Evaluation
1.7.2 Macrovascular Disease Identify, investigate, treat and make appropriate referrals for patients with macrovascular disease	Demonstrate Knowledge of: <ul style="list-style-type: none"> — The importance of hyperglycaemia as a risk factor for macroangiopathy — Other risk factors for macroangiopathy including elements of the so called metabolic syndrome — The presenting features of cerebrovascular, cardiovascular and peripheral vascular disease 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

	<ul style="list-style-type: none"> — The available treatments for non glycaemic risk factors for macroangiopathy 	<ul style="list-style-type: none"> • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Teaching pamphlets 	
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.2 Macrovascular Disease Identify, investigate, treat and make appropriate referrals for patients with macrovascular disease	Skills <ul style="list-style-type: none"> — Identify and manage glycaemia and other modifiable risk factors for macroangiopathy — Diagnose heart failure in diabetes — Provide basic management of heart failure among diabetics* — Manage glycaemic control of diabetic patients suffering heart failure — Investigate and manage diabetic patients with established macrovascular disease — Manage glycaemic control of diabetic patients suffering acute myocardial infarction and stroke 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.2 Macrovascular Disease: Identify, investigate, treat and make appropriate referrals for patients with macrovascular disease	Attitude <ul style="list-style-type: none"> — Recognise when to refer patients for specialist investigation and treatment (e.g. Cardiology, Vascular surgery) 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Objectives	Learning activities	Resources	Evaluation
1.7.3 Eye Disease in Diabetes	Demonstrate Knowledge of: <ul style="list-style-type: none"> — How diabetes can affect different 	<ul style="list-style-type: none"> • Supervised Patient 	<ul style="list-style-type: none"> • Patients • Charts 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Identify and prevent diabetic eye disease	<ul style="list-style-type: none"> parts of the eye — The pathogenesis and different stages of diabetic retinopathy — The importance of visual acuity testing and retinal screening — The available treatments for eye complications — The implications of eye complications on driving / employment 	<ul style="list-style-type: none"> care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual material • Teaching pamphlets 	<ul style="list-style-type: none"> • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.3 Eye Disease in Diabetes Identify and prevent diabetic eye disease	Skills <ul style="list-style-type: none"> — Discuss the importance of glycaemic control and blood pressure management in diabetic eye disease — Recognise the types of diabetic eye complications which need urgent ophthalmology referral — Diagnose all grades of severity of diabetic retinopathy /macular disease using direct ophthalmoscopy — Diagnose cataract using direct ophthalmoscopy — Interpret results of retinal photographs — Identify other ocular disorders associated with diabetes — Perform and interpret visual acuity testing 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Retina Rotation 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Perform funduscopy examinations (indirect funduscopy)
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.3 Eye Disease in Diabetes Identify and prevent diabetic eye disease (cont)	Attitude <ul style="list-style-type: none"> — Practice primary prevention of diabetic eye disease — Refer the appropriate patients for specialist ophthalmic assessment — Communicate to patients and advise 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	<p>accordingly about the treatments available for eye complications and the implications of eye complications on driving / employment</p> <ul style="list-style-type: none"> — Recognise the importance of retinal screening and contribute to local diabetic retinopathy screening programmes — Recognise the impact of diabetes eye complications on patients lifestyle 	<ul style="list-style-type: none"> • Retina Rotation 	<p>resources</p> <ul style="list-style-type: none"> • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	
Subject area	Objectives	Learning activities	Resources	Evaluation
<p>1.7.4 Renal Disease and Hypertension in Diabetes</p> <p>Prevent, identify and manage renal disease and hypertension in people with diabetes</p>	<p>Demonstrate Knowledge of:</p> <ul style="list-style-type: none"> — How diabetes can affect different parts of the kidney — The pathogenesis and different stages of diabetic nephropathy — The effect of hypertension on diabetic nephropathy — The significance of proteinuria in the increased incidence of macroangiopathy — The treatment thresholds of blood pressure in patients with diabetes and nephropathy — The available tests for diagnosing nephropathy and the importance of screening for early nephropathy — Treatments available for diabetic nephropathy and hypertension 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Objectives	Learning activities	Resources	Evaluation
	<p>Skills</p> <ul style="list-style-type: none"> — Manage hypertension according to current guidelines — Manage glycaemia in patients with renal impairment — Diagnose nephropathy and 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	distinguish between its different stages (early / late) <ul style="list-style-type: none"> — Evaluate other macrovascular risk factors in patients with diabetic nephropathy — Advise/counsel patients about the significance of nephropathy — Timely referral to nephrologists* 		resources <ul style="list-style-type: none"> • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	
Subject Area	Objectives	Learning activities	Resources	Evaluation
1.7.4 Renal Disease and Hypertension in Diabetes Prevent, identify and manage renal disease and hypertension in people with diabetes (cont)	Attitude <ul style="list-style-type: none"> — Communicate to patients the importance of blood pressure and glycaemic management in the prevention and slowing of progression of nephropathy — Communicate the significance of a diagnosis of nephropathy to patients — Communicate with colleagues in specialist nephrology services and refer patients appropriately — Recognise the implications of a diagnosis of diabetic nephropathy on patients, their carers and families. 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject Area	Objectives	Learning activities	Resources	Evaluation
1.7.5 Neuropathy and Erectile & Sexual Dysfunction in Diabetes To understand principles of management of diabetic neuropathy and erectile dysfunction and sexual dysfunction in women with diabetes*	Knowledge: <ul style="list-style-type: none"> — How diabetes can affect different parts of the nervous system — The pathogenesis and different manifestations of diabetic neuropathy 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic • Menopause & Infertility Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject Area	Objectives	Learning activities	Resources	Evaluation
1.7.5 Neuropathy and Erectile & Sexual Dysfunction in Diabetes To understand principles of management of diabetic neuropathy and erectile dysfunction and sexual dysfunction in women with diabetes* (cont)	Skills: <ul style="list-style-type: none"> — Diagnose the different patterns of autonomic and somatic poly- and mononeuropathies, including performance of appropriate examination — Manage the neuropathies, including neurogenic pain and the manifestations of autonomic neuropathy — Evaluate and manage erectile dysfunction in diabetic men 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Menopause & Infertility Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Objectives Behavior: <ul style="list-style-type: none"> — Select appropriate treatment particularly for neurogenic pain and manifestations of autonomic neuropathy — Exhibit appropriate behaviours when discussing erectile dysfunction and communicating range of treatment options 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Menopause & Infertility Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient procedures:
1.7.6 Foot Disease To understand principles of management of diabetes related foot disease	Knowledge: <ul style="list-style-type: none"> — The pathogenesis of diabetic foot ulceration — The range of specialist investigations available to detect vascular insufficiency and neuropathy — The principles of infection control — Appropriate antibiotic regimens including local and national guidelines 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

	<ul style="list-style-type: none"> — The risks of antibiotic therapy and importance of prescribing policies — Other conditions affecting feet such as tinea infection, skin cancer and causes of pain (e.g. simple fracture, tendonitis) — Risk stratification systems (ex. Wagner & Texas)* — Principles of wound care 	<ul style="list-style-type: none"> • Inter-hospital conference • Diabetes Clinic • Radiology Elective 	<ul style="list-style-type: none"> • materials • Teaching pamphlets 	
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.6 Foot Disease To understand principles of management of diabetes related foot disease (cont)	Skills: <ul style="list-style-type: none"> — Identify patients at risk of foot problems and advise on prevention recognising the importance of patient education. — Recognise the features of Charcot's neuro-arthropathy — Assess vascular supply and neurological status of the lower limb — Use of appropriate imaging techniques in detection and management of bone infection in the diabetic foot — Manage established diabetic foot problems including use of appropriate antibiotic treatment liaising appropriately with microbiological service — Exercise judgment in the need for, and timing of, surgical referral — Counsel patients on matters of infection risk, transmission and control — Recognise potential for cross-infection in clinical settings — Use of specialized footwear and off-loading techniques 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • Radiology Elective 	<ul style="list-style-type: none"> • Sphygmomano-meter • Portable Doppler • Duplex ultrasound 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.6 Foot Disease To understand principles of management of diabetes related foot disease (cont)	Attitude <ul style="list-style-type: none"> — Demonstrate effective management of established diabetic foot problems including communication of advice on prevention of foot ulceration — Recognise the importance of the multidisciplinary team, including vascular and orthopaedic surgeons, in the prevention and management of diabetic foot problems — Recognise when to refer patients for specialist foot care and use of orthotic appliances — Engage in local infection control procedures and practice aseptic technique whenever relevant — Encourage all staff, patients and relatives to observe infection control principles — Recognise the impact of amputation on patients and their carers and the importance of effective rehabilitation 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.7 Other Complications* To understand principles of management of other diabetes related complications	Knowledge <ul style="list-style-type: none"> — Other conditions affecting diabetics such as dental/oral, neurogenic bladder and other neuropathies. — Preventive care including influenza and pneumococcal vaccination 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written & bi-annual oral examinations

Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.7 Other Complications* To understand principles of management of other diabetes related complications	Skills <ul style="list-style-type: none"> — Advise/counsel patients about the significance of dental/oral care — Administer preventive care including vaccination 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Behaviour <ul style="list-style-type: none"> — Recognise when to refer patients for specialist care for dental/oral conditions neurogenic bladder and other neuropathies 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject area	Objectives	Learning activities	Resources	Evaluation
1.7.8 Lipid Disease To be able to diagnose and manage disorders of lipid metabolism	Knowledge: <ul style="list-style-type: none"> — The pattern of lipid abnormalities seen in patients — Range of treatments available for managing lipid abnormalities — Local epidemiology 	<ul style="list-style-type: none"> • Supervised patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Diabetes Clinic • General Endocrine Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject Area	Objectives	Learning activities	Resources	Evaluation
1.7.8 Lipid Disease To be able to diagnose and manage disorders of lipid metabolism	Skills <ul style="list-style-type: none"> — Select appropriate patients to screen for dyslipidaemia — Assess cardiovascular risk in relation to the patient's lipid profile — Diagnose and manage patients with primary and secondary lipid disorders — Communicate the cardiovascular risk of hyperlipidaemia to patients 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • General Endocrine Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
1.7.8 Lipid Disease To be able to diagnose and manage disorders of lipid metabolism	Attitude <ul style="list-style-type: none"> — Select appropriate treatment for individual patients — Explain the importance of screening for lipid abnormalities in diabetes — Recognise the need to refer patients with atypical or severe dyslipidaemia to specialist services 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Diabetes Clinic • General Endocrine Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Teaching pamphlets 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

2. Endocrinology

Subject Area	Objectives	Learning activities	Resources	Evaluation
2.1 Disorders of the Hypothalamus and Pituitary To diagnose, manage and provide care for patients with disorders of the hypothalamus and /or the pituitary gland	Knowledge: — The causes, investigations and treatments for disorders of the hypothalamus and pituitary — International & Local epidemiology — Molecular bases/cytopathologic staining for diagnosis	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Menopause & infertility Clinic • Radiology Elective • Pathology • Pediatric Endocrinology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.1 Disorders of the Hypothalamus and Pituitary To diagnose, manage and provide care for patients with disorders of the hypothalamus and /or the pituitary gland	Skills — Perform and interpret basal and dynamic tests of pituitary function — Demonstrate an ability to diagnose and provide first line management of functioning and non functioning pituitary/sellar tumours — Demonstrate an ability to diagnose and monitor optic nerve compression — Provide immediate and long term care to patients with mass effects from pituitary enlargement — Demonstrate ability to diagnose and manage hypopituitarism — Demonstrate ability to diagnose and manage diabetes insipidus — Demonstrate ability to manage	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: Perform & interpret the ff: (see p. 49) - Two-day low dose dexamethasone suppression test - ACTH Stimulation Test - Water Deprivation Test - Overnight low dose and high dose Dexamethasone Suppression test - Standard High dose

	<p>patients during and after surgery for pituitary tumours</p> <p>— Demonstrate ability to diagnose and manage patients with SIADH, thirst dysregulation and other disorders of water balance.</p>			<p>Dexamethasone suppression test</p> <p>Interpret the ff:</p> <ul style="list-style-type: none"> • Skull X-rays • Pituitary CT scan • Pituitary MRI
<p>2.1 Disorders of the Hypothalamus and Pituitary</p> <p>To diagnose, manage and provide care for patients with disorders of the hypothalamus and /or the pituitary gland</p>	<p>Skills</p> <p>— Perform and interpret basal and dynamic tests of pituitary function</p> <p>— Demonstrate an ability to diagnose and provide first line management of functioning and non functioning pituitary/sellar tumours*</p> <p>— Demonstrate an ability to diagnose and monitor optic nerve compression</p> <p>— Provide immediate and long term care to patients with mass effects from pituitary enlargement</p> <p>— Demonstrate ability to diagnose and manage hypopituitarism</p> <p>— Demonstrate ability to diagnose and manage diabetes insipidus</p> <p>— Demonstrate ability to manage patients during and after surgery for pituitary tumours</p> <p>— Demonstrate ability to diagnose and manage patients with SIADH, thirst dysregulation and other disorders of water balance.</p>	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: <p>Perform & interpret the ff: (see p.49)</p> <ul style="list-style-type: none"> - Two-day low dose dexamethasone suppression test - ACTH Stimulation Test - Water Deprivation Test - Overnight low dose and high dose Dexamethasone Suppression test - Standard High dose Dexamethasone suppression test <p>Interpret the ff:</p> <ul style="list-style-type: none"> • Skull X-rays • Pituitary CT scan • Pituitary MRI

<p>2.1 Disorders of the Hypothalamus and Pituitary</p> <p>To diagnose, manage and provide care for patients with disorders of the hypothalamus and /or the pituitary gland</p>	<p>Skills</p> <ul style="list-style-type: none"> — Perform and interpret basal and dynamic tests of pituitary function — Demonstrate an ability to diagnose and provide first line management of functioning and non functioning pituitary/sellar tumours* — Demonstrate an ability to diagnose and monitor optic nerve compression — Provide immediate and long term care to patients with mass effects from pituitary enlargement — Demonstrate ability to diagnose and manage hypopituitarism — Demonstrate ability to diagnose and manage diabetes insipidus — Demonstrate ability to manage patients during and after surgery for pituitary tumours — Demonstrate ability to diagnose and manage patients with SIADH, thirst dysregulation and other disorders of water balance. 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: <p>Perform & interpret the ff: (see p.49)</p> <ul style="list-style-type: none"> - Two-day low dose dexamethasone suppression test - ACTH Stimulation Test - Water Deprivation Test - Overnight low dose and high dose Dexamethasone Suppression test - Standard High dose Dexamethasone suppression test <p>Interpret the ff:</p> <ul style="list-style-type: none"> •Skull X-rays •Pituitary CT scan •Pituitary MRI
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Subject Area	Objectives	Learning activities	Resources	Evaluation
2.1 Disorders of the Hypothalamus and Pituitary To diagnose, manage and provide care for patients with disorders of the hypothalamus and /or the pituitary gland (cont)	Attitude — Recognise the need for appropriate referrals for pituitary surgery and radiotherapy — Recognise the role of the multidisciplinary team in the management of pituitary tumours — Recognise the need for urgent referral of patients presenting with symptoms of optic nerve compression — Recognise the impact of hypothalamic / pituitary disorders on patients and carers	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.2 Disorders of Growth and Development To assess normal growth and development by the use of growth charts and assessment of pubertal stage, and to diagnose and treat growth disorders	Knowledge: — Methods of assessment of normal growth and development by the use of growth charts and assessment of pubertal stage (Tanner staging) — Describe the diagnosis and management of endocrine growth disorders	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations

Subject Area	Objectives	Learning activities	Resources	Evaluation
2.2 Disorders of Growth and Development To assess normal growth and development by the use of growth charts and assessment of pubertal stage, and to diagnose and treat growth disorders	Skills <ul style="list-style-type: none"> — Demonstrate ability to diagnose and manage disorders of growth and maturation, — Diagnose and manage patients with adult GH deficiency* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • General Endocrine Clinic • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Attitude <ul style="list-style-type: none"> — Recognise the impact of growth and pubertal disorders on the patient and his / her family 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • General Endocrine Clinic • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Laboratory/ Testing area • Reagents and materials for lab tests • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject Area	Objectives	Learning activities	Resources	Evaluation
2.3 Disorders of the Thyroid Gland To understand the physiology and biochemistry of thyroid hormone, and to competently diagnose, manage and provide care for patients with thyroid disease, including thyroid eye disorders during pregnancy	Knowledge: <ul style="list-style-type: none"> — disease states in terms of disorders of physiology & biochemistry of thyroid hormones and TSH — Causes of thyroid dysfunction and goiter, their diagnosis and their management — Regulations applicable to the use of radioactive iodine for thyroid disease* — Methods of diagnosis and treatment of thyroid eye disease — The influence of pregnancy on tests of thyroid function and their interpretation — Describe the implications of pregnancy for the management of thyroid disease — Local epidemiology* — Complications of therapy for thyroid diseases* — Recognize thyroid emergencies including thyroid pts in critical care* — Indications for doing ultrasound guided FNAB vs blind biopsy* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • Thyroid Clinic • PNRI rotation • Retina Rotation • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Thyroid scan plates, RAIU results • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.3 Disorders of the Thyroid Gland (cont)	Skills <ul style="list-style-type: none"> — Interpret thyroid function test and imaging results to diagnose and exclude thyroid disease and to recognise assay interferences — Demonstrate ability to diagnose and manage simple non-toxic goitre and solitary thyroid 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Thyroid Clinic • PNRI rotation • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Thyroid function test results • RAI Lab • Charts • Thyroid scan plates, RAIU results • Consultants 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: <p>Interpret the following:</p> <ul style="list-style-type: none"> • Thyroid scan (30)

	<p>nodules</p> <p>— Perform and/or refer appropriately for fine needle aspiration cytology of the thyroid and ultrasound guided FNAB</p> <p>— Use and/or refer for the use of radioisotopes to diagnose thyroid disorders</p> <p>— Use and/or refer for the use of radioisotopes in the treatment of hyperthyroidism and thyroid cancer</p> <p>— Demonstrate the ability to diagnose and manage primary and secondary hypothyroidism</p> <p>— Demonstrate the ability to manage thyroid emergencies including thyroid patients in critical care</p> <p>— Provide perioperative care for patients undergoing thyroid surgery (particularly preoperative preparation)</p> <p>— Demonstrate the ability to investigate and manage patients with thyroid eye disease</p> <p>— Demonstrate the ability to manage thyroid disorders during and after pregnancy</p> <p>— Recognition and management of Complications of therapy for thyroid diseases*</p> <p>— Patient education regarding disease process and complication/ Adverse drug reaction</p> <p>— Management of complicated</p>		<ul style="list-style-type: none"> • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Whole Body Iodine-131 Scan (8) • Thyroid ultrasound (8) <p>Perform the following :</p> <ul style="list-style-type: none"> • Aspiration and sclerotherapy of thyroid cysts, ultrasound guided fine needle aspiration biopsy of the thyroid (4) • Administration of Radioactive Iodine Ablation treatment for toxic goiter and thyroid cancer
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	thyroid cancer cases* — Interpretation of thyroid cyto-pathology report			
Subject AREA	Objectives	Learning activities	Resources	Evaluation
2.3 Disorders of the Thyroid Gland (cont)	Attitude <ul style="list-style-type: none"> — Refer appropriate patients with hyperthyroidism or benign goitre for treatment with radio-iodine or surgery — Understand the role of multidisciplinary care in the management of patients with thyroid cancer — Understand the need to refer selected patients for ophthalmological review — Anticipate complications in the management of thyroid emergencies 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Thyroid Clinic • PNRI rotation • Retina Rotation • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.4 Disorders of the Adrenal Glands To be competent to diagnose, manage and provide care for patients with adrenal disease	Knowledge: <ul style="list-style-type: none"> — The causes, investigations and treatments for disorders of the adrenal glands — Local epidemiology* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Skills <ul style="list-style-type: none"> — Perform and interpret tests of adrenal function — Demonstrate ability to investigate and provide first line 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Radiology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required

	<p>management of Cushing's Syndrome</p> <ul style="list-style-type: none"> — Demonstrate ability to investigate suspected endocrine hypertension and provide first line management for pheochromocytoma and adrenocortical hypertension — Demonstrate the ability to diagnose and manage non classical congenital adrenal hyperplasia (CAH) and provide first line management for classical CAH in adolescents and adulthood — Demonstrate ability to investigate and manage patients with suspected adrenal tumors — Provide perioperative care for patients with suspected or proven adrenal insufficiency — Explain importance of steroid replacement during intercurrent illness — Provide perioperative care for patients with suspected or proven pheochromocytoma* 	<ul style="list-style-type: none"> • Pathology 	<p>resources</p> <ul style="list-style-type: none"> • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory/testing area 	<p>procedures:</p> <p>Interpret the ff: (p.49)</p> <ul style="list-style-type: none"> • Adrenal ultrasound • Adrenal CT scan • Saline Suppression Test <p>Perform & interpret the ff:</p> <ul style="list-style-type: none"> • Two-day low dose dexamethasone suppression test • ACTH Stimulation Test • Overnight low dose & high dose Dexamethasone Suppression test • Standard High dose Dexamethasone suppression test
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.4 Disorders of the Adrenal Glands (cont)	<p>Attitudes</p> <ul style="list-style-type: none"> — Recognise the urgency of managing adrenal insufficiency — Recognise complex management issues in congenital adrenal hyperplasia especially in females and adolescents 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Radiology • Pathology 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	<ul style="list-style-type: none"> — Recognise the role of referral to appropriate specialists of those with adrenal diseases — Recognise the role of patient and carer education in the long term management of adrenal insufficiency 			
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.5 Disorders of the Gonads Diagnose, manage and provide care for patients with gonadal disorders Knowledge	Knowledge: <ul style="list-style-type: none"> • The causes of primary and secondary gonadal failure and menstrual irregularity • International and local epidemiology • State treatment strategies for gonadal failure, hirsutism, virilism, gynaecomastia, polycystic ovarian syndrome and infertility • Transgender management* (NICE TO KNOW) 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Menopause & Infertility Clinic • Pathology • Pediatric Endocrinology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Skills <ul style="list-style-type: none"> — Perform & interpret tests of the hypothalamo pit-gonadal axis — Ability to investigate and manage primary and secondary gonadal failure — Prescribe appropriately sex hormone replacement therapy to men and women — Assess, investigate & manage women with <ul style="list-style-type: none"> - hirsutism /virilism - menstrual disturbances - polycystic ovarian syndrome — Ability to investigate & manage men with gynaecomastia 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	<ul style="list-style-type: none"> — Ability to provide basic assessment and management to an infertile couple — Ability to investigate & manage common chromosomal disorders such as Turner's and Klinefelter's syndromes 			
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.5 Disorders of the Gonads Diagnose, manage and provide care for patients with gonadal disorders Knowledge (cont)	Attitude <ul style="list-style-type: none"> — Recognise the role of multidisciplinary teams and other services including genetic services in disorders of fertility and chromosome disorders — Recognise the impact of infertility on the patient and their family — Adopt non-judgemental approach to patients with gender dysphoria 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Menopause & Infertility Clinic • Radiology Elective • Pathology 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.6 Disorders of Parathyroid Glands, Calcium Disorders and Bone Diagnose, manage and provide care for patients with disorders of the parathyroid glands, calcium metabolism and bone	Knowledge: <ul style="list-style-type: none"> — Causes of hypercalcaemia and hypocalcaemia and their treatments — Screening and treatment strategies for osteoporosis — The endocrine and metabolic causes of renal stones — Int'l and local epidemiology 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Radiology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Lab results • Laboratory 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Skills <ul style="list-style-type: none"> — Ability to diagnose and manage hypercalcaemia including emergency presentations 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of

	<ul style="list-style-type: none"> — Ability to diagnose and manage hyperparathyroidism — Provide peri operative care for patient undergoing parathyroid surgery — Ability to investigate and manage hypocalcemia — Risk factors for vitamin D deficiency including dietary factors and ethnicity — Ability to diagnose and manage vitamin D deficient states — Risk factors for osteoporosis — Provide preventive care against osteoporosis — Assess and manage established osteoporosis — Assess and manage Paget's Disease of bone — identify the indications for bone biopsy — Provide care for chronic kidney disease with bone mineral dis 	<ul style="list-style-type: none"> • Radiology Elective 		<p>required procedures:</p> <p>Interpret</p> <ul style="list-style-type: none"> • Bone DXA scans
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.6 Disorders of Parathyroid Glands, Calcium Disorders and Bone (cont)	Attitude <ul style="list-style-type: none"> — Make appropriate referrals for bone densitometry and understand its value and limitations — Recognise which patients with hyperparathyroidism require referral for parathyroid surgery 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.7 Disorders of Appetite and Weight	Knowledge: <ul style="list-style-type: none"> — Endocrine and other secondary causes of obesity 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Diagnose, manage and provide care for patients with disorders of appetite and weight.	<ul style="list-style-type: none"> — The endocrine consequences of anorexia nervosa, bulimia and malnutrition (underweight and obesity)* — Medical and surgical treatment options for obesity — Epidemiology* 	<ul style="list-style-type: none"> • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic 		<ul style="list-style-type: none"> • Conference Evaluation • Quarterly written and bi-annual oral examinations
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.7 Disorders of Appetite and Weight (cont)	Skills <ul style="list-style-type: none"> — Diagnose, manage and provide care for patients with disorders of appetite and weight — Demonstrate the ability to investigate the obese patient in order to exclude endocrine causes — Demonstrate the ability to initiate management of the obese patient — Manage endocrine and weight problems of post bariatric patients * 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Attitude <ul style="list-style-type: none"> — Recognise which patients require consideration for referral for surgery for management of obesity — Recognise the importance of multidisciplinary team management of patients with eating disorders — Exhibit non judgemental attitudes to patients with obesity and eating disorders 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject Area	Objectives	Learning activities	Resources	Evaluation
2.8 Miscellaneous Endocrine and Metabolic Disorders Diagnose and provide first line care for patients with rarer endocrine conditions such as hypoglycaemia, neuroendocrine tumours and ectopic hormone production.	Knowledge: <ul style="list-style-type: none"> — Causes of and investigations of possible hypoglycemia — Causes of and investigations of neuroendocrine tumors and ectopic hormone production — Causes and investigations of electrolyte disturbances — Features of multiple endocrine neoplasia syndromes — Possible long term endocrine consequences of treatments for cancer — Causes of and investigations of post-trauma endocrine problems * 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Radiology Elective • Pathology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory • Radiology 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Objectives Skills <ul style="list-style-type: none"> — The ability to investigate patients with suspected hypoglycaemia — The ability to diagnose and provide first line care for neuropeptide secreting tumours — Ability to investigate and manage hypo and hypernatraemia — Ability to investigate and manage disorders of potassium homeostasis — Ability to investigate and manage disorders of magnesium homeostasis 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Radiology Elective • Pathology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory Radiology 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: <p>Interpret the ff:</p> <ul style="list-style-type: none"> • Insulin Tolerance Test • 72 hour fast

	<ul style="list-style-type: none"> — Ability to diagnose and manage syndromes of ectopic hormone production (e.g. PTHrP, ACTH, ADH) — Ability to diagnose and manage syndromes of multiple endocrine neoplasia (MEN 1, 2a, 2b) - including an understanding of genetic testing and strategies for long term monitoring — Ability to investigate and manage the 'late endocrine effects' of treatment for cancer — Recognise, investigate and manage disorders of insulin resistance 			
Subject Area	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> — Recognise the need to refer to specialist services for complex endocrine disorders — Recognise the role for genetic services in the management of potentially inherited endocrine disorders — Recognise the role of multidisciplinary team approach in managing complex endocrine disorders e.g. ectopic hormone production and neuroendocrine tumours 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Radiology Elective • Pathology Elective • Multidisciplinary Conferences 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

Subject Area	Objectives	Learning activities	Resources	Evaluation
2.9 Imaging Techniques in Endocrinology Demonstrate understanding of the role and interpretation of imaging techniques in the diagnosis and management of endocrine disease.	Knowledge: <ul style="list-style-type: none"> — The role of imaging in the investigation and management of a wide spectrum of endocrine disorders — Normal anatomy of the endocrine system* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine • Diabetes Clinic • Thyroid Clinic • Menopause & Infertility Clinic • Radiology Elective 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory • Radiology 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations
	Skills <ul style="list-style-type: none"> — Make appropriate referrals for CT and MR scans of pituitary, adrenals orbits and other organs — Make appropriate referrals for ultrasonography of the ovaries, parathyroids and thyroid — Make appropriate referrals for radionuclide scans of the adrenals, parathyroids and thyroid — Make appropriate referrals for angiography with selective catheterisation and sampling from endocrine glands — Interpretation of basic imaging techniques in endocrinology* 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Diabetes Clinic • Thyroid Clinic • Menopause & Infertility Clinic • Radiology Elective • Nuclear medicine rotation 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Internet resources • Journals • Clinics • Audio-visual materials • Laboratory results • Laboratory • Radiology • CT/MRI/ PET Scan plates 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Completion of required procedures: <p>Interpret the ff:</p> <ul style="list-style-type: none"> • Skull X-rays (4) • Pituitary CT scan (4) • Pituitary MRI (2) • Thyroid ultrasound (8) • Adrenal ultrasound (4) • Adrenal CT scan (2) <p>Nuclear imaging</p> <ul style="list-style-type: none"> • Thyroid tc99m/I131 • Parathyroid imaging • I-131 whole body scan • MIBG scans

	— Interpretation of results of adrenal vein and petrosal vein sampling*			
Subject Area	Objectives	Learning activities	Resources	Evaluation
2.9 Imaging Techniques in Endocrinology Demonstrate understanding of the role and interpretation of imaging techniques in the diagnosis and management of endocrine disease.	Attitude — Consult colleagues about the interpretation of radiological investigations — Act appropriately upon receipt of radiological results	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • General Endocrine Clinic • Diabetes Clinic • Thyroid Clinic • Menopause & Infertility Clinic • Radiology Elective 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

3. Common Competencies

Subject Area	Objectives	Learning activities	Resources	Evaluation
3.1 Research To understand the principles of research and research governance	Demonstrate Knowledge of: <ul style="list-style-type: none"> The principles of research administration The differences between audit and research General Research ethics principles The principles of qualitative, quantitative, bio-statistical and epidemiological research methods Principles of good clinical practice (GCP) for clinical research 	<ul style="list-style-type: none"> Didactic conferences Research Conferences Journal Club Fellows research forum Research workshops		<ul style="list-style-type: none"> Conference Evaluation Research proposal & completed study
	Objectives	Learning activities	Resources	Evaluation
	Skills <ul style="list-style-type: none"> Develop critical appraisal skills and apply these when reading literature Demonstrate the ability to write a scientific publication Demonstrate good verbal and written presentations skills 	<ul style="list-style-type: none"> Research Conferences Journal Club Fellows research forum Research workshops <ul style="list-style-type: none"> Research protocol proposal and actual conduct of research 		<ul style="list-style-type: none"> Conference Evaluation Research proposal & completed study
	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> Follow guidelines on ethical conduct in research and consent for research 	<ul style="list-style-type: none"> Research protocol proposal and actual conduct of research 		<ul style="list-style-type: none"> Research proposal & completed study

	Objectives	Learning activities	Resources	Evaluation
3.2 Evidence and Guidelines To develop the ability to construct evidence based guidelines and protocols and make optimal use of best evidence in making decisions about the care of patients	Demonstrate Knowledge of: <ul style="list-style-type: none"> • The application of statistics in scientific medical practice • The role and limitations of evidence in the development of clinical guidelines and protocols • The processes that result in nationally applicable guidelines (e.g. NICE and SIGN) 	<ul style="list-style-type: none"> • Didactic conferences • Research Conferences • Journal Club Fellows research forum Research workshops		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Quarterly written and bi-annual oral examinations • Research proposal & completed study
	Skills <ul style="list-style-type: none"> • Demonstrate the use of literature databases • Appraise and apply retrieved evidence to address a clinical question 	<ul style="list-style-type: none"> • Research Conferences • Journal Club Fellows research forum Research workshops Research protocol <ul style="list-style-type: none"> • proposal and actual conduct of research 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation • Research proposal & completed study
	Attitude <ul style="list-style-type: none"> • Keep up to date with national reviews and guidelines of practice (Philippine & Int'l) • Contribute to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine • Recognise the occasional need to practise outside clinical guidelines 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Research Conferences • Journal Club Fellows research forum Research workshops		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	Objectives	Learning activities	Resources	Evaluation
3.3. Teaching and Training To develop the ability to teach or train a variety of different audiences in a variety of different ways with appropriate assessments	Demonstrate Knowledge of: <ul style="list-style-type: none"> • Adult learning principles relevant to medical education • Techniques for effective appraisal and performance review • Identification of learning methods and effective learning objectives and outcomes • The role of workplace-based assessments • The appropriate local course of action to assist a trainee experiencing difficulty in making progress within their training programme 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Diabetes Clinic • Thyroid Clinic 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation
	Skills <ul style="list-style-type: none"> • Provide effective after teaching, and promote learner reflection • Demonstrate effective lecture, presentation, small group and bed side teaching skills • Participate in strategies aimed at improving patient education e.g. talking at support group meetings • Be able to lead departmental teaching programmes including journal clubs • Recognise the trainee in 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds • Didactic conferences • Case Conferences • Journal Club • Inter-hospital conference • General Endocrine Clinic • Diabetes Clinic • Thyroid Clinic 		<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Conference Evaluation

	difficulty and take appropriate action including where applicable relevant referral to other services			
	Attitude <ul style="list-style-type: none"> Balance the needs of service delivery with education Demonstrate willingness to teach trainees and other health and social workers in a variety of settings to maximise effective communication and practical skills and to improve patient care Maintain honesty and objectivity during appraisal and assessment Show willingness to participate in workplace-based assessments and demonstrate a clear understanding of their purpose Show willingness to take up formal training as a trainer and respond to feedback obtained after teaching sessions 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Didactic conferences Case Conferences Journal Club Inter-hospital conference General Endocrine Clinic Diabetes Clinic Thyroid Clinic 		<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient Conference Evaluation
	Objectives	Learning activities	Resources	Evaluation
1.11 Principles of Medical Ethics & Confidentiality and Consent To know, understand and apply appropriately	Demonstrate Knowledge of: <ul style="list-style-type: none"> The principles of medical ethics The principles of data protection, freedom of information and 	<ul style="list-style-type: none"> Supervised Patient care Clinical teaching rounds Didactic conferences Research Conferences Journal Club Fellows research forum 	<ul style="list-style-type: none"> Patients Charts Consultants Textbooks Clinics Internet 	<ul style="list-style-type: none"> Clinical Evaluation – OPD & inpatient Research proposal & completed study

the principles, guidance and laws regarding medical ethics and confidentiality	information governance <ul style="list-style-type: none"> • The problems posed by disclosure in the public interest, without patient's consent • The role and legal standing of advance directives • The importance of the patient's level of understanding and mental state (and also that of the parents, relatives or carers when appropriate) and how this may impair their capacity for informed consent 	<ul style="list-style-type: none"> • Research workshops • Good Clinical Practice workshops 	<ul style="list-style-type: none"> • Journals • Workshop venue & materials 	
	Objectives	Learning activities	Resources	Evaluation
	Skills <ul style="list-style-type: none"> • Use and share information with the highest regard for confidentiality, and encourage such behaviour in other members of the team • Outline and follow the guidance given by GCP on confidentiality • Counsel pts on the need for information distribution within members of the immediate healthcare team 	<ul style="list-style-type: none"> • Supervised Patient care 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks • Clinics • Internet • Journals • GCP document 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Research proposal & completed study
	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> • Encourage informed ethical reflection in others • Show willingness to seek advice of peers, legal bodies, and the GMC in the 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Textbooks 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient • Research proposal & completed study

	<p>event of ethical dilemmas over disclosure and confidentiality</p> <ul style="list-style-type: none"> • Respect patient's requests for information not to be shared, unless this puts the patient, or others, at risk of harm • Show willingness to share information about their care with patients, unless they have expressed a wish not to receive such information • Respect a patient's rights of autonomy even in situations where their decision might put them at risk of harm • Not withhold information relevant to proposed care or treatment in a competent patient • Seek to obtain consent only for those procedures, which the trainee is competent to perform, in accordance with advice of a consultant • Obtain a second opinion, senior opinion, and legal advice in difficult situations of consent or capacity • Inform a patient and seek alternative care where personal, moral or religious belief prevents a usual professional action 			
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	Objectives	Learning activities	Resources	Evaluation
1.7 Team Work, Communication and Leadership To develop the skills necessary to make teams more effective and better able to deliver better care	<ul style="list-style-type: none"> • Demonstrate Knowledge of: • The components of effective collaboration and team working • The roles and responsibilities of members of the healthcare team • Ways in which individual behaviours impact on others: personality types, group dynamics, learning styles, leadership styles • The role of team dynamics in the way a group, team or department functions 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient
	Objectives	Learning activities	Resources	Evaluation
	Skills <ul style="list-style-type: none"> • Demonstrate leadership and provide supervision in education and training of junior colleagues and other members of the healthcare team • Effective handover of care between shifts and teams • Lead and participate in interdisciplinary team meetings and understand your role within that team • Prevent and resolve conflict within the team, providing feedback and rectify team dysfunction • Encourage staff to develop and exercise their own leadership skills 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

	Objectives	Learning activities	Resources	Evaluation
	Attitude <ul style="list-style-type: none"> • Encourage an environment that is open to exploring concerns about the safe working of the team • Recognise the importance of induction for new members of a team • Recognise the importance of prompt and accurate information sharing with other team members including Primary Care • Respect the skills and contributions of colleagues • Maintain confidentiality where appropriate within team discussions 	<ul style="list-style-type: none"> • Supervised Patient care • Clinical teaching rounds 	<ul style="list-style-type: none"> • Patients • Charts • Consultants • Clinics • Audio-visual materials 	<ul style="list-style-type: none"> • Clinical Evaluation – OPD & inpatient

I. TEACHING-LEARNING ACTIVITIES:

A. SUPERVISED PATIENT CARE

B. CLINICAL TEACHING ROUNDS

C. CONFERENCES

One a week conference, 2 hours, at least 2 consultants (training core) attending

- Didactic conferences – minimum of 1x a month
- Case Conferences – minimum of 1x a month
- Research Conferences or research updates– once a quarter
- Journal Club – once a quarter
- Inter-hospital conference – each fellow will present once during the senior year
- Fellows research forum
- Research workshops including GCP Workshops

D. OPD CLINICS AND IN-PATIENT ROTATIONS

1. General Endocrine – 25 new cases, 50 follow-up cases
2. Diabetes Clinic – 100 new cases; 100 follow-up cases
3. Thyroid Clinic - 100 new cases; 100 follow-up cases

E. ROTATIONS

1. Nuclear Endocrine - Philippine Nuclear Research Institute (PNRI)
2. Retina Clinic (Medical retina subspecialty clinics of Ophthalmology)
3. Menopause and Infertility Clinics (Reproductive endocrinology)

F. ELECTIVES

1. Radiology
2. Pathology
3. Pediatric Endocrinology
4. Nutrition
5. Osteoporosis/Bone Clinic
6. Obesity/Weight Management

II. EVALUATION


- Clinical Evaluation – OPD & inpatient
- Conference Evaluation
- Quarterly written and bi-annual oral examinations
- Research proposal & completed study
- Completion of required procedures

SKILLS/DIAGNOSTIC TESTS:

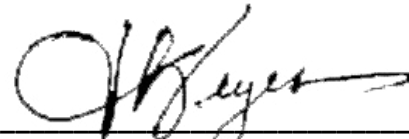
Test	Good to Know (Core competency)	Nice to Know
OGTT- 75 gm (non-pregnant)	Interpret results	
OGTT-75 gm (pregnant)	Interpret results	
OGTT- 100 gm	Interpret results	
Insulin assay	Interpret results	
Thyroid ultrasound	Observe & interpret	Perform
Thyroid scintigraphy (scan)	Observe & interpret	
Radioactive-iodine uptake	Observe & interpret	
Fine needle aspiration of thyroid nodules (blind or ultrasound-guided)	Perform & interpret	Perform US guided
1-mg overnight dexamethasone test	Perform & interpret	
2-day low dose dexamethasone suppression test	Perform & interpret	
2-day LDDST with CRH (for pseudo Cushing's)		Perform
Localization tests for Cushing's		
Baseline ACTH level	Perform & interpret	
Overnight High dose DST	Perform & interpret	
Standard 48 hr High dose DST	Perform & interpret	
Inferior petrosal sampling		Observe & interpret
CRH stimulation test		Perform & interpret
8-am or Random cortisol test	Perform & interpret	
Glucose suppression of Growth Hormone	Perform & interpret	
Bone densitometry/DEXA	Observe & interpret	
48-hr fast for insulinoma	Perform & interpret	
Insulin tolerance test (hypoglycemia)		Perform & interpret
Water Deprivation test for Diabetes Insipidus	Perform & interpret	
Saline Suppression Test for primary hyperaldosteronism	Perform & interpret	
Bilateral adrenal vein sampling		Observe & interpret results
Clomiphene test		Perform & interpret
Direct/indirect ophthalmoscopy (funduscopy)	Perform & interpret- at least 5 supervised by ophthalmologist	

Others		
Low dose ACTH Stimulation test for Adrenal Insufficiency	Perform & interpret	
High dose ACTH Stimulation test for Adrenal Insufficiency	Perform & interpret	
Congenital adrenal hyperplasia		Perform & interpret
SESTAMIBI SCAN	Interpret	
US, MRI, CT, PET	Interpret	
Primary Aldosteronism / Primary Renin Activity determination	Interpret	

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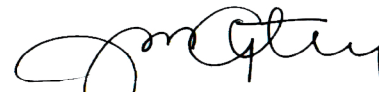
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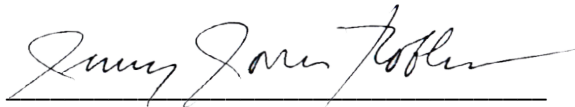
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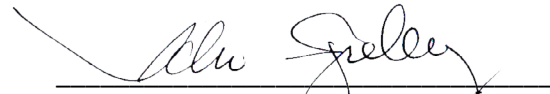
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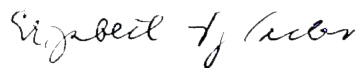
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