SPECIALTY TRAINING CURRICULUM

FOR

Endocrinology & Diabetes Mellitus

MAY 2007

Joint Royal Colleges of Physicians Training Board

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1. RATIONALE

1.1 Aim The overall aim of the training programme in Diabetes and Endocrinology is to produce specialist practitioners who will:

1. Show appropriate attitudes and communication skills in dealing with colleagues and patients.
2. Apply sound understanding of the biological and behavioural sciences and skill in diagnosis and management to ensure safe independent practice.
3. Establish a differential diagnosis for patients presenting with diabetes/endocrine disease by appropriate use of a clinical interview, physical examination and investigations.
4. Are competent in performing the core investigations of the specialty.
5. Can develop a management plan for 'the whole patient' and have sound knowledge of the appropriate treatments including health promotion, disease prevention and long term management.
6. Use life-long learning skills to keep their expertise up to date
7. Have the qualities of a teacher, team worker and leader
8. Manage time and resources to the benefit of their patients and colleagues
9. Practice medicine in accordance with the General Medical Council document 'Good Medical Practice'.

1.2 Responsibility for the curriculum

The Medical Director of the JRCPTB is responsible for the curriculum

The curriculum contents were chosen by a sub group of the SAC in Endocrinology and Diabetes Mellitus after extensive consultation with Regional Specialty Advisors, trainees, local training committees, and specialist societies. The curriculum was finally agreed by the SAC, the membership of which is as below. There was an extensive involvement of teachers and trainees in the consultation process. The curriculum builds upon core elements in the medical training programme for post foundation years and is appropriate for those doctors seeking specialty accreditation in endocrinology and diabetes.

Professor R W Bilous; Professor JA Franklyn; Dr A W Patrick; Professor JMC Connell; Dr I A MacFarlane; Dr SR Page; Dr DF Wood; Dr CN Dang; Professor DD Gallen; Dr PM Bell; Dr NJ Morrish.

1.3 Entry requirements

Applicants for medical specialist training will have satisfactorily completed and obtained the competencies of the Foundation training programme, the evidence being full registration with the General Medical Council and a certificate of completion of Foundation training or equivalent.

The curriculum is appropriate for trainees preparing to practise as independent

consultants in Endocrinology and Diabetes Mellitus in the UK. Integration of the curriculum into the trainee's stage of learning is described in more detail in below.

Trainees commencing specialist training in Endocrinology and Diabetes Mellitus will have achieved acute medicine level 1 competency after progressing through core medical training rotations in the speciality of medicine. This would normally require a minimum of 1 but typically 2 years of training in acute medicine following the F2 foundation year. Some candidates may attain acute medicine level 1 competency through the Acute Care Core Stem (ACCS) programme. Further candidates may achieve this competence after a variable period in other training programmes in a different area of clinical practice, because of alteration of their career plans or failure to enter the programme at the first attempt.

Patients expect medical specialists to be highly competent, knowledgeable and intelligent, good communicators, professional, compassionate and committed to their speciality. For this reason, adequate evidence of successful completion of core training in accordance with the requirements of the Joint Committee on Higher Medical Training of the Royal Colleges of Physicians is essential.

1.4 Duration and Organisation of training

Although this curriculum is competency based, the duration of training must meet the European minimum of 3 (three)years for post registration in full time training adjusted accordingly for flexible training (EU directive 93/16/EEC requires that flexible training can be no less than 50% whole time equivalent). The SAC has advised that training from ST1 will usually be completed in 6 (six) years in full time training for trainees not wishing to obtain acute and internal medicine competencies to level 2, but since many trainees will seek to acquire these additional competencies to enable them to be certificated in acute medicine, more usually training will be completed in 7 (seven) years.

There will be a record of training either written or electronic which will identify the components of training set out in the curriculum and will facilitate the recording of their completion, evidence of reflective learning and of the achievement of the prescribed competencies. Trainers will countersign the record and it will play an important part in the process of annual assessment.

1.5 Flexible Training

Trainees who are unable to work full-time are entitled to opt for flexible training programmes. EC Directive 93/16/EEC requires that:

1. Part-time training shall meet the same requirements as full-time training, from which it will differ only in the possibility of limiting participation in medical activities to a period of at least half of that provided for full-time trainees;

2. The competent authorities shall ensure that the total duration and quality of

part-time training of specialist are not less than those of full-time trainees.

The above provisions must be adhered to. Flexible trainees should undertake a pro rata share of both in normal working hours and out of hours duties (including on-call and other out of hours commitments) required of their full-time colleagues in the same programme and at the equivalent stage.

Funding for flexible trainees is now from deaneries and these posts are no longer supernumerary. Ideally therefore 2 flexible trainees should share one post to provide appropriate service cover.

1.6 Research and critical appraisal

Trainees who wish to acquire extensive research competencies, in addition to those specified in the generic element of the curriculum, may undertake a research project as an ideal way of obtaining those competencies, all options can be considered including taking time out of programme to complete a specified project or research degree. Time out of programme needs prospective approval from the SAC and the support of the Postgraduate Dean. Funding will need to be identified for the duration of the research period. A maximum period of 3 years out of programme is allowed.

1.7 Dual Accreditation

Trainees may wish to dually train and accredit in Endocrinology and Diabetic Medicine and General Internal Medicine (Acute) to achieve two CCTs. In this case they must have applied for and successfully entered a training programme which was advertised openly as a dual training programme. This programme will need to achieve the competencies as described in both curricula and there must be agreed assessments (proposed by both SACs in Endocrinology and Diabetic Medicine and GIM (Acute), and approved by PMETB). These assessments will be those blueprinted to both curricula. It is expected that a number of assessments will be shared without a need for the trainee to repeat them separately for both curricula. Postgraduate deans wishing to advertise such programmes should ensure that they meet the requirements of both SACs.

2. CONTENT OF LEARNING

2.1 Scope of the curriculum

The scope of the specialty curriculum is from Specialty Training year 3 to Certificate of Completion of Training illustrated in the diagram below. It will follow a period of core training - specialty training years 1 and 2. Presently the specialty training will apply to specialist registrars, but from 2007 and following implementation of "Modernising Medical Careers" it will apply to specialty trainees years 3 and onwards.

Generic Curriculum

This specialty curriculum is complementary to the generic curriculum which applies to all 28 physicianly specialities. The generic curriculum follows the headings of good medical practice and runs through from core training to CCT (see fig 1). Trainees should read and understand both their specialty curriculum and the generic curriculum. Both curricula should be seen as integrated so that generic competencies are acquired at all stages of specialty training. Some generic components are also further expanded and deepened for some specialties (eg palliative medicine). When planning specialty programmes, deaneries and trainers should ensure that both specialty and generic competencies can be acquired and assessed.

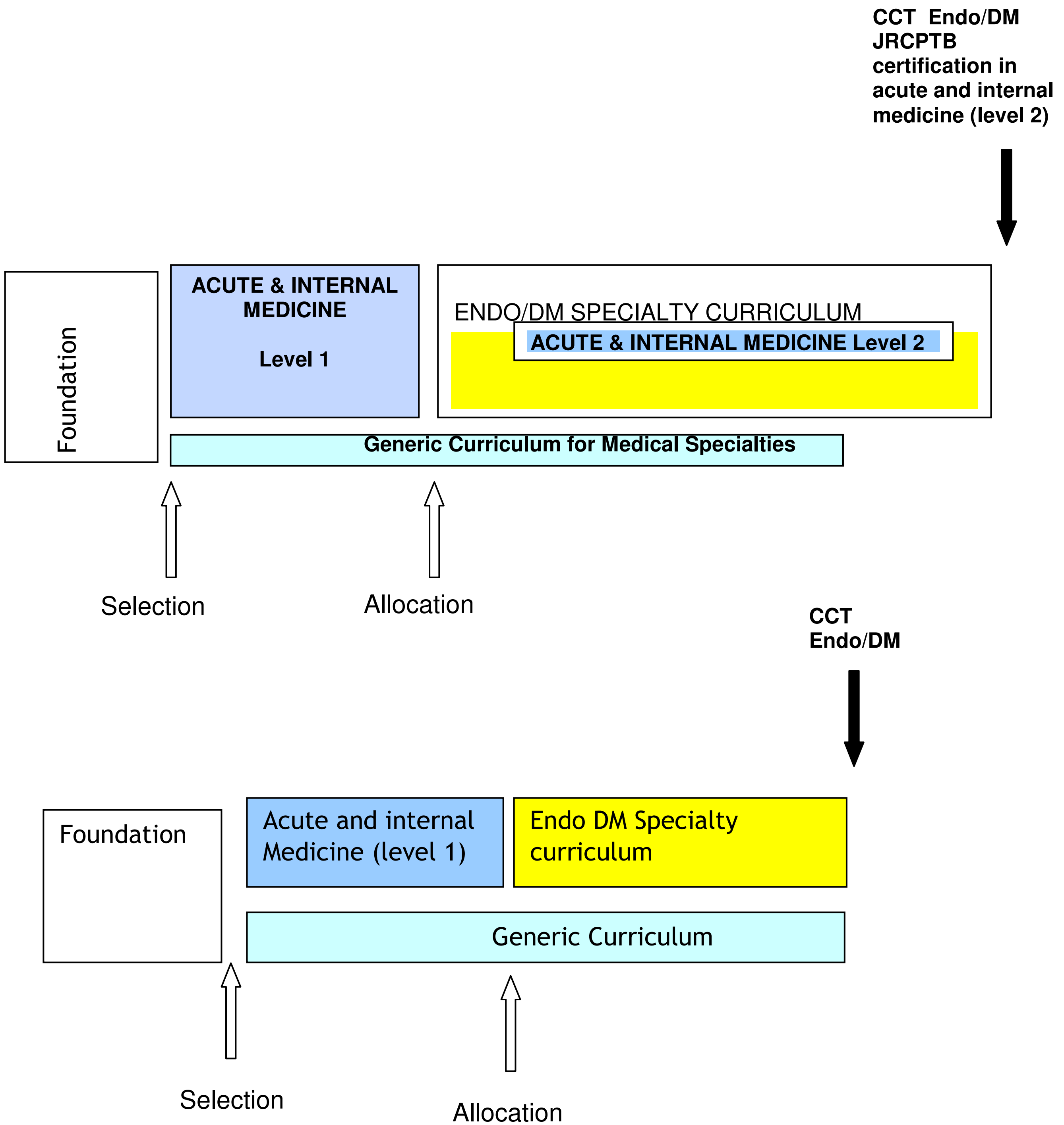
General Internal Medicine (Acute) curriculum

The new curriculum for General Internal Medicine (Acute) is split into 3 parts.

Level one competencies will be achieved by all physicianly trainees during core training (core medical training – CMT or acute care common stem – ACCS) and must be achieved before progression to specialty training.

To participate in the acute medical take and to be responsible for the care of unselected acutely ill patients as a senior medical appointment a clinician requires a CCT in a medical specialty, such as endocrinology and diabetes mellitus, and a certificate in GIM (Acute). The Level 2 GIM (Acute) training programme ensures a trainee's ability to provide acute medical care in the acute setting. Upon successful attainment of Level 2 competencies, the trainee will be certificated in GIM (Acute). The SAC in acute and general medicine has advised that it will generally be necessary for a trainee to spend a further two years in general and acute medicine from entry into ST3 in order to deliver the competencies required, for instance a dedicated period of acute medicine may deliver these competencies, or alternatively training in the specialty can continue in parallel with exposure to acute medicine.

Level 3 competencies will usually only be achieved by those wishing to CCT in GIM (acute) medicine and practice as an acute physician.



CCT Endo/DM
JRCPTB
certification in
acute and internal
medicine (level 2)
Foundation
ACUTE & INTERNAL MEDICINE
Level 1
ENDO/DM SPECIALTY CURRICULUM
ACUTE & INTERNAL MEDICINE Level 2
Generic Curriculum for Medical Specialties
Selection
Allocation
CCT
Endo/DM
Foundation
Acute and internal Medicine (level 1)
Endo DM Specialty curriculum
Generic Curriculum
Selection
Allocation

2.2 Subject matter

The CCT in Endocrinology and Diabetes Mellitus will be awarded following evidence of satisfactory completion of the curriculum, as evidenced by acquisition of RITA (Record of In-Training Assessment) form G.

Following completion of training and having been awarded a CCT in Endocrinology and Diabetes Mellitus the curriculum will also have prepared the doctor to:

- Embrace and maintain Continuing Professional Development;
- Engage with appraisal and revalidation;
- Review knowledge, skills, attitudes and behaviours in the light of Good Medical Practice;

The curriculum sets out the knowledge skills and expertise that we would expect a trainee to achieve as a pre-requisite for CCT. The sequence of learning and experience will vary according to the structure of local training programmes and opportunities for trainees in individual posts. However, as a general principle generic skills and expertise will predominate in the earlier stages of training and more specialty based knowledge skills and expertise later on.

The content of the curriculum and the teaching/learning methods described, were chosen by the Specialist Advisory Committee (SAC) in Endocrinology & Diabetes Mellitus. Regular meetings were held by the SAC involving all relevant stakeholders (guidance was given by the Joint Committee on Higher Medical Training (now Joint Royal Colleges of Physicians Training Board) and officials from PMETB). The curriculum was drawn up by the SAC and submitted for approval by the JRCPTB. The majority of the SAC members are teachers, trainers or trainees in the specialty (listed in Paragraph 1b above).

The competencies to be achieved as described within the curriculum build upon the core training achieved in specialty training years 1 and 2. Core training competencies build upon foundation training. The curriculum describes the level of achievement expected from each of the years of training and how competency is attained and assessed.

2.3 Learning Objectives

By the end of training, trainees should have the requisite knowledge of, skills in, and attitudes towards the situations listed in order to manage:

- Newly presenting disease in the outpatient and inpatient hospital settings in a way that restores health and well-being efficiently and effectively.
- The long term care of patients in a way that minimises the impact on health and optimises long-term disease outcomes.
- Risk factors for a poor outcome, for example: hypertension, smoking, obesity, and hyperlipidaemia.
- Emergencies and short-term loss of disease control in a hospital setting in order to minimise the period of hospital admission while making efficient use of resources.

- Disease pre-dating or newly arising in pregnancy in both the outpatient and in-patient settings to optimise maternal and foetal outcomes.
- Adolescent, adult and elderly inpatients and outpatients.
- Screening for, and the prevention and treatment of, complications to optimise intermediate and final health outcomes.
- The application of nationally accepted guidelines in their own practice.
- 'The whole patient' taking account of personal, social and cultural as well as biomedical factors.
- Social and professional implications such as restrictions on driving and certain types of employment or activity
- Clinical services at department, hospital, district and population level in a way that makes efficient and effective use of resources to optimise health outcomes

1.Diagnosis and general management of diabetes mellitus Trainees must be able to:

Objective	Knowledge	Skills	Attitudes
Provide care and manage patients with established diabetes	Define the diagnostic criteria for diabetes and identify the different types.	Educate patients in the appropriate use of insulin syringes, injection pens, home blood glucose monitoring & urinalysis	Understand concerns arising from the diagnosis and provide advice in a non-judgemental manner
Communicate the implications and consequences of the diagnosis in the longer term	Describe the principles of life style management.	Give advice about the avoidance, recognition, correction and implications of hypoglycaemia	Recognise the central role of the patient in managing their disease
	Describe the available oral hypoglycaemic agents and define their use.	Give advice about the appropriate use of oral hypoglycaemic agents individually and in combination	
	Describe the range of available insulins and their delivery systems (including pumps) and define their use.	Give advice on the indication for insulin initiation, different regimen options, and dose adjustment.	
	Describe the range of monitoring systems for home blood and urine glucose monitoring.	Advise about employment, driving, exercise, weight control, smoking and family planning	
		Give preventative advice with regard to microvascular, neurological and macrovascular complications	
		Detect complications of diabetes and their associated risk factors	
		Personalise treatment goals based upon national therapeutic targets whilst recognising the individual patients' circumstances.	Recognise the role of carers and carer education in diabetes management
	Demonstrate awareness of structured education programmes such as DAFNE and DESMOND	Refer for structured education appropriately	

2. Management of delivery of diabetes care

Objective	Knowledge	Skills	Attitudes
Understand different models of delivery of diabetes care	Describe different settings in which diabetes care can be delivered	Discuss different models of diabetes care delivery e.g. in primary care and secondary care	Recognise the importance of multidisciplinary team working
	Understand the factors which influence commissioning diabetes care within the NHS	Describe the commissioning process for diabetes care and its relationship to other NHS initiatives	Recognise the value of working care and primary/2nd care interface in diabetes management
	Describe which aspects of clinical diabetes care can appropriately be delivered in different clinical settings	Select appropriate patient groups for management in different settings e.g. primary, secondary care and multidisciplinary subspecialty clinics	
	Understand the role of local initiatives in delivering integrated diabetes care	Describe the processes required to develop local initiatives e.g. diabetes databases, managed clinical networks and diabetes advisory groups.	

3. Diabetic Emergencies Trainees must be able to:

Objective	Knowledge	Skills	Attitude
Manage hypoglycaemic and metabolic decompensation and advise about future prevention	Diagnose and distinguish between the types of diabetic hyperglycaemic metabolic emergency.	Diagnose, distinguish and institute appropriate management for the main types of hyper and hypoglycaemic metabolic emergency.	Recognise the urgency of hyper and hypoglycaemic metabolic emergencies.
	Identify patients with hypoglycaemia unawareness and advise them accordingly	Give advice about future prevention of hyper and hypoglycaemic metabolic emergencies.	Recognise patient factors which may contribute to recurrent hyper or hypoglycaemic metabolic emergencies.
	Diagnose and manage severe hypoglycaemia and advise about future prevention	Evaluate hypoglycaemic unawareness and advise patients accordingly.	Recognise the impact of hypoglycaemia and hypoglycaemic unawareness on the lifestyle of patients and their families and carers.

4. Management of diabetic patients during acute illness or surgery

The trainee must be able to:

Objective	Knowledge	Skills	Attitude
Manage diabetic patients during acute illness or surgery	Describe the impact of acute illness and / or surgery on glycaemia and the implications /effects on current diabetes management.	Demonstrate how to manage the different types of diabetes peri-operatively and during acute illness	Recognise the need for specialist diabetes care in different clinical environments.
		Supervise and advise other medical teams in the management of all types of diabetes peri-operatively and during acute illness	

5**. Conception and pregnancy in diabetes:** In order to optimise the outcome of pregnancy, trainees must be able to:

Competency:	Knowledge	Skills	Attitude
Manage pre-conception, conception, pregnancy in the diabetic woman in order to optimise the outcome.	Describe the importance of pre-conceptual preparation for pregnancy in the pre-gestational diabetic woman.	Discuss the importance of diabetes in pregnancy and the need for family planning in fertile women of all ages	Recognise that many women have difficulty in achieving glycaemic targets prior to conception
	Define the effect of diabetes on the pregnant woman and her foetus.	Advise women about the potential risks of diabetic pregnancy, including progression of complications	Exhibit a non judgemental attitude on women who present in established pregnancy with no pre-conceptual care
	Describe the effect of pregnancy on diabetes management and glycaemia	Optimise glycaemic and blood pressure control prior to and throughout pregnancy	Consult and work with obstetric and midwifery colleagues in the joint management of diabetic pregnancy.
	Recognise the risk factors for and define the diagnosis of gestational diabetes based upon current criteria	Manage other aspects of pregnancy such as folate supplements and rubella vaccination	
		Diagnose and manage gestational diabetes	
		Deliver ante-natal 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 in order to mature foetal lungs	

6. Age related conditions and diabetes

6.1. Young people The trainee must be able to:

Objective	Knowledge	Skills	Attitudes
Demonstrate awareness of how diabetes affects children	Outline the effect of diabetes on normal growth and development in young children	Provide care to young persons with diabetes before and during transition to the adult service.	Recognise the potentially negative effects on adolescent behaviour on diabetes and the potential impact it may have on family and personal relationships
Provide care to young persons with diabetes in transition to the adult service	Describe the physiological, psychological and social factors affecting glycaemic control in adolescence.	Identify common risk taking behaviour in young persons and its effects on diabetes	Exhibit a non judgemental attitude in addressing these problems.
Respond to the physiological, psychological and social problems maintaining glycaemic control in adolescence			

6.2 Elderly people

Objective	Knowledge	Skills	Attitude
Provide care and manage elderly patients with diabetes	Identify the potential effects of co-morbidities associated with ageing on diabetes treatments and control.	Adapt therapeutic targets and diabetes treatment regimens to the individual patient taking account of co-morbidities.	Recognises that diabetes management and therapeutic targets may need adjustment in elderly patients with co-morbidity.
		Manage the specific social and medical needs of elderly patients in the community with diabetes	
		Advise about the care of older people in residential care	

7. Complications of diabetes Trainees must be able to:

7.1. Screening:

Objective	Knowledge	Skills	Attitude
Understand the principles and practice of screening for diabetic complications	Describe the principles and practice of screening	Practice effective strategies in order to implement a screening programme for diabetes complications	Recognise the criteria for urgent referral for diabetes complications when identified.

7.2. Macrovascular disease

Objective	Knowledge	Skills	Attitude
Identify and manage risk factors for macroangiopathy	Define the importance of hyperglycaemia as a risk factor for macro angiopathy	Manage glycaemia and other modifiable risk factors for macro-angiopathy	Recognise when to refer patients for further specialist investigation and treatment (eg Cardiology, Vascular surgery)
Identify, investigate, treat and make appropriate referrals for patients with macrovascular disease	Identify other risk factors for macro-angiopathy including elements of the so-called metabolic syndrome	Investigate and manage diabetic patients with established macrovascular disease	
Manage diabetic patients suffering acute myocardial infarction or stroke	Describe the available treatments for non glycaemic risk factors for macro-angiopathy	Manage diabetic patients suffering acute myocardial infarction and stroke	
Diagnose and manage heart failure in diabetes	Describes the presenting features of cerebrovascular, cardiovascular and peripheral vascular disease.		

7.3. Eye disease in diabetes

Objective	Knowledge	Skills	Attitude
Practice primary prevention of diabetic eye disease	Describe how diabetes can affect different parts of the eye	Discuss the importance of glycaemic control and blood pressure management of diabetic eye disease	Recognise the importance of retinal screening and contribute to local diabetic retinopathy screening programmes
Diagnose cataract, and all grades of severity of retinopathy using direct ophthalmoscopy	Describe the pathogenesis and different stages of diabetic retinopathy	Diagnose cataract, the different stages of retinopathy and other ocular disorders associated with diabetes using a direct ophthalmoscope	Recognise the impact of diabetes eye complications on patients life style
Interpret retinal photographs	Explain the importance of visual acuity testing and retinal screening	Interpret retinal photographs	Recognise the types of diabetic eye complications which need urgent ophthalmology referral
Identify other ocular disorders associated with diabetes	Explain the available treatments for eye complications	Perform and interpret visual acuity testing	
Perform and interpret visual acuity testing	Explains the implications of eye complications on driving / employment	Communicate the treatments available for eye complications to patients and communicate the implications of eye complications on driving / employment and advises patients accordingly	
Refer the appropriate patients for ophthalmological assessment	Outline the structure of a retinal screening programme		

7.4. Renal disease and hypertension in diabetes

Objective	Knowledge	Skills	Attitude
Diagnose nephropathy and distinguish between microalbuminuria and clinical nephropathy	Describe how diabetes can affect different parts of the kidney	Diagnose nephropathy and distinguish between its different stages (early / late)	Recognise the importance of early referral to nephrology services for multidisciplinary team assessment in preparation for renal replacement therapy
Advise/counsel patients about the significance of nephropathy	Describe the pathogenesis and different stages of diabetic nephropathy	Communicate the significance of a diagnosis of nephropathy to patients	Recognise the implications of a diagnosis of diabetic nephropathy on patients, their carers and families.
Demonstrate understanding of: • The role of blood pressure in the pathogenesis and progression of nephropathy • The significance of proteinuria in the increased incidence of macroangiopathy	Describe the effect of hypertension on diabetic nephropathy	Communicate the importance of blood pressure and glycaemic management in the prevention and slowing of progression of nephropathy	
Manage hypertension according to current guidelines	Define the treatment thresholds of blood pressure in patients with diabetes and nephropathy	Manage hypertension according to current guidelines	
Manage glycaemia in patients with renal impairment	Describe the available tests for diagnosing nephropathy and explain the importance of screening for early nephropathy and explain the treatments available for diabetic nephropathy and hypertension	Manage glycaemia in patients with renal impairment	
Refer patients appropriately to a nephrology service		Evaluate other macrovascular risk factors in patients with diabetic nephropathy	

7.5. Neuropathy, foot disease and erectile dysfunction in diabetes:

Objective	Knowledge	Skills	Attitude
Diagnose the different patterns of autonomic and somatic poly- and mononeuropathies	Describe how diabetes can affect different parts of the nervous system	Perform an appropriate examination in order to diagnose the different patterns of neuropathy	Recognise the importance of the multidisciplinary team in the prevention and management of diabetic foot problems.
Manage the neuropathies, including neurogenic pain and the manifestations of autonomic neuropathy	Describe the pathogenesis and different manifestations of diabetic neuropathy	Select appropriate treatment particularly for neurogenic pain and manifestations of autonomic neuropathy	Recognise when to refer patients for specialist foot care
Assess vascular supply and neurological status of the lower limb	Identify the different patterns of autonomic and somatic poly and mono neuropathies	Assess vascular supply and neurological status of the lower limb	Exhibit appropriate behaviours when discussing erectile dysfunction
Identify patients at risk of foot problems and advise on prevention	Identify patients at risk of foot problems	Communicate advice on prevention of foot ulceration	Recognise the impact of amputation on patients and their carers and the importance of effective rehabilitation.
Manage established diabetic foot problems		Demonstrate effective management of established diabetic foot problems.	
Investigate and manage erectile dysfunction in diabetic men		Evaluate erectile function in diabetic men and communicate the available range of therapies	
Care for patients with foot problems in a multi-disciplinary setting			

7.6. Subject matter related to lipid disease

Trainees must be able to:

Objective:	Knowledge	Skills	Attitude
Select appropriate patients to screen for dyslipidaemia	Describe the pattern of lipid abnormalities seen in patients with diabetes	Explain the importance of screening for lipid abnormalities in diabetes	Recognise the need to refer patients with a typical or severe dyslipidaemia to specialist services
Assess cardiovascular risk in relation to the lipid profile		Describe the range of treatments available for managing lipid abnormalities in diabetes	
Diagnose and manage patients with primary and secondary lipid disorders		Assess macrovascular risk in relation to individual patients lipid profile	
		Communicate the cardiovascular risk of hyperlipidaemia to patients	
		Select appropriate treatment for individual patients.	

8 Subject matter related to endocrine disease

8.1. Disorders of the hypothalamus and pituitary Trainees must be able to:

Objective	Knowledge	Skills	Attitude
Diagnose, manage and provide care for patients with disorders of the hypothalamus / pituitary disorder	Identify causes, investigations and treatments for disorders of the hypothalamus and pituitary	Performs and interpret basal and dynamic tests of pituitary function	Recognise the need for appropriate referrals for pituitary surgery and radiotherapy
		Demonstrate an ability to diagnose and provide first line management of functioning and non functioning pituitary tumours	Recognise the role of the multidisciplinary team in the management of pituitary tumours
		Demonstrate an ability to diagnose and monitor optic nerve compression	Recognise the need for urgent referral of patients presenting with symptoms of optic nerve compression
		Provide immediate and long term care to patients with mass effects from pituitary enlargement	Recognise the impact of hypothalamic / pituitary disorders on patients and carers
		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.	

8.2. Growth & Development

Objective:	Knowledge	Skills	Attitude
Assess normal growth & development by the use of growth charts and assessment of pubertal stage	Outline methods of assessment of normal growth and development by the use of growth charts and assessment of pubertal stage	Demonstrate ability to diagnose and manage disorders of growth and maturation, particularly constitutional delay in growth in puberty.	Recognise the impact of growth and pubertal disorders on the patient and his / her family.

8.3 Disorders of the thyroid gland

Objective	Knowledge	Skills	Attitude
Understand disease states in terms of disorders of the physiology and biochemistry of thyroid hormone	Explain disease states in terms of disorders of physiology and biochemistry of thyroid hormones and TSH	Interpret thyroid function test results to diagnose and exclude thyroid disease and to recognise assay interferences	
Diagnose and manage simple non-toxic goitre, multinodular goitre and solitary thyroid nodules	State causes of thyroid dysfunction and goitre	Demonstrate ability to diagnose and manage simple non-toxic goitre and solitary thyroid nodules	Refer appropriate patients with hyperthyroidism or benign goitre for treatment with radio-iodine or surgery
		Perform and/or refer appropriately for fine needle aspiration cytology of the thyroid	Understand the role of multidisciplinary care in the management of patients with thyroid cancer
	Recall the required processes for later application for a personal license to administer radioactive iodine for benign thyroid disease		
		Use and/or refer for the use of radioisotopes to diagnose thyroid disorders	
		Use and/or refer for the use of radioisotopes in the treatment of hyperthyroidism and goitre	

		Demonstrate the ability to diagnose and manage primary and secondary hypothyroidism	
		Demonstrate the ability to manage thyroid emergencies including thyroid patients in intensive care	
		Provide perioperative care for patients undergoing thyroid surgery (particularly preoperative preparation)	
Diagnose and manage thyroid eye disease	Recall methods of diagnosis and treatment of thyroid eye disease	Demonstrate the ability to investigate and manage patients with thyroid eye disease	Understand the need to refer selected patients for ophthalmological review
Diagnose and manage thyroid disease associated with pregnancy	Describe the influence of pregnancy on tests of thyroid function and their interpretation	Demonstrate the ability to manage thyroid disorders during and after pregnancy	
	Describe the implications of pregnancy for the management of thyroid disease		

8.4. Disorders of the Adrenal glands

Objective	Knowledge	Skills	Attitude
Diagnose, manage and provide care for patients with adrenal disease	Outline causes, investigations and treatments for disorders of the adrenal glands	Perform and interpret tests of adrenal function	Recognise the urgency of managing adrenal insufficiency
		Demonstrate ability to investigate and provide first line management of Cushing's Syndrome.	Recognise complex management issues in congenital adrenal hyperplasia especially in females and adolescents.
		Demonstrate ability to investigate suspected endocrine hypertension and provide first line management for phaeochromocytoma and adrenocortical hypertension	Recognise the role of referral to appropriate specialists of those with adrenal diseases
		Demonstrate ability to investigate and manage suspected primary and secondary adrenal failure, including acute presentations.	Recognise the role of patient and carer education in the long term management of adrenal insufficiency
		Demonstrate the ability to diagnose and manage non classical congenital adrenal hyperplasia and provide first line management for classical CAH in adolescents and adulthood	
		Demonstrate ability to investigate and manage patients with suspected adrenal tumours	
		Provide perioperative care for patients with suspected or proven adrenal insufficiency	
		Explain importance of steroid replacement during intercurrent illness	

8.5. Disorders of the gonads

Objective:	Knowledge	Skills	Attitude
Diagnose, manage and provide care for patients with gonadal disorders	Outline the causes of primary and secondary gonadal failure and menstrual irregularity	Perform and interpret test of the hypothalamo-pituitary-gonadal axis	Recognise the role of MDTs and other services including genetic services in disorders of fertility and chromosome disorders
	State treatment strategies for gonadal failure, hirsutism / virilism, gynaecomastia, polycystic ovarian syndrome and infertility	Demonstrate ability to investigate and manage primary and secondary gonadal failure	Recognise the impact of infertility on the patient and their family
		Prescribe appropriately sex hormone replacement therapy to men and women	Demonstrate non-judgemental approach to patients with gender dysphoria.
		Assess, investigate and manage women with hirsutism / virilism.	
		Assess, investigate and manages women with menstrual disturbance	
		Manage polycystic ovarian syndrome	
		Demonstrate ability to investigate and manage men with gynaecomastia	
		Demonstrate ability to provide first line assessment and management to an infertile couple	
		Demonstrate ability to investigate and manage common chromosomal disorders such as Turner's and Klinefelter's syndromes	

8.6. Disorders of parathyroid glands, calcium metabolism and bone

Objective:	Knowledge	Skills	Attitude
Diagnose, manage and provide care for patients with disorders of the parathyroid glands, calcium metabolism and bone.	Identify causes of hypercalcaemia and hypocalcaemia and their treatments	Demonstrate ability to diagnose and manage hypercalcaemia including emergency presentations	Make appropriate referrals for bone densitometry and understand its value and limitations
		Demonstrate ability to diagnose and manage hyperparathyroidism	Recognise which patients with hyperparathyroidism require referral for parathyroid surgery
		Provide peri operative care for patient undergoing parathyroid surgery	
		Demonstrate ability to investigate and manage hypocalcaemia	
	Recall diagnostic methods and treatments for vitamin D deficient states and Paget's Disease	Describe risk factors for vitamin D deficiency including dietary factors and ethnicity	
		Demonstrate ability to diagnose and manage vitamin D deficient states	
		Describe risk factors for osteoporosis	
	Outline screening and treatment strategies for osteoporosis	Provide preventive care against osteoporosis	
		Assess and manages established osteoporosis	
		Assess and manages Paget's Disease of bone	
		Select appropriate patients for bone biopsy	

8.7. Disorders of appetite and weight

Objective:	Knowledge	Skills	Attitude
Diagnose, manage and provide care for patients with disorders of appetite and weight.	Define obesity and overweight	Recognise and manage the endocrine consequences of anorexia nervosa, bulimia and obesity	Recognise which patients require consideration for referral for surgery for management of obesity
	Describe endocrine and other secondary causes of obesity	Demonstrate the ability to investigate the obese patient in order to exclude endocrine causes	Recognise the importance of multi disciplinary team management of patients with eating disorders
	Describe the endocrine consequences of anorexia nervosa, bulimia and obesity	Demonstrate the ability to initiate management of the obese patient	Exhibit non judgemental attitudes to patients with obesity and eating disorders
	Outline medical and surgical treatment options for obesity		

8.8. Miscellaneous endocrine and metabolic disorders

Objective:	Knowledge	Skills	Attitude
Diagnose and provide first line care for patients with rarer endocrine conditions such as hypoglycaemia, neuroendocrine tumours and ectopic hormone production	Recall causes and investigations for possible hypoglycaemia, neuroendocrine tumours and ectopic hormone production	Demonstrate the ability to investigate patients with suspected hypoglycaemia	Recognise the need to refer to specialist services for complex endocrine disorders. Such services would include genetic services in potentially inherited endocrine disorders
	Identify causes and investigations of electrolyte disturbances	Demonstrate the ability to diagnose and provide first line care for peptide secreting tumours, eg of the gastro intestinal tract	Recognise the role of MDTs in managing complex endocrine disorders eg ectopic hormone production and neuroendocrine tumours
	Identify features of multiple endocrine neoplasia syndromes	Demonstrate ability to investigate and manage acute and chronic hypo and hypernatraemia	
	Identify possible long term endocrine consequences of treatments for cancer	Demonstrate ability to investigate and manage disorders of potassium and magnesium homeostasis	
		Demonstrate ability to diagnose and manage syndromes of ectopic hormone production (PTHrP, ACTH, ADH)	
		Demonstrate 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	
		Demonstrate ability to investigate and manage the 'late endocrine effects' of treatment for cancer	
		Recognise, investigate and manage disorders of insulin resistance	

8.9. Imaging techniques in endocrinology

Objective:	Knowledge	Skills	Attitude
Demonstrate understanding of the role and interpretation of imaging techniques in the diagnosis and management of endocrine disease.	Identify the role imaging in the investigation and management of a wide spectrum of endocrine disorders	Interpret CT and MRI scans of pituitary, adrenals, orbits and other organs	Consult colleagues about the interpretation of radiological investigations and utilise specialist reports arising from imaging modalities.
		Make appropriate referrals for ultrasonography of the ovaries and thyroid	
		Make appropriate referrals for and interpret radioisotope scans of the thyroid (technetium, iodine) and adrenals (MIBG)	

3. MODEL OF LEARNING

A trainee will be expected to assume appropriate responsibility for self assessment, continuing self directed learning and maintenance of competence. Learning and teaching opportunities will include work based experiential learning and learning in more formalised settings. Independent self directed learning should be encouraged throughout the training period.

The general balance of experiential learning will be dependant upon the stage of training and the occupied post in the individual training scheme. For example those trainees undertaking training in acute internal medicine in years 1 and 2 of specialty training may have a more general as opposed to specialised experience the latter taking place in years 3 and 4.

Achievement of knowledge competence performance and independent action is outlined in section 4 (learning experiences).

4. LEARNING EXPERIENCES

In order to achieve competence in these areas, it is suggested the trainee gain experience in the following settings:

Out-patient

1. Diabetes new and follow up clinics in various setting, e.g. in primary care if locally available.
2. Specialist diabetes clinics for renal disease, eye disease, foot problems.
3. Multi-disciplinary nurse/dietician education sessions.
4. Lipid management clinics.
5. General endocrine, new and follow-up clinics.
6. Multidisciplinary working with a thyroid surgeon and cytopathologist, and with a pituitary neurosurgeon, neuroradiologist and radiotherapist where available.
7. Paediatric and adolescent diabetes and endocrine clinics, including growth clinics.
8. Metabolic bone disease clinics.
9. Medical obstetric joint clinics.
10. Gynaecological endocrine clinics, including joint working with a gynaecologist and managing infertility.

In-patient

11. General medical service providing consultative advice on diabetes and endocrine disease.
12. Hospital providing secondary/tertiary services including:

- Vascular surgery
- Renal dialysis
- Pituitary surgery
- Adrenal surgery
- Thyroid and parathyroid surgery.

In addition, the trainee should:

13. Attend the majority of regional study days.

14. Receive training in communication/consultation skills.
15. Deliver care of diabetes, endocrine and general medical diseases collaboratively with non-medical professionals.
16. Participate in patient education collaboratively with other members of a multiprofessional team.
17. Participate in the teaching of allied health professionals and medical undergraduates and postgraduates in areas relevant to the speciality.
18. Take part in multidisciplinary team meetings to plan service provision and individual patient care.
19. Attend or speak at meetings of 'lay' patient support organisations.
20. Attend a diabetic children's' camp as a helper.
21. Gain experience of care in general practice and other community settings.
22. Observe the working of an organisation such as a Local Diabetes Implementation Team or managed clinical network.
23. Gain detailed experience of one or more computer register systems in diabetes/endocrinology.
24. Receive training in Evidence-based medicine/critical appraisal.
25. Complete and present findings from audit cycles relevant to the specialty.
26. Receive training in research methodology and/or conduct research.
27. Regularly read medical journals.
28. By the time of the penultimate year assessment, the trainee should have attended a majority of the following:

- Foundation Course in Clinical Diabetes
- Advanced Diabetes Course
- Advanced Endocrine Course
- Society for Endocrinology annual meetings to include clinical cases meetings and clinical practice days
- Diabetes UK Annual Professional Conference
- Association of British Clinical Diabetologists (ABCD) Clinical Meetings
- British Endocrine Societies' annual Meeting
- Diabetes Counselling Course
- Regional (CME) Training Days organised by the Royal College of Physicians
- A 'Teach the Teachers' course

Most of the curriculum is suited to delivery by work-based experiential learning and on-the-job supervision. Where it is clear from trainees' experience that parts of the curriculum are not being delivered within their work place, appropriate off-the job education or rotations to other work places will be arranged. The key will be regular work-based assessment by educational supervisors who will be able to assess, with the trainee, their on-going progress and whether parts of the curriculum are not being delivered within their present work place.

5. SUPERVISION AND FEEDBACK

5.1 General The educational supervisor will meet regularly with the trainee in order

to discuss progress and to feed back assessment. This will ensure the trainee understands what development is required. An important component of this will be the completion of work based assessments (mini CEX, multi source feedback and case based discussions)

Educational supervisors are expected to enable trainees to achieve their educational objectives as defined in the curriculum and in accordance with the extent of training completed. Supervisors will fulfil an ongoing role in providing formal and informal training opportunities, as well as assessment and feedback. Educational supervisors will play a day to day role in the supervision of trainee practice and in ensuring patient safety. Supervisors will provide constructive feedback throughout training in both formal and informal settings. Supervisors will provide feedback on learning in line with the standards outlined in the curriculum, will deliver relevant assessment methods described below and will provide formative interaction and feedback on those assessments. Opportunities for feedback will arise during appraisal meetings, when trainees are being assessed, in the workplace setting and, generally, through discussions with trainees, assessors and other members of the team.

The educational supervisor, when meeting with the trainee, will discuss issues of clinical governance, risk management and the report of any untoward clinical incidents involving the trainee. The educational supervisor is part of the clinical specialty team thus if the clinical directorate (clinical director) have any concerns about the performance of the trainee, or there were issues of doctor or patient safety, these would be discussed with the educational supervisor. This would not detract from the statutory duty of the trust to deliver effective clinical governance through its management systems.

5.2 Assessment Strategy

The domains of Good Medical Practice will be assessed using both workplace-based assessments and examination of knowledge and clinical skills, which will sample across the domains of the curriculum i.e. knowledge, skills and attitudes. The assessments will be supported by structured feedback for trainees within the training programme of Endocrinology and Diabetes. Assessment tools will be both formative and summative and will be selected on the basis of their fitness for purpose.

It is likely that the workplace-based assessment tools will include miniCEX (clinical examination exercise), and MSF (multi-source feedback).The Federation of the Royal Colleges of Physicians has piloted these methods and has demonstrated their validity and reliability. It is proposed that the examination and assessment of knowledge will utilise elements of the MRCP(UK) examination relevant to training.

An assessment blueprint will be developed which will map the assessment methods on to the curriculum in a systematic way. The blueprint will ensure that there is appropriate sampling across the curriculum. It is expected the blueprinting exercise will have been completed by December 2006.

The SAC will be responsible for the blueprinting exercise

In line with the above, it is anticipated that trainee competence will be assessed by

the following, (this has yet to be agreed):

1. Mini CEX of the requisite number and case mix as determined by the training record
2. Multi source feedback on an annual basis
3. Patient satisfaction surveys
4. Case based discussion – reflective work selecting at least 8 examples from a recommended menu over the 4 year period of training
5. Records of annual assessment including RITAs
6. An audit report and list of audit activities
7. A record of research training / completed research projects including a list of scientific publications either as abstracts and / or full papers
8. A list of meetings / conferences attended and / or at which presented
9. A list of courses attended including those recommended in the curriculum.

It will include entries by the trainee to provide evidence of acquisition of competence. May include any or all of:

1. A required number of case analyses, to include some or all of the following:
   - Patient with new type 1 diabetes
   - Patient with new type 2 diabetes
   - Macrovascular emergency
   - Microvascular complication
   - Patient with complicated hyperthyroidism
   - Patient with pituitary hyperfunction
   - Patient with hypopituitarism/mass effect of pituitary tumour.

2. A record of training received in/research performed by the trainee
3. An audit report and list of audit activities
4. A list of publications
5. A list of meeting/conference presentations
6. A list of courses attended

6. MANAGING CURRICULUM IMPLEMENTATION

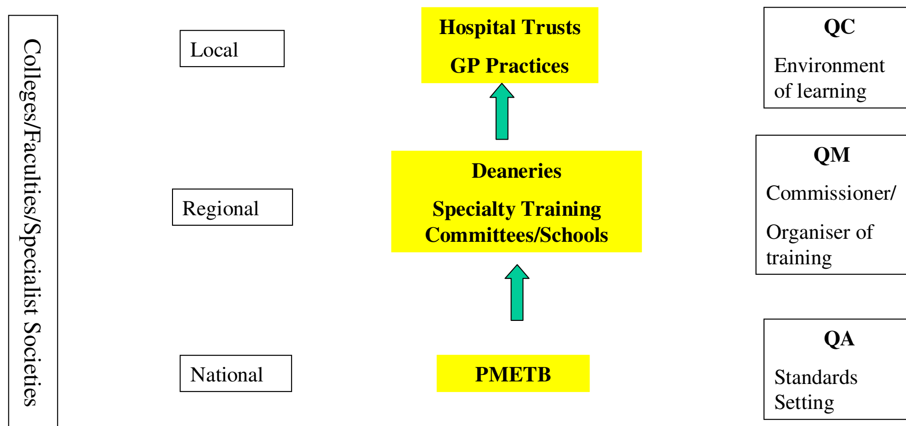
The curriculum will be issued to the trainee once they enrol with JRCPTB. All the educational supervisors and trainers will be given the up to date curriculum and be expected to use this in their discussions with trainees. All the speciality curricula are available on the JRCPTB website, as are the performance assessment methods. Both the trainers and trainees are expected to have a good knowledge of the curriculum and use it as the blueprint for their training.

It is intended that the curriculum shall form the basis of the educational and training process for all trainees in the specialty pre CCT. It will therefore be an important driver for trainees and trainers in terms of accessing educational opportunities, especially in the workplace setting. Coverage of the curriculum will be ensured through the assessment methods described as well as through feedback from educational supervisors. Local training committees will play an important role in implementing the curriculum and ensuring curriculum coverage by arranging rotation through posts providing experiential training in different aspects of the specialty and

in assessing access to those educational opportunities at annual appraisals. It is expected that all trainees shall be proactive in maximising their educational opportunities and curriculum coverage through discussion with trainers and other members of the team. Curriculum management in posts and attachments within programmes will be directed by interactive discussions between trainees, trainers, assessors and the local training committee and regional specialty adviser. Feedback from trainees and trainers on curriculum management will be sought at a local level, at programme level, and nationally, through interaction with regional specialty advisers. This interactive process will drive changes in local delivery of training opportunities and inform future curriculum revisions.

Deaneries are responsible for quality management, PMETB will quality assure the deaneries and educational providers are responsible for local quality control, to be managed by the deaneries. The role of the Colleges in quality management remains important and will be delivered in partnership with the deaneries. The College role is one of quality review of deanery processes and this will take place within the SACs on a regular basis.

The Organisation and Quality Assurance of PG Training



7. CURRICULUM REVIEW AND UPDATING

Curriculum review will be informed by a number of different processes. For instance the SAC will be able to use information gathered from specialty heads, specialty deans and the National Health Service. It will have available to it results of the trainee survey, which will include questions pertaining to their specialty. Interaction with the NHS will be particularly important to understand the performance of specialists within the NHS and feedback will be required as to the continuing need for that specialty as defined by the curriculum. It is likely that the NHS will have a view as to the balance between generalist and specialist skills, the development of generic competencies and, looking to the future, the need for additional specialist competencies and curricula.

8. EQUALITY AND DIVERSITY

In the exercise of these powers and responsibilities, the Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of relevant legislation, such as the:

Race Relations (Amendment) Act 2000
Disability Discrimination Act 1995 (Amendment) 2004 and Special Educational Needs and Disabilities Act 2001
The Disability Discrimination Act 1995 (amendment) (further and higher education) Regulations 2006
Data Protection Acts 1984 and 1998
Age Discrimination Act October 2006

The Federation believes that equality of opportunity is fundamental to the many and varied ways in which individuals become involved with the Colleges, either as members of staff and Officers, as advisers from the medical profession, as members of the Colleges' professional bodies or as doctors in training and examination candidates. Accordingly, it warmly welcomes contributors and applicants from as diverse a population as possible, and actively seeks to recruit people to all its activities regardless of race, religion, ethnic origin, disability, age, gender or sexual orientation.

Deanery quality assurance will ensure that each training programme complies with the equality and diversity standards in postgraduate medical training as set by PMETB.

Compliance with anti-discriminatory practice will be assured through:

- Monitoring of recruitment processes
- Ensuring all College representatives and Programme Directors have attended appropriate training sessions prior to appointment or within 12 months of taking up post
- Ensuring trainees have an appropriate, confidential and supportive route to report examples of inappropriate behaviour of a discriminatory nature
- Monitoring of College examinations
- Ensuring all assessments discriminate on objective and appropriate criteria and do not unfairly disadvantage trainees because of gender, ethnicity, sexual

orientation or disability (other than that which would make it impossible to practise safely as a physician). All efforts shall be made to ensure the participation of people with a disability in training.

Statutory responsibilities

The Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of legislation, such as the:

Human Rights Act 1998
Freedom of Information Act 2001
Data Protection Acts 1984 and 1998