



**IRISH COMMITTEE
ON HIGHER
MEDICAL TRAINING**

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

ENDOCRINOLOGY



This curriculum of training in Endocrinology & Diabetes Mellitus was developed in 2010 and undergoes an annual review by Dr James Gibney and Dr Sean Dinneen National Specialty Directors, Dr Ann O'Shaughnessy, Head of Education, Innovation & Research and by the Endocrinology & Diabetes Mellitus Training Committee. The curriculum is approved by the Irish Committee on Higher Medical Training.

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Introduction

Endocrinology and Diabetes Mellitus is a predominantly clinical specialty dealing with diseases of the endocrine glands as they affect people of all ages. Besides the pathophysiological processes involved and the physical impact of each condition, psycho-social effects must also be understood. The potential benefits and risks of specific treatments must be learned and experience gained in the multi-disciplinary approach to management of patients with diabetes mellitus. The physician may later wish to subspecialise in Endocrinology or Diabetes Mellitus develop to a greater extent, so it is important that an interest in such topics can be facilitated during training.

Besides these specialty specific elements, trainees in Endocrinology and Diabetes Mellitus must also acquire certain core competencies which are essential for good medical practice. These comprise the generic components of the curriculum.

Aims

Upon satisfactory completion of specialist training in Endocrinology and Diabetes Mellitus, the doctor will be **competent** to undertake comprehensive medical practice in that specialty in a **professional** manner, unsupervised and independently and/or within a team, in keeping with the needs of the healthcare system.

Competencies, at a level consistent with practice in the specialty of, Endocrinology and Diabetes Mellitus will include the following:

- Patient care that is appropriate, effective and compassionate dealing with health problems and health promotion.
- Medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and application of such knowledge in patient care.
- Interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professionals, the scientific community and the public.
- Appraisal and utilisation of new scientific knowledge to update and continuously improve clinical practice.
- The ability to function as a supervisor, trainer and teacher in relation to colleagues, medical students and other health professionals.
- Capability to be a scholar, contributing to development and research in the field of Gastroenterology.
- Professionalism.
- Knowledge of public health and health policy issues: awareness and responsiveness in the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, the practice of cost-effective health care, health economics and resource allocations.
- Ability to understand health care and identify and carry out system-based improvement of care.

Professionalism:

Being a good doctor is more than technical competence. It involves values – putting patients first, safeguarding their interests, being honest, communicating with care and personal attention, and being committed to lifelong learning and continuous improvement. Developing and maintaining values are important; however, it is only through putting values into action that doctors demonstrate the continuing trustworthiness with the public legitimately expect. According to the Medical Council, Good Professional Practice involves the following aspects:

- Effective communication
- Respect for autonomy and shared decision-making
- Maintaining confidentiality
- Honesty, openness and transparency (especially around mistakes, near-misses and errors)
- Raising concerns about patient safety
- Maintaining competence and assuring quality of medical practice

Entry Requirements

Applicants for Higher Specialist Training (HST) in Endocrinology & Diabetes Mellitus must have a certificate of completion in Basic Specialist Training (BST) in General Internal Medicine and obtained the MRCPI.

BST should consist of a minimum of 24 months involved with direct patient care supervised by senior clinicians and based on a clinical curriculum and professional and ethical practice learnt through mentorship by senior clinicians and supported by RCPI's mandatory courses.

BST in General Internal Medicine (GIM) is defined as follows:

- A minimum of 24 months in approved posts, with direct involvement in patient care and offering a wide range of experience in a variety of specialties.
- At least 12 of these 24 months must be spent on a service or services in which the admissions are acute and unselected.
- Assessment of knowledge and skills gained by each trainee during their clinical experience. This assessment takes place in the form of the mandatory MRCPI examination (*The MRCPI examination was introduced as mandatory for BST as of July 2011)
- For further information please review the BST curriculum

Those who do not hold a BST certificate and MRCPI must provide evidence of equivalency.

Entry on the training programme is at year 1. Deferrals are not allowed on entry to Higher Specialist Training.

Duration & Organisation of Training

The duration of HST in Endocrinology & Diabetes Mellitus and General Internal Medicine is five years, one year of which **may** be gained from a period of full-time research.

For further information on dual training in General Internal Medicine please refer to the GIM Curriculum on our website www.rcpi.ie

While no particular order or sequence of training will be imposed and programmes offered should be flexible i.e. capable of being adjusted to meet trainees' needs, trainees must spend the first two years of training in clinical posts in Ireland before undertaking any period of research or out of programme clinical experience (OCPE). The earlier years will usually be directed towards acquiring a broad general experience of Endocrinology & Diabetes Mellitus under appropriate supervision. An increase in the content of hands-on experience follows naturally, and, as confidence is gained and abilities are acquired, the trainee will be encouraged to assume a greater degree of responsibility and independence.

If an intended career path would require a trainee to develop further an interest in a sub-specialty within Endocrinology & Diabetes Mellitus (e.g. pituitary endocrinology, thyroidology etc.), this should be accommodated as far as possible within the training period, re-adjusting timetables and postings accordingly.

Generic knowledge, skills and attitudes support competencies which are common to good medical practice in the entire Medical and related specialties. It is intended that all Specialist Registrars should re-affirm those competencies during Higher Specialist Training. No time-scale of acquisition is offered, but failure to make progress towards meeting any of these important objectives **at an early stage** would cause concern about a SpR's suitability and ability to become independently capable as a specialist.

Flexible Training

National Flexible Training Scheme – HSE NDTP

The HSE NDTP operates a National Flexible Training Scheme which allows a small number of Trainees to train part time, for a set period of time.

Overview

- Have a well-founded reason for applying for the scheme e.g. personal family reasons
- Applications may be made up to 12 months in advance of the proposed date of commencement of flexible training and no later than 4 months in advance of the proposed date of commencement
- Part-time training shall meet the same requirements as full-time training, from which it will differ only in the possibility of limited participation in medical activities to a period of at least half of that provided for full-time trainees

Job Sharing - RCPI

The aim of job sharing is to retain doctors within the medical workforce who are unable to continue training on a full-time basis.

Overview

- A training post can be shared by two trainees who are training in the same specialty and are within two years on the training pathway
- Two trainees will share one full-time post with each trainee working 50% of the hours
- Ordinarily it will be for the period of 12 months from July to July each year in line with the training year
- Trainees who wish to continue job sharing after this period of time will be required to re-apply
- Trainees are limited to no more than 2 years of training at less than full-time over the course of their training programme

Post Re-assignment – RCPI

The aim of post re-assignment is to support trainees who have had an unforeseen and significant change in their personal circumstances since the commencement of their current training programme which requires a change to the agreed post/rotation.

Overview:

- Priority will be given to trainees with a significant change in circumstances due to their own disability, it will then be given to trainees with a change in circumstances related to caring or parental responsibilities. Any applications received from trainees with a change involving a committed relationship will be considered afterwards
- If the availability of appropriate vacancies is insufficient to accommodate all requests eligible trainees will be selected on a first come, first serve basis

For further details on all of the above flexible training options, please see the Postgraduate Specialist Training page on the College website www.rcpi.ie

Training Programme

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training for Endocrinology & Diabetes Mellitus in both general hospitals and teaching hospitals. Each post within the programme will have a named trainer/educational supervisor and programmes will be under the direction of the National Specialty Director for Endocrinology & Diabetes Mellitus. Programmes will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop a sub-specialty interest.

The experience gained through rotation around different departments is recognised as an essential part of HST. No trainee should remain in the same unit for longer than 2 years of clinical training.

Where an essential element of the curriculum is missing from a programme, access to it will be arranged, by day release for example, or if necessary by secondment.

Teaching, Research & Audit

All trainees are required to participate in teaching. They should also receive basic training in research methods, including statistics, so as to be capable of critically evaluating published work.

A period of supervised research relevant to Endocrinology & Diabetes Mellitus is considered highly desirable and will contribute up to 12 months towards the completion of training. Some trainees may wish to spend two or three years in research leading to a MSc, MD, or PhD, by stepping aside from the programme for a time. For those intending to pursue an academic path an extended period of research may be necessary in order to explore a topic fully or to take up an opportunity of developing the basis of a future career. Such extended research may continue after the CSCST is gained. However, those who wish to engage in clinical medical practice must be aware of the need to maintain their clinical skills during any prolonged period concentrated on a research topic, if the need to re-skill is to be avoided.

Trainees are required to engage in audit during training and to provide evidence of having completed the process.

ePortfolio

The trainee is required to keep their ePortfolio up to date and maintained throughout HST. The ePortfolio will be countersigned as appropriate by the trainers to confirm the satisfactory fulfilment of the required training experience and the acquisition of the competencies set out in the Curriculum. This will remain the property of the trainee and must be produced at the annual Evaluation meeting.

The trainee also has a duty to maximise opportunities to learn, supplementing the training offered with additional self-directed learning in order to fulfil all the educational goals of the curriculum. Trainees must co-operate with other stakeholders in the training process. It is in a SpR's own interest to maintain contact with the Medical Training Department and Dean of Postgraduate Specialist Training, and to respond promptly to all correspondence relating to training. "Failure to co-operate" will be regarded as, in effect, withdrawal from the HST's supervision of training.

At the annual Evaluation, the ePortfolio will be examined. The results of any assessments and reports by educational supervisors, together with other material capable of confirming the trainee's achievements, will be reviewed.

Assessment Process

The methods used to assess progress through training must be valid and reliable. The Endocrinology & Diabetes Mellitus Curriculum has been re-written, describing the levels of competence which can be recognised. The assessment grade will be awarded on the basis of direct observation in the workplace by consultant supervisors. Time should be set aside for appraisal following the assessment e.g. of clinical presentations, case management, observation of procedures. As progress is being made, the lower levels of competence will be replaced progressively by those that are higher. Where the grade for an item is judged to be deficient for the stage of training, the assessment should be supported by a detailed note which can later be referred to at annual review. The assessment of training may utilise the Mini-CEx, DOPS and Case Based Discussions (CBD) methods adapted for the purpose. These methods of assessment have been made available by HST for use at the discretion of the NSD and nominated trainer. They are offered as a means of providing the trainee with attested evidence of achievement in certain areas of the Curriculum e.g. competence in procedural skills, or in generic components. Assessment will also be supported by the trainee's portfolio of achievements and performance at relevant meetings, presentations, audit, in tests of knowledge, attendance at courses and educational events.

Annual Evaluation of Progress

The HST Annual Evaluation of Progress (AEP) is the formal method by which a trainee's progression through her/his training programme is monitored and recorded each year. The evidence to be reviewed by the panel is recorded by the trainee and trainer in the trainee's e-Portfolio.

There is externality in the process with the presence of the National Specialty Director (NSD), a Chairperson and an NSD Forum Representative. Trainer's attendance at the Evaluation is mandatory, if it is not possible for the trainer to attend in person, teleconference facilities can be arranged if appropriate. In the event of a penultimate year Evaluation an External Assessor, who is a consultant in the relevant speciality and from outside the Republic of Ireland will be required.

Purpose of Annual Evaluation

- Enhance learning by providing formative Evaluation, enabling trainees to receive immediate feedback, measure their own performance and identify areas for development;
- Drive learning and enhance the training process by making it clear what is required of trainees and motivating them to ensure they receive suitable training and experience;
- Provide robust, summative evidence that trainees are meeting the curriculum standards during the training programme;
- Ensure trainees are acquiring competencies within the domains of Good Medical Practice;
- Assess trainees' actual performance in the workplace;
- Ensure that trainees possess the essential underlying knowledge required for their speciality;
- Inform Medical Training, identifying any requirements for targeted or additional training where necessary and facilitating decisions regarding progression through the training programme;
- Identify trainees who should be advised to consider a change in career direction.

Structure of the Meeting

The AEP panel speaks to the trainee alone in the first instance. The trainee is then asked to leave the room and a discussion with the trainer follows. Once the panel has talked to the trainer, the trainee is called back and given the recommendations of the panel and the outcome of the AEP.

At the end of the Evaluation, all panel members and the Trainee agree to the outcome of the Evaluation and the recommendations for future training. This is recorded on the AEP form, which is then signed electronically by the Medical Training Coordinator on behalf of the panel and trainee. The completed form and recommendations will be available to the trainee and trainers within their ePortfolio.

Outcomes

- Trainees whose progress is satisfactory will be awarded their AEP
- Trainees who are being certified as completing training receive their final AEP
- Trainees who need to provide further documentation or other minor issues, will be given 2 weeks (maximum 8) from the date of their AEP to meet the requirements. Their AEP outcome will be withheld until all requirements have been met.
- Trainees who are experiencing difficulties and/or need to meet specific requirements for that year of training will not be awarded their AEP. A date for an interim AEP will be decided and the trainee must have met all the conditions outlined in order to be awarded their AEP for that year of training. The "Chairperson's Overall Assessment Report" will give a detailed outline of the issues which have led to this decision and this will go the Dean of Postgraduate Specialist Training for further consideration.
- Trainees who fail to progress after an interim Evaluation will not be awarded their AEP.

The Dean of Postgraduate Training holds the final decision on AEP outcomes. Any issues must be brought to the Dean and the Annual Chairperson's Meeting for discussion.

Facilities

A consultant trainer/educational supervisor has been identified for each approved post. He/she will be responsible for ensuring that the educational potential of the post is translated into effective training, which is being fully utilized. The training objectives to be secured should be agreed between trainee and trainer at the commencement of each posting in the form of a written training plan. The trainer will be available throughout, as necessary to supervise the training process.

All training locations approved for HST have been inspected by the ICHMT. Each must provide an intellectual environment and a range of clinical and practical facilities sufficient to enable the knowledge, skills, clinical judgement and attitudes essential to the practice of Endocrinology & Diabetes Mellitus to be acquired.

Physical facilities include the provision of sufficient space and opportunities for practical and theoretical study; access to professional literature and information technologies so that self-learning is encouraged and data and current information can be obtained to improve patient management.

Trainees in Endocrinology & Diabetes Mellitus should have access to an educational programme of e.g. lectures, demonstrations, literature reviews, multidisciplinary case conferences, seminars, study days etc., capable of covering the theoretical and scientific background to the specialty. The Training Committee will set down the schedule of appropriate educational activities for Endocrinology & Diabetes Mellitus and the minimum acceptable attendance stated. Trainees should be notified in advance of dates so that they can arrange for their release. For each post, at inspection, the availability of an additional limited amount of study leave for any legitimate educational purpose has been confirmed. Applications, supported if necessary by a statement from the consultant trainer, will be processed by the relevant employer.

Generic Components

This chapter covers the generic components which are relevant to HST trainees of all specialties but with varying degrees of relevance and appropriateness, depending on the specialty.

As such, this chapter needs to be viewed as an appropriate guide of the level of knowledge and skills required from all HST trainees with differing application levels in practice.

Standards of Care

Objective: To be able to consistently and effectively assess and treat patients' problems

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care; Relating to Patients; Communication and Interpersonal Skills; Collaboration and Teamwork; Management (including Self-Management); Clinical Skills.

KNOWLEDGE

Diagnosing Patients

- How to carry out appropriate history taking
- How to appropriately examine a patient
- How to make a differential diagnosis

Investigation, indications, risks, cost-effectiveness

- The pathophysiological basis of the investigation
- Knowledge of the procedure for the commonly used investigations, common or/and serious risks
- Understanding of the sensitivity and specificity of results, artefacts, PPV and NPV
- Understanding significance, interpreting and explaining results of investigations
- Logical approach in choosing, sequencing and prioritising investigations

Treatment and management of disease

- Natural history of diseases
- Quality of life concepts
- How to accurately assess patient's needs, prescribe, arrange treatment, recognise and deal with reactions / side effects
- How to set realistic therapeutic goals, to utilise rehabilitation services, and use palliative care approach appropriately
- Recognising that illness (especially chronic and/or incapacity) has an impact on relationships and family, having financial as well as social effects e.g. driving

Disease prevention and health education

- screening for disease, (methods, advantages and limitations),
- health promotion and support agencies; means of providing sources of information for patients
- Risk factors, preventive measures, strategies applicable to smoking, alcohol, drug abuse, lifestyle changes
- Disease notification; methods of collection and sources of data

Notes, records, correspondence

- Functions of medical records, their value as an accurate up-to-date commentary and source of data
- The need and place for specific types of notes e.g. problem-orientated discharge, letters, concise out-patient reports
- Appreciating the importance of up-to-date, easily available, accurate information, and the need for communicating promptly e.g. with primary care

Prioritising, resourcing and decision taking

- How to prioritise demands, respond to patients' needs and sequence urgent tasks
- Establishing (clinical) priorities e.g. for investigations, intervention; how to set realistic goals; understanding the need to allocate sufficient time, knowing when to seek help
- Understanding the need to complete tasks, reach a conclusion, make a decision, and take action within allocated time
- Knowing how and when to conclude

Handover

- Know what are the essential requirements to run an effective handover meeting
 - Sufficient and accurate patients information
 - Adequate time
 - Clear roles and leadership
 - Adequate IT
- Know how to prioritise patient safety
 - Identify most clinically unstable patients
 - Use ISBAR (Identify, Situation, Background, Assessment, Recommendations)
 - Proper identification of tasks and follow-ups required
 - Contingency plans in place
- Know how to focus the team on actions
 - Tasks are prioritised
 - Plans for further care are put in place
 - Unstable patients are reviewed

Relevance of professional bodies

- Understanding the relevance to practice of standards of care set down by recognised professional bodies – the Medical Council, Medical Colleges and their Faculties, and the additional support available from professional organisations e.g. IMO, Medical Defence Organisations and from the various specialist and learned societies

SKILLS

- Taking and analysing a clinical history and performing a reliable and appropriate examination, arriving at a diagnosis and a differential diagnosis
- Liaising, discussing and negotiating effectively with those undertaking the investigation
- Selecting investigations carefully and appropriately, considering (patients') needs, risks, value and cost effectiveness
- Appropriately selecting treatment and management of disease
- Discussing, planning and delivering care appropriate to patient's needs and wishes
- Preventing disease using the appropriate channels and providing appropriate health education and promotion
- Collating evidence, summarising, recognising when objective has been met
- Screening
- Working effectively with others including
 - Effective listening
 - Ability to articulate and deliver instructions
 - Encourage questions and openness
 - Leadership skills
- Ability to prioritise
- Ability to delegate effectively
- Ability to advise on and promote lifestyle change, stopping smoking, control of alcohol intake, exercise and nutrition
- Ability to assess and explain risk, encourage positive behaviours e.g. immunisation and preventive measures
- Ability to enlist patients' involvement in solving their health problems, providing information, education
- Availing of support provided by voluntary agencies and patient support groups, as well as expert services e.g. detoxification / psychiatric services
- Valuing contributions of health education and disease prevention to health in a community
- Compiling adequate case notes, with results of examinations, investigations, procedures performed, sufficient to provide an accurate, detailed account of the diagnostic and management process and outcome, providing concise, informative progress reports (both written and oral)
- Maintaining legible records in line with the Guide to Professional Conduct and Ethics for Registered Medical Practitioners in Ireland
- Actively engaging with professional/representative/specialist bodies

ASSESSMENT & LEARNING METHODS

- Consultant feedback
- Workplace based assessment e.g. Mini-CEX, DOPS, CBD
- Educational supervisor's reports on observed performance (in the workplace)
- Audit
- Medical Council Guide to Professional Conduct and Ethics

Dealing with & Managing Acutely Ill Patients in Appropriate Specialties

Objectives: To be able to assess and initiate management of patients presenting as emergencies, and to appropriately communicate the diagnosis and prognosis. Trainees should be able to recognise the critically ill and immediately assess and resuscitate if necessary, formulate a differential diagnosis, treat and/or refer as appropriate, elect relevant investigations and accurately interpret reports.

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care, Clinical Skills.

KNOWLEDGE

Management of acutely ill patients with medical problems

- Presentation of potentially life-threatening problems
- Indications for urgent intervention, the additional information necessary to support action (e.g. results of investigations) and treatment protocols
- When to seek help, refer/transfer to another specialty
- ACLS protocols
- Ethical and legal principles relevant to resuscitation and DNAR in line with National Consent Policy
- How to manage acute medical intake, receive and refer patients appropriately, interact efficiently and effectively with other members of the medical team, accept/undertake responsibility appropriately
- Management of overdose
- How to anticipate / recognise, assess and manage life-threatening emergencies, recognise significantly abnormal physiology e.g. dysrhythmia and provide the means to correct e.g. defibrillation
- How to convey essential information quickly to relevant personnel: maintaining legible up-to-date records documenting results of investigations, making lists of problems dealt with or remaining, identifying areas of uncertainty; ensuring safe handover

Managing the deteriorating patient

- How to categorise a patients' severity of illness using Early Warning Scores (EWS) guidelines
- How to perform an early detection of patient deterioration
- How to use a structured communication tool (ISBAR)
- How to promote an early medical review, prompted by specific trigger points
- How to use a definitive escalation plan

Discharge planning

- Knowledge of patient pathways
- How to distinguish between illness and disease, disability and dependency
- Understanding the potential impact of illness and impairment on activities of daily living, family relationships, status, independence, awareness of quality of life issues
- Role and skills of other members of the healthcare team, how to devise and deliver a care package
- The support available from other agencies e.g. specialist nurses, social workers, community care
- Principles of shared care with the general practitioner service
- Awareness of the pressures/dynamics within a family, the economic factors delaying discharge but recognise the limit to benefit derived from in-patient care

SKILLS

- BLS/ACLS (or APLS for Paediatrics)
- Dealing with common medical emergencies
- Interpreting blood results, ECG/Rhythm strips, chest X-Ray, CT brain
- Giving clear instructions to both medical and hospital staff
- Ordering relevant follow up investigations
- Discharge planning
- Knowledge of HIPE (Hospital In-Patient Enquiry)
- Multidisciplinary team working
- Communication skills
- Delivering early, regular and on-going consultation with family members (with the patient's permission) and primary care physicians
- Remaining calm, delegating appropriately, ensuring good communication
- Attempting to meet patients'/ relatives' needs and concerns, respecting their views and right to be informed in accordance with Medical Council Guidelines
- Establishing liaison with family and community care, primary care, communicate / report to agencies involved
- Demonstrating awareness of the wide ranging effects of illness and the need to bridge the gap between hospital and home
- Categorising a patients' severity of illness
- Performing an early detection of patient deterioration
- Use of structured communication tool (e.g. ISBAR)

ASSESSMENT & LEARNING METHODS

- ACLS course
- Record of on call experience
- Mini-CEX (acute setting)
- Case Based Discussion (CBD)
- Consultant feedback

Good Professional Practice

Objective: Trainees must appreciate that medical professionalism is a core element of being a good doctor and that good medical practice is based on a relationship of trust between the profession and society, in which doctors are expected to meet the highest standards of professional practice and behaviour.

Medical Council Domains of Good Professional Practice: Relating to Patients, Communication and Interpersonal Skills, Professionalism, Patient Safety and Quality of Patient Care.

KNOWLEDGE

Effective Communication

- How to listen to patients and colleagues
- Disclosure – know the principles of open disclosure
- Knowledge and understanding of valid consent
- Teamwork
- Continuity of care

Ethics

- Respect for autonomy and shared decision making
- How to enable patients to make their own decisions about their health care
- How to place the patient at the centre of care
- How to protect and properly use sensitive and private patient information according to Data Protection Act and how to maintain confidentiality
- The judicious sharing of information with other healthcare professionals where necessary for care following Medical Council Guidelines
- Maintaining competence and assuring quality of medical practice
- How to work within ethical and legal guideline when providing clinical care, carrying research and dealing with end of life issues

Honesty, openness and transparency (mistakes and near misses)

- When and how to report a near miss or adverse event
- Knowledge of preventing and managing near misses and adverse events. Incident reporting; root cause and system analysis
- Understanding and learning from errors
- Understanding and managing clinical risk
- Managing complaints
- Following open disclosure practices
- Knowledge of national policy and National Guidelines on Open Disclosure

Raising concerns about patient safety

- The importance of patient safety relevance in health care setting
- Standardising common processes and procedures – checklists, vigilance
- The multiple factors involved in failures
- Safe healthcare systems and provision of a safe working environment
- The relationship between 'human factors' and patient safety
- Safe working practice, role of procedures and protocols in optimal practice
- How to minimise incidence and impact of adverse events
- Knowledge and understanding of Reason's Swiss cheese model
- Understanding how and why systems break down and why errors are made
- Health care errors and system failures
- human and economic costs

SKILLS

- Effective communication with patients, families and colleagues
- Co-operation and collaboration with colleagues to achieve safe and effective quality patient care
- Being an effective team player
- Ability to learn from errors and near misses to prevent future errors
- Using relevant information from complaints, incident reports, litigation and quality improvement reports in order to control risks
- Minimising errors during invasive procedures by developing and adhering to best-practice guidelines for safe surgery
- Minimising medication errors by practicing safe prescribing principles
- Using the Open Disclosure Process Algorithm
- Managing errors and near-misses
- Managing complaints
- Ethical and legal decision making skills

ASSESSMENT & LEARNING METHODS

- Consultant feedback at annual assessment
- Workplace based assessment e.g. Mini-CEX, DOPS, CBD
- Educational supervisor's reports on observed performance (in the workplace): prioritisation of patient safety in practice
- Patient Safety (on-line) – recommended
- RCPI HST Leadership in Clinical Practice
- Quality improvement methodology course - recommended
- RCPI Ethics programmes (I-IV)
- Medical Council Guide to Professional Conduct and Ethics
- Reflective learning around ethical dilemmas encountered in clinical practice

Infection Control

Objective: To be able to appropriately manage infections and risk factors for infection at an institutional level, including the prevention of cross-infections and hospital acquired infection

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care; Management (including Self-Management).

KNOWLEDGE

Within a consultation

- The principles of infection control as defined by the HIQA
- How to minimise the risk of cross-infection during a patient encounter by adhering to best practice guidelines available (including the 5 Moments for Hand Hygiene guidelines)
- The principles of preventing infection in high risk groups e.g. managing antibiotic use to prevent *Clostridium difficile*
- Knowledge and understanding the local antibiotic prescribing policy
- Awareness of infections of concern, e.g. MRSA, *Clostridium difficile*
- Best practice in isolation precautions
- When and how to notify relevant authorities in the case of infectious disease requiring notification
- In surgery or during an invasive procedure, understanding the increased risk of infection in these patients and adhering to guidelines for minimising infection in such cases
- The guidelines for needle-stick injury prevention and management

During an outbreak

- Guidelines for minimising infection in the wider community in cases of communicable diseases and how to seek expert opinion or guidance from infection control specialists where necessary
- Hospital policy/seeking guidance from occupational health professional regarding the need to stay off work/restrict duties when experiencing infections the onward transmission of which might impact on the health of others

SKILLS

- Practicing aseptic techniques and hand hygiene
- Following local and national guidelines for infection control and management
- Prescribing antibiotics according to antibiotic guidelines
- Encouraging staff, patients and relatives to observe infection control principles
- Communicating effectively with patients regarding treatment and measures recommended to prevent re-infection or spread
- Collaborating with infection control colleagues to manage more complex or uncommon types of infection including those requiring isolation e.g. transplant cases, immunocompromised host
- In the case of infectious diseases requiring disclosure:
 - Working knowledge of those infections requiring notification
 - Undertaking notification promptly
 - Collaborating with external agencies regarding reporting, investigating and management of notifiable diseases
 - Enlisting / requiring patients' involvement in solving their health problems, providing information and education
 - Utilising and valuing contributions of health education and disease prevention and infection control to health in a community

ASSESSMENT & LEARNING METHODS

- Consultant feedback at annual assessment
- Workplace based assessment e.g. Mini-CEX, DOPS, CBD
- Educational supervisor's reports on observed performance (in the workplace): practicing aseptic techniques as appropriate to the case and setting, investigating and managing infection, prescribing antibiotics according to guidelines
- Completion of infection control induction in the workplace

Therapeutics and Safe Prescribing

Objective: To progressively develop ability to prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice in specific specialities including non-pharmacological therapies and preventative care.

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care.

KNOWLEDGE

- Pharmacology, therapeutics of treatments prescribed, choice of routes of administration, dosing schedules, compliance strategies; the objectives, risks and complications of treatment cost-effectiveness
- Indications, contraindications, side effects, drug interaction, dosage and route of administration of commonly used drugs
- Commonly prescribed medications
- Adverse drug reactions to commonly used drugs, including complementary medicines
- Identifying common prescribing hazards
- Identifying high risk medications
- Drugs requiring therapeutic drug monitoring and interpretation of results
- The effects of age, body size, organ dysfunction and concurrent illness or physiological state e.g. pregnancy on drug distribution and metabolism relevant to own practice
- Recognising the roles of regulatory agencies involved in drug use, monitoring and licensing e.g. IMB, and hospital formulary committees
- Procedure for monitoring, managing and reporting adverse drug reaction
- Effects of medications on patient activities including potential effects on a patient's fitness to drive
- The role of The National Medicines Information Centre (NMIC) in promoting safe and efficient use of medicine
- Differentiating drug allergy from drug side effects
- Good Clinical Practice guidelines for seeing and managing patients who are on clinical research trials

SKILLS

- Writing a prescription in line with guidelines
- Appropriately prescribing for the elderly, children and pregnant and breast feeding women
- Making appropriate dose adjustments following therapeutic drug monitoring, or physiological change (e.g. deteriorating renal function)
- Reviewing and revising patients' long term medications
- Anticipating and avoiding defined drug interactions, including complementary medicines
- Advising patients (and carers) about important interactions and adverse drug effects including effects on driving
- Providing comprehensible explanations to the patient, and carers when relevant, for the use of medicines
- Being open to advice and input from other health professionals on prescribing
- Participating in adverse drug event reporting
- Taking a history of drug allergy and previous side effects

ASSESSMENT & LEARNING METHODS

- Consultant feedback
- Workplace based assessment e.g. Mini-CEX, DOPS, CBD
- Educational supervisor's reports on observed performance (in the workplace): prioritisation of patient safety in prescribing practice
- Principles of Antibiotics Use (on-line) – recommended
- Guidance for health and social care providers - Principles of good practice in medication reconciliation (HIQA)

Self-Care and Maintaining Well-Being

Objectives:

1. To ensure that trainees understand how their personal histories and current personal lives, as well as their values, attitudes, and biases affect their care of patients so that they can use their emotional responses in patient care to their patients' benefit
2. To ensure that trainees care for themselves physically and emotionally, and seek opportunities for enhancing their self-awareness and personal growth

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care, Relating to Patients, Communication and Interpersonal Skills, Collaboration and Teamwork, Management (including self-management).

KNOWLEDGE

- Self knowledge – understand own psychological strengths and limitations
- Understand how own personality characteristics (such as need for approval, judgemental tendencies, needs for perfection and control) affect relationships with patients and colleagues
- Knowledge of core beliefs, ideals, and personal philosophies of life, and how these relate to own goals in medicine
- Know how family-of-origin, race, class, religion and gender issues have shaped own attitudes and abilities to discuss these issues with patients
- Understand the difference between feelings of sympathy and feelings of empathy for specific patients
- Know the factors between a doctor and patient that enhance or interfere with abilities to experience and convey empathy
- Understanding of own attitudes toward uncertainty and risk taking and own need for reassurance
- How own relationships with certain patients can reflect attitudes toward paternalism, autonomy, benevolence, non-maleficence and justice
- Recognise own feelings (love, anger, frustration, vulnerability, intimacy, etc) in “easy” and difficult patient-doctor interactions
- Recognising the symptoms of stress and burn out

SKILLS

- Exhibiting empathy and showing consideration for all patients, their impairments and attitudes irrespective of cultural and other differences
- Ability to create boundaries with patients that allow for therapeutic alliance
- Challenge authority appropriately from a firm sense of own values and integrity and respond appropriately to situations that involve abuse, unethical behaviour and coercion
- Recognise own limits and seek appropriate support and consultation
- Work collaboratively and effectively with colleagues and other members of health care teams
- Manage effectively commitments to work and personal lives, taking the time to nurture important relationship and oneself
- Ability to recognise when falling behind and adjusting accordingly
- Demonstrating the ability to cope with changing circumstances, variable demand, being prepared to re-prioritise and ask for help
- Utilising a non-judgemental approach to patient's problem
- Recognise the warning signs of emotional ill-health in self and others and be able to ask for appropriate help
- Commitment to lifelong process of developing and fostering self-awareness, personal growth and well being
- Be open to receiving feedback from others as to how attitudes and behaviours are affecting their care of patients and their interactions with others
- Holding realistic expectations of own and of others' performance, time-conscious, punctual
- Valuing the breadth and depth of experience that can be accessed by associating with professional colleagues

ASSESSMENT & LEARNING METHODS

- On-going supervision
- Ethics courses
- RCPI HST Leadership in Clinical Practice course
- RCPI Physician Wellbeing and Stress Management
- RCPI Building Resilience in a Challenging Work Environment

Communication in Clinical and Professional Setting

Objective: To demonstrate the ability to communicate effectively and sensitively with patients, their relatives, carers and with professional colleagues in different situations.

Medical Council Domains of Good Professional Practice: Relating to Patients; Communication and Interpersonal Skills.

KNOWLEDGE

Within a consultation

- How to effectively listen and attend to patients
- How to structure an interview to obtain/convey information; identify concerns, expectations and priorities; promote understanding, reach conclusions; use appropriate language.
- How to empower the patient and encourage self-management

Difficult circumstances

- Understanding of potential areas for difficulty and awkward situations, knowing how and when to break bad news, how to negotiate cultural, language barriers, dealing with sensory or psychological and/or intellectual impairments, how to deal with challenging or aggressive behaviour
- How to communicate essential information where difficulties exist, how to appropriately utilise the assistance of interpreters, chaperones, and relatives.
- How to deal with anger, frustration in self and others
- Selecting appropriate environment; seeking assistance, making and taking time

Dealing with professional colleagues and others

- How to communicate with doctors and other members of the healthcare team; how to provide concise, problem-orientated statement of facts and opinions (written, verbal or electronic)
- Knowledge of legal context of status of records and reports, of data protection (confidentiality), Freedom of Information (FOI) issues
- Understanding of the relevance to continuity of care and the importance of legible, accessible, records
- Knowing when urgent contact becomes necessary and the appropriate place for verbal, telephone, electronic, written communication
- Recognition of roles and skills of other health professionals
- Awareness of own abilities/limitations and when to seek help or give assistance, advice to others; when to delegate responsibility and when to refer

Maintaining continuity of care

- Understanding the relevance to outcome of continuity of care, within and between phases of healthcare management
- The importance of completion of tasks and documentation (e.g. before handover to another team, department, specialty), of identifying outstanding issues and uncertainties
- Knowledge of the required attitudes, skills and behaviours which facilitate continuity of care such as maintaining (legible) records, being available and contactable, alerting others to avoid potential confusion or misunderstanding through communications failure

Giving explanations

- The importance of possessing the facts, and of recognising uncertainty and conflicting evidence on which decisions have to be based
- How to secure, retain attention avoid distraction
- Understanding how adults receive information best, the relative value of the spoken, written, visual means of communication, use of reinforcement to assist retention
- Knowledge of risks of information overload
- Interpreting results, significance of findings, diagnosis, explaining objectives, limitations, risks of treatment, using communication adjusted to recipients' ability to comprehend
- Ability to achieve level of understanding necessary to gain co-operation (compliance, informed choice, acceptance of opinion, advice, recommendation)

Responding to complaints

- Value of hearing and dealing with complaints promptly; the appropriate level, the procedures (departmental and institutional); sources of advice, assistance available
- The importance of obtaining and recording accurate and full information, seeking confirmation from multiple sources
- Knowledge of how to establish facts, identifying issues and responding quickly and appropriately to a complaint received

SKILLS

- Ability to elicit facts, using a mix of open and closed-ended questions appropriately
- Using "active listening" techniques such as nodding and eye contact
- Giving information clearly, avoiding jargon, confirming understanding, ability to encourage co-operation, compliance; obtaining informed consent
- Showing consideration and respect for other's culture, opinions, patient's right to be informed and make choices
- Respecting another's right to opinions and to accept or reject advice
- Valuing perspectives of others contributing to management decisions
- Conflict resolution
- Dealing with complaints
- Communicating decisions in a clear and thoughtful manner
- Presentation skills
- Maintaining (legible) records
- being available, contactable, time-conscious
- Setting (and attempting to reach) realistic objectives, identifying and prioritising outstanding problems
- Using language, literature (leaflets) diagrams, educational aids and resources appropriately
- Ability to establish facts, identify issues and respond quickly and appropriately to a complaint received
- Accepting responsibility, involving others, and consulting appropriately
- Obtaining informed consent
- Discussing informed consent
- Giving and receiving feedback

ASSESSMENT & LEARNING METHODS

- Mastering Communication course (Year 1)
- Consultant feedback at annual assessment
 - Workplace based assessment e.g. Mini-CEX, DOPS, CBD
 - Educational supervisor's reports on observed performance (in the workplace): communication with others e.g. at handover. ward rounds, multidisciplinary team members
- Presentations
- Ethics courses
- RCPI HST Leadership in Clinical Practice Course

Leadership

Objective: To have the knowledge, skills and attitudes to act in a leadership role and work with colleagues to plan, deliver and develop services for improved patient care and service delivery.

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care; Communication and Interpersonal Skill; Collaboration and Teamwork; Management (including Self-Management); Scholarship.

KNOWLEDGE

Personal qualities of leaders

- Knowledge of what leadership is in the context of the healthcare system appropriate to training level
- The importance of good communication in teams and the role of human interactions on effectiveness and patient safety

Working with others

- Awareness of own personal style and other styles and their impact on team performance
- The importance of good communication in teams and the role of human interactions on effectiveness and patient safety

Managing services

- The structure and function of Irish health care system
- Awareness of the challenges of managing in healthcare
 - Role of governance
 - Clinical directors
- Knowledge of planning and design of services
- Knowledge and understanding of the financing of the health service
 - Knowledge of how to prepare a budget
 - Defining value
 - Managing resources
- Knowledge and understanding of the importance of human factors in service delivery
 - How to manage staff training, development and education
- Managing performance
 - How to perform staff appraisal and deal effectively with poor staff performance
 - How to rewards and incentivise staff for quality and efficiency

Setting direction

- The external and internal drivers setting the context for change
- Knowledge of systems and resource management that guide service development
- How to make decisions using evidence-based medicine and performance measures
- How to evaluate the impact of change on health outcomes through ongoing service evaluation

SKILLS

- Effective communication with patients, families and colleagues
- Co-operation and collaboration with others; patients, service users, carers colleagues within and across systems
- Being an effective team player
- Ability to manage resources and people
- Managing performance and performance indicators

Demonstrating personal qualities

- Efficiently and effectively managing one-self and one's time especially when faced with challenging situations
- Continues personal and professional development through scholarship and further training and education where appropriate
- Acting with integrity and honesty with all people at all times
- Developing networks to expand knowledge and sphere of influence
- Building and maintaining key relationships
- Adapting style to work with different people and different situations
- Contributing to the planning and design of services

ASSESSMENT & LEARNING METHODS

- Mastering Communication course (Year 1)
- RCPI HST Leadership in Clinical Practice (Year 3 – 5)
- Consultant feedback at annual assessment
- Workplace based assessment e.g. Mini-CEX, DOPS, CBD
- Educational supervisor's reports on observed performance (in the workplace): on management and leadership skills
- Involvement in hospital committees where possible e.g. Division of Medicine, Drugs and Therapeutics, Infection Control etc.

Quality Improvement

Objective: To demonstrate the ability to identify areas for improvement and implement basic quality improvement skills and knowledge to improve patient safety and quality in the healthcare system.

Medical Council Domains of Good Professional Practice: Patient Safety and Quality of Patient Care; Communication and Interpersonal Skills; Collaboration and Teamwork; Management; Relating to Patients; Professionalism

KNOWLEDGE

Personal qualities of leaders

- The importance of prioritising the patient and patient safety in all clinical activities and interactions

Managing services

- Knowledge of systems design and the role of microsystems
- Understanding of human factors and culture on patient safety and quality

Improving services

- How to ensure patient safety by adopting and incorporating a patient safety culture
- How to critically evaluate where services can be improved by measuring performance, and acting to improve quality standards where possible
- How to encourage a culture of improvement and innovation

Setting direction

- How to create a 'burning platform' and motivate other healthcare professionals to work together within quality improvement
- Knowledge of the wider healthcare system direction and how that may impact local organisations

SKILLS

- Improvement approach to all problems or issues
- Engaging colleagues, patients and the wider system to identify issues and implement improvements
- Use of quality improvement methodologies, tools and techniques within every day practice
- Ensuring patient safety by adopting and incorporating a patient safety culture
- Critically evaluating where services can be improved by measuring performance, and acting to raise standards where possible
- Encouraging a culture of improvement and innovation

Demonstrating personal qualities

- Encouraging contributions and involvement from others including patients, carers, members of the multidisciplinary team and the wider community
- Considering process and system design, contributing to the planning and design of services

ASSESSMENT & LEARNING METHODS

- RCPI HST Leadership in Clinical Practice
- Consultant feedback at annual assessment
- Involvement in hospital committees where possible e.g. Division of Medicine, Drugs and Therapeutics, Infection Control etc.

Scholarship

Objective: To develop skills in personal/professional development, teaching, educational supervision and research

Medical Council Domains of Good Professional Practice: Scholarship

KNOWLEDGE

Teaching, educational supervision and assessment

- Principles of adult learning, teaching and learning methods available and strategies
- Educational principles directing assessment methods including, formative vs. summative methods
- The value of regular appraisal / assessment in informing training process
- How to set effective educational objectives and map benefits to learner
- Design and delivery of an effective teaching event, both small and large group
- Use of appropriate technology / materials

Research, methodology and critical evaluation

- Designing and resourcing a research project
- Research methodology, valid statistical analysis, writing and publishing papers
- Ethical considerations and obtaining ethical approval
- Reviewing literature, framing questions, designing a project capable of providing an answer
- How to write results and conclusions, writing and/or presenting a paper
- How to present data in a clear, honest and critical fashion

Audit

- Basis for developing evidence-based medicine, kinds of evidence, evaluation; methodologies of clinical trials
- Sources from which useful data for audit can be obtained, the methods of collection, handling data, the audit cycle
- Means of determining best practice, preparing protocols, guidelines, evaluating their performance
- The importance of re-audit

SKILLS

- Bed-side undergraduate and post graduate teaching
- Developing and delivering lectures
- Carrying out research in an ethical and professional manner
- Performing an audit
- Presentation and writing skills – remaining impartial and objective
- Adequate preparation, timekeeping
- Using technology / materials

ASSESSMENT & LEARNING METHODS

- Health Research – An Introduction
- Effective Teaching and Supervising Skills course (online) - recommended
- Educational Assessment Skills course - recommended
- Performing audit course –mandatory
- Health Research Methods for Clinicians - recommended

Management

Objective: To understand the organisation, regulation and structures of the health services, nationally and locally, and to be competent in the use and management of information on health and health services, to develop personal effectiveness and the skills applicable to the management of staff and activities within a healthcare team.

Medical Council Domains of Good Professional Practice: Management.

KNOWLEDGE

Health service structure, management and organisation

- The administrative structure of the Irish Health Service, services provided in Ireland and their funding and how to engage with these for best results
- Department of Health, HSE and hospital management structures and systems
- The national regulatory bodies, health agencies and patient representative groups
- Understanding the need for business plans, annual hospital budgets, the relationship between the hospital and PCCC

The provision and use of information in order to regulate and improve service provision

- Methods of collecting, analysing and presenting information relevant to the health of a population and the apportionment of healthcare resources
- The common ways in which data is presented, knowing of the sources which can provide information relevant to national or to local services and publications available

Maintaining medical knowledge with a view to delivering effective clinical care

- Understanding the contribution that current, accurate knowledge can make to establishing clinical effectiveness, best practice and treatment protocols
- Knowledge of sources providing updates, literature reviews and digests

Delegation skills, empowerment and conflict management

- How to assess and develop personal effectiveness, improve negotiating, influencing and leadership skills
- How to manage time efficiently, deal with pressure and stress
- How to motivate others and operate within a multidisciplinary team

SKILLS

- Chairing, organising and participating in effective meetings
- Managing risks
- Managing time
- Delegating tasks effectively
- Managing conflicts
- Exploring, directing and pursuing a project, negotiating through the relevant departments at an appropriate level
- Ability to achieve results through an understanding of the organisation and its operation
- Ability to seek / locate information in order to define an issue needing attention e.g. to provide data relevant to a proposal for change, establishing a priority, obtaining resources
- Ability to make use of information, use IT, undertake searches and obtain aggregated data, to critically evaluate proposals for change e.g. innovative treatments, new technologies
- Ability to adjust to change, apply management, negotiating skills to manage change
- Appropriately using management techniques and seeking to improve these skills and personal effectiveness

ASSESSMENT & LEARNING METHODS

- Mastering Communication course
- Performing Audit course
- RCPI HST Leadership in Clinical Practice
- Annual audit
- Consultant feedback on management and leadership skills

Involvement in hospital committees

Specialty Section

Hormones: The Pathophysiology of the Endocrine System

Objective: To understand and be able to explain the normal and abnormal production of hormones, their regulation and effects and the means of assessing the structures and functions of the endocrine system. To be capable of applying this information correctly and efficiently in the diagnosis and management of endocrine disease.

The Endocrine Glands, their Hormones, Effects and Mechanism of Actions, Pathology in Disease

Objective: To understand and be able to explain the production and actions of hormones and the pathogenesis of diseases of the endocrine system.

KNOWLEDGE

Anatomy, physiology and pathology

- The development, anatomy, histology, functions and inter-relationships of the endocrine glands and tissues
- Synthesis, secretion, transport, regulation of hormones and the mechanisms by which they produce their effects in health and disease
- Pathogenesis of endocrine diseases: infection, inflammation, auto-immunity, benign and malignant, functioning and non-functioning tumours, hyperplasia, atrophy

SKILLS

- To be able to apply knowledge to the diagnosis and effective management of endocrine disease
- Fully utilises opportunities and resources for self-directed learning, eager to learn, inquisitive, industrious

ASSESSMENT & LEARNING METHODS

- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Clinical and Laboratory Assessment of Endocrine Function

Objective: To have the knowledge and skills to make a clinical assessment of endocrine function. To select, arrange, explain and interpret investigations and tests appropriate to the patient's needs.

KNOWLEDGE

Assessment of endocrine function

- To know and to be able to recognise the symptoms, signs, biochemical and other manifestations of abnormal endocrine function
- To understand and directly observe the principles of and techniques employed in hormonal assays and the laboratory assessment of endocrine function
- To have knowledge of the tests available, the "normal" ranges, variability and possible artefacts relevant to interpretation
- To be capable of explaining and advising on the selection of tests appropriate to the patient's needs; the collection, timing and storage of specimens, on stimulation and suppression techniques. To be able to interpret the results correctly
- To properly obtain fully informed consent
- To recognise the potential for misinterpretation of results due to collection, methodological errors, extraneous substances
- To be able to elicit from patients relevant symptoms and physical signs and interpret correctly positive and negative clinical findings in order to reach a working diagnosis and/or arrange appropriate investigations
- To appreciate the patients' and their relatives' fears and uncertainties and be prepared to discuss and deal with these sensitively, encouraging their contributions to the decision-making process and respecting the right of the individual to consider, accept or to refuse medical advice

SKILLS

- Interpretation of investigations

ASSESSMENT & LEARNING METHODS

- Attendance in laboratory with full range of endocrinology testing (minimum 5 days)
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Imaging Techniques in Endocrinology

Objective: To have the knowledge and skills necessary to select, explain, arrange and interpret the imaging technique(s) most appropriate to each patient's needs.

KNOWLEDGE

Imaging in endocrine disease

- Know the potential contribution and the limitations of radiological techniques to the diagnosis and assessment of endocrine diseases from radiography, CT, MRI, nuclear medicine scanning and ultrasonography
- To know and understand the principles of the imaging techniques available for demonstrating endocrine tissues and their function
- To make appropriate referrals, complete documentation accurately to assist in the interpretation of CT and MRI scans of the pituitary region, adrenals, orbits etc; ultrasonography of the thyroid, ovaries; and radio-isotope scanning of the thyroid, adrenal glands
- To participate in joint endocrine/radiology meetings and be able to interpret MRI scans of the pituitary region and thyroid and adrenal imaging
- Recognises the importance of explaining the purpose and the results of investigations using appropriate language

SKILLS

- Appropriate diagnostic testing

ASSESSMENT & LEARNING METHODS

- Attendance at Radiology meetings (minimum 6 times per year)
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Diabetes Mellitus

Objective: To acquire the knowledge and skills necessary to correctly diagnose and manage patients with diabetes mellitus and its complications.

Diagnosis and General Management of Diabetes

Objective: To be competent to diagnose and manage Type 1 (insulin dependent) and Type 2 (adult-onset) diabetes.

KNOWLEDGE

Classification and diagnosis

- The classification, different types and sub-types of diabetes, their aetiology, genetics; the natural history and pathology of those diseases and their complications
- Glucose homeostasis, the principles, design and interpretation of glucose tolerance testing
- To understand the differences in presentation of diabetes in different ethnic groupings
- To be able to perform a full clinical examination on a person suspected as having diabetes, discover and accurately report on any evidence of the disease and its complications: interpret and explain the findings
- To be able to perform and interpret correctly the results of tests for glucose tolerance
- To be aware and sensitive to the impact a diagnosis of diabetes will have on the patient and their family

General management, treatment

- Principles, objectives of management of both Type 1 and Type 2 diabetes
- Medical nutrition therapy. Exercise. Actions, use of anti-diabetic agents, other drugs
- Insulins, their delivery, dose adjustment; monitoring glycaemic control
- Involvement in structured education programmes for the delivery of diabetes care to patients with Type 1 and Type 2 diabetes
- Appreciates contributions from other specialists and health professionals (including specialist nurses) to general management of diabetes
- Aware of potential contributions from patient support groups, family members

SKILLS

- Diagnose and manage Type 1 and Type 2 diabetes
- Devising individualised treatment plans, advising on choice of treatments, drugs and insulin adjustments based on monitoring glucose etc.
- Screening for and detecting early signs of complications; avoiding, recognising, correcting hypoglycaemia

ASSESSMENT & LEARNING METHODS

- Study Day
- Attend diabetic clinics

Social and Practical Aspects

Objective: To have knowledge and skills to be able to advise and arrange to support patients and their relatives in dealing with the social and practical issues faced by diabetic patients.

KNOWLEDGE

Social and practical aspects

- Home blood and urine testing (through attendance at Diabetes Day Centre): insulin administration devices
- Support services available, including foot care, visual impairment
- Implications for employment, driving
- Patient education regarding above, advising about hypo/hyperglycaemia, diet, exercise and weight control; smoking; care of the feet; family planning
- Prepared to listen; recognises patient's concerns; encourages patient to participate in and share responsibility for management

SKILLS

- Patient education

ASSESSMENT & LEARNING METHODS

- Attend Diabetic Day Centre

Diabetic Emergencies

Objective: To be able to diagnose correctly, manage effectively and efficiently and prevent future recurrences of severe hypoglycaemia, hyperglycaemic emergencies and related metabolic decompensations.

KNOWLEDGE

Hypoglycaemia, hyperglycaemia

- Precipitating factors, evolution, clinical features, metabolic consequences of hyperglycaemia; keto-acidosis and other metabolic decompensations
- Causes of hypoglycaemia, presentation, hypoglycaemic unawareness, sequelae
- Identifying hypoglycaemic unawareness, “risk-taking” behaviour, “brittle” diabetics
- Attentive to patient’s needs, listens, is prepared to adjust, re-adjust, individualise treatment plan

SKILLS

- To distinguish, effectively manage severe hypoglycaemia, hyperglycaemia and associated metabolic disturbances presenting as emergencies and to advise on the means of preventing recurrences

ASSESSMENT & LEARNING METHODS

- Case based discussion (CBD)

Intercurrent Events Complicating Management

Objective: To be competent to advise on the appropriate management and continuing care of the diabetic patient in the presence of intercurrent infection, other disease; in the young, old and during pregnancy.

KNOWLEDGE

The management of diabetes in the presence of various intercurrent events

- Awareness of the appropriate adjustments to the management of the diabetic patient in the presence of infection, other diseases and in relation to an operative procedure
- Able to maintain control of the diabetic state pre- and post- operatively and during intercurrent illness
- Appreciation of the importance of good glycaemic control during intercurrent illness and ability to communicate this to patient and health care professionals. Ability to alleviate patient's concerns re deterioration of glycaemic control at times of stress/intercurrent illness

Conception and pregnancy

- Know the potential of diabetes to affect conception and pregnancy and of the risks of pregnancy for a diabetic patient
- Recognise the particular importance of good glycaemic and blood pressure control during pregnancy
- Able to manage and advise on the care of the patient with diabetes prior to conception and throughout pregnancy
- Supervise/deliver ante-natal care (at joint diabetes/obstetric clinic); manage glycaemia during labour
- Appropriate follow-up of patients with gestational diabetes mellitus
- Be sensitive to the patient's needs during pregnancy and be aware of the impact of a diagnosis of gestational diabetes mellitus on the patient

Diabetes and the young and old

- Understand how diabetes affects children, adolescents and of the physiological, psychological and social problems experienced
- Special care needs of young people with diabetes and for transition to a service for adults
- Impairments and handicaps in older people complicating management and self-care. Agencies providing support
- Involvement in adolescent diabetes camps is desirable
- Recognise and identify as risk – taking the behaviour of young people with diabetes, recognise their special need for understanding and support
- Encourage enlist patient's, relative's involvement in management
- Assisting in meeting the additional social and medical needs of elderly people with diabetes, in the community and in residential care. Obtaining access to agencies in available for assistance
- Non-judgemental response to the difficulties/needs of young and old
- Understanding of the impact of psychosocial factors on adolescents with diabetes and the control of their disease

SKILLS

- Ability to maintain control of diabetes in patients who are unable to eat, are on enteral or parenteral feeding as well as in the post myocardial infarction period and in the intensive care setting
- Diagnose and manage gestational diabetes
- Management of diabetes in the young and old

ASSESSMENT & LEARNING METHODS

- Case based discussion
- Attend diabetic obstetric clinics (minimum 10 during programme)
- Attend diabetic paediatric/adolescent (minimum 10 during programme)
- Study Day

Assessment at SpR :

- Year 1: Management of Diabetes in presence of various intercurrent events
- Year 1- 5: Management of diabetes in conception and pregnancy
- Year 1- 5: Management of diabetes in the young and old

Microvascular Complications of Diabetes (Including the Diabetic Foot)

Objective: To have the knowledge and skills necessary to understand the pathogenesis of the microvascular complications of diabetes mellitus, the principles and practice of screening for and management of ophthalmic, renal, neuropathic and other effects.

KNOWLEDGE

Eye disease in diabetes

- How diabetes may affect the eyes, cataracts, retinopathy (mild moderate and severe non-proliferative retinopathy), ophthalmoplegia
- Understand and be able to explain strategies for prevention, treatment of diabetic eye disease
- Range of services provided for visually handicapped (partially sighted); implications for driving and employment
- Inform and advise on treatment options, make appropriate referrals for ophthalmic opinion
- Understand the difficulties for patients and their families in adjusting to visual handicap. Offer appropriate support particularly re insulin administration and blood glucose monitoring

Renal disease in diabetes

- Pathology/pathogenesis of renal disease in diabetes, effects, natural history and prognosis
- Significance of micro-albuminuria, hypertension, overt nephropathy, increased risk of infection, renal papillary necrosis
- Principles of management to preserve renal function
- Diagnosing micro-albuminuria, diabetic nephropathy, optimal management of BP, glycaemia, renin-angiotensin system to preserve kidney function
- Informing and advising patients on the implications of renal involvement, on treatment options available, the use, benefits and effects of therapeutic interventions
- Refer appropriately for nephrology opinion, dialysis, transplant
- Understand potential impact of immunosuppressants on diabetes control

Neuropathy

- Know and understand the effects of peripheral sensory, proximal motor and autonomic neuropathies, mononeuritis including cranial nerve palsies occurring in diabetes
- To understand the impact of neuropathy including foot complications and fear of foot complications on patients suffering from diabetes and their families
- To be able to discuss the benefits of good glycaemic control on reducing the risk of neuropathy

Foot problems

- Multifactorial basis of foot problems in diabetes - neuropathic, micro and macro vascular, infectious and mechanical contributions
- Principles and means of management, prevention; necessary precaution
- Understanding the benefit of a multidisciplinary approach to the prevention and management of foot complications in patients with diabetes mellitus
- Appropriate referral for specialist e.g. surgical opinion, rehabilitation following amputation
- Understanding the fears patients have regarding the potential risk of amputation

SKILLS

- Use ophthalmoscope to diagnose and assess cataract, retinopathy. Perform visual acuity test, correctly interpret result. Interpret retinal photographs
- Management of diabetes in dialysis patients and pre and post-transplant
- Able to recognise, correctly diagnose, assess and manage appropriately the varied clinical neurological manifestations, including sensory impairments, dyesthesiae, loss of muscle power, postural hypotension, impotence, erectile dysfunction, diarrhoea
- Advise on prevention, care of established foot problems in a multidisciplinary setting (attendance at foot care clinics)

ASSESSMENT & LEARNING METHODS

- Attend ophthalmic clinics (Minimum of 10 during programme)
- Attend renal clinics (Minimum of 10 during programme)
- Attend foot clinics (Minimum of 10 during programme)
- Study day

Macrovascular Complications of Diabetes Mellitus

Objective: To have the knowledge and skills necessary to understand the pathogenesis of macrovascular disease as it occurs in diabetes and to be able to provide appropriate advice on its prevention and management.

KNOWLEDGE

Clinical macro vascular disease

- Contributions from arteriosclerotic disease, hyperlipidaemia, coagulative abnormalities, hypertension to premature, severe arterial disease in diabetes
- Particular risk from smoking
- Able to recognise and assess effects of pathology in coronary, cerebral (neck), aortic, renal, pelvic, leg etc. vessels and advise on investigations appropriate to patient's needs
- Arrange effective interventions (anticoagulation, angioplasty, surgery)
- Recognise and manage other vascular risk factors including hyperlipidaemia and hypertension
- Refer appropriately
- Advise/assist patient to stop smoking
- Be aware of issues regarding compliance with medication and be able to explain clearly to the patients the rationale and importance of compliance

SKILLS

- Recognise and manage vascular risk factors
- Manage vascular complications

ASSESSMENT & LEARNING METHODS

- CBD
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Other Metabolic Disorders

Objective: To have the knowledge and skills necessary and be competent to advise on the appropriate management of disorders of nutrition and metabolism including disorders of appetite and weight.

Disorders of Appetite and Weight

Objective: To understand and be able to explain the physiology of appetite regulation, energy requirements and balance; the causes, pathophysiology, psychology of obesity, and of eating disorders and their endocrine effects.

KNOWLEDGE

Obesity

- Obesity as a health problem, causes, risk to health, treatment options, principles of management including role of bariatric surgery
- The metabolic syndrome
- Measuring obesity, estimating energy intake/expenditure, appropriate dietary prescription.
- Appropriate referral to other health professionals, slimming agencies
- Non judgemental, supportive approach, prepared to share responsibility with patient to achieve agreed, attainable goals

Eating disorders

- Patho-physiology, psychopathology of anorexia nervosa, bulimia
- Clinical features, mental state, physical, biochemical, endocrine and metabolic complications
- Recognition, investigation and appropriate management of these conditions and complications
- Non-judgemental, supportive approach, prepared to share responsibility with patient to achieve agreed, attainable goals

SKILLS

- Recognition, investigation and appropriate management of eating disorders including obesity

ASSESSMENT & LEARNING METHODS

- CBD
- Study Day

Lipid Disorders/Dyslipidaemia

Objective: To acquire the knowledge and skills necessary to differentiate and manage primary and secondary dyslipidaemic states.

KNOWLEDGE

Hyperlipidaemia

- Plasma lipids and lipid transport, lipoproteins, “normal” ranges; dyslipidaemic states (primary and secondary) and risks associated
- Genetic and environmental influences
- Treatment of lipid disorders; lifestyle measures, drugs and their effects
- Screening for dyslipidaemia, interpretation of results; assessing cardiovascular risk

SKILLS

- Correctly diagnosing and managing patients with primary and secondary lipid disorders (attendance at specialised lipid clinics optional)
- Use evidence-based medicine to develop/justify strategies for prevention

ASSESSMENT & LEARNING METHODS

- CBD
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Spontaneous Hypoglycaemia

Objective: To diagnose the cause and correctly manage hypoglycaemia in order to prevent recurrences.

KNOWLEDGE**Hypoglycaemia**

- Physiology of glucose control
- Symptoms, signs and consequences of hypoglycaemia
- Causes e.g. insulinoma, other endocrine, hepatic, factitious
- Recognise, correctly diagnose pathological hypoglycaemia, investigate appropriately and interpret results to identify cause of fasting and reactive types
- To understand the impact of hypoglycaemia on patients' quality of life and alleviate patients' concerns regarding symptoms and potential complications
- To recognise potential settings in which factitious hypoglycaemia may be a possibility and ability to handle these situations sensitively

SKILLS

- Diagnose, investigate and manage hypoglycaemia

ASSESSMENT & LEARNING METHODS

- CBD
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Hyper- and Hyponatraemia

Objective: To understand and be able to explain water and sodium homeostasis and to be competent to recognise and advise in the management of hyponatraemic and hypernatraemic states.

KNOWLEDGE

Hyper- and hyponatraemia

- Water and sodium homeostasis, renal regulation of sodium homeostasis and their abnormalities
- Classification and causes of hypo and hypernatraemia, polyuria and polydipsia.
- Inappropriate ADH secretion syndrome
- Recognise circumstances potentially leading to hypo/hypernatraemia, able to detect clinical features, interpret correctly plasma/urinary chemistry
- Diagnose cause, institute appropriate treatment for acute and chronic hypo- and hypernatraemia
- Appreciate the complex nature of treating severe degrees of hyper- and hyponatraemia
- Close liaison with other health care professionals involved in managing patients with disorders of sodium balance to help prevent recurrences

SKILLS

- Recognise, diagnose and manage hyponatraemic and hypernatraemic states

ASSESSMENT & LEARNING METHODS

- Consultations (record a minimum of 10 per year)
- CBD
- Study day

Disorders of Carbohydrate Metabolism, Haemochromatosis and Porphyria

Objective: To understand the inborn and acquired errors of metabolism which underlie diseases seen in humans and the principles upon which the effective management of the manifestations of these diseases is based.

KNOWLEDGE

Haemochromatosis

- Iron absorption, storage and transport; measurement of Fe status
- Idiopathic haemochromatosis clinical presentation
- Screening and means of early diagnosis; able to recognise range of clinical manifestations including endocrine
- Differentiate other causes of iron overload
- Understand the importance of and rationale for family screening for haemochromatosis
- Ability to communicate with patients and families to alleviate concerns regarding the impact of a (possible) diagnosis of haemochromatosis

Disorders of carbohydrate metabolism

- Carbohydrate digestion, absorption and storage and the effects of inborn and acquired abnormalities. Biochemical aspects, enzymology, glycogen storage diseases
- Able to recognise clinical presentations, investigate appropriately, arrange management
- To understand the genetic basis of inborn errors of metabolism and develop an ability to sensitively interact with patients and families with these conditions
- Appreciation of the need for involvement of medical genetics specialists

The porphyrias

- Biochemical basis and varieties of porphyria: their acute and non-acute presentations, investigations necessary to determine diagnosis
- Inheritance patterns
- Recognise GI and neuropsychiatric features of acute intermittent porphyria, aggravating factors
- Able to identify cutaneous manifestations
- Manage acute presentation, advise on prophylaxis
- To understand and communicate the genetic basis of the porphyrias to patients and families.
- To refer to medical genetics specialists for assessment
- To advise patients and families regarding prevention of acute episodes

SKILLS

- Screening
- Diagnosis, investigation and management of:
 - Haemochromatosis
 - Disorders of carbohydrate metabolism
 - The porphyrias

ASSESSMENT & LEARNING METHODS

- CBD
- Study day (With Chemical pathology)
- Year 1 - 2: Haemochromatosis
- Year 1 - 5: Carbohydrate metabolism, porphyria

The Endocrine Glands and Their Diseases

Objective: To be able to identify the clinical presentations of diseases of the endocrine glands and to be able to investigate appropriately, correctly diagnose and manage patients suspected as suffering from such diseases.

Hypothalamic and Pituitary Diseases

Objective: To have the knowledge and skills necessary to be able to diagnose deficiencies or excessive production of pituitary hormones and to recognise the local and systemic effects of the lesions responsible for anterior and posterior pituitary and hypothalamic disorders: to identify and manage the pathology responsible and the endocrine disease caused.

KNOWLEDGE

Hypothalamic syndromes

- The regulatory and integrative functions of the hypothalamus, its hormones and releasing factors
- Congenital and acquired hypothalamic diseases and injuries
- Recognising distortions of appetite, sleep, thirst etc as potential features of hypothalamic syndromes
- Correctly diagnosing and managing the pathology responsible and endocrine/metabolic effects
- Understanding and managing the psychological impact of hypothalamic disease on patients

Pituitary diseases

- Pituitary structure and functions, hormones and their actions, hormone deficiencies
- Strategies for the assessment of anterior and posterior pituitary function, assessment of visual fields
- Hyperplasia and increased activity, non-functioning and functioning pituitary tumours; prolactinomas, acromegaly, gigantism, Cushing's Disease, Craniopharyngioma, mass effects
- Treatment options, including irradiation, surgery, medical treatment
- Genetic and acquired hypopituitarism, causes, effects, replacement of adrenal, thyroid, gonadal axes
- Growth hormone deficiency
- Be able to select, arrange and interpret basal and dynamic tests of pituitary function, imaging and other investigations appropriate to patients' needs
- Competence to diagnose and manage diabetes insipidus, to diagnose and provide the initial and long-term medical management of anterior and other posterior pituitary diseases
- Able to recognise and manage appropriately patients with SIADH, thirst dysregulation and other disorders of fluid balance
- Make appropriate referrals for pituitary surgery, radiotherapy: supervise perioperative management of patients
- Advise patients on appropriate doses of replacement hormones including stress doses of steroids

SKILLS

- Investigation and management of hypothalamic and pituitary diseases
- Dynamic testing e.g.,
 - Insulin Tolerance Test
 - ACTH Stimulation Test
 - Supervision of Prolonged Fast
 - LH-RH Testing

ASSESSMENT & LEARNING METHODS

- Study Days
- Years 1- 3: Dynamic testing
- Years 2 - 3 : Hypothalamic

The Thyroid Gland

Objective: To have the knowledge and skills necessary to be able to diagnose deficiencies or excessive production of thyroid hormones and to recognise the local and systemic effects of the lesions responsible; to identify and manage the pathology responsible and the endocrine disease caused.

KNOWLEDGE

Thyroid disease

- To understand thyroid disease in terms of the physiology and biochemistry of thyroid hormones, iodine metabolism, auto-immunity and the pathogenesis of malignant disease
- Tests of thyroid function, their interpretation, and value, assay interference: imaging and the use of radio-isotopes in the investigation of thyroid disease
- Causes of hyper and hypothyroidism
- Causes and types of goitre
- Competent to diagnose, assess and appropriately manage hyperthyroidism and its systemic effects; use appropriately anti-thyroid and other drugs; refer for radioactive iodine and surgery as necessary
- Able to provide emergency treatment (for thyroid "Storm" and Myxedema Coma)
- Recognition, assessment, medical management and appropriate referral of patients with significant ocular involvement (Grave's eye disease)
- Able to assess and advise on the management of non-toxic goitre, multi-nodular goitre and solitary thyroid nodules
- Perform and refer for fine-needle biopsy as appropriate
- Diagnose thyroid carcinoma, recognise the place for TSH suppression, radioactive iodine and/or surgery; refer appropriately
- Able to differentiate primary and secondary causes of hypothyroidism including inherited enzyme defects, peripheral resistance to thyroid hormones and to manage appropriately hypothyroidism in the newborn, in childhood and older people, treat severe cases including myxoedema coma
- Supervision of perioperative care of patients undergoing thyroid surgery (especially hyperthyroid patients)
- Managing thyroid disorders during and after pregnancy
- Recognise and treat acute, subacute and chronic thyroiditis
- Differentiate non-thyroidal illness simulating thyroid disease
- To understand and recognise potential psychological/psychiatric manifestations of thyroid diseases e.g. anxiety in hyperthyroidism, and their impact on patients and their perceptions of their conditions

SKILLS

- Fine needle aspiration of thyroid nodule
- Diagnosis, investigation and management of thyroid disease

ASSESSMENT & LEARNING METHODS

- DOPS: Fine needle aspiration (optional)
- Study Day
- CBD

The Adrenal Glands

Objective: To have the knowledge and skills necessary to be able to recognise the manifestations of excessive production or deficiencies of the hormones produced by the adrenal glands: to understand and identify the pathogenesis and to be competent to differentiate and manage appropriately the endocrine syndromes resulting.

KNOWLEDGE

Adrenocortical diseases

- The biochemistry, production, regulation and actions of the hormones produced by the adrenal cortex. Abnormal production and effects e.g. in Cushing's syndrome, congenital adrenal hyperplasia (CAH), hyperaldosteronism and Addison's disease
- Imaging techniques available to assist management
- Aetiology of varieties of Cushing's, tests and investigations of value in diagnosis and differential diagnosis, differentiation from pseudo-Cushing's
- Adrenal androgen excess. Androgen secreting tumours. Genetic, biochemical and enzymic abnormalities of CAH; clinical features in babies, children and adults
- Causes of primary hyperaldosteronism, appropriate treatment. Other causes of hyperaldosteronism
- Pathogenesis, laboratory investigation and diagnosis of primary hypoadrenalism (Addison's disease) other causes of adrenal insufficiency
- Screening, the appropriate selection and performance of basal and dynamic tests of adrenal function and the pituitary-adrenal axis, correct interpretation of results and biochemical findings
- Appropriate use of imaging
- Diagnosis and management of patients with Cushing's syndrome, CAH, hyperaldosteronism.
- Investigation and management of suspected primary and secondary adrenal failure, perioperative care, treatment of acute adrenal insufficiency
- Understanding the impact of adrenal diseases on patient's quality of life
- Education of patients regarding the nature of adrenal disease, the impact on their health and the complex nature of the investigation and treatment of adrenal conditions

Phaeochromocytoma, paraganglioma

- Neuroectodermal origin of tumours
- Familial cases and associated diseases, principles of investigation, suppression tests, localisation
- Competent to investigate fully and carefully, and correctly interpret results in a suspected case
- Refer appropriately for surgery, perioperative care with emphasis on preoperative blood pressure control
- Be able to discuss risks associated with surgery with patients, families, surgeons and anaesthetic staff

SKILLS

- Diagnosis, investigation and management of deficiencies of the adrenal glands
- Dynamic testing of adrenal glands

ASSESSMENT & LEARNING METHODS

- CBD
- Study Day

The Endocrinology of Reproduction

Objective: To understand the physiology and endocrinology of reproduction: to have the knowledge and skills necessary to investigate, identify and advise on the management of gonadal and other endocrine disorders affecting the reproductive system in females and in males.

KNOWLEDGE

Development and differentiation of sexual characteristics

- Understand the process of sexual differentiation and development, the genetic and hormonal influences relevant; abnormalities encountered, intersex states
- Normal, delayed and precocious puberty
- Gonadotrophins, sex hormones from testicular and ovarian, adrenal and other tissues, actions and interactions
- Investigate and manage common chromosomal disorders such as Turner's and Klinefelter's (attend a minimum of 10 Paediatric endocrinology clinics)
- Adopt a non-discriminatory, non-judgemental attitude to all patients, recognising and respecting their rights as individuals equally so in the case of children, people with physical, mental, learning disabilities

Primary and secondary gonadal dysfunction in females and males

- Causes of menstrual irregularly, amenorrhoea, ovarian dysfunction, primary and secondary ovarian failure, infertility: hirsutism and the causes of virilism in female
- Know of and understand the polycystic ovary syndrome, its metabolic and reproductive aspects, clinical features of ovarian tumours
- Causes of hypogonadism in males, androgen deficiencies both congenital and acquired; characteristic hormonal profiles
- Cryptorchidism, cause of male infertility, erectile dysfunction, gynaecomastia.
- Types, effects, presentation of testicular tumours
- Assess, investigate appropriately women presenting with hirsutism, virilization, polycystic ovarian syndrome
- Providing the first line assessment of the infertile couple, advising on management and referring appropriately
- Deals appropriately with patient's concerns, sensitivities in a professional manner, explains using appropriate language, checks for understanding

SKILLS

- Perform complete physical examination relevant to reproductive system, perform and interpret functional tests of the hypothalamic – pituitary – gonadal axis, obtain samples for and interpret results of cytogenetic analyses, arrange for imaging and/or biopsy as appropriate for patient's need
- Able to assess, investigate and manage appropriately women with a menstrual disturbance
- Able to investigate fully, identify the cause and manage appropriately male and female patients presenting as a result of primary or secondary gonadal failure
- Competent to assess, investigate and advise on the management of erectile dysfunction, gynaecomastia

ASSESSMENT & LEARNING METHODS

- Attend reproductive endocrine clinics (Minimum of 10 during programme)
- Study Day

Growth and Development

Objective: To have the knowledge and skills necessary to assess growth and development and to be competent to diagnose correctly and manage disorders of growth and maturation.

KNOWLEDGE

Development and growth

- Sexual determination and differentiation, endocrine influences on growth and development through childhood and puberty
- Differential diagnosis of short stature and growth retardation, delayed puberty and premature sexual maturation
- Able to differentiate genetic, endocrine, metabolic causes, diagnose and manage disorders of growth and maturation responsible for abnormally short or tall stature
- Appropriate use of growth hormone, growth-promoting agents in children
- Understanding the psychological impact of disorders of growth and development on children and their families
- Education and reassuring patients with disorders of growth and development and their families as appropriate

SKILLS

- Measurement of height and weight, use of growth charts, radiology, endocrinology in the assessment of growth, age, maturity

ASSESSMENT & LEARNING METHODS

- Attend paediatric endocrinology clinics ((Minimum of 10 during programme)
- Study Day

Calcium Metabolism and Bone; The Parathyroid Glands

Objective: To understand calcium homeostasis and bone metabolism and have the knowledge and skills to diagnose and manage hyper and hypocalcaemic states, parathyroid disorders and metabolic bone disease.

KNOWLEDGE

Parathyroid hormone (PTH), calcitonin and vitamin D

- The origin, production regulation and actions on the gut, kidney and bones of PTH and calcitonin
- Understand calcium and phosphate homeostatic mechanisms, the biological effects and metabolism of the D vitamins: the biology of bone formation, mineralization and resorption
- Hyperplasia, adenomas and carcinoma of the parathyroids, medullary carcinoma of thyroid and associations with M.E.N
- Understanding of the genetic basis of rare genetic disorders such as MEN and ability to educate patients regarding risk of transmission/referral of patients to appropriate specialists

Disordered parathyroid function

- To be aware of the symptomatic and asymptomatic presentation of hyperparathyroidism
- The causes of primary and secondary hyperparathyroidism and of hypoparathyroidism, also their biochemical profiles and radiological features
- To assist and advise in the localisation of the pathology, select and refer for surgery
- Able to supervise/provide immediate and long-term postoperative care
- Able to differentiate and manage hypoparathyroidism and pseudohypoparathyroidism
- Understanding of the importance of careful patient selection for surgical interventions of hyperparathyroidism and communication of information to patients to assist them in decision-making
- To understand and communicate the importance of compliance in management of hypoparathyroidism and pseudo-hypoparathyroidism

Vitamin D and metabolic disease of bone

- Hypervitaminosis D, vitamin D deficiency states and resistance: causes and clinical presentations, rickets and osteomalacia
- Radiology of metabolic diseases of bone, measuring bone density, turnover, mineralisation
- Able to recognise, correctly diagnose cause and manage, vitamin D deficient states, rickets/osteomalacia
- Ability to identify and advise patients at risk of vitamin D deficiency

SKILLS

- Able to appropriately investigate and interpret findings in disorders of calcium and bone metabolism, including those due to disorders of the parathyroids, Vitamin D deficiency and renal disease
- To correctly diagnose the causes of hyper/hypocalcaemia and provide the appropriate management including for acute emergency presentations
- Able to diagnose and differentiate primary and secondary causes of hyperparathyroidism and provide management appropriate to patients' needs
- Appropriate screening for osteoporosis, diagnosis, causes, risks: advise on prophylaxis, assess and manage established osteoporosis

ASSESSMENT & LEARNING METHODS

- Study Day
- Attend metabolic bone clinic (Minimum of 10 during programme)
- CBD

The Diffuse Endocrine System

Objective: To have the knowledge and skills necessary to recognise the effects and identify the cause and origin of excessive production of the hormones of the diffuse endocrine system (neuro endocrine tumours).

Neuro-Endocrine Tumours and their Effects

Objective: To have the knowledge and skills necessary to recognise the effects and identify the cause and origin of excessive production of the hormones of the diffuse endocrine system (neuro endocrine tumours).

KNOWLEDGE

Neuro-endocrine tumours and their effects

- Concept of a diffuse neuro-endocrine system, pancreatic, gastro-intestinal and neural location of tissue, physiology of hormones
- The clinical and biochemical effects of the tumours and the hormones they produce e.g. gastrinomas, insulinomas, glucagonomas, vipomas, somatostatinomas
- Type I and Type II multiple endocrine neoplasia (M.E.N.)
- Origins, chemistry and chemical effects of carcinoid tumours and the carcinoid syndrome
- Recognition of the distinguishing metabolic and clinical consequences of the products of individual neuro-endocrine tumours
- Collection of appropriate material for estimation of relevant peptides (by radio-immunoassay).
- Use of appropriate supportive and anti-tumour drugs
- Assist in the localisation of tumour sites, co-operative management with surgeon
- Correctly recognises the likelihood of M.E.N., value of genetic testing and programmed long-term management
- Sensitivity regarding the need for screening for MEN and associated inherited conditions

SKILLS

- Identify the cause and origin of excessive production of the hormones of the diffuse endocrine system (neuro-endocrine tumours)

ASSESSMENT & LEARNING METHODS

- CBD
- Study Day

Miscellaneous Endocrine Disorders

Objective: To understand and contribute to the diagnosis and appropriate management of the endocrinological aspects of systemic disease, malignancy and the aging process.

Endocrinology and Malignancy

Objective: To have the knowledge and skills to assess and provide appropriate management in relation to the effects of hormones on tumour growth, the endocrine effects of malignant tumours and their treatment.

KNOWLEDGE

Endocrinology and malignant disease

- Endocrine responsive tumours e.g. of breast, reproductive system, prostate, thyroid
- The potential for production of hormones at ectopic sites by certain cancers and their metastases
- The endocrine effects of anti-tumour drugs and irradiation
- Recognise and advise on diagnosis and management of endocrinological problems arising in patients with and/or undergoing treatment for malignant disease
- Effects of metastases to endocrine glands
- To contribute to the multidisciplinary team involved in the management of patients with endocrine tumours/ endocrine responsive tumours

SKILLS

- Assess and manage effects of hormones on tumour growth
- Investigation and management of syndromes of hormone excess associated with malignancy

ASSESSMENT & LEARNING METHODS

- CBD
- Teaching medical students
- Provide talks at laboratory to scientists
- Prepare and deliver presentations to non-medical staff

Hormonal Changes with Ageing and in Systemic Disease

Objective: To be familiar with endocrine and metabolic changes that accompany the ageing process and occur in systemic diseases and to be able to provide appropriate management.

KNOWLEDGE

Hormonal changes that occur with increasing age

- Physiology, changes in growth hormone, gonadotrophins, testicular and ovarian hormones at puberty, during the menopause and with advancing age
- Hyperglycaemia, hyperlipidaemia, osteoporosis, risk of hypothermia in older people
- Recognise and offer intervention appropriate to the patient's need when endocrine or metabolic disorders give rise to health problems in older people
- Appreciate that chronological age does not necessarily equate with physical/metabolic failure

Endocrine disorders occurring in systemic diseases

- Know and understand the endocrine and metabolic disturbances that occur as a consequence of liver disease (in cirrhosis, haemochromatosis) chronic renal failure (renin/angiotensin, calcium homeostasis, haematologic). Androgen abuse
- Autoimmune endocrinopathy syndromes
- Able to recognise and assist in the management of the endocrine and metabolic consequences of systemic illness
- Responds promptly to inter-departmental request: accepts the role of an advisor to consultant in-charge

SKILLS

- Manage endocrine and metabolic changes that accompany the ageing process

ASSESSMENT & LEARNING METHODS

- CBD
- Study day

Required Experience in Diabetes Mellitus and in Endocrinology

In addition to the competencies listed on the previous pages of this curriculum, trainees are required to demonstrate their clinical and laboratory experiences by confirming attendances at general and specialist diabetic and endocrinology clinics, appropriate responsibilities for the care of in-patients (including emergencies), and some experience of working in a recognised endocrinology laboratory. The records of attendance and details of the experience gained, countersigned as necessary by the supervising consultant, should be filed in a portfolio of achievements.

Objectives: To embed theoretical knowledge of endocrinology and diabetes and practical skills in day to day clinical practice, through contact with patients and appropriately supervised management of their illnesses in an out-patient setting, on the wards and in the endocrine laboratory.

Required Experience in Diabetes Mellitus

Objective: Attendance at general and specialist diabetic clinics, responsibility for in-patients including diabetic emergencies, participation in multidisciplinary diabetic care.

- 100 General adult diabetic out-patient clinics, new and review patients
- 10 Paediatric, adolescent and young adult diabetic clinics
- Provision of supervised in-patient diabetic care, including management of diabetic emergencies and in-house consultation services
- 10 Specialist diabetes/ophthalmology clinics
- 10 Specialist nephrology clinics
- 10 Multidisciplinary diabetes care, foot clinics
- 10 Joint metabolic bone clinics
- 10 Nurse/dietitian/patient education and day care

Required Experience in Endocrinology

Objective: Attendance at general endocrine and specialist endocrinology and metabolic clinics, appropriately supervised responsibility for in-patients including emergencies and peri-operative care, ensure participation in multidisciplinary care and experience of working in an endocrine laboratory.

- 100 General adult endocrinology OP clinics, new and review patient
- 10 Paediatric endocrinology, including growth clinics
- 10 Joint reproductive medicine (obstetrics and gynaecology)/endocrinology clinics including infertility
- Optional Lipid clinics
- N/A Provision of supervised in-patient care for endocrine diseases including management of emergencies and in-house consultation services
- N/A Multidisciplinary contact with specialist surgical (thyroid, pituitary/neurosurgical, gynaecological) paediatric, radiological and laboratory colleagues including joint working

Documentation of Minimum Requirements for Training

- These are the minimum number of cases you are asked to document as part of your training. It is recommended you seek opportunities to attain a higher level of exposure as part of your self-directed learning and development of expertise.
- You should expect the demands of your post to exceed the minimum required number of cases documented for training.
- If you are having difficulty meeting a particular requirement, please contact your specialty coordinator.

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Section 1 - Training Plan				
Personal Goals Plan (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer)	Required	1	Training Post	Form 052
Personal Goals Review Form	Required	1	Training Post	Form 137
Weekly Timetable (Sample Weekly Timetable for Post/Clinical Attachment)	Required	1	Training Post	Form 045
On Call Rota	Required	1	Training Post	Form 064
Section 2 - Training Activities				
Outpatient Clinics				Form 001
General Endocrine	Required	30	Year of Training	Form 001
Paediatric Endocrine	Required	10	Training Programme	Form 001
Reproductive Endocrine	Required	10	Training Programme	Form 001
General Diabetic	Required	30	Year of Training	Form 001
Diabetic Obstetric	Required	10	Training Programme	Form 001
Diabetic paediatric/adolescent	Required	10	Training Programme	Form 001
Ophthalmic	Required	10	Training Programme	Form 001
Renal	Required	10	Training Programme	Form 001
Foot	Required	10	Training Programme	Form 001
Lipidology or Dyslipidaemia	Desirable	1	Training Programme	Form 001
Nurse/Dietitian/Patient education and day care	Required	10	Training Programme	Form 001
Metabolic Bone Clinic	Required	10	Training Programme	Form 001
Ward Rounds				Form 002
Consultant Led	Required	40	Year of Training	Form 002

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
SpR Led	Required	40	Year of Training	Form 002
Consultations	Required	40	Year of Training	Form 002
NB: Consultations must include at least 10 salt/water disorders)	Required	10	Year of Training	Form 002
Emergencies/Complicated Cases	Required	10	Training Programme	Form 003
Procedures/Practical Skills				
Insulin Tolerance Test	Required	10	Training Programme	Form 004
ACTH Stimulation Test	Required	10	Training Programme	Form 004
Supervision of Prolonged Fast	Required	10	Training Programme	Form 004
LH-RH Testing	Required	10	Training Programme	Form 004
Observation of fine Needle Aspiration of thyroid nodules - Ultrasound guided	Required	1	Training Programme	Form 004
Lead a radiology MDT	Required	5	Year of Training	Form 004
Additional/Special Experience Gained				
Attend Diabetic day centre (minimum of 4 months attached to diabetes centre per year)	Required	4	Year of Training	Form 005
Observe endocrine surgery (e.g. pituitary, thyroid, adrenal)	Required	4	Year of Training	Form 005
Lab Experience				Form 018
Endocrine Laboratory (5 days attendance in Laboratory with full range of endocrinology testing)	Required	1	Training Programme	Form 018
Management experience				
Participation in coordinated care of diabetes in primary and secondary care	Required	2	Training Programme	Form 110
Section 3 - Educational Activities				
Mandatory Courses				
ACLS	Required	1	Training Programme	Form 006
Ethics I Professionalism	Required	1	Training Programme	Form 006
Ethics II Ethics & Law	Required	1	Training Programme	Form 006
Ethics III Research	Required	1	Training Programme	Form 006
Ethics IV: (End of Life) General Medicine Specialties	Required	1	Training Programme	Form 006
Health Research – An Introduction	Required	1	Training Programme	Form 006
HST Leadership in Clinical Practice (≥ Year 3)	Required	1	Training Programme	Form 006
Mastering Communications (Year 1)	Required	1	Training Programme	Form 006
Performing Audit (Year 1)	Required	1	Training Programme	Form 006
Non – Mandatory Courses	Desirable	1	Training Programme	Form 007
Study Days (Minimum 6 attended) as per training programme	Required	6	Year of Training	Form 008

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Participation at In-house activities minimum of 1 per month from the categories below:				
Grand Rounds	Required	10	Year of Training	Form 011
Journal Club	Required	10	Year of Training	Form 011
MDT Meetings	Required	10	Year of Training	Form 011
Examinations (MRCP – UK Endocrinology and Diabetes special certificate examination) at year 3 or 4	Required	1	Training Programme	Form 012
Delivery of Teaching				
Lecture	Required	4	Year of Training	Form 013
Tutorial	Required	4	Year of Training	Form 013
Bedside Teaching	Required	4	Year of Training	Form 013
Research	Desirable	1	Training Programme	Form 014
Audit activities and Reporting (1 per year either to start or complete, Quality Improvement (QI) projects can be uploaded against audit)	Required	1	Year of Training	Form 135
Publications	Desirable	1	Training Programme	Form 016
Presentations	Desirable	1	Training Programme	Form 017
National/International meetings	Desirable	1	Training Programme	Form 010
Additional Qualifications	Desirable	1	Training Programme	Form 065
Committee Attendance	Desirable	1	Training Programme	Form 063
Section 4 - Assessments				
CBD See below examples: Diabetic Emergencies; Management of diabetes; Dislipidaemia; Hyper- and Hyponatraemia; Macro vascular complications of DM; Disorders of appetite and weight; Carbohydrate metabolism; Thyroid gland; Adrenal gland; Parathyroid Glands; Neuro-endocrine tumors; Endocrinology & malignancy; Hormonal Changes with ageing and systemic disease; Spontaneous hypoglycemia	Required	1	Year of Training	Form 020
Mini-CEX (At least two Mini-CEX assessments)	Required	2	Year of Training	Form 023
Quarterly Assessments	Required	4	Year of Training	Form 092