INSTITUTE
OF MEDICINE

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

INTERNATIONAL CLINICAL FELLOWSHIP TRAINING IN

GENERAL NEUROLOGY

This International Clinical Fellowship Programme Curriculum in Neurology was developed in 2016 by Dr Brian Sweeney and undergoes an annual review by Dr Lisa Costelloe and Prof David Bradley, National Specialty Directors, and by the RCPI Education Department. The curriculum is approved by the Neurology Training Committee and by the Institute of Medicine.

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Introduction

The International Clinical Fellowship Programme (ICFP) provides a route for overseas doctors wishing to undergo structured and advanced postgraduate medical training in Ireland. The ICFP enables suitably qualified overseas postgraduate medical trainees to undertake a fixed period of active training in clinical services in Ireland.

The purpose of the ICFP is to enable overseas trainees to gain access to structured training and in active clinical environments that they cannot get in their own country, with a view to enhancing and improving the individual's medical training and learning and, in the medium to long term, the health services in their own countries.

This Programme will allow participants to access a structured period of training and experience as developed by the Royal College of Physicians of Ireland to specifically meet the clinical needs of participants as defined by their home country's health service.

Aims

Upon satisfactory completion of the ICFP, the doctor will be **competent** to undertake comprehensive medical practice in their chosen specialty in a **professional** manner, in keeping with the needs of the healthcare system.

Competencies, at a level consistent with practice in the specialty, 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.
- Capability to be a scholar, contributing to development and research in the field of the chosen specialty.
- Professionalism.
- Ability to understand health care and identify and carry out system-based improvement of care.

Professionalism

Medical professionalism is a core element of being a good doctor. Good medical practice is based on a relationship of trust between profession and society, in which doctors are expected to meet the highest standards of professional practice and behaviour. It involves partnership between patient and doctor that is based on mutual respect, confidentiality, honesty, responsibility and accountability. In addition to maintaining clinical competence, a doctor should also:

- Show integrity, compassion and concern for others in day-to-day practice
- Develop and maintain a sensitive and understanding attitude with patients
- Exercise good judgement and communicate sound clinical advice to patients
- Search for the best evidence to guide professional practice
- Be committed to continuous improvement and excellence in the provision of health care whether working alone or as part of a team

Prior to commencing their sponsored clinical placements, all participants will also be required to undergo the mandatory screening requirements of the relevant clinical site/service including occupational health assessment and Garda/Police clearance.

Training Programme Duration & Organisation of Training

The period of clinical training that will be provided under the International Clinical Fellowship Programme (ICFP) for this specialty is 3 years.

- Each ICFP is developed by the Royal College of Physicians of Ireland will be specifically designed so as to meet the training needs of participants to support the health service in their home country.
- All appointees to the ICFP will be assessed by the Royal College of Physicians of Ireland to ensure that they possess the necessary requirements from a training and clinical service perspective.
- Each overseas doctor participating in the ICFP will be enrolled with the Royal College of Physicians of Ireland and will be under the supervision of a consultant doctor who is registered on the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council and who is an approved consultant trainer.
- Appointees to the ICFP will normally be registered on the Supervised Division of the Register of Medical Practitioners maintained by the Medical Council in Ireland.
- Appointees will agree a training plan with their trainers at the beginning of each training year.
- For the duration of their International Medical Graduate (IMG) programme and associated clinical placements, all participants will remain directly employed and directly paid by their sponsoring state at a rate appropriate to their training level in Ireland and benchmarked against the salary scales applicable to NCHD's in Ireland.
- Successful completion of an ICFP will result in the participant being issued with a formal Certificate of completion for the Fellowship Programme by the Royal College of Physicians of Ireland. This Certificate will enable the participant's parent training body in their sponsoring home country to formally recognise and accredit their time spent training in Ireland.

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training. There will be posts 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 Specialist Director of the relevant medical speciality to be confirmed by the College. Programmes will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop their sub-specialty interest.

ePortfolio logbook

Each trainee is responsible for maintaining an up-to-date record of progress through training and compiling a portfolio of achievements for presentation at each annual assessment review. 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.
Up-to-date training records and an ePortfolio of achievements will be maintained by the trainee throughout. The training records 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 training plan. They will remain the property of the trainee and must be produced at their annual assessment review.
Trainees must co-operate with the College in completing their training plan.
It is in a trainee's own interest to maintain contact with the Royal College of Physicians of Ireland, and to respond promptly to all correspondence relating to training. At review, your ePortfolio will be examined.

Review

A consultant trainer/educational supervisor will be identified for each participant in the programme. He/she will be responsible for ensuring that the educational potential of the post is translated into effective training which is being fully utilized. Only departments approved for Training by the Royal College of Physicians of Ireland and its constituent training bodies will be used.

The training objectives to be secured should be agreed between each 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. In each year trainees undergo a formal review by an appropriate panel. The panel will review in detail the training record, will explore with the trainee the range of experience and depth of understanding which has been achieved and consider individual trainer's reports. An opportunity is also given to the trainee to comment on the training being provided; identifying in confidence any deficiencies in relation to a particular post.

A quarterly and annual review of progress through training will be undertaken on behalf of the International Clinical Fellowship Programme (ICFP). These will include assessments and reports by educational supervisors, confirmation of achievements and the contents of the ePortfolio will be reviewed. At some or all of these annual reviews a non-specialty assessor will be present capable of addressing core competencies.

The award of a Certificate of completion will be determined by a satisfactory outcome after completion of the entire series of assessments.

Generic Components

This chapter covers the generic components which are relevant to international 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 trainees with differing application levels in practice.

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
- 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 in accordance with data protection legislation 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)

- Preventing and managing near misses and adverse events.
- When and how to report a near miss or adverse event
- 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

- Safe working practice, role of procedures and protocols in optimal practice
- The importance of standardising practice through the use of checklists, and being vigilant
- Safe healthcare systems and provision of a safe working environment
- Awareness of the multiple factors involved in failures
- 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 in system failures
- The important of informing a person of authority of systems or service structures that may lead to unsafe practices which may put patients, yourself or other colleagues at risk
- Awareness of the Irish Medical Councils policy on raising concerns about safety in the environment in which you work

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
- Ethical and legal decision making skills
- Minimising errors during invasive procedures by developing and adhering to best-practice guidelines for safe surgery
- Minimising medication errors by practicing safe prescribing principles
- Ability to learn from errors and near misses to prevent future errors
- Managing errors and near-misses
- Using relevant information from complaints, incident reports, litigation and quality improvement reports in order to control risks
- Managing complaints
- Using the Open Disclosure Process Algorithm

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
- RCPI HST Leadership in Clinical Practice
- RCPI Ethics programmes
- Medical Council Guide to Professional Conduct and Ethics
- Reflective learning around ethical dilemmas encountered in clinical practice
- Quality improvement methodology course - recommended

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 of 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 notifiable infectious disease
- Understanding the increased risk of infection to patients in surgery or during an invasive procedure 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
- Personal Protective Equipment Training Course (In hospital)

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-awareness including preferences and biases
- Personal psychological strengths and limitations
- Understand how personality characteristics, such as need for approval, judgemental tendencies, needs for perfection and control etc., affect relationships with patients and others
- 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
- 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-malfeasance and justice
- Recognise own feelings in straightforward and complex 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
- RCPI Ethics programmes
- Wellness Matters Course (Mandatory)
- RCPI HST Leadership in Clinical Practice course

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
- How to negotiate cultural, language barriers, dealing with sensory or psychological and/or intellectual impairments and how to deal with challenging or aggressive behaviour
- Knowing how and when to break bad news
- How to communicate essential information where difficulties exist, how to appropriately utilise the assistance of interpreters, chaperones, and relatives.
- How to deal with anger and 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 a concise, written, verbal, or electronic, problem-orientated statement of facts and opinions
- The legal context of status of records and reports, of data protection confidentiality
- Freedom of Information (FOI) issues
- Understanding of the importance of legible, accessible, records to continuity of care
- Knowing when urgent contact becomes necessary and the appropriate place for verbal, telephone, electronic, or 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 of continuity of care to outcome, within and between phases of healthcare management
- The importance of completion of tasks and documentation, e.g. before handover to another team, department, specialty, including identifying outstanding issues and uncertainties
- Knowledge of the required attitudes, skills and behaviours which facilitate continuity of care including, 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 and retain attention avoiding 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 the risks of information overload
- Tailoring the communication of information to the level of understanding of the recipient
- Strategies to achieve the level of understanding necessary to gain co-operation and partnership; 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, and assistance available
- The importance of obtaining and recording accurate and full information, seeking confirmation from multiple sources
- Knowledge of how to establish facts, identify issues and respond quickly and appropriately to a complaint received

SKILLS

- Ability to appropriately elicit facts, using a mix of open and closed-ended questions
- 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 realistic objectives, identifying and prioritising outstanding problems
- Using language, literature (e.g. leaflets) diagrams, educational aids and resources appropriately
- 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
- RCPI Ethics programmes
- 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 (online) – An Introduction
- Effective Teaching and Supervising Skills course (online) - recommended
- Educational Assessment Skills course - recommended
- Performing audit (online) 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 online course
- RCPI HST Leadership in Clinical Practice
- Annual audit
- Consultant feedback on management and leadership skills
- Involvement in hospital committees

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
- Understand the clinical significance of references ranges, positive and negative predictive value and potential risks of inappropriate tests
- The procedures for 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, and change strategies applicable to smoking, alcohol, drug abuse, and lifestyle
- 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
- An understanding of the need and appropriate use of problem-orientated discharge notes, letters, more detailed case reports, concise out-patient reports and focused reviews
- 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
- Involve patients' in solving their health problems, by providing information and education
- Availing of support provided by voluntary agencies and patient support groups, as well as expert services e.g. detoxification / psychiatric services
- Act in accordance with, up to date standards on palliative care needs assessment
- Valuing contributions of health education and disease prevention to health in a community
- Compile accurate and appropriate detailed medical notes and care reports including the 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)
- Transfer information in an appropriate and timely manner

- 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, including complex discharge
- 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 tools (e.g. ISBAR)

ASSESSMENT & LEARNING METHODS

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

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
- Know the difference between an early and late drug allergy, and drug side-effects
- Good Clinical Practice guidelines for seeing and managing patients who are on clinical research trials
- Best practice in the pharmacological management of cancer pain
- The management of constipation in adult patients receiving palliative care

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
- Take and record an accurate drug allergy history and history of 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
- Guidance for health and social care providers - Principles of good practice in medication reconciliation (HIQA)

Specialty Section

Basic Neurological Knowledge and Skills

Objective: To acquire basic knowledge and skills in order to benefit from engaging in clinical training in Neurology.

Relating Structure and Function to Physical Findings and Complaints

Objective: In order to benefit from clinical training in the specialty, the trainee must first acquire a sound knowledge of neuroanatomy and neurophysiology and be capable of taking a full neurological history and carrying out a detailed physical examination of the nervous system.

KNOWLEDGE

Basic neurology

- Anatomy of the central, peripheral and autonomic nervous systems. Functional anatomy and co-ordination in the nervous system: neurophysiology and biochemistry, the autonomic and neuroendocrine systems, neurotransmitters.
- Able to perform a detailed physical examination of the nervous system.
- Able to evaluate the significance of symptoms and physical findings and suggest a differential diagnosis.
- Appreciates the importance of knowledge of the structure, function and biochemistry of the nervous system in understanding the basis upon which the symptoms and physical signs of disease may develop.

SKILLS

- To elicit and concisely report a factual medical, occupational, family, social and personal history in a patient as relevant to suspected neurological disease.

ASSESSMENT & LEARNING METHODS

- Mini-CEX
- RITE Exam *

*(The AAN Residency In-service Training Exam (RITE) is listed as one of the assessment methods in the specialty section of this curriculum. The purpose of this exam is not as a certifying or qualifying examination but to be used as a self- assessment tool designed to gauge knowledge of neurology and neuroscience.)

Basic Sciences: Specialities Relevant To Neurology Used To Support Neurological Practice

Objective: The trainee should have sufficient knowledge and skills in basic science and in the specialties relevant to neurology to be able to understand, assess and plan the management of neurological problems as the present in patients.

Clinical Neurophysiology

Objective: Acquire knowledge and skills to understand the role and practice of neurophysiology investigations in patients with disorders of the nervous system.

KNOWLEDGE

- EEG, EMG nerve conduction, evoked potentials
- Normal range of EEG findings, common epileptiform abnormalities.
- Capabilities and limitations of EEG in neurological disorders other than epilepsy.
- Role of monitoring techniques (telemetry, ambulatory).

Optional:

- Use of EEG in evaluation of sleep disorders.
- EEG in neurological emergencies with impaired consciousness.
- Principles of techniques of EMG, NCS.
- Abnormalities in common nerve entrapments; peripheral neuropathies, motor neurone disease; disorders of neuromuscular junction.
- Common abnormalities of Evoked Potentials (EP) in neurological diseases, particularly demyelination.
- Knowledge of role of intraoperative EP monitoring.
- Appreciation of the importance of close working relationship with Clinical Neurophysiologists, and need to provide clinical detail in referral.
- Appreciates the value and limitation of these techniques used in the investigation of neurological disease and the importance of critically evaluating the results obtained.
- Willing to explain to the patient the procedures involved and to interpret the results obtained in ways which can assist the patient in understanding their significance.

SKILLS

- Ability to formulate and appropriate investigation plan.
- Interpret and explain reports/results.
- Interpretation of EEG

ASSESSMENT & LEARNING METHODS

- DOPS: EMG
- DOPS: NCS
- RITE Exam
- Case Based Discussion

Neuroradiology and Imaging

Objective: To provide the trainee with the skills and knowledge to select, explain, arrange radiology and/or imaging which is appropriate to the patient's needs in the management of neurological disorders, and to understand and interpret findings and reports.

KNOWLEDGE

- Radiographs; CT, MRI Scans; myelograms; angiography, PET and SPECT studies
- Common imaging modalities, including:
    - Plain x-ray films of skull and spine
    - MRI and CT scans of the neural axis
    - Angiographic studies (MR and DSA)
    - Basic PET and SPECT studies
- To know the applications, limitations, of the following investigative techniques:
    - CT Scans: cranial, angiography
    - MRI Scans: cranial, spinal, angiography
    - Catheter Angiography: diagnostic, interventional
    - Myelography
    - Ultrasound: carotid, trans-cranial, cardiac
    - Other special investigations e.g. PET, SPECT, etc.
- To be able to explain the capability, risks and limitations of all common neuroradiological techniques.
- Appreciates the need of the neuroradiologist for full clinical information to be provided.
- Appreciates the need for close working with the neuroradiology services in arriving at a diagnosis and planning treatment.

SKILLS

- Request, interpret and utilise neuroradiological investigations for outpatients, inpatients and acutely ill patients in a cost-effective manner.
- Explain the nature, risks and benefits of neuroradiological investigations to patients.
- Recognise the anatomy of the neural axis from imaging studies and to recognise abnormal images.
- Give a reasonable differential diagnosis of the observed abnormalities.
- Understand the role and place of interventional studies.

ASSESSMENT & LEARNING METHODS

- Weekly neuroradiology meetings
- RITE Exam
- Case Based Discussion

Pharmacology and the Nervous System

Objective: Understand the basis of, application, limitations and risks of neuropharmacological treatments.

KNOWLEDGE

Drugs and their use

- Synapse and neurotransmitter physiology.
- Principles of neuropharmacokinetics and pharmacodynamics.
- Modes of actions of drugs used to treat neurological diseases.
- Principles of pharmacological treatment, especially:
    - Vascular disease/Stroke
    - Pain
    - Multiple sclerosis
    - Motor neurone disease
    - Migraine
    - Psychiatric disorders
    - Autoimmune disorders
    - Epilepsy
    - Movement disorders
    - Dementia
- Adverse effects of medications. Interactions involving medications.
- Awareness of need to respond to information needs of patients.
- Recognises the importance of a full understanding of neurotransmitter physiology and the limitations and risks of neuropharmacological treatments in the management of patients.

SKILLS

- Able to take and evaluate a medication history.
- Able to plan treatment strategies, re-evaluate and awareness of cost implications.

ASSESSMENT & LEARNING METHODS

- Study Day
- RITE Exam

Immunology

Objective: To have working knowledge of those neurological disorders which have an immunological or inflammatory basis.

KNOWLEDGE

- Basic principles of immune responses in relation to the nervous system. The immunological basis underlying autoimmune neurological disease
- The clinical phenotypes of these diseases.
- The diagnostic techniques needed to confirm or refute these diseases, and their appropriate use.
- Immunosuppressive and immunomodulatory therapies: their actions, side effects and indications, and how critically to evaluate evidence for their efficacy.
- Appreciates the importance and knowledge of immunological and inflammatory mechanisms in understanding the neurological disease processes and in guiding the development of therapeutic strategies.
- Autoimmune encephalopathy such as NMDA and VGKC antibodies

SKILLS

- Competent in the recognition, of diagnosis and management of patients with autoimmune neurological disease.

ASSESSMENT & LEARNING METHODS

- Study Day
- Case Based discussion
- RITE Exam

Cerebrospinal Fluid

Objective: To understand normal and abnormal production and circulation of the CSF.

KNOWLEDGE

- Abnormal CSF and raised intracranial pressure
- CSF composition and dynamics. Anatomy and radiology of ventricular system. Biochemistry and immunology of CSF. Blood brain barrier.
- To understand the changes in CSF dynamics and composition in disease. Symptoms, signs and causes of raised intracranial pressure. Genesis of hydrocephalus.
- Indications and contraindications to LP. LP techniques. Methods of cranial pressure monitoring.
- To be familiar with and be able to advise on the treatment of disorders of CSF.
- Always ready to explain the details and purpose of the procedure to the patient and obtain and informed consent.
- Seeks technical proficiency.

SKILLS

- Management of raised CSF and raised intracranial pressure
- To be able to carry out LP safely and with maximum patient comfort and to be familiar with other methods of CSF examination.

ASSESSMENT & LEARNING METHODS

- DOPS: Lumbar puncture
- RITE Exam

Neuroophthamology – Otology

Objective: To be competent to assess and manage appropriately ophthalmic and otological abnormalities as they may present in patients with neurological diseases.

KNOWLEDGE

- Disturbances of vision, hearing and balance
- To be familiar with principal methods used in neurophthalmic diagnosis
- To be familiar with the regulations on visual loss and driving, and the blind register
- Applied anatomy and physiology of the visual and oculomotor system, hearing and balance
- History taking and examination relevant to the eyes and ears, vision, hearing, and balance
- Conditions which may affect hearing, balance, vision, eye movements, pupils and the eye lids
- Recognises the contribution of other specialist services in this field and liaises effectively with them

SKILLS

- Diagnosis and management of disturbance of vision, hearing and balance
- To form a differential diagnosis for common and uncommon visual symptoms
- To be competent in assessing dizzy patients, and managing any underlying neurological cause
- To be able to diagnose and manage neurological causes of disturbances of hearing or balance, and to appropriately refer others
- Examination of the vestibuloocular system

ASSESSMENT & LEARNING METHODS

- DOPS: Visual eye movements
- RITE Exam
- Study Day: Neurophthalmology
- Study day: Neurotology

Clinical Encounters in Neurology

Objective: During higher specialist training the trainee should acquire the knowledge and skills necessary to be fully competent to assess and manage patients presenting neurological problems in the following clinical contexts.

Infections of the Nervous System

Objective: To have an understanding and a working knowledge of neurological disorders which have an infectious basis and the ability to diagnose, investigate and treat infectious diseases of the nervous system

KNOWLEDGE

Causes and management of infection in the nervous system

- Basic principles relevant to pathogenesis, clinical presentation, management and complications of neurological infectious disease.
- The clinical phenotypes of these diseases.
- Clinical features, investigation findings, treatment and prognosis of:
    - Bacterial/viral meningitis
    - Acute disseminated encephalomyelitis
    - Opportunistic infections in the immunosuppressed
    - Syndromes associated with herpes zoster and herpes simplex
    - Neurological aspects of TB and AIDS
    - Spinal infections and cortical thrombophlebitis
    - The neurological aspects of endocarditis and septicaemia
    - Encephalitis
    - Syphilis
    - Tetanus
    - Rabies
    - Rubella
    - Measles
- Epidemiology of meningitis, TB, AIDS, poliomyelitis, cysticercosis, malaria and common viral illnesses.
- The epidemiology of common neurological infections.
- Available vaccination programmes for poliomyelitis, meningitis and childhood illness.
- Understand the effectiveness of and need for vaccination against specified neurological infections. The public health responsibilities of physicians.
- To become competent in the recognition, prevention, diagnosis and management of patients with these disorders.
- Recognises the supreme importance of the early recognition and the correct diagnosis of infection in the nervous system.
- Fully appreciates the need for close liaison and effective working with other specialists and teams in the co-ordination of multidisciplinary care.
- Demonstrates a responsible attitude to the public health aspects of infections.

SKILLS

- The diagnostic techniques needed to confirm or refute infection in the nervous system and their appropriate use.
- Anti-microbial therapies and their proper use; preventative medicine in relation to neurological infections.
- Services offered by microbiology, interpretation of reports, antibiotic resistance, diagnostic methods available for common neurological infections.
- To know how to liaise and work closely with Infectious Disease Physicians, Microbiologists and ICU teams in order properly to co-ordinate multi-disciplinary care where appropriate.
- Assessment of vital signs and respiratory function in critically ill patients and timing of referral for intensive care.
- Notification of infectious disease, advice to and referral/treatment of contacts

ASSESSMENT & LEARNING METHODS

- Case based discussion
- Study Day: AIDS and other infections of the nervous systems
- RITE Exam

Cerebrovascular Disease

Objective: The trainee should have the knowledge, skills and competencies to diagnose, assess, manage effectively and advise on the care of patients who present with the neurological effects of cerebrovascular diseases.

KNOWLEDGE

Stroke and TIA, vascular dementia

- Clinical features of stroke and TIA. Pathophysiology of cerebral infarction, cerebral haemorrhage
- To be familiar with the anatomy of the cerebral circulation and its appearances on imaging, CT, MRI, and DSA appearances
- Investigations available, including blood tests, carotid ultrasound, TCD, echocardiography, CT, MRI, MRA, and DSA. Rare causes of stroke risks and costs of investigations
- Value and organisation of multidisciplinary stroke care, nutrition after stroke, rehabilitation techniques, community stroke care
- Stroke scales, Rankin score, Barthel index
- Epidemiology and prevention, risk factors for stroke. Management of hypertension, hyperlipidaemia and atrial fibrillation. Cardiac cause and investigation
- Classification, symptoms, diagnosis and management of vascular dementia.
- Stroke charities and support services
- Investigation and treatment of vascular dementia. Assessment of cognitive function
- Shows willingness to use the full range of professional skills and resources available for patient's support and rehabilitation
- Recognises the supreme importance of preventive measures in addressing the problem of vascular disease within the nervous system

Cerebral aneurysms and subarachnoid haemorrhage

- Anatomy and pathology of subarachnoid haemorrhage, cerebral aneurysm and AVM. Interventional, surgical and radiotherapy treatment
- Appreciates the value of multidisciplinary team working and the need to involve other specialists in optimising patient care

Intracranial venous thrombosis

- Symptoms, investigation and treatment of intracranial venous thrombosis
- Appreciates the value of multidisciplinary team working and the need to involve other specialists in optimising patient care

SKILLS

- To form a differential diagnosis of stroke and TIA
- To order appropriate investigations for stroke
- Manage acute stroke including thrombolysis, antiplatelet therapy, control of blood pressure, complications of stroke
- Manage acute stroke where immediate large vessel occlusion may require neuroradiological stenting or embolectomy
- Advise on treatment of carotid stenosis, carotid surgery, angioplasty/stenting and embolectomy
- Assess impairment, activities of daily living and handicap in a stroke patient
- To give advice and prescribe treatment for stroke prevention
- To advise on the treatment of subarachnoid haemorrhage, cerebral aneurysm and AVM
- To manage intracranial venous thrombosis

ASSESSMENT & LEARNING METHODS

- Case based discussion
- Neurovascular meetings in house
- RITE Exam

Disordered Consciousness

Objective: To enable the trainee to assess the unconscious, unresponsive patient, to formulate a plan of investigation and management action in the best interests of the patient and within the legal frameworks provided.

KNOWLEDGE

- The anatomy and physiology of consciousness, and the pathophysiology of disorders of consciousness.
- Definitions, causes, pathophysiology, clinical features and prognosis of persistent vegetative state, locked in state and brainstem death.
- Legal issues relating to disorders of consciousness.
- Assessment of patient with disordered consciousness.
- The use of tests for brainstem death.
- Interpersonal skills relating to communication, management and resolution of issues with the family of patients with disorders of consciousness.
- Appreciates the right of the patient (and of their relatives) to be kept informed of the results of investigations, other assessments and treatment intentions and their right to challenge or refuse advice.
- Fully aware of the need for effective communication in difficult circumstances and of legal and ethical aspects in forming decisions.

SKILLS

- Assess and manage the unconscious patient

ASSESSMENT & LEARNING METHODS

- DOPS: Brainstem death
- Study Day
- HST Ethics
- RITE Exam

Epilepsy and Altered Consciousness

Objective: To acquire knowledge, skills and attitudes to evaluate and treat patients with epilepsy.

KNOWLEDGE

- Distinction of epilepsy from other paroxysms, management of epilepsy
- Differential diagnosis of paroxysmal and transient events.
- Indications, scope and limitations of: EEG, brain imaging, psychology, haematology and biochemistry.
- Understand the principles of antiepileptic drug treatment: efficacy, adverse effects, interactions; treatment of chronic epilepsy; treatment of refractory seizures, psychological and psychiatric concomitants of epilepsy.
- Role of neurosurgery.
- Epilepsy in relation to pregnancy, contraception, driving, legal aspects, risk of sudden death.
- Psychological and social consequences of epilepsy. Patient support groups and charities.
- Arrange appropriate investigation in evaluating patients with epilepsy, and possible epilepsy.
- Advising, explaining antiepileptic drug treatment appropriate to patient's needs.
- Able to convey important relevant information to patients and their relatives.
- Ability to manage emergency situations e.g. serial seizures, status epilepticus.
- Sensitive to and willing to deal with the concerns of patients (and their relatives) and the legal and employment implications of the diagnosis of epilepsy in an individual.

SKILLS

- Diagnose and management of epilepsy

ASSESSMENT & LEARNING METHODS

- Mini-CEX
- Case based discussion
- Study Day
- RITE exam

Head Injury

Objective: To provide trainee with the skills and knowledge to assess the head injured patient, including gaining the ability to perform immediate resuscitative measures and formulate a strategy for immediate and short-term management.

KNOWLEDGE

- Immediate and early phase management of head injury
- Primary and secondary effects of head injury.
- The Glasgow Coma Scale.
- Recognises symptoms and signs of head injury including extradural and subdural haematomas, increased intracranial pressure.
- Understand and can manage post-concussion syndrome, post-traumatic headache and post-traumatic epilepsy.
- Serial assessment of head injury patient, indications for intervention including urgent and delayed neurosurgery.
- Appreciates the value of multidisciplinary team working and the need to involve other specialists at times in optimising the care and rehabilitation of patients following head injury.
- Willing to meet and respond to the concerns and anxieties of relatives.

SKILLS

- Management of acute and subacute head injury
- Rehabilitation aspect of head injuries

ASSESSMENT & LEARNING METHODS

- Study Day (part of neurosurgery study day)
- Mini-CEX: in ICU
- RITE exam

Dementia

Objective: To be able to assess and manage patients with dementia

KNOWLEDGE

- Cognitive impairments, dementia: causes, differential diagnosis and management
- Definition and epidemiology of dementia. Pathology and clinical features of individual dementias. Treatable causes of dementia
- Blood tests, CT, MRI, MRA and DSA appearances in various causes of dementia. Rare causes of dementia. Risks and costs of investigations. Genetic causes and investigations. Neuropsychology tests
- Understanding the value of CSF such as tau and abata amyloid as a marker for pre-symptomatic or early MCI
- Community and support services available
- Mental status and cognitive examination
- Dementia and mood scales
- Dementia charities and support services
- Shows appropriate interest in the assessment and investigation of dementia
- Recognises the impact of dementia on other members of the patient's family/carers and potential for risk
- Understands and values the support available in the community and from carers and support services. Consults and engages with them

SKILLS

- Assess cognitive impairment at the bedside
- Form a differential diagnosis
- Manage and treat dementia
- Give advice and communicate prognosis to patient and carer

ASSESSMENT & LEARNING METHODS

- DOPS: Cognitive or other neurological impairment assessment at bedside
- Study Day
- RITE exam

Demyelinating Diseases

Objective: To be competent to diagnose, assess and advise on the early and long-term management of patients with demyelinating diseases and disability arising as a result.

KNOWLEDGE

- Demyelination: causes, recognition, management
- Pathogenesis, presentation and clinical manifestations of multiple sclerosis and related conditions, such as acute disseminated encephalomyelitis, Behcet's disease, leucodystrophies
- The role of imaging and other investigations in the assessment of demyelinating disease.
- The contributions from a multi-disciplinary team and rehabilitation services, to the management of disabilities
- Drugs and other available treatments
- The ability to formulate a strategy for investigation, assessment and management of a patient with demyelinating disease
- Recognises how an improved understanding of demyelinating diseases has influenced and guided treatment to date, and the importance of using emerging knowledge appropriately to the advantage of patients
- Monoclonal and other biological therapies such a natalizumab and fingolimod

SKILLS

- Able to take a history from a patient with demyelinating disease; identify the salient features, and identify signs though the neurological examination
- Effectively uses the full range of professional skills and resources available to support patients during their illness and for rehabilitation
- Appreciates the right of the patient (and their relatives) to be fully informed and a patient's right to accept or refuse advice regarding treatment
- Application of McDonald criteria in the diagnosis of MS
- Assessing risk related to new biological therapies

ASSESSMENT & LEARNING METHODS

- DOPS: EDSS assessment
- Journal Club
- RITE exam
- Test ability of application of McDonald criteria

Disorders of the Spine and Spinal Cord

Objective: To provide trainees with skills and knowledge to assess and manage the patient with a neurological disturbance affecting the spinal cord.

KNOWLEDGE

- The anatomy of the spine and spinal cord, features of regional damage at different levels.
- Clinical features of spinal cord, nerve root and cauda equina syndromes including cervical myelopathy, cord compression, cauda equine compression, lumbosacral and cervical spondylotic radiculopathy, spinal abscess, spinal cord ischaemia, infarction and haemorrhage, and subacute combined degeneration of the spinal cord
- Indications for urgent investigation including an understanding of the potential and limitations of spinal MRI scanning; indications for myelography and indications and risks of spinal angiography
- Common neurosurgical procedures performed on the spine and spinal cord. Their indications, limitations and risk
- Principles of management of paraplegia and the role of specialist spinal injury units
- Advise on and expedite the emergency management of spinal cord or cauda equina compression
- Advise on the management of cervical spondylosis, low back pain and sciatica
- Assist in the assessment and long-term management of patients with disability due to spinal cord disease
- Recognises the importance of urgent investigation and treatment and the contributions made by the neuroradiological and neurosurgical services in dealing with a neurological disturbance affecting the spinal cord
- Appreciates the need to involve other health professionals in optimising the care of the patient. Shows willingness and the capacity to work within the multidisciplinary teams

SKILLS

- Recognition and management of acute and progressive spinal cord damage
- To identify important symptoms and signs of spinal cord dysfunction through neurological examination
- The ability to formulate a strategy for investigation of patients with disorders of the spine and spinal cord
- Management of spinal injury

ASSESSMENT & LEARNING METHODS

- Case Based Discussion
- Study Day
- RITE exam

Movement Disorders

Objective: To be able to diagnose, investigate and manage common movement disorders to include Parkinsonism, chorea/athetosis, dystonia, tics and tremor.

KNOWLEDGE

- Parkinsonism, chorea/athetosis, dystonia
- Specific knowledge of MRI/CT scan appearances in movement disorders: use of gene testing and other blood tests
- Knowledge of optimal appropriate therapy/treatment of movement disorders
- Awareness and use of support services and patient organisations for patients and carers
- Appreciates the importance of how knowledge of movement disorders has guided therapy to date and the importance of considering applying emerging knowledge to the advantage of patients
- Prepared to recognise and discuss the concerns of patients (and their relatives) in relation to the diagnosis offered

SKILLS

- Interpret clinical features and make differential diagnosis in Parkinsonism, chorea/athetosis, dystonia, tics and tremors
- Use of appropriate investigations to make a diagnosis and guide treatment
- Botox for basic cervical dystonia and large muscle spasticity

ASSESSMENT & LEARNING METHODS

- Case based discussion
- Study Day
- RITE exam
- DOPS: BoTox injection

Motor Neurone Disease

Objective: The trainee will be able to diagnose and manage motor neurone disease and distinguish the condition from other causes of muscle wasting.

KNOWLEDGE

- Understand the pathology of motor neurone disease, presentations, clinical patterns, prognosis
- Diagnostic features, differential diagnosis
- Principles of palliative care
- Take a history from patient and care; examine the nervous system with particular attention to evidence of muscle wasting
- Knowledge of investigatory technique (e.g. EMG, NCS) and use of mimic screen
- Symptomatic treatment and management of complications
- Involvement of multidisciplinary team
- Breaking bad news
- Values the importance of treating symptoms and the life-threatening complications of motor neurone disease and the need to take control of symptom management and to enlist the help of other agents and services as required in the patient's best interests

SKILLS

- Diagnose and manage motor neurone disease

ASSESSMENT & LEARNING METHODS

- Case Based Discussion
- Study Day
- RITE exam

Disorders of Peripheral Nerves and Muscles

Objective: To be familiar with the clinical presentation and diagnosis of common neuromuscular conditions, to recognise typical patterns of motor and sensory deficit and formulate an appropriate differential diagnosis.

KNOWLEDGE

- Background knowledge of the anatomy and pathology of peripheral nerve and muscle.
- Neuropathies:
    - Axonal and demyelinating
    - Entrapment neuropathies and plexopathies
    - Environmental toxin and drug-induced neuropathy Inflammatory/immune
    - Critical illness neuropathies and myopathies
- Motor neurone disease, inflammatory muscle disease
- Inherited disease of muscle and nerve; muscular dystrophy, Charcot-Marie-Tooth disease
- Disorders of the neuromuscular junction; myasthenia gravis etc
- Appreciates the importance of neuroanatomy, neurophysiology and medical genetics in understanding diseases of the peripheral nerves and muscles and guiding the development of the therapeutic strategies employed
- Appreciates the need for close working with laboratory, radiology and other specialist services in correctly making a diagnosis and the value of multidisciplinary team working in delivering effective treatment

SKILLS

- Diagnose and management of common neuromuscular conditions
- Management of acute neuromuscular paralysis
- To be able to interpret the results of nerve conduction studies and EMG and apply these to clinical decision-making
- To be clinically competent in the assessment and management of patients with acute and chronic neuromuscular paralysis both in the general ward and intensive care setting

ASSESSMENT & LEARNING METHODS

- Study Day
- Muscle pathology day (North/South)
- RITE exam

Disorders Affecting the Cranial Nerves

Objective: To equip the trainee with the knowledge necessary to diagnose disorders of the cranial nerves and their central connections, to carry out appropriate investigations, and to formulate management plans for these disorders.

KNOWLEDGE

- Cranial neuropathies
- The anatomy of the skull base, particularly the orbit, cavernous sinus, pituitary fossa, foramen magnum and jugular foramen
- Pathological processes involving the cranial nerves and their central connections.
- Methods of clinical assessment of cranial nerve function
- The use and limitation of investigative techniques in the cranial nerves, including CSF analysis, imaging, EMG, video fluoroscopy, VER, ERG and audiometry
- Appreciates the value of careful physical examination of the whole patient as well as the nervous system and of enlisting other specialist services in arriving at a correct diagnosis
- Refers appropriately for specialist investigations and neurosurgical assistance

SKILLS

- Management of cranial nerve disorders including multiple disciplinary approaches to cerebellopontine angle and pituitary disorders

ASSESSMENT & LEARNING METHODS

- DOPS: Eye Movements
- DOPS: Facial nerve palsy
- Journal clubs
- RITE exam

Neurotoxicology

Objective: To understand, diagnose and detect the acute and chronic effects of toxins on the nervous system and be able and prepared to respond to the needs of sufferers and their carers.

KNOWLEDGE

- Acute and chronic effects of substances with toxic effects on the nervous system
- Biochemistry and neuropathy of exposure to:
    - Alcohol and other recreational drugs (cocaine, amphetamine, opiates)
    - Heavy metals, pesticides and
    - Therapeutic agents (e.g. chemotherapeutic agents, lithium)
- Clinical features of:
    - Alcohol induced neurological syndromes (delirium tremens, withdrawal seizures, Wernicke-Korsakoff etc)
    - Cocaine, opiate, amphetamine neurotoxicity
    - Pb, Hg, Mn, CO, NO and organophosphate poisoning
- Neurotoxicity from therapeutic agents (e.g. vincristine, lithium)
- Understand the value and timing of blood and urine sampling in toxicology and the likely value of imaging and neurophysiology in specific conditions
- Know the tests required for assessment of organ damage
- Knowledge of the effects of neurotoxins on other organ systems
- Psychiatric morbidity associated with substance abuse
- Management of common intoxications, particularly ethanol, including local plans/practice for alcohol and sedative drug withdrawal. Location of poison centres
- Epidemiology of alcoholism and other drug abuse, including both medical and social consequences and their cost (direct and indirect). Prognosis, medically and socially of long-term addicts. Co-morbidity amongst carers and family
- Names of relevant organisations for alcohol, drug, substance abuse and how to access them

Acute and chronic effects of substances with toxic effects on the nervous system

- Knowledge of the importance of an understanding of biochemistry and toxicology in the interpretation of the syndromes and effects produced by various neurotoxins including therapeutic agents
- Knowledge of patient and family support organisations

SKILLS

- Diagnose and detect acute and chronic effects of common toxins on the nervous system

ASSESSMENT & LEARNING METHODS

- Study Day
- RITE exam

Headache

Objective: The trainee will be able to diagnose and treat common causes of headache and distinguished benign causes from sinister ones.

KNOWLEDGE

- Assessment and management of patients complaining of headache
- Common causes of headaches, persistent or recurrent. Clinical features distinguishing different causes and types including psychological
- Investigatory techniques e.g. appropriate urgent use of blood tests, lumbar puncture, brain scanning
- Advise and arrange treatment which is appropriate to patient's needs
- Take a history from headache sufferer, recognising important diagnostic features and identifying a psychological contribution
- Examination of the nervous system, particularly identification of papilloedema, temporal arteritis. Investigate appropriately
- Values the importance of treating symptoms and dealing with the patient's (and their relatives') concerns

SKILLS

- Differentiate common causes and more serious underlying problems of headaches
- Recognise papilloedema
- Greater occipital nerve block and botulinum toxin injection

ASSESSMENT & LEARNING METHODS

- DOPS: Assessment of papilloedema
- DOPS: Bedside assessment of visual fields
- RITE Exam
- Case Based Discussion

The Autonomic Nervous System (ANS)

Objective: To be familiar with the anatomy, pathophysiology, assessment and management of clinical disorders affecting the ANS primarily or occurring as part of another disease.

KNOWLEDGE

- Understanding, assessing and managing disorders of the ANS
- Essential anatomy physiology and neurophysiology of the ANS and of the clinical disorders primarily affecting the ANS or occurring as part of other conditions
- Examination techniques including autonomic function tests and special clinical methods.
- To be able to seek, recognise and investigate evidence of ANS disorders
- To be able to manage postural hypotension and other manifestations of disease of ANS
- Appreciates how knowledge and an understanding of the autonomic nervous system can guide therapeutic and management strategies employed
- Aware of the potential contributions that can be made by other specialist departments and services

SKILLS

- Assessment and management of clinical disorders affecting the ANS

ASSESSMENT & LEARNING METHODS

- Case Based discussion
- Study Day
- RITE exam

Intensive Care

Objective: To enable the doctor to manage neurological disorders in the neurological or general intensive care unit. The level of competence will be that to be expected of a consultant neurologist with access to adequate diagnostic investigations and with adequate anaesthetic, neurosurgical and nursing support available.

KNOWLEDGE

- Neurological involvement in ICU
- The clinical features and causes of coma
- Neurological complications of major surgery
- Understands the principles of cardiovascular and respiratory support
- Indications for and methods of artificial nutrition of patients in the ITU
- Legal and ethical issues in brainstem death, coma and PVS, including organ donation. Definition and diagnosis of brainstem death
- Appropriate management of status epilepticus
- Recognise the causes, clinical features and management of severe neuromuscular paralysis
- Ability to work well with anaesthetic or intensivist colleagues for optimal patient care
- Demonstrates attitudes and exhibits communication skills needed for the management of ICU patients and their relatives
- Shows willingness and the capacity to work within the multidisciplinary team, providing specialist neurological opinion and expertise as required
- Understands the legal and ethical issues involved. Appreciates the rights of patients (and their relatives) to be fully informed of the results of investigations, tests and of treatment intentions

SKILLS

- Manage neurological disorders in the neurological or general intensive care

ASSESSMENT & LEARNING METHODS

- Case Based Discussions
- HST Ethics
- Attend in-house ICU training
- RITE exam

OPTIONAL MODULES

Neuropathology

Objective: To understand the pathological basis of neurological disorders, recognise the scope and limitations of examination of material from biopsies and necropsies: recognise the needs and concerns of patients and their relatives.

KNOWLEDGE

Obtaining, preparing, interpreting pathological specimens

- Anatomy of brain sections, brain preparation.
- Histological, histochemical, immunocytochemical and E.M. techniques.
- Basic pathology of brain tumours.
- Basic pathology of:
    - Multiple sclerosis
    - Alzheimer's disease
    - Prion disease
    - Friedreich's ataxia
    - Axonal and demyelinating peripheral neuropathy
    - Muscular dystrophy
    - Amyloid
    - Lewy bodies
    - Parkinson's disease
    - Meningitis
    - Vasculitis
    - Guillain Barré
    - Polymyositis
    - Meaning of gliosis
    - Neurofibrillary tangles
    - Granulomas
- Understands of need for discussion regarding specimens with laboratory staff, especially if special precautions needed.
- Obtain informed consent for a necropsy examination.
- Appreciates the importance of a detailed knowledge and understanding of the pathological basis of neurological disorders and the limitation of the methods available for tissue diagnosis
- Recognises and is prepared to respond to the concerns of patients and their relatives.

SKILLS

- Understand, interpret and explain a pathology report.
- Examine (under supervision) brain sections, stained material, in laboratory.

ASSESSMENT & LEARNING METHODS

- Neuropathology Neuroscience weekly meeting
- Attend 3 brain cuttings
- Study Day with Pathology
- HST Ethics
- RITE Exam
- Optional:
    - Attend Brain Tumour and Muscle Pathology day
    - Secondment in a neuropathological laboratory

Genetics

Objective: To understand the principles of genetics as applied to Neurology; and particularly as it applies to patients with neurological disease.

KNOWLEDGE

- Genetics applied to neurology
- DNA, RNA, chromosomes, modes of inheritance (Mendelian, polygenic, multifactorial, mitochondrial)
- The genetic contribution to common multifactorial neurological disease (stroke, multiple sclerosis, subarachnoid haemorrhage, epilepsy)
- Methods of DNA diagnosis including southern blotting, PCR, whole genome sequencing arrays and copy number variation
- Working knowledge of pathology, molecular biology in common genetic conditions
- To be familiar with the clinical presentation and diagnosis of the common neurogenetic diseases, e.g. Huntington's disease, Hereditary ataxias, muscular dystrophies, neuropathies, and neurocutaneous syndromes
- To understand the principles of genetic counselling including sensitive ethical issues surrounding confidentiality and consent (e.g. in Huntington's disease and the role of specialist genetics nurses)
- Utilize bioinformatics databases on human disease e.g. online Mendelian Inheritance in Man, NBCI and Human Genome Project
- Recognise when it is most appropriate to take a detailed family history, to order DNA based diagnostic tests and to liaise with colleagues in Clinical Genetics
- Because of the rapidity of development in this field, basic skills in using electronic resources to aid in the diagnosis of Neurogenetic disease
- Exercises care in the translation of genetic information when counselling patients
- Is fully aware of the important issues of confidentiality and consent surrounding ethical considerations

SKILLS

- To be able to take a detailed family history using appropriate standard nomenclature.
- Recognises the important contributions from genetic information obtained, towards understanding neurological diseases.
- Communicate the uses and limitations of risk variants in disease such as APOE-4 genotype

ASSESSMENT & LEARNING METHODS

- Study Day
- Case Based Discussion
- RITE Exam

Psychology and Neuropsychiatry

Objective: To understand the basis of normal and abnormally functioning memory, attention, perception and language, and to be familiar with basic psychological testing. To understand the psychiatric consequences of Neurological disease e.g. depression in MS, personality change in head injury and to be able to identify neurological diseases with a psychiatric presentation, e.g. SLE, vCJD etc.

KNOWLEDGE

- Neuropsychology
- The neuro-anatomical and neurophysiological basis of memory, attention, language and perception.
- Basic neuropsychology tests e.g. as employed by clinical psychologists (NART, WAIS etc).
- Understand the value and limitations of neuropsychological interventions such as cognitive behavioural therapy.
- To understand the role of the clinical neuropsychologist and when it is appropriate to refer patients.
- Appreciates the importance of basic neuropsychology to understanding brain function
- Recognises own limitations and refers appropriately to the clinical neuropsychologist.
- Identifying and managing neuropsychiatric disease
- Clinical features of functional psychosis and depression.
- Clinical features of neuropsychiatric disease such as SLE, porphyria, neurodegenerative diseases. Drug induced mood disorders.
- Familiarity with the law and mental health
- Recognises the psychiatric aspects and consequences that may complicate neurological disease.
- Appreciates the importance of the recognition and control of psychiatric symptoms, enlisting the help of other agencies as required in the patients' best interests.

SKILLS

- Perform simple bedside testing of higher cognitive function e.g. mini-mental state examination.
- Interpret a neuropsychological report in the context of the patient's overall management.
- Identifying and managing neuropsychiatric disease
- Identify and manage unexplained neurological symptoms.
- Familiar with the 1945 Mental Health Act and when it can be used.
- Competent in the management of acute organic brain syndromes.
- Provide effective liaison to psychiatric services.

ASSESSMENT & LEARNING METHODS

- Study Day: Psychology
- RITE Exam
- DOPS: Application of mini mental assessment MSE or other assessment of their choice

Pain

Objective: To be able to reach an accurate (safe) working diagnosis in a patient with pain and advise on or arrange for appropriate management.

KNOWLEDGE

- Understanding and managing pain
- Theories of pain generation and knowledge of pain patterns in neurological disease
- Knowledge of systemic disease which can present with neurological pain (e.g. brachialgia from plexus infiltration)
- Pharmacology of various agents used in pain relief
- Psychosocial effects of chronic pain

SKILLS

- To be able to manage pain using appropriate pharmacological and non-pharmacological methods
- Recognise and utilise the additional range of expertise in other disciplines to manage pain
- Appreciates the need to understand the mechanisms involved in the generation and perception of pain and the treatment modalities available for its modification
- Sensitive to the psychological and social effects of chronic pain on patients and their families

ASSESSMENT & LEARNING METHODS

- Study Day
- RITE exam

Uroneurology

Objective: To provide the trainees with the skills and knowledge to asses and manage appropriately patients with uroneurological symptoms.

KNOWLEDGE

- Assessment and management of disorders of micturition and sexual function caused by neurological disease
- An understanding of the normal control of micturition and sexual function
- The differential diagnosis of causes of disorders of micturition, erectile dysfunction, hyposexuality and hypersexuality
- Treatment strategies for disorders of micturition and sexual function
- An understanding of the contribution offered by Urologists in this field
- Able to identify the salient features in history and the appropriate and relevant physical signs present to enable a diagnosis and differential diagnosis of the cause of complaint to be make
- The ability to formulate a strategy for investigation of patients with uroneurological problems
- To consider and advise on early and long-term management of patients with long-term bladder, bowel and sexual dysfunction as a result of neurological disease
- Appreciates and is prepared to deal with the sensitivities and concerns of patients suffering from disorders of micturition or sexual function
- Appreciates how knowledge and an understanding of the normal control of micturition and of sexual function can guide the therapeutic approach to the problems experienced by patients
- Appreciates the value of multidisciplinary team working in providing support for the patients. Uses the full range of professional skills and resources available for the patient's support

SKILLS

- Assess and manage patients with uroneurological symptoms

ASSESSMENT & LEARNING METHODS

- Case Based Discussion
- Study Day
- RITE exam

Sleep Disorders

Objective: To acquire knowledge, skills and attitudes to evaluate and treat patients with common sleep disorders.

KNOWLEDGE

- The diagnosis, effects of sleep disorders and their management
- Differential diagnosis of sleep disorders. Narcolepsy, daytime hypersomnolence, parasomnia, obstructive sleep apnoea
- Effects of neurological conditions on sleep
- Indications, scope and limitations of the sleep laboratory. Effects of sleep on the EEG.
- Principles of physical treatment. Principles of pharmacological treatment
- Driving regulations. Consequences and complications of sleep disorders
- Understands the role of investigations in evaluation of patients with possible sleep disorders

SKILLS

- Utilises appropriately the pharmacological, physical and psychological therapies available
- Able to convey important information to patients; shows empathy and appropriate attitude to patients and relatives
- Appreciates the potential effects of sleep disorders on patients and their families
- Recognises the potential contribution of specialist departments to the investigation and management of patients with disorders of sleeping
- Shows and awareness of the potential disturbance created by sleep disorders on sufferers and their families

ASSESSMENT & LEARNING METHODS

- Case Based Discussions
- Study Day
- Sleep disorder day (optional)
- RITE Exam

Endocrinology

Objective: The trainee will be able to diagnose common endocrinological conditions and recognise their effects on the nervous system.

KNOWLEDGE

- Endocrine disease and the nervous system
- Signs, symptoms and biochemistry of common endocrinological conditions, for example under and over active pituitary, thyroid and adrenal glands, and malfunction of the hypothalamus
- Anatomy and imaging of hypothalamus and pituitary
- Treatment options available
- Familiar with the principles of relevant endocrinological tests and their application
- Appreciates the need to liaise with laboratory and specialist endocrinological services in making a diagnosis and planning treatment. Refers appropriately

SKILLS

- Diagnose and manage common endocrinological conditions

ASSESSMENT & LEARNING METHODS

- Case Based Discussion
- RITE Exam

Oncology

Objective: To enable the doctor to diagnose and appropriately manage patients with tumours of the nervous system or neurological complications of cancer or treatment. The level of competence will be that to be expected of a consultant neurologist with access to adequate diagnostic investigations and with adequate neurosurgical, oncological and nursing support available.

KNOWLEDGE

- Managing the effects of malignant disease and its treatment
- The clinical features of the common tumours of the nervous system including malignant meningitis, neuropathological classification of brain tumours
- The clinical features and immunology of the main Paraneoplastic syndromes and their effects on the nervous system
- Benefits and risks of various therapies including surgery and radiotherapy. Neurological complications of chemotherapy and radiotherapy
- Ethical and legal aspects of terminal care
- History and neurological examination skills: selection of appropriate investigation techniques
- Recognition of metastatic and non-metastatic (paraneoplastic) malignant disease on the nervous system
- Enlists support services and outside agencies/organisations for patients and carers
- Breaking bad news; communication skills and attitudes needed for management of the terminally ill
- While appreciating that a cure is not generally attainable in this group of diseases, shows appropriate recognition that newer treatment programmes and approaches have the potential to achieve a better treatment outcome
- Appreciates and is willing to explain the potential benefits as well as the risks of treatment
- Balances risk with benefit in arriving at a decision regarding treatment
- Recognises the need to involve other specialists including palliative care in the management of patients

SKILLS

- Diagnose and manage patients with tumours of the nervous system

ASSESSMENT & LEARNING METHODS

- Case based discussion
- Monthly neuro-oncology meetings
- Study Day
- HST Ethics
- RITE Exam

Neurosurgery

Objective: To provide the trainees with factual knowledge of the capability and limitations of neurosurgery in common neurological conditions.

KNOWLEDGE

- Place of neurosurgery, appropriate referral
- Clinical features, natural history, investigation, treatment and prognosis of:
    - Head injury
    - Brain tumour
    - Spinal cord compression
    - Intracranial and spinal abscess
    - Epilepsy
- Pain syndromes: Extradural, subdural and intracerebral haematoma
- Deep brain stimulation and various indications
- Intracranial aneurysm, carotid artery stenosis
- Nerve root compression
- Congenital abnormalities of skull and spine
- Parkinson's disease
- Recognises own limitations regarding management and is prepared to refer in a timely and appropriate way
- Ensures that accurate and complete clinical information is provided for referral/handover
- Appreciates the rights of patients (and their relatives) to be fully informed of the risks and benefits of any treatment or investigations proposed and of the possible outcomes
- Obtains informed consent and accepts the patient's right to accept or refuse advice/referral

SKILLS

- To assess the need for and urgency of neurosurgical referral
- To be able to give patients a realistic expectation of results of neurosurgical treatment

ASSESSMENT & LEARNING METHODS

- Study Day
- RITE Exam

Please Note: One or two neurosurgical procedures should be observed by the trainee (e.g. in Cork University Hospital or Beaumont Hospital).

Rehabilitation

Objective: To provide the trainee with the knowledge and skills to assess function and prognosis, advise on setting realistic goals and assist in the planning of programmes for the rehabilitation of patients with various neurological problems.

KNOWLEDGE

Rehabilitation following stroke, head injury and e.g. in patients with multiple sclerosis, spinal cord lesions, peripheral neuropathies etc.

- To have knowledge of the principles, and the methods and skills available to assist in the rehabilitation of patients with various neurological disorders
- To understand the potential benefits and limitation of neurorehabilitation
- To be familiar with relevant financial/social support legislation and availability of and access to care in the community: know of relevant patients' support groups
- Explain the purpose, potential value and limitations of neurorehabilitation
- Able to perform and utilise information from a functional assessment
- Contribute to and lead and MDT meeting being aware of the different role, skills, approach and agenda of members of a rehabilitation team. Set realistic goals and timeframes
- Put the patient's problems into their proper social perspective
- Prepared to use the full range of professional skills and resources available to support the patient during their illness and its rehabilitation. Has the capacity to provide leadership while working within the multidisciplinary team

Please Note: A period of sub-specialty training in rehabilitation could be considered as part of neurology training – if it can be arranged, with the trainer's and NSD's approval

SKILLS

- Planning rehabilitation of patients
- Multidisciplinary team meetings

ASSESSMENT & LEARNING METHODS

- Case based discussion
- RITE exam

Neurological Diseases in Special Groups

Objective: To have a working knowledge of the clinical presentations, assessment and management of neurological diseases presenting in special identifiable groups of patients.

Neurological Diseases in Children

Objective: A working knowledge of the common clinical presentations of neurological diseases in children: normal versus abnormal child development: methods of assessment/investigation

KNOWLEDGE

- Paediatric neurology
- Developmental disorders
- Metabolic conditions
- Cerebral palsy
- Learning disability and autism
- Epilepsy
- Migraine and stoke in childhood
- Muscular dystrophy and other neuromuscular conditions
- Effects of anticonvulsant drugs in-utero
- Complications of intrauterine infection, childhood infections and immunisation.
- Key stages of development and range of normality
- MRI and EEG appearances in childhood
- Specialised community and hospital services for children. Health service and social service agencies. Role of educational psychologist (statements of special needs); special needs educational services
- The limitations of adult neurology in childhood

SKILLS

- Ability to distinguish normal and abnormal child development
- Interpretation of results of neurological investigations in children
- Endeavours to communicate effectively with children and with their parents and other agencies involved in child care
- Shows willingness and a capacity to work within the multidisciplinary team which includes paediatric specialists and paediatric specialist services
- Recognises the impact of developmental, genetic and other paediatric neurological conditions not only on the child but on the whole family
- Endeavours to deal sensitively with the concerns, anxieties and fears of parents and the limited understanding of disease and its implications by children suffering
- A more prolonged secondment in a neuropaediatric department is encouraged but not mandatory

ASSESSMENT & LEARNING METHODS

- Case Based Discussion
- RITE exam

Reproduction and Pregnancy in Neurology

Objective: The trainee will obtain the knowledge and skills necessary to be able to manage neurological problems in women of reproductive age and neurological conditions in pregnancy.

KNOWLEDGE

- Neurological problems in pregnancy and women of reproductive age
- Effects of menarche, menstrual cycle and menopause on common neurological disorders
- Methods of contraception, failure rate and interaction with drugs (especially antiepileptic drugs)
- Teratogenic risks of commonly prescribed drugs (especially AEDs)
- Genetic risk factors of neurological diseases, prenatal diagnosis of neurological conditions
- Psychosexual dysfunction in neurological illness (especially epilepsy)
- Basic embryology; effect of pregnancy on existing neurological disorders; neurological disorders as complications of pregnancy; eclampsia; neonatal complications in offspring of affected women; communication with obstetricians

SKILLS

- Recognise and advise on the effects of pregnancy, menstruation, contraception and psycho-sexual dysfunction in relation to neurological disease
- Advise on the teratogenic risks of prescribed drugs, the risks of genetically-linked disease
- Shows willingness and the capacity to provide leadership and to work within the multidisciplinary team
- Recognises the need to provide patients with neurological disease with information regarding the risks of pregnancy, genetic risk and the potential risk of prescribed drugs.
- Recognises the rights of patients to accept or to refuse advice

ASSESSMENT & LEARNING METHODS

- Case based discussion
- RITE exam

Neurological Diseases in the Elderly

Objective: The trainee must be able to manage neurological disorders as they occur in the elderly.

KNOWLEDGE

Neurology in older patients

- Normal clinical and radiological findings in the elderly
- Special features of the presentation and course of the common neurological diseases encountered in older people
- Effects on the nervous system of drugs commonly used in the elderly
- Early recognition of dementia, causes and investigation: treatments available.
- Hospital and community based services for older people

SKILLS

- Ability to differentiate abnormal neurology from normal clinical and radiological features seen in older people
- Able to recognise atypical presentations, investigate appropriately and manage safely dementia and other neurological disorders when they present in the elderly
- Effective, timely communication with patients, their relatives and carers: recognises legal and ethical guidelines in dealing with non-competent or partially competent patients; recognises patient's right to decide, responds to patients needs
- Appreciates the value of working within the multidisciplinary team including specialists in medicine of the elderly and other health professionals in optimising the care of the elderly patient, providing leadership where necessary

ASSESSMENT & LEARNING METHODS

- Study day
- RITE Exam

Tropically Acquired Neurological Disease

Objective: The trainee will acquire the knowledge and skills to diagnose and manage common tropical neurological disorders.

KNOWLEDGE

Neurological aspects of the common tropical diseases e.g. malaria, AIDS/TB, leprosy, cysticercosis, encephalitis etc.

- Infectious agents, parasites responsible; transmission, vectors, geographical distribution. Prophylactic measures available
- Chemotherapy, efficacy and risks of therapeutic agents used; drug resistance
- Presentations, neurological features, investigation, diagnosis; complications, prognosis

SKILLS

- Able to recognise common tropically acquired disease when the present and to advise on the management of their effects on the nervous system
- Utilises appropriate investigations to confirm clinical diagnosis, capable of advising on management of neurological features
- Appreciates the importance of a detailed knowledge of the tropical disease, the infectious agent concerned and its transmission in determining the therapeutic strategies required
- Shows appropriate use of the laboratory and refers for expert assistance as required
- Prepared to deal with the public health concerns and issues surrounding the case/cases

ASSESSMENT & LEARNING METHODS

- Study day
- RITE Exam

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	Personal Goals Form
On Call Rota	Required	1	Training Post	Clinical Activities
Section 2 - Training Activities				
Outpatient Clinics				Clinics
General Neurology and/or Specialise Outpatients Clinics (minimum of 2 outpatient clinics per week)	Required	80	Year of Training	
Ward Rounds/Consultations				Clinical Activities
Consultant led (minimum 1 per week)	Required	40	Year of Training	
Fellow led (1 per week)	Desirable	40	Year of Training	
Consultations	Required	10	Year of Training	
Emergencies/Complicated Cases				Cases
(Diagnosis of nature of problem and its presentation, emergency case for investigation)	Required	10	Year of Training	
Procedures/Practical Skills/Surgical Skills				Procedures, Skills & DOPS
Neuroimaging	Desirable	5	Training Programme	
Neuropathology	Desirable	5	Training Programme	
Neurophysiology	Desirable	5	Training Programme	
Additional/Special Experience Gained				Cases
Neuro-Rehabilitation Intensive Care	Optional	1	Training Programme	
Pain Management	Optional	1	Training Programme	
Uro Neurology	Optional	1	Training Programme	
Neuro-psychiatry/psychology	Optional	1	Training Programme	
Paediatric Neurology	Optional	1	Training Programme	
Head Injury	Optional	1	Training Programme	

Curriculum Requirement	Required/ Desirable	Minimum Requirement	Reporting Period	Form Name
Neuro-ophthalmology/otology	Optional	1	Training Programme	
Genetics	Optional	1	Training Programme	
Spinal Injury	Optional	1	Training Programme	
ICU/CCU	Desirable	1	Training Programme	Cases
Section 3 - Educational Activities				
Mandatory Courses				Teaching Attendance
ACLS	Required	1	Training Programme	
Ethics Foundations	Required	1	Training Programme	
Ethics for General Medicine Specialties	Required	1	Training Programme	
Health Research – an Introduction	Required	1	Training Programme	
HST Leadership in Clinical Practice (Year 3)	Required	1	Training Programme	
Mastering Communications (Year 1)	Required	1	Training Programme	
Performing Audit (Year 1)	Required	1	Training Programme	
Wellness Matters	Desirable	1	Training Programme	
Non – Mandatory Courses	Desirable	1	Training Programme	Teaching Attendance
Study days	Required	7	Year of Training	Teaching Attendance
Neurology Grand Rounds attended during training	Required	35	Year of Training	Attendance at Hospital Based learning
In-house activities				Attendance at Hospital Based learning
Hospital Grand rounds (Minimum attend 1 per month)	Required	10	Year of Training	
Journal clubs (Minimum attend 1 per month)	Required	10	Year of Training	
Radiology conference	Required	10	Year of Training	
Pathology conference	Desirable	1	Year of Training	
MDT meetings (Minimum attend 1 per month)	Required	10	Year of Training	
Seminar/Lecture	Desirable	1	Year of Training	
Examinations				Examinations
RITE Exam	Required	1	Year of Training	
Formal Teaching Activity (1 formal teaching session per month)				Delivery of Teaching
Lecture	Optional	1	Training Programme	
Tutorial	Required	1	Training Programme	
Bedside teaching	Required	1	Training Programme	

Curriculum Requirement	Required/ Desirable	Minimum Requirement	Reporting Period	Form Name
Research	Optional	1	Training Programme	Research Activities
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	Audit & QI
Publications	Optional	1	Year of Training	Additional Professional Experience
Presentations	Optional	1	Year of Training	Additional Professional Experience
National/International meetings	Optional	1	Year of Training	Additional Professional Experience
Additional Qualifications	Optional	1	Training Programme	Additional Professional Experience
Section 4 - Assessments				
DOPS				Procedures, Skills & DOPS
EEG interpretation	Required	1	Training Programme	
EMG interpretation	Required	1	Training Programme	
NCS interpretation	Required	1	Training Programme	
Lumbar Puncture	Required	1	Training Programme	
Brainstem death testing (formal)	Optional	1	Training Programme	
Bedside cognitive assessment	Required	1	Training Programme	
Full formal eye movement assessment	Required	1	Training Programme	
Assessment of papilloedema	Required	1	Training Programme	
Botulinum toxin injection	Optional	1	Training Programme	
Bedside assessment of visual fields & vestibuloocular reflex	Required	1	Training Programme	
CBD	Required	2	Year of Training	Case Based Discussion
Mini-CEX (At least two Mini-CEX assessments)	Required	2	Year of Training	Mini CEX
Quarterly Assessments	Required	4	Year of Training	Quarterly Assessments/ End-of-Post Assessments
End-of-Post/End-of-Year Assessments	Required	1	Year of Training	End of Year Assessment