



**FACULTY OF  
PAEDIATRICS**

ROYAL COLLEGE OF  
PHYSICIANS OF IRELAND

INTERNATIONAL CLINICAL FELLOWSHIP TRAINING IN

# PAEDIATRIC NEUROLOGY



**This curriculum of training in Paediatric Neurology was developed in 2019 and undergoes an annual review by Prof Mary O'Regan and Dr Ann O'Shaughnessy, Head of Education, and by the Paediatric Neurology Training Committee. The curriculum is approved by the Faculty of Paediatrics.**

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# Table of Contents

<b>INTRODUCTION .....</b>	<b>3</b>
<b>GENERIC COMPONENTS.....</b>	<b>6</b>
GOOD PROFESSIONAL PRACTICE .....	7
INFECTION CONTROL .....	9
SELF-CARE AND MAINTAINING WELL-BEING.....	11
COMMUNICATION IN CLINICAL AND PROFESSIONAL SETTING .....	13
LEADERSHIP .....	15
QUALITY IMPROVEMENT .....	17
SCHOLARSHIP.....	18
MANAGEMENT .....	19
STANDARDS OF CARE.....	21
DEALING WITH & MANAGING ACUTELY ILL PATIENTS IN APPROPRIATE SPECIALTIES.....	24
THERAPEUTICS AND SAFE PRESCRIBING .....	26
<b>SPECIALTY SECTION .....</b>	<b>28</b>
BASIC NEUROLOGICAL KNOWLEDGE AND SKILLS .....	28
RELATING STRUCTURE AND FUNCTION TO PHYSICAL FINDINGS AND COMPLAINTS.....	28
SPECIALITIES RELEVANT TO NEUROLOGY USED TO SUPPORT NEUROLOGICAL PRACTICE.....	29
CLINICAL NEUROPHYSIOLOGY .....	29
NEURORADIOLOGY AND IMAGING .....	29
NEUROPATHOLOGY .....	31
CLINICAL ENCOUNTERS IN NEUROLOGY .....	32
GENETICS.....	39
DISORDERS OF THE SPINE AND SPINAL CORD.....	44
PALLIATIVE CARE .....	45
NEUROREHABILITATION AND BRAIN INJURY .....	46
<b>DOCUMENTATION OF MINIMUM REQUIREMENTS FOR TRAINING .....</b>	<b>47</b>

## 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 medical specialities is up to 3 years, after which the overseas doctors will be required to return to their country of origin.

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 HST trainees within the Faculty of Paediatrics but with varying degrees of relevance and appropriateness, depending on the specialty.**

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

## 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 children and their family 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 importance 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, parents, guardians 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-maleficence 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, parents and guardians
- How to structure an interview to obtain/convey information; identify concerns, expectations and priorities; promote understanding, reach conclusions and use age-appropriate language.
- How to empower the patient, and/or parent, 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 children and their guardians 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 everyday 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 reference 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

#### 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 the essential requirements are to run an effective handover meeting
  - Sufficient and accurate patient's 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
- APLS 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/APLS
- 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**

- APLS 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
- 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 children receiving palliative care

### SKILLS

- Writing a prescription in line with guidelines
- Appropriately prescribing for children and pregnant adolescent
- 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
- 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

#### Relating Structure and Function to Physical Findings and Complaints

**Objective:** To benefit from clinical training in the speciality, 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 including neurodevelopment assessment.

#### KNOWLEDGE

- Anatomy of the central, peripheral and autonomic nervous systems. Including and not limited to neurophysiology, biochemistry, neurotransmitters, autonomic and neuroendocrine systems,
- 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 the disease which may develop.

#### SKILLS

- To elicit and concisely report a factual medical, developmental, family, social and personal history in a patient as relevant to suspected neurological disease.
- 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.
- Able to provide an appropriate differential diagnosis and investigations for different presentations.
- Ability to formulate an appropriate investigation plan.

#### ASSESSMENT & LEARNING METHODS

- Mini-CEX
- Case-Based discussion

## **Specialities Relevant To Neurology Used To Support Neurological Practice**

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

### **Clinical Neurophysiology**

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

#### **KNOWLEDGE**

- EEG, EMG nerve conduction, evoked potentials
- Normal range of EEG findings (depending on age) and common epileptiform abnormalities
- Limitations of EEG
- EEG in neurological emergencies and impaired consciousness
- Role of monitoring techniques (telemetry, ambulatory)
- Use of EEG in the evaluation of sleep disorders.
- Principles of techniques of EMG and NCS.
- Abnormalities in muscle disease; peripheral neuropathies, anterior horn cell disease and disorders of the neuromuscular junction.
- Common abnormalities of evoked potentials in neurological diseases, particularly demyelination.
- Appreciation of the importance of a 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.

#### **SKILLS**

- Requests, interprets, acts on and communicates the results of EEG
- Explain to the child/adolescent and their parents/carers the procedures involved and to interpret the results obtained in ways which can assist them in understanding their significance.
- Interprets an EEG
- Interprets an EMG/NCS
- Determines indication for an EEG with and without sleep in the urgent or elective clinical setting,
- Evaluates indications for EEG video telemetry and the relative urgencies.

#### **ASSESSMENT & LEARNING METHODS**

- Observe EMG and NCS
- Case-Based Discussion

### **Neuroradiology and Imaging**

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

#### **KNOWLEDGE**

- Ultrasound; Brain, spine and muscle

- Imaging; CT, MRI Scans; angiography and PET studies
- Applications and limitations of different investigative techniques
- Be able to explain the capability, risks and limitations of all common neuroradiological techniques.
- Appreciates the need for close working with the neuroradiology services in arriving at a diagnosis and planning treatment.

**SKILLS**

- Request, interpret, acts on and communicates the significance of normal and abnormal neuroradiological investigations for outpatients, inpatients and acutely ill children/adolescents.
- Explains the role of neuroimaging in the diagnostic and management plan.
- Explains the nature, risks and benefits of neuroradiological investigations to children and adolescents and their parents/carers.
- Recognise the anatomy of the neural axis from imaging studies and to recognise abnormal images.
- Give a reasonable differential diagnosis of the observed neuroradiological abnormalities.

**ASSESSMENT & LEARNING METHODS**

- Weekly neuroradiology meetings
- Mini-Cex

## 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 children and adolescents and their parents/carers.

### KNOWLEDGE

- Obtaining, preparing and interpreting pathological specimens
- Anatomy of brain sections, brain preparation.
- Histological, histochemical, immunocytochemical and E.M. techniques.
- Basic pathology of; brain tumours, cortical dysplasias, demyelinating disorders, axonal and demyelinating peripheral neuropathy, muscle disorders, vasculitis, Guillain Barré, neurodegenerative diseases and gliosis
- Understands the need for discussion regarding specimens with laboratory staff, especially if special precautions needed.
- Obtain informed consent for a necropsy examination.
- Appreciates the importance of 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 children and adolescents and their parents/carers.

### SKILLS

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

### ASSESSMENT & LEARNING METHODS

- Attend Neuropathology-Neuroscience weekly meeting
- Attend brain pathology examinations



## **Clinical Encounters in Neurology**

**Objective:** The trainee should acquire the knowledge and skills necessary to be fully competent to assess and manage children and adolescents presenting neurological problems in the following clinical contexts.

### **Epilepsies in the newborn, infancy, childhood and adolescence**

**Objective:** To acquire knowledge, skills and attitudes to evaluate and treat children and adolescents with epilepsy.

#### **KNOWLEDGE**

- Knowledge of the different presentations of seizures and relationship to EEG findings.
- Knowledge of the ILAE classification of seizures.
- Indications, scope and limitations of EEG, brain imaging, psychology, haematology and biochemistry in the investigation of epilepsy.
- Distinction of epilepsy from other paroxysms
- 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.
- Knowledge of the role of non-drug treatments such as the ketogenic diet and the selection of patients for surgical treatment of epilepsy and vagal nerve stimulation.
- Role of neurosurgery and epilepsy surgery in the management of epilepsy.
- Psychological and social consequences of epilepsy.
- Knowledge of the NICE guidelines on epilepsy

#### **SKILLS**

- Assess, diagnosis and manages epilepsy presenting at different ages
- Arrange appropriate investigations in evaluating children and adolescents with epilepsy or possible epilepsy.
- Choose the correct anti-epileptic medications depending on age, presentation and EEG findings
- Advises and explains antiepileptic drug treatment appropriate to the child's/adolescent's needs.
- Able to convey important relevant information to children and adolescents and their parents/carers about the diagnosis of epilepsy, life-style factors and risk of SUDEP.
- Ability to manage emergency situations e.g. status epilepticus.

#### **ASSESSMENT & LEARNING METHODS**

- Case-Based discussion
- Mini-Cex
- BPNA Paediatric epilepsy training courses
- Attending epilepsy surgery meetings

## Inflammatory and demyelinating disorders

**Objective:** The trainee should have the knowledge, skills and competencies to diagnose, assess, manage effectively and advise on the care of children and adolescents who present with demyelinating and immunological disorders.

### KNOWLEDGE

- Basic principles of immune responses in relation to the nervous system and autoimmune neurological disease.
- The clinical phenotypes of autoimmune neurological diseases (especially autoimmune encephalopathy such as NMDA and VGKC antibodies) and diagnostic investigations required.
- Pathogenesis, presentation and clinical manifestations of demyelination in the paediatric population including multiple sclerosis and related conditions, such as acute disseminated encephalomyelitis, optic neuritis and neuromyelitis optica.
- The role of imaging and other investigations in the assessment of demyelinating disease.
- Immunosuppressive and immunomodulatory therapies: their actions, side effects and indications, and how critically to evaluate evidence for their efficacy.

### SKILLS

- Competent in the recognition, diagnosis and management of children and adolescents with autoimmune and demyelinating neurological disorders.
- Be able to take a history from a child/adolescent and their parents/carers with demyelinating disease; identify the salient features, and identify signs through the neurological examination
- Be able to formulate a strategy for investigation, assessment and management of a child/adolescent with demyelinating disease and immune-related disorders
- Recognise typical magnetic resonance appearances of multiple sclerosis and other demyelinating conditions
- Application of the International Paediatric Multiple Sclerosis Study Group consensus diagnostic criteria for paediatric-onset multiple sclerosis
- Assessing risk related to new biological therapies

### ASSESSMENT & LEARNING METHODS

- Attend speciality paediatric demyelination clinics
- Case-Based discussion
- Test the ability of the application of the International Paediatric Multiple Sclerosis Study Group consensus diagnostic criteria for paediatric-onset multiple sclerosis

## Neonatal neurology

**Objective:** The trainee should have the knowledge, skills and competencies to diagnose, assess, manage effectively and advise on the care of neonates

### KNOWLEDGE

- The embryology of the developing brain.
- The evolution of the preterm and neonatal EEG with regards to expected electrographic elements, background and seizure recognition.
- Aetiologies of brain injury, genetic, neuromuscular, metabolic conditions and epilepsies presenting in the antenatal, perinatal, or early postnatal period.
- Knowledge of the medical conditions that accompany neurological conditions in the neonate.
- Understand the mechanisms of neuroprotection in hypoxic-ischaemic encephalopathy
- The presentation of neonatal stroke, aetiology, investigation and treatment
- Long-term outcomes associated with prematurity, very-low birth weight infants, hypoxic-ischemic encephalopathy and neonatal stroke.
- Be sensitive to ethical issues that arise in neonatal neurology
- Neonatal neuroimaging including cranial ultrasound and magnetic resonance imaging
- National guidelines on hypoxic-ischemic encephalopathy and neonatal status epilepticus.

### SKILLS

- Perform a neurological examination of the newborn at all gestational ages, including expected age-specific normal and abnormal findings.
- Diagnosis and manage common and rare neonatal neurological disorders.
- Evaluation and management of neonatal seizures, including acute symptomatic versus genetic and metabolic aetiologies.
- Evaluation of the infant with neonatal encephalopathy.
- Recognition of primary neuromuscular and neurogenetic/metabolic presentations in the neonatal period.
- Interpretation of amplitude-integrated EEG (cerebral function monitoring) and understand its limitations
- Interpretation of neonatal neurologic imaging including fetal, preterm and term MRI of the brain.
- Communicate and counsel families regarding the neurologic prognostication, based on clinical history, examinations and investigations.

### ASSESSMENT & LEARNING METHODS

- Case-based discussion
- Interpretation of neonatal aEEG in the NICU/PICU

## Cerebrovascular disorders

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

### KNOWLEDGE

- Anatomy and pathology of cerebral infarction, cerebral haemorrhage, subarachnoid haemorrhage, cerebral aneurysm and AVM
- Clinical features of stroke and transient ischemic attack.
- 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, echocardiography, CT, MRI and MRA.
- Different modalities of treatments available (medical, interventional radiology) depending on the underlying cause and the timing of presentation.
- Value and organisation of multidisciplinary stroke care, nutrition after stroke, rehabilitation techniques, community stroke care.
- Paediatric Stroke scales.
- Shows willingness to use the full range of professional skills and resources available for patient's support and rehabilitation.

### SKILLS

- To form a differential diagnosis of stroke and TIA.
- To order appropriate investigations for stroke, including investigation for inflammatory disorders.
- Manage acute stroke including the role of supportive therapy, antiplatelet therapy, thrombolysis and supportive treatment (e.g. blood pressure).
- Manage long-term complications of stroke including tone, psychological and impact on activities of daily living.
- Manage intracranial venous thrombosis, subarachnoid haemorrhage, cerebral aneurysm and AVM.

### ASSESSMENT & LEARNING METHODS

- Neurovascular meetings
- Case-Based Discussion

## Neuromuscular disorders

**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

- Anatomy and pathology of peripheral nervous and muscle.
- Inherited disease of muscle and nerve, especially spinal muscular atrophy and Duchenne Muscular dystrophy
- Abnormalities in muscle disease; peripheral neuropathies, anterior horn cell disease and disorders of the neuromuscular junction.
- Inflammatory muscle disease
- Be familiar with acute and chronic presentations of diseases of muscles and nerves
- Newer drug treatments and research studies available to neuromuscular patients.

### SKILLS

- Clinically competent in the assessment, diagnosis and management of children and adolescents with acute and chronic neuromuscular conditions.
- Management of acute neuromuscular paralysis.
- Interpret the results of nerve conduction studies and EMG and apply these to clinical decision-making.
- Understands and manages complications of neuromuscular conditions by collaborating with spinal, respiratory (including non-invasive ventilation) and cardiac services.

### ASSESSMENT & LEARNING METHODS

- Attending speciality neuro-muscular clinic
- Case-based discussion

## Neurodegenerative and neurometabolic disorders

**Objective:** The trainee should have the knowledge, skills and competencies to assess, request appropriate investigations and manage children and adolescents with regression and/or neurometabolic disorders.

### KNOWLEDGE

- The underlying mechanisms of metabolic disorders and clinical presentations.
- Know the presentations, differential diagnosis and investigations of common neurodegenerative conditions, including metabolic, mitochondrial and neurotransmitter disorders.
- Know the differential diagnosis of psychomotor regression presenting in adolescence.

### SKILLS

- Recognise the regression of developmental skills.
- Demonstrate a systematic and logical approach to the investigation of neuro-developmental regression guided by age, ethnicity and other clinical features.
- Demonstrate an approach to the investigation of metabolic disorders and initiate appropriate treatments, if indicated.
- Work effectively with the multidisciplinary team including palliative care in the management of children/adolescents with neurodegenerative disorders.

### ASSESSMENT & LEARNING METHODS

- Case-Based discussion
- Metabolic clinics

## Movement disorders, including cerebral palsy

**Objective:** The trainee should be competent in the recognition, assessment, investigations and management of tone, cerebral palsy and movement disorders in children and adolescents.

### KNOWLEDGE

- Anatomy and pathophysiology of central motor pathways, abnormal tone and movement disorders.
- The different presentations of movement disorders in the paediatric populations.
- Different investigations employed in the investigations of movement disorders including radiology, genetics, blood and CSF investigations
- Different modalities of treatments available (medical, equipment, surgical) depending on the underlying cause.
- The role of Botulinum Toxin in the management of tone.
- The role of Deep Brain Stimulation in the management of dystonia.
- Rating scales employed in the evaluation of tone and movement disorders.

### SKILLS

- Competent in the approach and evaluation of movement disorders in the paediatric population diagnosis in chorea/athetosis, dystonia, tics, tremor and myoclonus
- Competent in the assessment and management of abnormal tone.
- Choose appropriate diagnostic investigations (genetics, bloods, radiology, CSF)
- Provide specialist spasticity and dystonia management.
- Aware when to refer to specialised movement disorder services for further medical or surgical interventions.
- Management of status dystonicus.

### ASSESSMENT & LEARNING METHODS

- Case-based Discussion
- Attend speciality movement disorder clinics
- Attend Botulinum Toxin clinic

## Genetics

**Objective:** To understand the principles of genetics and particularly as it applies to children and adolescents with neurological disease.

### KNOWLEDGE

- Genetics applied to neurology
- DNA, RNA, chromosomes, modes of inheritance (Mendelian, polygenic, multifactorial, mitochondrial)
- Methods of genetic diagnosis including PCR, microarray, whole-exome and whole-genome sequencing.
- To be familiar with the clinical presentation and diagnosis of the common neurogenetic diseases, e.g. Hereditary ataxias, muscular dystrophies, 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, NCI and Human Genome Project.
- Exercises care in the translation of genetic information when counselling children and adolescents and their parents/carers.
- Is fully aware of the important issues of confidentiality and consent surrounding ethical considerations.
- Recognises the important contributions from genetic information obtained, towards understanding neurological diseases

### SKILLS

- Be able to take a detailed family history using appropriate standard nomenclature.
- Be able to request the appropriate genetic test depending on the clinical phenotype.
- Counsel and communicates with families the uses and limitations of different genetic testing used in paediatric neurology, including the relevance of polymorphism, variants of unknown significance and likely pathogenic variant.

### ASSESSMENT & LEARNING METHODS

- Case-Based Discussion



## Neuropsychiatric and neuropsychological disorders, and medically unexplained neurological syndromes

**Objective:** The trainee should be aware of the overlying neuropsychiatric and neuropsychological conditions which may be the presentation of neurological disorders or as a co-morbidity.

### KNOWLEDGE

- Be familiar with psycho-pharmacology for child and adolescent mental health problems.
- Be familiar with the theoretical bases, principles and indications of the major models of psychological treatment.
- The use and limitations of questionnaire measures in child and adolescent mental health, including disorder-specific and more global functioning measures.
- The epidemiology, aetiology and co-morbidities of a range of child psychiatric conditions.
- The indications for a range of therapies and medication for childhood psychiatric conditions.
- Knowledge of the resources for families and professionals relevant to children with a range of psychiatric disorders.

### SKILLS

- Aware of the mental health presentations of neurological disease (acute and chronic)
- Differentiate a functional neurological disorder from other neurological presentations and explain the diagnosis to the child/adolescent and their parent/guardian.
- The identification of psychological and psychiatric co-morbidities associated with neurological disorders and the impact it has.
- Demonstrate developing skills in judging the severity of emotional and behavioural difficulties and their impact on children and families.
- Demonstrate an understanding of how emotional, behavioural and developmental problems can result from physical disorders and demonstrate appropriate thresholds for the involvement of Child and Adolescent Mental Health Services (CAMHS) professionals for advice or direct assessment
- Demonstrate an understanding of the roles and potential contributions of members of the multidisciplinary CAMHS team
- Know when to seek advice from the CAMHS in a timely fashion

### ASSESSMENT & LEARNING METHODS

- Attend CAMHS clinics
- Multi-disciplinary meeting

## Headaches and disorders of raised intracranial pressure

**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 children and adolescents complaining of a headache.
- Common causes of headaches, acute, chronic or recurrent. Clinical features distinguishing different causes and types including psychological.
- International classification of headache.
- Investigatory techniques e.g. appropriate urgent use of blood tests, lumbar puncture, brain imaging.

### SKILLS

- Competent with obtaining a headache history, recognising important diagnostic features.
- Competent in the examination of the nervous system, particularly the identification of papilledema, visual field defects
- Competent in explaining the diagnosis to children/adolescents, arranging investigations if appropriate and commencing treatment.
- Applies the international classification of headache disorders in children it to support diagnosis and management in the outpatient setting.
- Competent with initiating pharmacological and non-pharmacological management strategies for headache.

### ASSESSMENT & LEARNING METHODS

- Case-based discussion
- Mini-Cex

## Neuro-oncology

**Objective:** The trainee should be competent with the presentation of central nervous system, tumours, acute and long-term complications of treatment of CNS tumours.

### KNOWLEDGE

- Anatomy, pathology and biology of paediatric central nervous system (CNS) tumours.
- Presentation of CNS tumours in the paediatrics population.
- Acute and long-term complications of medical and surgical treatment of CNS tumours
- Posterior fossa syndrome
- Paraneoplastic syndromes

### SKILLS

- Recognises the clinical features, investigation and management of children with CNS tumours.
- Recognises the acute and long-term neuro-toxicity/complication of medical and surgical treatment of CNS tumours.
- Supports the neurological management of a child with a posterior fossa tumour

### ASSESSMENT & LEARNING METHODS

- Attend Neuropathology-neuroscience meetings
- Case-based discussion

## Acute neurology and neurocritical care

**Objective:** To enable the trainee to recognise and manage neurological disorders that may present to the paediatric intensive care unit (PICU) and neurological complications that may occur in patients admitted to the PICU with non-neurological disorders.

### KNOWLEDGE

- Neurological assessment in PICU.
- Neurological complications of acute illness, major surgery and infections in children and adolescents.
- Understands the principles of neuroprotection, cardiovascular and respiratory support.
- The different patterns of EEG in the PICU and role in prognostication.
- Role of neuroimaging in acute neurology and prognostication.
- Clinical features and investigations of stroke, TIA and venous thrombosis.
- Neurological emergencies: status epilepticus, status dystonicus, meningitis, stroke, traumatic brain injury, hypoxic injury, autoimmune disorders.

### SKILLS

- Investigates and constructs clear management strategies for a child/adolescents with acute neurological disorders in the PICU.
- Management of neurology emergencies including; status epilepticus, status dystonicus, stroke, encephalopathy etc.
- Management of child/adolescent in the PICU following cardiac arrest or severe hypoxic-ischaemic encephalopathy (e.g. near drowning).
- Manage acute stroke including the role of thrombolysis, antiplatelet therapy, control of blood pressure, complications of stroke.
- Interpretation of CFAM and EEG in the PICU
- Brain stem death examination and interpreting findings.
- Communicates effectively with the PICU team.

### ASSESSMENT & LEARNING METHODS

- Case-based discussion
- Mini-Cex

## Disorders of the Spine and Spinal Cord

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

### KNOWLEDGE

- Anatomy of the spine and spinal cord, features of injury at different levels.
- Clinical features of spinal cord, nerve root and cauda equina syndromes .
- ASIA spinal cord injury scale.
- Indications for urgent investigation including an understanding of the potential and limitations of spinal MRI scanning.
- The emergency management of spinal cord or cauda equina compression
- Complications of acute spinal cord injury and principles of management

### SKILLS

- Identify important symptoms and signs of spinal cord dysfunction via a thorough neurological examination
- Formulate a strategy for investigation of children and adolescents with disorders of the spine and spinal cord
- Management of acute spinal injury
- Recognises the complications and manage acute and long-term spinal cord injury, including autonomic dysfunction, neuropathic bladder and bowel disorders.
- Participation in the multi-disciplinary team meetings and long-term management of a child/adolescent with acute spinal injury

### ASSESSMENT & LEARNING METHODS

- Case-based discussion
- Use the ASIA spinal cord injury scale.

## Palliative Care

**Objective:** To provide the trainee with the knowledge and skills of the role of palliative care in managing children and adolescents with neurological disorders.

### KNOWLEDGE

- Be familiar with local and national guidelines on the management of a child with a life-limiting condition.
- Know about appropriate therapeutic interventions in symptom control .
- Know the differential diagnosis of chronic sensory symptoms, irritability and pain in a child/adolescent with a life-limiting condition, how to investigate and treat appropriately.
- Be aware of legal and ethical issues relating to therapeutic interventions and withdrawing life support in a child/adolescent with a life-limiting condition.
- Know about local opportunities for respite care, including hospice availability.
- Be aware of local bereavement support services

### SKILLS

- Recognise factors which determine when the care of a patient becomes palliative.
- Investigate and manage appropriately chronic pain/irritability in a child with a life-limiting condition.
- Recognise loss and grief and their effects on the health and well-being of children, families and professionals
- Recognise the skills and experience of other professionals, acknowledge personal needs for support and the needs of other professionals involved in the care of the dying child for support networks

### ASSESSMENT & LEARNING METHODS

- Participate in discussing and creating a life-limiting document with a family

## Neurorehabilitation and brain injury

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

### KNOWLEDGE

- Trauma to central and peripheral nervous systems.
- Aware of the mechanisms of head injury (accidental and non-accidental), short and long-term consequences and rehabilitation.
- Appreciates the long-term consequences of neurological, head or spinal injury in paediatrics and adolescents.

### SKILLS

- Planning rehabilitation of children and adolescents
- Work effectively with the multidisciplinary team to set and manage achievable short, medium and longer term objectives
- Treatment of co-morbidities associated with rehabilitation after acute neurological illness including psychological, tone, feeding etc.

### ASSESSMENT & LEARNING METHODS

- Participate in multidisciplinary assessment of children/adolescents undergoing rehabilitation in the hospital setting
- Case-based discussion

## 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
<b>Section 1 - Training Plan</b>				
<b>Personal Goals Plan</b> (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer)	Required	1	Training Post	Personal Goals Plan
<b>On Call Rota</b>	Desirable	1	Training Post	Clinical Activities
<b>Section 2 - Training Activities</b>				
<b>Outpatient Clinics</b>				Clinics
Epilepsy	Required	25	Year of Training	
Neuromuscular	Required	8	Year of Training	
Movement disorders	Required	6	Year of Training	
Inflammatory disorders	Required	6	Year of Training	
General Neurology	Required	40	Year of Training	
<b>Ward Rounds</b>	Required	40	Year of Training	Clinical Activities
<b>Consultations</b>	Required	20	Year of Training	Clinical Activities
<b>Emergencies/Complicated Cases</b>	Required	10	Training Programme	Cases
<b>Procedures/Practical Skills</b>				Procedures, Skills & DOPS
Interpretation of EEG/EEG report	Required	200	Training Programme	
<b>Additional/Special Experience Gained</b>	Desirable	1	Training Programme	Clinical Activities
<b>Section 3 - Educational Activities</b>				
<b>Mandatory Courses</b>				Teaching Attendance
Ethics Foundation	Required	1	Training Programme	
Ethics for Paediatrics	Required	1	Training Programme	
Headache	Desirable	1	Training Programme	
An Introduction to Health Research	Required	1	Training Programme	
HST Leadership in Clinical Practice	Required	1	Training Programme	



Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Mastering Communications	Required	1	Training Programme	
Movement Disorder	Desirable	1	Training Programme	
Neonatal Neurology	Desirable	1	Training Programme	
Performing Audit	Required	1	Training Programme	
PET 1, 2, and 3	Desirable	1	Training Programme	
Wellness Matters	Desirable	1	Training Programme	
<b>Study Days (Minimum 6 attended)</b> as per training programme	Required	6	Training Programme	Teaching Attendance
<b>Participation at In-house activities</b> minimum of 1 per month from the categories below:				Attendance at In House Activities
Grand Rounds	Required	10	Year of Training	
Journal Club	Required	20	Year of Training	
MDT Meetings	Required	20	Year of Training	
<b>Delivery of Teaching (1 per month)</b>				Delivery of Teaching
Lecture	Required	10	Year of Training	
Tutorial	Required	10	Year of Training	
Bedside Teaching	Required	10	Year of Training	
<b>Research</b>	Desirable	1	Training Programme	Research Activities
<b>Audit Activities and Reporting</b> (1 per year to start or complete, Quality Improvement (QI) projects can be uploaded against audit)	Required	1	Training Programme	Audit & QI
<b>Publications</b>	Desirable	1	Training Programme	Additional Professional Activities
<b>Presentations</b>	Desirable	1	Training Programme	Additional Professional Activities
<b>National/International meetings</b>	Desirable	1	Training Programme	Additional Professional Activities
<b>Additional Qualifications</b>	Desirable	1	Training Programme	Additional Professional Activities
<b>Committee Attendance</b>	Desirable	1	Training Programme	Additional Professional Activities
<b>Section 4 - Assessments</b>				
<b>CBD</b>	Required	1	Training Programme	CBD
<b>DOPS</b>				Procedures, Skills & DOPS
Interpretation of EEG	Required	1	Training Programme	

<b>Curriculum Requirement</b>	<b>Required/Desirable</b>	<b>Minimum Requirement</b>	<b>Reporting Period</b>	<b>Form Name</b>
<b>Mini-CEX</b>	Required	6	Training Programme	Mini-CEX
<b>Quarterly Assessments/End-of-Post Assessment</b>	Required	4	Year of Training	Quarterly/End of Post Assessment
<b>End-of-Year Evaluation</b>	Required	1	Training Programme	End of Year Evaluation