



**FACULTY OF
PATHOLOGY**

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

NEUROPATHOLOGY



This curriculum of training in Neuropathology was developed in 2015 and undergoes an annual review by Dr Michael Jansen, Training Lead, Dr Ann O’Shaughnessy, and by the Neuropathology Training Committee. The curriculum is approved by the Faculty of Pathology.

Version	Date Published	Last Edited By	Version Comments
5.0	01 July 2023	Keith Farrington	No changes

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Introduction

The overall aim of the specialist training in Neuropathology is to produce clinicians who are competent to practice at consultant level in the specialty of Neuropathology. Registration as a specialist in Neuropathology alone or Neuropathology/Histopathology and award of a Certificate of Satisfactory Completion of Specialist Training (CSCST) will require satisfactory completion of a structured training programme and passing the FRCPATH examination.

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

Aims

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

Competencies, at a level consistent with practice in the specialty of Neuropathology will include the following:

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

Professionalism:

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

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

Entry Requirements

Applicants for Higher Specialist Training (HST) in Neuropathology must be on the medical register and

1. Have completed Basic Specialist Training (BST) in approved or equivalent Histopathology posts.
2. Have demonstrated their aptitude for the specialty by satisfactory performance in the Aptitude Assessment that is usually conducted during the second year of Senior House Officer (SHO) training (BST).
3. Trainees within the Higher Specialist Training System can approach a career as a Specialist Neuropathologist in one of two ways:

Route A. Part I and Part II FRCPATH in Histopathology followed by an additional period of specialist training in Neuropathology (*so that the total minimum training in Neuropathology is 2 years*).

Route B. Part I FRCPATH with Part II slanted towards Neuropathology.

At the completion of the training programme it is expected that the trainee will have met the minimum requirements (see attached) laid down by the Faculty of Pathology of the Royal College of Physician

Duration & Organisation of Training

Training in Neuropathology consists of BST and HST periods. Knowledge and skills must be acquired actively and prospectively during a minimum of two years full-time attachment to a specialist department approved by the Faculty of Pathology for HST in Neuropathology. It is expected that for trainees wishing to take Neuropathology-slanted examinations in order to pursue a career as a specialist Neuropathologist, the majority of the SpR years (typically years 3, 4 and 5) will be spent in such a department with appropriate rotations arranged to acquire experience in particular specialist areas.

Attendance at all relevant mandatory postgraduate courses (often international) is essential.

Participation at national and international conferences, as well as attendance of relevant non-mandatory course is desirable. The training period should also allow time for research.

Trainees must spend the first 2 years in training in clinical posts in Ireland before undertaking any period of research or Out of Programme Clinical Experience (OCPE).

In order to obtain CSCST a trainee must

1. Obtain the FRCPath examination.
2. Satisfactorily complete training in Neuropathology by pursuing:

Route A. Part 1 and Part 11 FRCPath in Histopathology followed by an additional period of specialist training in Neuropathology (*so that the total minimum training in Neuropathology is 2 years*).

Route B. Part 1 FRCPath with Part 11 slanted towards Neuropathology.

Note:

In circumstances where a trainee has, following successful Aptitude Assessment, spend two years in Histopathology at BST level, the second of these two years may be assessed for equivalence to a Year 1 programme of Higher Specialist Training. This evaluation will be made at annual assessments.

Training Programme

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training for Neuropathology. Each post within the programme will have a named lead trainer/educational supervisor and programmes will be under the direction of the Regional Specialist Advisor in Neuropathology. The programme will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop a sub-specialty interest.

The experience gained through rotation around different departments is recognised as an essential part of HST.

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

Teaching, Research & Audit

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

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

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

Generic knowledge, skills and attitudes support competencies which are common to good medical practice in all the medical and related specialties. It is intended that all Specialist Registrars should confirm these competencies during Higher Medical (Specialist) Training.

Assessment Process

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

The FRCPATH examinations will be the main summative assessments of progress. The FRCPATH Part I examination is a written test of knowledge which consists of multiple-choice questions, extended matching format questions and short answer type questions. The FRCPATH recommends that candidates attempt the Part I examination after two years of recognised training.

Facilities

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

All training locations approved for HST have been inspected by the medical training department. Each must provide an intellectual environment and a range of clinical and practical facilities sufficient to enable the knowledge, skills, clinical judgement and attitudes essential to the practice of Histopathology or Neuropathology to be acquired.

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

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

Generic Components

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

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

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-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
- 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

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

Management

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

Medical Council Domains of Good Professional Practice: Management.

KNOWLEDGE

Health service structure, management and organisation

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

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

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

Maintaining medical knowledge with a view to delivering effective clinical care

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

Delegation skills, empowerment and conflict management

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

SKILLS

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

ASSESSMENT & LEARNING METHODS

- Mastering Communication course
- Performing audit course (online)
- 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 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)
- Annual 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

Surgical Neuropathology Overview

(please refer to later sections on neurosurgical biopsy, intraoperative diagnosis, CSF cytology)

Objectives: To accurately diagnose and report pathological neurological disorders

KNOWLEDGE

Basic knowledge

- Knowledge of the normal anatomy, function and development of the nervous system
- Be familiar with the clinical, radiological and genetic information required to ensure accurate pathological diagnoses of neurological disorders
- Tumours: Knowledge of the major primary and metastatic tumours of the brain, spinal cord and their surrounding tissues.
- Knowledge of genetics of nervous system tumours and their relevance to diagnosis, prognosis and treatment
- Non-neoplastic lesions: Knowledge of the range of common inflammatory and degenerative lesions and malformations in neurosurgical pathology practice
- Central spinal fluid (CSF) cytopathology: Knowledge of CSF cytopathology in the diagnosis of diseases of the brain and spinal cord

SKILLS

- Develop the ability to solve clinical problems by applying knowledge of basic principles of pathology to the nervous system
- Smears and frozen sections: Develop the ability to prepare smears; interpret smears and cryostat sections; to recognise the limitations of intraoperative diagnoses
- Histology and immunocytochemistry: Develop ability to interpret histology and immunocytochemistry for the accurate diagnosis of tumours and non-neoplastic lesions of the central and peripheral nervous system tumours
- Develop the practice of integrating clinical, radiological and pathological data in formulating accurate pathological diagnoses
- Develop the practice of integrating clinical, radiological (CT, MRI, etc.) and pathological data for accurate diagnosis
- Acquire skill in the interpretation of CSF cytopathology
- Apply genetic information in the diagnosis and management of central and peripheral nervous system (CNS) disease

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Selection of blocks for microscopy

Autopsy and Post-Mortem Brain Pathology

Objectives: To develop skills in autopsy techniques for the examination of the central and peripheral nervous system at autopsy.

KNOWLEDGE

- Autopsies: Possess sufficient knowledge of the anatomy and pathology of the central and peripheral nervous systems and how the nervous system interacts with the other organ systems in the body
- Fixed brains: possess sufficient knowledge of anatomy and pathology of the nervous system in all age groups including fetuses for the selection of appropriate blocks for histology and for evaluating trauma, vascular disease, infections, tumours, multiple sclerosis, dementias, epilepsy, fetal and childhood disorders of the nervous system
- Forensic neuropathology: possess sufficient knowledge for the evaluation, reporting of pathological findings and their presentation in court
- Possess knowledge of health and safety, law, ethics and legal practices as they apply to the practice of neuropathology

SKILLS

- Develop skills in adult autopsy including CJD autopsy
- Develop special skills such as removal of spinal cord, vertebral artery dissection, sinus examination, muscle and nerve biopsy, brachial plexus examination, ophthalmic examination,
- Develop skills in Brain 'cutting' and sampling (adult, paediatric and perinatal)
- Recognise limitations and when to refer cases or specimens to a specialist laboratory.
- Interpret histological and immunocyto-chemical preparations for the evaluation of major pathological lesions of the nervous system
- Develop skills in reporting of pathological findings and the presentation of evidence in court.
- Understand the relevance of clinical and radiological data in planning and successfully completing a neurological autopsy

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Macroscopic description of fixed and unfixed brain.
- DOPS: Brain slicing and internal description of fixed brain
- DOPS: Selection of blocks for microscopy

Neurosurgical biopsy

Objectives: To diagnose and advise on masses/ lesions of the neurological system

KNOWLEDGE

- Microscopical and clinical features of:
 - lesions in bones of skull or vertebrae
 - lesions arising from the meningeal coverings of the brain or spinal cord
 - lesions of the sella turcica
 - lesions in the region of the pineal gland
 - lesions within the brain or spinal cord
 - lesions arising from nerve root or from the trunk of a cranial or peripheral nerve
 - lesions causing intractable epilepsy
- Microscopical and clinical features of dementia including degenerative disease
- Microscopical and clinical features of focal or diffuse cerebral white matter abnormalities
- Microscopical and clinical features of focal or diffuse meningeal or cerebral lesions in the immunosuppressed patient
- Microscopical and clinical features of vascular pathology

SKILLS

- Preparation and interpretation of intra-operative biopsy (see later section)
- Preparation and interpretation of neurosurgical biopsy
- Preparation and interpretation of CT and MR-guided bone needle biopsy
- Dissection, preparation and examination of neurosurgical lobectomy
- Apply WHO classification to a tumour
- Clarity in communication of diagnosis
- Effectiveness in advising on likely biological behaviour of the lesion

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Handling of routine specimens at surgical cut-up
- DOPS: Selection of blocks for microscopy

Intra-operative biopsy diagnosis

Objectives: To be able to perform an intra-operative diagnosis using smear and/or frozen section techniques

KNOWLEDGE

- Role of intra-operative diagnosis
- Limitations in intra-operative diagnosis
- Pitfalls in intra-operative diagnosis
- Role of imaging studies in making intra-operative diagnosis

SKILLS

- Preparation and interpretation of intra-operative wet smear preparation stained with toluidine blue or haematoxylin and eosin
- Preparation and interpretation of frozen section stained with haematoxylin and eosin
- Clarity and efficiency in communication of diagnosis with surgeon
- Effectiveness in advising on likely biological behaviour of the lesion
- Select appropriate range of histological techniques for investigation of infectious, metabolic and/or neurodegenerative disease
- Determine adequacy of biopsy

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: of tissue for frozen section
- DOPS: Selection of tissue for smears and smear preparation
- DOPS: Interpretation of intraoperative biopsies and communication with Neurosurgeons

Skeletal muscle biopsy

Objectives: To investigate, interpret, diagnose and advise on neuropathological muscle disease

KNOWLEDGE

- Knowledge of histology and histochemistry of skeletal muscle and the major pathological and genetic features of neurogenic and myopathic and dystrophic muscle diseases
- Peripheral nerve diseases: Knowledge of the histology and pathology of peripheral nerves
- Microscopical and clinical features of:
 - Muscle diseases associated with sarcolemmal and extracellular matrix defects
 - Muscle diseases associated with myonuclear abnormalities
 - Muscle diseases due to defects of myofibrillar and internal cytoskeletal protein
 - Muscle diseases associated with defects of ion channels and ion transporters
 - Developmental disorders of skeletal muscle
 - Muscle diseases due to defects of catabolic mechanisms
 - Neuromuscular transmission defects
 - Myopathies affecting fuel and energy metabolism including mitochondrial disease
 - Dysimmune and infectious myopathies
 - Toxic myopathies
 - Muscle pathology resulting from chronic denervation and disuse
 - Other muscle disorders including cancer-related muscle disease, osteomalacic myopathy and peripheral neuropathies
 - Myopathic and muscular forms of arthrogryposis multiplex congenital

SKILLS

- Interpretation of:
 - skeletal muscle biopsy
 - peripheral nerve biopsy
 - enzyme histochemistry
 - skeletal muscle biochemistry
 - electron microscopy

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Handling of fresh muscle specimens
- DOPS: Selection of blocks for microscopy

Peripheral nerve biopsy

Objectives: To be able to identify specific features of peripheral nerve pathology

KNOWLEDGE

- Microscopical features of:
 - demyelinating neuropathy
 - axonal neuropathy
- Specific features of neuropathy due to:
 - Infective causes
 - Vasculitis
 - Carcinomatous or lymphomatous infiltration
 - Paraneoplastic effect
 - Inherited mutations

SKILLS

- Interpretation of:
 - Standard nerve sections
 - Electron microscopy
 - Immunohistochemistry

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Handling of fresh nerve specimens
- DOPS: Selection of blocks for microscopy

Cerebrospinal fluid cytology

Objectives: To examine cerebrospinal fluid to detect inflammatory and neoplastic disorders of the CNS and its coverings

KNOWLEDGE

- Features of cells normally present in the CSF
- Features of neoplastic and non-neoplastic pathologic cells within the CSF

SKILLS

- Distinguish between normal appearances, reactive pleocytosis and neoplastic pleocytosis
- Identify micro-organisms in some instances
- Appropriately select immunocytochemical preparations to assist differential diagnosis

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Interpretation of CSF cytology findings

Molecular Neuropathology

Objective; To integrate molecular oncology findings into the surgical pathology report.

KNOWLEDGE

- Understand role for molecular tests in diagnosis, prognosis and predictive tumour neuropathology
- Understand molecular techniques used in modern Neuropathologic diagnostics – FISH, array comparative genomic hybridisation, next generation sequencing, methylation profiling,

SKILLS

- Appropriately identify tumour specimen for freezing/ banking
- Appropriately identify cases for referral for molecular genetics including 1p19q status, MGMT methylation, BRAF fusion and BRAFV600 mutation analysis, IDH1/2 mutation analysis, histone mutation analysis, methylation profiling and classification, and newer tests as they evolve
- Integrate molecular results into final (integrated) diagnosis
- Communicate, with clarity, these techniques, results and interpretation to surgical and oncology colleagues

ASSESSMENT & LEARNING METHODS

- Record of the number and range of specimens handled
- DOPS: Integration of molecular information into a final integrated tumour report
- DOPS: Determine appropriate molecular testing required in individual tumour cases

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 Plan
Section 2 - Training Activities				
Surgical Neuropathology (number of cases handled)				Clinical Activities
Cut ups	Required	50	Year of Training	
Frozen sections reported and diagnosis made	Required	50	Year of Training	
CSF cytology	Required	30	Year of Training	
Tumour pathology	Required	50	Year of Training	
Autopsies				Clinical Activities
Adult autopsies	Required	5	Year of Training	
CJD autopsy	Required	3	Training Programme	
Adult Brain cuts				
• Neurodegenerative	Required	5	Year of Training	
• Trauma	Required	3	Year of Training	
• Epilepsy	Required	2	Year of Training	
Paediatric/ Perinatal brain cuts				Clinical Activities
Brain cuts (total)	Required	5	Year of Training	
Metabolic	Required	1	Year of Training	
HIE	Required	3	Year of Training	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Forensic brain cuts	Required	3	Year of Training	Clinical Activities
Inquests	Desirable	1	Training Programme	Clinical and Other liaisons
Special autopsy techniques:				Clinical Activities
Spinal Cord Removal	Required	1	Training Programme	
Vertebral Artery Dissection	Required	1	Training Programme	
Sinus Examination	Required	1	Training Programme	
Muscle Biopsy	Required	1	Training Programme	
Sural nerve Biopsy	Required	1	Training Programme	
Ophthalmic Pathology	Required	1	Training Programme	
Cervical, Brachial and Lumbar Plexus dissection	Required	1	Training Programme	
Non-tumour Neuropathology				Clinical Activities
Muscle Pathology	Required	20	Year of Training	
Nerve Pathology	Required	20	Year of Training	
Ophthalmic neuropathology (to include tumour and non-tumour cases)	Desirable	50	Training Programme	Clinical Activities
Special Techniques				Clinical Activities
Interpretation of Electron-microscopy specimens	Required	5	Training Programme	
Molecular integration (including FISH, MGMT assays, mitochondrial disease)	Required	30	Year of Training	
Independent Reports Written				Clinical Activities
Surgical neuropathology	Required	20	Year of Training	
Autopsy including brain cuts	Required	20	Year of Training	
Non-tumour neuropathology	Required	20	Year of Training	
Complicated cases handled	Desirable	5	Training Programme	Cases
Section 3 - Educational Activities				

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Mandatory Courses				Teaching Attendance
Core pathology I	Required	1	Training Programme	
Core pathology II	Required	1	Training Programme	
Core pathology III	Required	1	Training Programme	
Ethics for Pathology	Required	1	Training Programme	
An Introduction to Health Research	Required	1	Training Programme	
HST Leadership for Pathology	Required	1	Training Programme	
Mastering Communications	Required	1	Training Programme	
Performing Audit	Required	1	Training Programme	
Non-Mandatory Courses				Teaching Attendance
Health Research Methods for Clinicians	Desirable	1	Training Programme	
Euro CNS course	Desirable	1	Training Programme	
Courtroom Skills	Desirable	1	Training Programme	
BNS Study Days	Desirable	1	Training Programme	Teaching Attendance
Participation at In-house activities minimum of 1 per month from the categories below:				Attendance at Hospital Based Learning
Neuroscience Grand Rounds	Required	10	Year of Training	
Journal Club	Required	10	Year of Training	
MDT Meetings	Required	10	Year of Training	
Additional Experience				Clinical Activities
Attend neuroradiology reporting	Desirable	1	Training Programme	
Observe neurosurgery	Desirable	1	Training Programme	
Examinations				
FRCPATH or equivalent	Required	1	Training Programme	Examinations

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Delivery of Teaching				Delivery of Teaching
Lecture	Desirable	1	Year of Training	
Tutorial	Desirable	1	Year of Training	
Research	Desirable	1	Year of Training	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 and QI
Publications	Desirable	1	Year of Training	Additional Professional Experience
Presentations	Desirable	1	Year of Training	Additional Professional Experience
National/International meetings (INA, AANP, BNS)	Desirable	1	Year of Training	Additional Professional Experience
Additional Qualifications	Desirable	1	Year of Training	Additional Professional Experience
Committee Attendance (1 per year)	Desirable	1	Year of Training	Additional Professional Experience
Section 4 - Assessments				
DOPS				Procedures, Skills, & DOPS
Cut-up (competently handle specimens)	Required	3	Year of Training	
Remove spinal cord, cervical, brachial and lumbar plexuses and special autopsy techniques	Required	1	Training Programme	
Remove and dissect adult brain	Required	1	Training Programme	
Remove and dissect perinatal brain				
CBD	Required		Year of Training	Case Based Discussion
Reporting (Identify cases requiring specialist opinion)	Required	2	Year of Training	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Interpret immunocytochemistry, biochemistry and electron microscopy of muscle and nerve biopsies.	Required	1	Year of Training	
Diagnose frozen section and give appropriate advice	Required	1	Year of Training	
Use molecular techniques to supplement routine histopathology in forming a diagnosis	Required	1	Year of Training	
Neurodegenerative disease	Required	1	Year of Training	
	Required	4	Year of Training	Quarterly Assessment/End of Post Assessment
Quarterly Assessment/End of Post Assessment				
End-of-Year Assessments	Required	1	Year of Training	End of Year Evaluation