



**FACULTY OF  
PAEDIATRICS**

ROYAL COLLEGE OF  
PHYSICIANS OF IRELAND

INTERNATIONAL CLINICAL FELLOWSHIP TRAINING IN

# PAEDIATRIC ALLERGY AND IMMUNOLOGY



**This curriculum of training in Allergy and Immunology was developed in 2015 and undergoes an annual review by Prof Ronan Leahy, Clinical Professor in Paediatrics (UCD, TCD), Consultant in Paediatric Immunology (CHI, Crumlin), by Ann O'Shaughnessy, Head of Education, and by the Allergy and Immunology Training Committee. The curriculum is approved by the Faculty of Paediatrics**

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## Introduction

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

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

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

### Aims

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

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

- Patient care that is appropriate, effective and compassionate dealing with health problems and health promotion.
- Medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and application of such knowledge in patient care.
- Interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professionals, the scientific community and the public.
- Appraisal and utilisation of new scientific knowledge to update and continuously improve clinical practice.
- Capability to be a scholar, contributing to development and research in the field of the chosen specialty.
- Professionalism.
- Ability to understand health care and identify and carry out system-based improvement of care.

### Professionalism

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

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

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

### **Training Programme Duration & Organisation of Training**

The period of clinical training that will be provided under the International Clinical Fellowship Programme (ICFP) for 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 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, 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 patients information
  - Adequate time
  - Clear roles and leadership
  - Adequate IT
- Know how to prioritise patient safety
  - Identify most clinically unstable patients
  - Use ISBAR (Identify, Situation, Background, Assessment, Recommendations)
  - Proper identification of tasks and follow-ups required
  - Contingency plans in place
- Know how to focus the team on actions
  - Tasks are prioritised
  - Plans for further care are put in place
  - Unstable patients are reviewed

**Relevance of professional bodies**

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

**SKILLS**

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

- Maintaining legible records in line with the Guide to Professional Conduct and Ethics for Registered Medical Practitioners in Ireland
- Actively engaging with professional/representative/specialist bodies

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

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

## Dealing with & Managing Acutely Ill Patients in Appropriate Specialties

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

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

### KNOWLEDGE

#### Management of acutely ill patients with medical problems

- Presentation of potentially life-threatening problems
- Indications for urgent intervention, the additional information necessary to support action (e.g. results of investigations) and treatment protocols
- When to seek help, refer/transfer to another specialty
- 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**

## The Acquisition of a Core Body of Knowledge in Fundamental Immunology and its Applications

**Objectives:** To provide the trainee with a core body of knowledge in fundamental Immunology to underpin clinical and laboratory practice.

### KNOWLEDGE

- Principles of body defence
  - Non-specific defence mechanisms
  - Innate immune response
  - Adaptive immune response (humoral/cellular)
- The acute phase response and inflammation
- Cells of myelomonocytic lineage, dendritic cells, NK cells and non-specific defence
  - Ontogeny, structure, phenotype, function and activation
  - Chemokines and migration from the blood vasculature
  - Complement and Fc receptors, adhesion molecules
  - Phagocytosis, intracellular/extracellular killing
  - Respiratory burst and secretory products
- Innate immunity
  - Role of pattern recognition receptors including toll-like receptors
  - Interferons
  - Natural opsonins
  - Effector mechanisms of innate immunity
- Complement
  - Regulation of complement activation
  - Genetics, structure, function, control in defence and in disease
  - Deficiencies
- The basis of specific immunity
  - Antigens: types, structures, processing and presentation
  - Immunogenetics: polymorphisms, generation of diversity and rearranging gene families
  - Immunoglobulins: structure, function and antigen binding
  - Immunoglobulin effector functions
  - Major Histocompatibility Complex: structure, function and regulation
  - T cell receptors: structure, function and antigen binding
- T and B Lymphocytes
  - Ontogeny, phenotype, subpopulations
  - Receptor/ligand interactions and cell activation
  - Effector functions
- Organisation of the lymphoid system
  - Primary and secondary lymphoid organs
  - Population dynamics
  - Lymphocyte migration
  - Mucosal and other compartments of the lymphoid system
- Cytokines, chemokines - origin, structure, effects, site(s) of action (receptor), metabolism regulation and gene activation
- Inflammatory mediators (e.g. leukotrienes, prostaglandins and platelet-activating factor: origin, structure, effect, sites of action)
- Hypersensitivity mechanisms
  - IgE mediated: acute and late phase reactions
  - IgG, IgA-, and IgM-mediated: opsonization, complement fixation, antibody dependent, cell-mediated cytotoxicity, stimulation and blocking
  - Immune complex mediated: physicochemical properties and complex clearance
  - Cell-mediated: participating cells, effector mechanisms and granuloma formation
  - Others: natural killer cells; lymphokine-activated killer cells and cutaneous basophil hypersensitivity
- Immunoregulation
  - Tolerance: clonal selection, suppression and antigen paralysis
  - Cell-cell interactions: help and suppression

- Idiotype networks: inhibition and stimulation
- Immunodeficiency
  - Genetic basis of immunodeficiency disorders
  - Scientific basis of therapy of primary immunodeficiency
  - New developments in diagnosis and therapy of immunodeficiency
  - Pathogenesis and management of secondary immunodeficiency
- Allergic Disease
  - Pathogenesis of allergic diseases
  - Scientific basis of management of allergic disorders
  - New developments in therapy of allergic disease
- Mechanisms of autoimmunity
- Transplantation immunology
  - Histocompatibility: major and minor antigens and principles of cross matching
  - Graft rejection: mechanisms
  - Graft-versus-host reactions and their mechanisms
  -
- Immunotherapy
  - Drugs
  - Vaccines
  - Antibodies
  - Recombinant molecules
  - Immunosuppression
  - Others
- Scientific basis of laboratory immunology

## SKILLS

- Integrate and apply a broad-based knowledge of the scientific basis of the immune system and the mechanisms that result in disease states.
- Integrate knowledge of basic immunology with general medical skills to assess patients with potential immunological disease
- Explain putative mechanisms of action and evidence base of various immunological therapies including immunoprophylaxis
- Ability to explain the indications for the use of these therapies including explaining adverse effects associated with individual therapies
- Ability to use relevant sources of information including computerised databases and should have the skills to use information resources to keep up to date with the latest developments in this rapidly developing field.

**ASSESSMENT & LEARNING METHODS**

- Personal study and self-directed learning
- Literature search & critical review
- Journal club presentations
- Study days and small group seminars
- Didactic courses in basic immunology (e.g. Current concepts in immunology)
- Attendance at meetings of learned societies:
  - Irish Association for Allergy and Immunology
  - British Society for Immunology
  - British Society for Allergy and Clinical Immunology
  - European Society for Immunodeficiencies
  - European Academy for Allergy & Immunology
  - UKPIN meeting
  - IPIC meeting
- Testing knowledge during tutorials conducted by trainer
- Evidence of teaching others (including feedback from students)
- Annual training assessments

## Structured Clinical Training – General Aspects

**Objectives:** To provide the trainee with the skills and knowledge required to:

- assess and manage patients with congenital and acquired immunodeficiency - antibody and cell mediated defects, complement deficiency and neutrophil defects, at a consultant level
- investigate and manage allergy and allergic disease

### KNOWLEDGE

- Understand the immunological basis for immunodeficiency states, allergic disease and autoimmune disease
- Knowledge of investigation and the evidence base for management of immunological disorders
- Knowledge of expected natural history of the disease, expected response to treatment, likely adverse effects and required monitoring for therapies instituted.

### SKILLS

- History and physical examination
  - Taking an allergy focussed history
  - History & supporting information to assess drug allergy
  - Detailed recording of infection history
- Selection and interpretation of appropriate laboratory and ancillary investigations (e.g. Lung function tests, CT scans etc)
- Formulating differential diagnoses
- Prioritising therapeutic Interventions

### ASSESSMENT & LEARNING METHODS

- Attendance at out-patients, day wards and consult rounds
- Detailed procedures observed (DOPS) by trainer or other professionals and judged to be satisfactory against established criteria
- Portfolio indicating evidence of learning e.g. Literature reviews, case reports, publications, evidence-based protocols, patient information sheets and standard operating procedures authored by trainee
- Written case records and presentations
- Completed clinical and laboratory audits
- Attendance at meetings of learned societies:
  - Irish Association for Allergy and Immunology
  - British Society for Immunology
  - British Society for Allergy and Clinical Immunology
  - European Society for Immunodeficiencies
  - European Academy for Allergy & Immunology
  - UKPIN meeting
  - IPIC meeting
- Testing knowledge during tutorials conducted by trainer
- Evidence of teaching others (including feedback from students)
- Case Based Discussion
- Mini-CEX

## Diagnosis and Management of Immunodeficiency Disorders in Children

### KNOWLEDGE

- Understand the patho-physiology, including the molecular basis of immunodeficiency diseases
- Understand and be able to give advice on the appropriate use of laboratory tests for the diagnosis, treatment and prevention of primary or secondary immunodeficiency

#### Knowledge of -

- Clinical features of congenital and acquired immunodeficiency syndromes
- Antibody deficiency disorders
- T-Cell/Severe Combined Immunodeficiencies
- HIV disease
- Complement deficiencies
- Phagocyte deficiencies
- Asplenia
- Genetic studies of immunodeficiency syndromes
- Assessment of secondary antibody deficiency
- Knowledge of sensitivity, precision and specificity of relevant laboratory tests
- Knowledge of the relevant methods of quality control and quality assurance
- Aware of the clinical consequences of HIV infection, its epidemiology and prevention, current ideas about treatment and techniques required for monitoring HIV-induced disease

#### Therapy of Immunodeficiency Diseases

- Knowledge of the principles governing immune reconstitution of immunodeficiency diseases, including immunoglobulin replacement therapy, bone marrow transplantation and stem cell transplantation, gene therapy, cytokine therapy
- Knowledge of evidence-based indications for Immunoglobulin replacement therapy, the methods of delivery of replacement immunoglobulin (including intravenous and subcutaneous therapy), potential hazards of this therapy.

#### Immunoprophylaxis

- Knowledge of the principles of immunoprophylaxis, including potential advances in the field.

**SKILLS**

- History and clinical assessment of patients with suspected primary and secondary immunodeficiency
- Provide consultative advice on the diagnosis and management of secondary immunodeficiency.
- Advise clinically appropriate and cost-effective selection of laboratory tests, and interpretation of these tests in context of clinical findings.
- Requesting and interpreting specific antibody titres and vaccination responses
- Analysis of complement functional defects, lymphocyte immunophenotyping & function testing & neutrophil function tests
- Management of immunoglobulin replacement therapy
- Explain indications, process and risk of immunoglobulin therapy to patients
- Management and prophylaxis of infections in the immunosuppressed patient
- Managing complications of immunoglobulin therapy
- Organising and delivering home-care therapy.
- Ability to anticipate, prevent, detect and manage infections in immuno-compromised patients in close co-operation with other clinical colleagues (e.g. specialists in Infectious Diseases, Microbiology and Virology)
- Competent to provide consultative advice on immunisation to prevent communicable disease, including:
  - how to prevent and deal with adverse reactions
  - immunisation of patients with immunodeficiency
  - contraindications to immunisation
  - using information resources to keep up to date with this field
- able to assess children with recurrent or unusual infections or failure-to-thrive.

**ASSESSMENT & LEARNING METHODS**

- Personal study and self-directed learning
- Literature search & critical review
- Journal club presentations
- Reference to IUIS Scientific committee – update on primary immunodeficiency diseases
- Attendance at meetings and courses run by the Royal Colleges
- Attendance at meetings of learned societies:
  - European Society for Immunodeficiencies
  - UK Primary Immunodeficiency Network
- UK Primary Immunodeficiency Network resources
- Immunodeficiency clinics, including paediatric immunodeficiency clinics
- Infusion day ward/clinics
- Review of home therapy patients
- Observe home therapy training and assessment
- Case Based Discussion
- Mini-CEX

## Diagnosis and Management of Allergic Diseases in Children

**Objectives:** To provide the trainee with the knowledge and skills to diagnose and treat allergic diseases as they present in childhood.

### KNOWLEDGE

#### Detailed knowledge of -

- Anaphylaxis
- Urticaria/ angioedema
- Chronic urticaria/angioedema
- Inducible urticaria/angioedema
- Asthma
- Rhinitis
- Drug & vaccine allergy
- Anaesthetic reactions
- Atopic dermatitis
- Latex allergy
- Venom hypersensitivity
- Paediatric immunotherapy
- Allergen immunotherapy

#### In particular, to develop –

- Knowledge of the mechanisms, common causes, clinical features and differential diagnosis of anaphylactic (immune-mediated and non-immune mediated) reactions
- Knowledge of the efficacy, limitations, indications and contraindications for allergen immunotherapy
- Knowledge of different desensitisation regimens, and the advantages and disadvantages of different allergen preparations for immunotherapy
- Knowledge of appropriate monitoring prior to, during and after desensitisation injections, including the management of trivial and severe reactions.
- Knowledge of the definition, diagnosis, differential diagnosis and management of asthma, rhinitis, conjunctivitis and atopic dermatitis.
- Knowledge of the differences in the natural history of allergic diseases and approaches to allergen avoidance and treatment in children
- Knowledge of how to diagnose and manage allergic diseases affecting the respiratory tract, skin and gut in children, usually in collaboration with paediatricians.

**SKILLS**

- Ability to diagnose, assemble a differential diagnosis and provide management of asthma, rhinitis, conjunctivitis and atopic dermatitis.
- Assess and treat patients with allergic diseases (in children as well as adults), including identification of clinically significant allergens and provision of avoidance advice, performance and interpretation of skin tests, Specific IgE testing, symptom & food diaries and allergen challenges as applied to allergy diagnosis.
- Recognise the clinical sequelae of IgE-mediated food allergy, and to distinguish these from intolerance syndromes
- Be familiar with the advantages and disadvantages of skin prick testing, exclusion diets, diet diaries and single and double-blind-placebo-controlled food challenge in the diagnosis of food allergy
- Recognise gastro-intestinal disorders which may mimic food allergy and referral of patients for appropriate specialist investigation
- Recognise anxiety and somatisation disorders which may mimic allergic disease – explain pathophysiology to patients and refer for appropriate care.
- Analyse and manage allergic adverse reactions to drugs, including general and local anaesthetics, antibiotics and other drugs
- Be familiar with the principles of drug challenge and desensitisation and provide advice in relation to the use of alternate drugs in allergic patients.
- Organise the systematic approach to the identification of aetiology, to explain emergency treatment plans, including self-administration of adrenaline in adults and children and to provide management plans to patients prescribed adrenaline auto-injectors (written where necessary) with appropriate liaison between immunologist, general practitioner, paediatrician and school where appropriate.

**ASSESSMENT & LEARNING METHODS**

- Allergy Clinics
- Office based and day ward-based challenges
- Case Based Discussion
- Mini-CEX
- Personal study and self-directed learning
- Literature search & critical review
- Journal club presentations
- Study days and small group seminars
- Attendance at meetings and courses run by the Royal Colleges
- Attendance at meetings of learned societies:
  - Irish Association for Allergy and Immunology
  - British Society for Allergy and Clinical Immunology
  - European Academy for Allergy & Immunology
- Evidence of teaching others (including feedback from students)

## Immunological Procedures

**Objectives:** To provide the trainee with the knowledge and skills: to prescribe and administer immunoglobulin replacement therapy and educate patients on the treatment of anaphylaxis; to perform skin prick testing and interpret other related investigations

### KNOWLEDGE

- Administration of Immunoglobulin (IV)
- Administration of Immunoglobulin (SC)
- Skin prick testing
- Imaging: appropriate ordering and interpretation
- Protocol for systematic investigation of anaphylaxis
- Protocol for emergency management of anaphylaxis in adults and children
- Management of home therapy programmes

### SKILLS

- Range of clinical skills as they apply to paediatrics but in particular in dealing with clinical immunological disorders.
- Specific knowledge about the appropriate investigations and therapies applied to these patients.

### ASSESSMENT & LEARNING METHODS

- Attendance at immunodeficiency and allergy clinics and daywards
- Portfolio of cases assessed
- Attend pulmonary function department
- Optional attendance at appropriate respiratory clinics
- Attendance at home therapy training/assessment
- Involvement in preparation of policies and procedures
- Testing knowledge during tutorials conducted by trainer
- Evidence of teaching others (including feedback from students)
- DOPS
- FRCPATH Immunology Parts 1 and 2

## Structured Laboratory Training

**Objective:** To provide trainees with the skills and knowledge to understand rationale for use and interpretation of immunological laboratory tests in the diagnosis of immunological disorders

### KNOWLEDGE

#### Knowledge of key laboratory methodologies and procedures

##### Measurement and analysis of proteins

- Turbidometry & Nephelometry,
- Radial immunodiffusion
- Electrophoresis (agar, cellulose, capillary zone)
- Immunofixation (electrophoresis with immune precipitation)
- Polyacrilamide gel electrophoresis (PAGE) with isoelectric focusing
- SDS electrophoresis
- Countercurrent electrophoresis
- Rocket electrophoresis

##### Detection of antibody:antigen reactions

- Enzyme-linked immunoassays (ELISA)
- Fluorochrome- linked assays
- Radio-immuno assays
- Chemiluminescence based assays
- Agglutination based assays (latex, red cell)

##### Fluorescence microscopy

- Indirect fluorescence microscopy
- Direct fluorescence microscopy on tissue biopsy samples
- Flow cytometry, laser-based assays

#### Knowledge of key technologies used in molecular biology

- Theoretical knowledge of procedures used in gene cloning and the basic principles of gene cloning
- Preparation and storage of DNA from peripheral blood cells
- Knowledge of digestion of DNA by restriction enzymes
- Knowledge of the techniques of Southern, Western and Northern blotting
- Knowledge of the polymerase chain reaction (PCR)
- Knowledge of molecular methods for the detection of gene defects causing primary immunodeficiency

#### Ability to interpret a range of immunological assays

**Immunoglobulins, other relevant circulating proteins**

- Quantification of total immunoglobulins i.e. IgG, IgA, IgM, IgD and IgE
- Quantification of IgG subclasses
- Quantification of specific IgG responses to pneumococcal, tetanus, hemophilus antigens
- Quantification of immunoglobulin fractions (light and heavy chains) in serum and other body fluids e.g. urine
- Detection and quantification of:
  - Paraproteins (monoclonal immunoglobulins)
  - Cryoglobulins
  - Beta 2 microglobulin
- Quantification of specific IgE responses to allergens
- Quantification of precipitin antibodies eg to avian, aspergillus antigens
- Quantification of inflammatory proteins such as C-reactive protein, tryptase, other acute phase proteins

**Complement components and activation pathways (classical and alternative)**

- Measurement of key individual complement proteins e.g. C3, C4, mannose binding lectin
- Investigation of complement activation pathways (classical and alternative)
- Measurement of complement control proteins, particularly C1-esterase inhibitor
- Measurement of products resulting from complement activation
- Measurement of C3 nephritic factor and other complement autoantibodies
- Measurement of individual components when activation pathways are defective

**Detection of auto-antibodies**

- Methods used for auto-antibody detection
- Develop skill in detection and interpretation of autoantibodies to mitochondrial, gastric parietal cell, smooth muscle, liver/kidney/microsomal, nuclear (ANA), anti-dsDNA, neutrophil cytoplasmic (ANCA) antigens
- Interpretation of other auto-antibodies including rheumatoid factor; antiphospholipid antibodies, beta 2 glycoprotein 1 antibodies; antibodies to MPO, PR3 and GBM; extractable nuclear antigen (ENA) antibodies; acetylcholine receptor antibodies; intrinsic factor antibodies; diabetes associated antibodies; coeliac disease associated antibodies; thyroid peroxidase antibodies; paraneoplastic associated antibodies.

**Flow cytometry**

- Familiarity with principles of flow cytometry
- Ability to interpret flow cytometry plots
- Familiarity with difficulties/pitfalls in interpretation
- Familiarity with commonly employed monoclonal antibodies
- Familiarity with testing for neutrophil oxidative burst activity
- Familiarity with use of cytometry for cytotoxicity assays
- Familiarity with use of cytometry for lymphocyte proliferation assays

**Oligoclonal antibody detection in CSF**

- Detection of oligoclonal IgG bands in CSF and in serum

**Histocompatibility & Immunogenetics**

- HLA typing by serological (lymphocytotoxicity) methods
- HLA typing by PCR – employing Sequence Specific Primer/Oligonucleotide (SSP/SSO) techniques
- Measurement of anti-HLA antibodies
- Cross-matching (CDC and flow cytometry based)

**SKILLS**

- Select, interpret and provide clinical advice based on laboratory investigations relevant to the diagnosis, assessment and monitoring of patients with suspected immunodeficiency, allergy or autoimmunity.

**ASSESSMENT & LEARNING METHODS**

- Experience in Immunology laboratory
- Participation in laboratory meetings
- Personal study and self-directed learning
- Literature search & critical review
- Journal club presentations
- Study days and small group seminars
- Attendance at meetings and courses run by the Royal Colleges
- Attendance at meetings of learned societies:
  - Irish Association for Allergy and Immunology
  - British Society for Immunology
  - British Society for Allergy and Clinical Immunology
  - European Society for Immunodeficiencies
  - European Academy for Allergy & Immunology
- Testing knowledge during tutorials conducted by trainer
- Evidence of teaching others (including feedback from students)
- Annual training assessments

## Diagnosis and Management of Systemic Autoimmune Disorders

**Objectives:** To provide the trainee with the knowledge and skills to diagnose a range of autoimmune diseases; develop an understanding of the immunopathogenesis of these disorders; to advise and administer a range of immunosuppressive therapies.

### KNOWLEDGE

#### Diagnosis and management of

- systemic lupus erythematosus
- rheumatoid arthritis and seronegative arthropathies
- other connective tissue disease
- autoinflammatory syndromes
- systemic vasculitic disorders

#### Diagnosis of autoimmune diseases

- Autoimmune skin diseases
- Autoimmune liver diseases
- Autoimmune endocrine diseases
- Autoimmune gastro-intestinal diseases
- Autoimmune neurological diseases
- Other rare autoimmune diseases

#### Therapy of Autoimmune diseases

- Knowledge of the principles governing the use of immunosuppressive drugs (corticosteroids, azathioprine, mycophenylate, cyclophosphamide, cyclosporin, tacrolimus, sirolimus, methotrexate, dapsone)
- Knowledge of the principles governing the use of high dose IVIg,
- Knowledge of the principles governing the use of therapeutic monoclonal antibodies (including anti-CD20, anti-CD52, anti-TNF, anti-IL-6, anti-IL-1 receptor, ATG),
- Knowledge of the principles governing the use plasma exchange
- Knowledge of the principles governing the use interferon therapies
- Knowledge of the appropriate precautions applied during the use of such therapies including the use of immunisation, anti-TB prophylaxis, pneumocystis prophylaxis, bone protection

### SKILLS

- Be able to diagnose, investigate and manage connective tissue disease such as systemic lupus erythematosus, rheumatoid arthritis and seronegative arthropathies; periodic fever syndromes and systemic vasculitic disorders
- Advise in the management of autoimmune skin diseases, autoimmune liver diseases, autoimmune endocrine diseases, autoimmune gastro-intestinal diseases, autoimmune neuromuscular diseases and other rare autoimmune diseases
- Competent to undertake immunosuppressive and immunomodulatory therapy including high-dose intravenous immunoglobulin therapy, plasma exchange, immunosuppressive drugs and biological agents.
- Competence in monitoring patients with autoimmune disease to prevent/minimise adverse effects of therapy

**ASSESSMENT & LEARNING METHODS**

- Autoimmune disease and/or rheumatology clinics
- Ward consults and ward rounds
- Review of complex cases, including literature review
- Case Based Discussion
- Mini-CEX
- Personal study and self-directed learning
- Literature search & critical review
- Journal club presentations
- Study days and small group seminars
- Attendance at meetings and courses run by the Royal Colleges
- Attendance at meetings of learned societies

## 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 speciality 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>Section 2 - Training Activities</b>				
<b>Outpatient Clinics</b>				
Allergy	Required	25	Training Programme	Clinics
Immunology	Required	80	Training Programme	
Auto-inflammatory	Required	4	Training Programme	
Joint auto-inflammatory (participate when onsite, 3 run monthly)	Required	6	Training Programme	
Neuro-inflammation clinics (participate monthly)	Required	4	Training Programme	
Benign Haematology clinics (Neutropaenia)	Required	1	Training Programme	
<b>Ward Rounds/Consultations</b>				
Inpatient Clinical Immunology Patients	Required	50	Training Programme	
Day Case Admissions	Required	150	Training Programme	
<b>Procedures/Practical Skills</b>				
Administration of SCIg and Parent Training (2 observations, 2 participation)	Required	5	Training Programme	Procedures, Skills & DOPS
Skin prick testing for allergens	Required	20	Training Programme	
Intradermal testing	Required	10	Training Programme	
Oral Food Challenge	Required	20	Training Programme	
Open Food Challenge	Required	10	Training Programme	
Prescribe and administer biological therapies and immunoglobulin (Infusions)	Required	10	Training Programme	
<b>Case Experience</b>				
Immunoglobulin deficiency (5 cases)				Cases
Combined immunodeficiency (5 cases)	Required	5	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Severe combined immunodeficiency (5 cases)	Required	5	Training Programme	
Neutrophil disorders (5 cases)	Required	5	Training Programme	
Complement deficiency (3 cases)	Required	3	Training Programme	
Hereditary Angioedema (3 cases)	Required	3	Training Programme	
Complex autoimmunity (3 cases)	Required	3	Training Programme	
Immuno-dysregulation (3 cases)	Required	3	Training Programme	
Syndromic Immunodeficiency (3 cases)	Required	3	Training Programme	
Pre-HSCT preparation and assessment	Required	1	Training Programme	
Post-HSCT care and assessment	Required	1	Training Programme	
Secondary immunodeficiency (3 cases)	Required	3	Training Programme	
<b>Additional/Special Experience Gained</b>				Clinical and Other Liaisons
12 month core immunology (primary immunodeficiency) clinical experience	Required	1	Training Programme	
12 months elective time	Desirable	1	Training Programme	
Paediatric Infectious Diseases (suggest 3 months)	Desirable	1	Training Programme	
Paediatric Allergy (3 months)	Required	1	Training Programme	
Paediatric Rheumatology	Required	1	Training Programme	
Adult Immunology, SJH (compulsory 1 month)	Required	1	Training Programme	
Elective "Research/Scholarship" time – maximum 2 months (supervised by Trainer)	Required	1	Training Programme	
Paediatric Bone Marrow Transplant (Immunology – GNCH, Newcastle, UK pending approval from GNCH/visa etc.)		1	Training Programme	
<b>Lab Experience</b>				Laboratory Experience
Immunology Laboratory experience - SJH (suggest 1 month)	Desirable	1	Training Programme	
<b>Section 3 - Educational Activities</b>				
<b>Mandatory Courses</b>				Teaching Attendance
Performing Audit (Online)	Desirable	1	Training Programme	
Mastering Communications	Desirable	1	Training Programme	
Ethics for Paediatrics	Desirable	1	Training Programme	
HST Leadership in Clinical Practice	Desirable	1	Training Programme	
Health Research – An Introduction	Desirable	1	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Wellness Matters	Desirable	1	Training Programme	
<b>Non – Mandatory Courses</b>	Desirable	1	Training Programme	
<b>Study Days (Minimum 6 attended)</b> as per training programme	Required	6	Training Programme	Teaching Attendance
<b>In-house activities</b>				Attendance at Hospital Based Learning
Grand Rounds	Required	20	Year of Training	
Journal Club	Required	10	Year of Training	
MDT Meetings	Required	10	Year of Training	
<b>Examinations</b>	Desirable	1	Training Programme	Examinations
<b>Formal Teaching Activity (1 per month)</b>				Delivery of Teaching
Lecture: prepare and present within division specific to primary immunodeficiency	Required	10	Training Programme	
Cases: prepare and present cases to DAIG	Required	6	Year of Training	
Cases: present complex cases at video-conference with GNCH Newcastle	Required	10	Year of Training	
Teaching: Medical Students, NCHDs, Nurse Specialists	Required	10	Training Programme	
<b>Research</b>	Desirable	1	Training Programme	Research Activities
<b>Clinical Audit activities and reporting</b> (2 per year to start or complete, Quality Improvement projects can be uploaded against audit)	Required	4	Training Programme	Audit and QI
<b>Publications</b>				
Peer reviewed publications per year (case series, case reports, review, others)	Required	4	Training Programme	
Clinical protocols/pathways/guideline development projects per year	Required	4	Training Programme	
<b>Presentations</b>	Desirable	1	Training Programme	
Poster/oral presentations annually at international conferences on PIDD	Required	2	Training Programme	
<b>National/International meetings</b> Irish Association of Allergy and Immunology, Dublin Allergy and Immunology Group (DAIG) European Society of immunodeficiencies (ESID) International course – current concepts in immunology (Germany)	Desirable	1	Training Programme	
<b>Additional Qualifications</b>	Desirable		Training Programme	
<b>Committee Attendance</b>	Desirable	1	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
<b>Section 4 - Assessments</b>				
<b>CBD</b>	Required	1	Year of Training	CBD
<b>Mini-CEX</b> (At least two Mini-CEX assessments)	Required	2	Training Programme	Mini-CEX
<b>DOPs</b>	Required	1	Training Programme	Procedures, Skill & DOPS
<b>Quarterly Assessments/End-of-Post</b>	Required	4	Year of Training	Quarterly Assessments/End-of-Post
<b>End-of-Year Assessments</b>	Required	1	Year of Training	End-of-Year Assessments