



**IRISH COMMITTEE
ON HIGHER
MEDICAL TRAINING**

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

RESPIRATORY MEDICINE



This curriculum of training in Respiratory Medicine was developed in 2010 and undergoes an annual review by Dr Cedric Gunaratnam and Dr Bob Rutherford National Specialty Directors, Leah O’Toole, Head of Postgraduate Training and Education, and by the Respiratory Medicine Training Committee. The curriculum is approved by the Irish Committee on Higher Medical Training.

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Introduction

Respiratory Medicine is a clinical specialty dealing primarily with diseases of the lungs but also their effects on other organs. Many diverse pathological processes are involved in producing such disorders and in addition to the common diseases such as asthma, chronic obstructive pulmonary disease (COPD) and carcinoma of the lung, many other inflammatory, infective and degenerative processes lead to a wide variety of diverse diseases.

Consequently there are many potential opportunities to develop a sub specialty interest. Because of the diverse nature of the disease processes, an interest in basic mechanisms of disease is important and there are ample opportunities for basic as well as translational research. Clinical management remains important as, though progress has been made in the care of certain diseases such as asthma and tuberculosis and the use of existing techniques such as bronchoscopy is being expanded, further challenges remain and new ones are likely to emerge.

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

Aims

Upon satisfactory completion of specialist training in Respiratory Medicine, 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 Respiratory Medicine, 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 Respiratory Medicine.
- 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 Respiratory must have a certificate of completion Basic Specialist Training (BST) in General Internal Medicine and obtained the MRCPI.

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

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

Duration & Organisation of Training

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

A minimum period of 4 months spent on an attachment to an intensive care unit is desirable for training in Respiratory Medicine. Some experience of thoracic surgery especially rigid bronchoscopy and mediastinoscopy is mandatory and all trainees should attend such procedures.

Trainees must spend the first two years of training in clinical posts in Ireland before undertaking any period of research or Out of Programme Clinical Experience (OCPE). The earlier years of training will usually be directed towards acquiring a broad general experience of Respiratory Medicine under appropriate supervision. An increase in the content of hands-on experience follows naturally, and, as confidence is gained and abilities are acquired, the trainee will be encouraged to assume a greater degree of responsibility and independence.

If an intended career path would require a trainee to develop further an interest in a sub-specialty within Respiratory Medicine (e.g. cystic fibrosis, lung transplantation, non-invasive ventilation etc.) this should be accommodated as far as possible within the training period, re-adjusting timetables and postings accordingly.

Trainees on HST programme in Respiratory Medicine are given a rotation of posts at the start of the programme. Each rotation will provide the trainee with experience in different hospitals so as to acquire the broad range of training required. A degree of flexibility to meet the individuals training needs is possible especially towards the end of the training programme following discussion with the NSDs.

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 fulfil those competencies during Higher Specialist Training. No time-scale of acquisition is offered, but failure to make progress towards meeting these important objectives **at an early stage** would cause concern about a Specialist Registrar's suitability and ability to become independently capable as a specialist.

Training Programme

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training for Respiratory Medicine in accredited training hospitals. Each post within the programme will have a named trainer/educational supervisor and programmes will be under the direction of the National Specialty Director for Respiratory Medicine or, in the case of GIM, the Regional Specialty Advisor. Programmes will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop a sub-specialty interest.

The experience gained through rotation around different departments is recognised as an essential part of HST. A Specialist Registrar may not remain in the same unit for longer than 2 years of clinical training; or with the same trainer for more than 1 year.

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.

Dual Specialty Training

GIM training is expected to be completed in the first 3 years of the programme. One of these years is a GIM specific year. During the other 2 years trainees must complete their GIM training as per the minimum requirements.

Each post must include general medicine on-call commitment for acute unscheduled/emergency care with attendance at relevant post-take rounds.

Acute Medicine:

There must be evidence of direct supervision of the activity of the more junior members of the “on-take” team and a minimum of 10 (480 per year) new acute medical assessments and admissions during the 24-hour period are expected. In addition, the trainee will be expected to have ongoing care/responsibility for a proportion of the patients for the duration of the clinical inpatient journey as well as follow up post discharge. In this capacity you should develop skills in non-technical aspects of care including discharge planning and end of life care.

Inpatient Responsibilities:

The trainee will have front line supervisory responsibilities for general medical inpatients. This will require supervising the activities (e.g. being available for advice) of the more junior members (SHO/Intern) of the clinical team at all times. In addition to personal ward rounds, a minimum of two ward rounds with the consultant each week is expected for educational experience. Ongoing responsibility for shared care of the team’s inpatients whilst in the ITU/HDU/CCU is also essential. If this is not possible in a particular hospital/training institution then a period of secondment to the appropriate unit will be required.

Outpatient Responsibilities:

The trainee is expected to have personal responsibilities for the assessment and review of general medicine outpatients with a minimum of at least one consultant led GIM clinic per week. The trainee should assess new patients; access to consultant opinion/supervision during the clinic is essential. In the event of clinics being predominantly subspecialty orientated, a trainee must attend other clinics to ensure comprehensive General Internal Medicine training.

General Education in Training:

The trainee is expected to spend four hours per week, in formal general professional education for certification of training. In the types of experience noted below, time must be fairly distributed between GIM and the other specialty in dual training programmes. Review of all these activities will form part of the training record for each trainee.

All trainees are required to undergo training in management. This will take the form of day-to-day involvement in the administration of the team/firm and must include attendance at a management course during the training period.

Trainees are expected to be actively involved in audit throughout their training and should have experience of running the unit's audit programme and presenting results of projects at audit meetings. They should also regularly attend other activities, journal clubs, X-ray conferences, pathology meetings etc.

Trainees should be expected to show evidence of the development of effective communication skills. This can be assessed from taking part in formal case presentations or in giving lectures/seminars to other staff or research/audit presentations at unit meetings.

All trainees must have a current ACLS certificate throughout their HST.

Procedures:

During training the trainee should acquire those practical skills that are needed in the management of medical emergencies, particularly those occurring out of normal working hours. Some exposure to these skills may have occurred during the period of BST but experience must be consolidated and competencies reviewed during HST. The procedures, with which the trainee must be familiar and show competencies in, either as essential to acquire, or as additional procedural skills i.e. desirable to acquire.

Essential & Additional Experience:

The trainee will be expected to have had experience of/be familiar with the management of a wide range of cases presenting to hospitals as part of an unselected acute medical emergency "take". Whilst trainees will not need to be expert in all of these areas they will be expected to be able to plan and interpret the results of immediate investigations, initiate emergency therapy and triage cases to the appropriate specialist care. These emergency situations have been considered under each specialty section and are indicative of what should be covered but are not prescriptive. It should form the basis of regular discussions between the trainee and trainers as training progresses. The various clinical situations listed for experience have been divided into those, which are considered "essential" and others, which are "additional".

Assessment Process

The methods used to assess progress through training must be valid and reliable. The Respiratory Medicine Curriculum has been re-written, describing the levels of competence which can be recognised. The assessment grade will be awarded on the basis of direct observation in the workplace by consultant supervisors. Time should be set aside for appraisal following the assessment e.g. of clinical presentations, case management, observation of procedures. As progress is being made, the lower levels of competence will be replaced progressively by those that are higher. Where the grade for an item is judged to be deficient for the stage of training, the assessment should be supported by a detailed note which can later be referred to at annual review.

The assessment of training utilise Mini-CEx, DOPS and Case Based Discussions (CBD) methods adapted for the purpose. These methods of assessment have been made available by HST for use at the discretion of the NSD and nominated trainer. They are offered as a means of providing the trainee with attested evidence of achievement in certain areas of the Curriculum e.g. competence in procedural skills, or in generic components. Assessment will also be supported by the trainee's portfolio of achievements and performance at relevant meetings, presentations, audit, in tests of knowledge, attendance at courses and educational events.

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)

General Internal Medicine Section

Objective: On completion of Higher Specialist Training the trainee will be able to identify and treat immediate life threatening causes of common medical presentations, form a differential diagnosis for non-life threatening cases and effectively manage the patient including further investigation and appropriate referral. They will have acquired a broad range of procedural and clinical skills to manage diverse presentations.

Assessment and Learning Methods

Learning opportunities during HST are through:

- Self-Directed Learning
- Attendance at Study days
- Participation in In-house activities
- Unselected acute on call
- General Medicine outpatient clinics
- Department education sessions (black box, journal club, tutorials)
- Completion of Required courses
- Attendance at additional learning events such as recommended courses and masterclasses

Progress is assessed through:

- Case Based Discussion
- ePortfolio
- Annual assessment
- DOPS

In the Acute setting

During the course of HST the trainee will encounter common acute presentations and demonstrate the following competencies:

- Recognising and assessing urgency
- Stabilising the patient
- Prioritising
 - Tasks
 - Investigations
- Managing co-existing morbidities
- Making appropriate referrals
- Decision making and appropriate delegation

The presentations listed in this section represent the most common acute presentations and conditions currently seen in Irish hospitals, accounting for over 95% of admissions. It is expected that HST trainees in general internal medicine will have a comprehensive knowledge of, and be able to provide a differential diagnosis for, these conditions.

Presentations

1. Shortness of breath
2. Cough
3. Chest Pain
4. Blackout/ Collapse/ Dizziness
5. The frail older patient in the acute setting
6. Abdominal Pain
7. Fever
8. Alcohol and substance dependence or withdrawal
9. Falls and Decreased mobility
10. Weakness and Paralysis
11. Headache
12. Limb Pain and/or Swelling
13. Nausea and Vomiting
14. Seizure
15. Diarrhoea
16. Delirium/Acute confusion
17. Acute Psychological illness
18. Palpitations
19. Hepatitis or Jaundice
20. Gastrointestinal Bleeding
21. Haemoptysis
22. Rash
23. Acute Back Pain
24. Poisoning and Drug Overdose
25. Hyper-glycaemia

Emergency management

Recognising and managing emergency cases including:

- Acute Coronary Syndrome
- Acute Kidney Injury
- Acute Respiratory Failure
- Acute Seizure
- Anaphylaxis / Angioedema
- Cardio-respiratory arrest
- Critical electrolyte abnormalities (calcium, sodium, potassium)
- Hypo- or Hyperglycaemia
- Sepsis and septic shock
- Stroke/ TIA
- The unconscious patient
- Unstable hypotensive patient

Skills and Knowledge in the General Medicine Setting

On completion of HST the trainee should know life threatening causes, clinical feature, classifications, investigations and management, including indications for urgent referral, for common general medicine presentations. The following outlines commonly associated features, causes and/or routes of investigation for these presentations, both acutely and for ongoing case management, the trainee is expected to know and the competencies they are expected to demonstrate.

When a patient presents with a general medicine complaint the trainee should demonstrate an ability to:

- Assess their signs and symptoms; formulating a differential diagnosis
 - Take history as part of an investigation
 - Undertake primary assessment
 - Recognise and assess urgency
 - Undertake secondary assessment
- Initiate appropriate investigations
 - Interpret results for common investigations
- Initiate appropriate treatment, including stabilising the patient where necessary
- Manage co-existing morbidities
- Manage on-going cases including
 - confirming a diagnosis for those not requiring urgent referral
 - assessing response to initial treatment
 - recognising signs to escalate management when needed
- Appropriately refer based on:
 - Response to treatment
 - Local guidelines
 - Culture
 - Self-awareness of their own knowledge and ability
 - Services available
- Provide ongoing management of the case

Shortness of breath

When a patient presents with shortness of breath a trainee should demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for common causes.

- Life threatening causes of breathlessness
 - Airway Obstruction
 - Acute severe asthma
 - Acute exacerbation of COPD
 - Pulmonary oedema
 - Tension pneumothorax
 - Acute presentations of Ischaemic heart disease
 - Acute severe left ventricular failure
 - Dysrhythmia
 - Pulmonary embolus
 - Cardiac tamponade
 - Metabolic acidosis

Cough

When a patient presents a cough a trainee should demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Common causes of acute cough
 - Viral and Pertussis type cough
 - Acute bronchitis
 - Pneumonia
 - Tuberculosis
 - Lung cancer
 - Understand the relevance of subacute and chronic cough
 - Common causes (Asthma, Upper airway, GORD)
 - When to refer for assessment of lung cancer
 - Consideration of Interstitial lung disease

Chest Pain

When a patient presents with chest pain a trainee should demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for common causes.

- Life threatening causes of chest pain
 - Myocardial infarction
 - Dissecting aortic aneurysm
 - Pulmonary emboli
 - Tension pneumothorax
 - Oesophageal rupture
- Clinical features of:
 - Cardiac chest pain
 - Chest pain caused by respiratory disease and oesophageal rupture
 - Chest pain caused by gastrointestinal disease
 - Chest wall pain
 - Functional chest pain

Blackout / Collapse / Dizziness

When a patient blacks out, collapses or presents with dizziness a trainee should demonstrate that they know the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Stroke
 - Cerebral infarction
 - Primary intracerebral haemorrhage
 - Subarachnoid haemorrhage
- Syncope
 - Cardiac causes (arrhythmia, cardiogenic shock)
 - Vasovagal syncope
 - Postural hypotension (e.g., drugs, neurocardiac, autonomic)
 - Localised vascular disease (posterior circulation)
 - Metabolic causes (e.g., hypoglycaemia)
- Seizures and epilepsy

Management of the frail older patient in the acute setting

When a frail older patient presents a trainee should demonstrate knowledge of the appropriate approach to assessment, risk factors, appropriate investigations and necessary management, including indications for urgent referral, for this population.

- Understand the broad differential diagnosis and management of complex multi-morbid illness in older patients
- Approach to investigation and management of recurrent Falls
- Non-pharmacological and pharmacological management of behavioural complications of dementia
- Investigation of causes, non-pharmacological and pharmacological management of Delirium
- Polypharmacy and inappropriate prescribing in older patients (e.g. renal dose adjustment)
- Medical management of nursing home residents- identifying aspiration risk
- Palliative care and pain management in the acute setting
- Acute stroke thrombolysis delivery and criteria for referral for intravascular intervention
- Completion of NIHSS stroke scale

Abdominal Pain

When a patient presents with abdominal pain a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Initial assessment of abdominal pain
- Differential Diagnosis:
 - Intra-abdominal
 - Gastrointestinal
 - Vascular (aneurysm, ischemia)
 - Urological
 - Gynaecological
 - Extraabdominal causes of pain
- Ability to identify and initiate management of life threatening conditions causes of abdominal pain
- Indications for surgical consultation and urgent referral
- Identifying constipation and urinary retention in older patients

Fever

When a patient presents with fever a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Recognize the symptoms and signs of sepsis
- Identify common causes of fever
 - Infection
 - Non-infectious including PE, Drugs, vasculitis,
- Delivery of initial management of septic patient
- Knowledge of the choice of empiric and infection targeted antibiotics

Alcohol and substance dependence or withdrawal

When a patient presents with dependence or withdrawal a trainee should demonstrate that they know the classifications and necessary management, including indications for referral.

- Recognition
- Psychosocial dysfunction
- Autonomic disturbances
- Stress and panic disorders
- Insomnia and sleep disturbance
- Understand the role of psychiatrist and referral to rehabilitation services

Falls and Decreased mobility

When a patient falls or presents with decreased mobility a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Common medical and social causes of falls in medical patients
- Complications of falls
 - Fractures including the neck of the femur
 - Intracranial injury
 - Rib fracture and pneumothorax
 - Loss of mobility and independence

Weakness and Paralysis

When a patient presents with weakness or paralysis a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Stroke/ space occupying lesion
- Spinal cord injury
- Underlying neurological causes: e.g. multiple sclerosis, Guillain-Barre syndrome
- Infections and disease causing weakness

Headache

When a patient presents with headache a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Clinical classifications of headache
- Headache with altered neurological and focal signs
- Headache with features suggestive of raised intracranial pressure
- Headache with papilloedema
- Headache with fever
- Headache with extracranial signs
- Headache with no abnormal signs
- Drugs and toxins

Limb Pain and/or Swelling

When a patient presents with limb pain or swelling a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- As a result of injury
- As a result of an underlying medical condition
 - Undifferentiated inflammatory arthritis

Nausea and Vomiting

When a patient with nausea and vomiting a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Understanding of common causes
 - Abdominal
 - Acute Gastroenteritis
 - PUD
 - Pancreatitis
 - Acute hepatitis
 - Bowel obstruction
 - Central Causes (CNS)
 - Poisoning and Medications
- Management
 - Identification of underlying cause
 - Control of symptoms
 - Treating dehydration

Seizure

When a patient presents with seizures a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Causes
 - Unprovoked seizures/epilepsy
 - Seizures associated with metabolic, toxic and system illness
 - Cerebral hypoxia
 - Seizures associated with drugs and toxic substances
- Management
 - Emergency supportive treatment
 - Anticonvulsant treatment
 - Work up of first presentation with seizure
 - Understand driving implications for patients with seizures

Diarrhoea

When a patient presents with diarrhoea a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Classification
 - Osmotic
 - Secretary
 - Exudative
- Causes
 - Infectious
 - Inflammatory
 - Ischemic
 - Malignant
- Complications
- Management
 - Acute management
 - Knowledge of appropriate investigations
 - Recognition of associated complications
 - Role of antibiotics
 - When to refer to gastroenterology.

Delirium/Acute confusion

When a patient presents with delirium or acute confusion a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Clinical features of acute confused state- differentiating delirium, dementia, depression and psychosis
- Causes of delirium
- Use of screening instruments for delirium and/or cognitive impairment
- Clinical features of acute delirium
- Clinical features of acute functional psychosis
- Causes of confused state associated with alcohol abuse- delirium tremens, Wernicke's encephalopathy
- Drug induced/related confusion/delirium
- Bacterial meningitis, Viral encephalitis
- Subarachnoid haemorrhage/ subdural haematoma

Social issues

When a patient presents with social issues a trainee should demonstrate knowledge of the appropriate approach to assessment, risk factors, appropriate investigations and necessary management, including indications for urgent referral, for this population.

- Managing medical conditions with an uncooperative patient
- Identifying potential elder abuse
- Recognising substance abuse
- Basic principles of psychiatry
- Recognising an at risk patient

Palpitations

When a patient presents with palpitations a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Anxiety
- Exercise induced
- In relation to pre-existing conditions including
 - Thyroid disease
 - Anaemia
 - Fever
 - Dehydration
 - Low blood sugar
 - Low blood pressure
- Resulting from medications or toxins
- Hormonal changes
- After prior myocardial infarct
- Coronary artery disease
- Other heart problems including congestive heart failure, heart valve or heart muscle problems

Hepatitis or Jaundice

When a patient presents with hepatitis or jaundice a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Incubation and prodromal phase
- Virus-specific
- Toxic hepatitis
- Autoimmune
- Acute liver failure

Gastrointestinal Bleeding

When a patient presents with gastrointestinal bleeding a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Understanding of the initial assessment and stabilization of patients with GI bleeding
- Understanding of haemovigilance and blood transfusion protocols
- Upper gastrointestinal bleeding including
 - Peptic ulcer Disease
 - Gastritis
 - Esophageal varices
 - Mallory-Weiss tears
 - Gastrointestinal cancers
 - Inflammation of the gastrointestinal lining from ingested material
- Lower gastrointestinal bleeding including
 - Diverticular disease
 - Gastrointestinal cancers
 - Inflammatory bowel disease (IBD)
 - Infectious diarrhoea
 - Angiodysplasia
 - Polyps
 - Haemorrhoids and anal fissures

Haemoptysis

When a patient presents with haemoptysis a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Recognition and Management of massive Haemoptysis
- Common causes of haemoptysis
 - Acute and chronic bronchitis
 - Tuberculosis
 - Lung cancer
 - Pneumonia
 - Bronchiectasis
 - Pulmonary Embolus
 - Alveolar Haemorrhage (vasculitis)

Rash

When a patient presents with a rash a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Urticaria
- Anaphylaxis and Angio Oedema
- Erythroderma and exfoliation
- Psoriasis and seborrhoeic/contact dermatitis
- Purpura and vasculitis
- Blistering eruptions
- Infections and the skin

Acute Back Pain

When a patient presents with acute back pain a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Non-specific acute back pain
- Causes of chronic low back pain
- Neurologic findings in back pain
- Identifying serious etiologies of back pain e.g.,
 - Cancer
 - Fracture
 - Infection
 - Cauda equina syndrome

Poisoning and Drug Overdose

When a patient presents with poisoning or overdose a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Diagnostic clues in the assessment of overdoses
- Identification of toxic agent (paracetamol, SSRI, benzodiazepines, opiates, amphetamines, TCAD)
- Immediate management
- Mental health assessment and definitive care

Hyper-glycaemia

When a patient presents with hyper-glycaemia a trainee should demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Symptoms of acute hyper-glycaemia
 - Recognition and Management of diabetic ketoacidosis
 - Recognition and management of Hyperosmolar non ketotic hyperglycemic states
-

Procedures

Objectives: To develop proficiency in common procedures required for general internal medicine.

Knowledge and Skills

Abdominal paracentesis under ultrasound

ECG Interpretation

Emergency DC cardioversion

- Up to date ACLS training to cover:
 - Necessity of Synchronised Shock
 - Starting voltage
 - Safe use of Defibrillator

Emergency care of tracheostomy

- In cases of:
 - Cardiac arrest
 - Dealing with a compromised airway

Femoral venous lines with ultrasound guidance

- Ultrasound guided femoral venous line placement
- Anatomical markers for femoral veins
- Safe cannulation of vein
- Secure line in place/review position on X-ray

Intercostal drain under ultrasound

- Anatomical markings
- Insertion of intercostal tube (small bore seldinger)
- Connection to underwater seal and secure in place
- Assessment and management of drain
- Safe removal of the tube

Joint aspiration

- Sterile field
- Fluid analysis
- Injectable compounds

Lumbar puncture

- Anatomical markers
- Cannula selection
- Safe puncture including appropriate preparation
- Measurement of CSF pressure
- Removal of samples and interpretation of results
- Management of post lumbar puncture headache

Non-invasive Ventilation

- Principles of BIPAP and CPAP
- Monitoring and limitations
- Mask fitting
- Understanding of pressures

Pleural and ascitic fluid aspiration under ultrasound

- Safe approach and role of ultrasound guidance
- Puncture pleural / peritoneal space
- Withdrawal of fluid

Specialty Section

Respiratory Anatomy, Physiology Genetic and Development Conditions

Objective: Know basic respiratory anatomy and to be able to apply pathology and microbiology expertise to the patient with respiratory disease.

KNOWLEDGE

- 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
- Anatomy as applied to the patient with respiratory disease
- Pathology as applied to the patient with respiratory disease
- Microbiology as applied to the patient with respiratory disease
- Value of meetings with Pathologists and Microbiologists

SKILLS

- Pleural biopsy - ultrasound
- Pleural aspiration under ultrasound guidance
- Bronchoscopy

ASSESSMENT & LEARNING METHODS

- Self directed - Journals/Books
- Study Day
- DOPS:
 - Pleural aspiration under ultrasound guidance
 - Bronchoscopy

Genetic and Developmental Lung Disease

Objective: To be able to carry out specialist assessment and treatment of genetic and developmental lung disease (Trainees must care for inpatients and outpatients with genetic and developmental lung disease during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience as this is not available in all placements).

KNOWLEDGE

- Definition and classification of GDD
- Clinical manifestations of Primary Ciliary Dyskinesia (PCD), Alpha-1-Antitrypsin Deficiency (A1ATD) and genetic surfactant deficiency disorders (GSDD)
- Genetic background of PCD, A1ATD and GSDD
- Developmental causes of upper and lower respiratory tract malformations
- Late (adolescent/adult) manifestations of respiratory tract malformations
- Morphological and functional diagnosis of GDD (imaging modalities, lung function testing)
- Therapeutic options for managing respiratory manifestations. Management of outpatients and of hospitalised patients. Treatment of respiratory exacerbations and complications
- Diagnosis and management of non respiratory sequelae and complications
- Long term sequelae and the residual morbidity of respiratory malformations after management and surgery in infancy and childhood
- Knowledge of the special psychological aspects of long term disease management

SKILLS

- Treatment and management of patients with genetic & developmental lung disease
- Evaluation of functional status
- Flexible bronchoscopy including BAL and TBLB
- Replacement therapy using alpha-1-antitrypsin and surfactant
- Cooperation with paediatric respiratory physicians and thoracic surgeons
- Radiological recognition and interpretation of common congenital issues

ASSESSMENT & LEARNING METHODS

- Self directed
- Case based discussion (CBD)
- Study Day

Procedures

Objective: To be fully competent to perform the procedures necessary during the practice of respiratory medicine. To be able to request appropriate imaging tests for the patient with respiratory disease.

KNOWLEDGE

Advanced Life Support:

- Causes of cardio-respiratory failure
- Principles of Cardio-pulmonary resuscitation
- Be proficient in basic and advanced life support
- Be competent in the use of defibrillators
- As outlined in the Generic Curriculum of Training with general emphasis on ethics and legal issues, breaking bad news and support of relatives, familiarity with “do not resuscitate orders”
- To know how and be competent to carry out and supervise effective cardio-pulmonary resuscitation

Lung function testing

- How to perform simple lung function tests
- Methods used for complex lung function tests
- Reporting of lung function tests
- Understand and to have seen plethysmography
- Assessment of airway hyper-responsiveness/bronchial provocation
- Hypoxic challenge test
- Exercise testing
- Perform simple lung function tests including blood gases and spirometry
- Perform lung function tests (Trainees must administer tests in both inpatients and outpatients during their clinical placements)

Pulmonary function testing

- Relationship between structure and function
- Ventilation and mechanics of breathing
- Principles of plethysmography
- Bronchial hyper-responsiveness
- Diffusion
- Blood flow
- Alveolar air equation
- Ventilation-perfusion relationships
- Control of ventilation
- ECG and echocardiography
- Cardio-pulmonary relationships
- Respiratory physiology during exercise and at altitude
- Performance, supervision and interpretation of spirometry
- Performance, supervision and interpretation of pulse oximetry
- Interpretation of single breath diffusing capacity
- Interpretation of shunt measurement tests

Bronchoscopy

- Normal and variant bronchial anatomy
- Technical aspects of the flexible and rigid bronchoscope
- Indications and contraindications for bronchoscopy and associated techniques
- Safe sedation and local anaesthesia
- Exposure to EBUS

Pleural Ultrasound and thoracentesis

- Safely perform pleural ultrasound and thoracentesis
- Indications of pleural imaging
- Techniques of pleural biopsy
- Patient consent and explanation of risks and benefits
- Knowledge of appropriate guidelines
- Initially trainee will be under the supervision of a senior colleague skilled in the performance of this technique and then perform independently

Intercostal tube placement

- Indications of intercostal tube placement
- Technique of intercostal tube placement
- Indications for other modalities including suction, closure of BPF
- Effective fixing of intercostal tube so it does not become displaced
- Patient consent and explanation of risks and benefits
- Safely perform intercostals tube placement

Sleep Studies

- Causes of sleep related disorders
- Methods of screening for sleep related disorders
- Polysomnography
- CPAP and NIPPV - initiate and titrate
- Perform screening studies
- Interpret sleep studies
- Initiate CPAP and NIPPV
- Initially trainee will be under the supervision of a senior colleague skilled in the performance of this technique and then perform independently

Non invasive ventilation

- Indications for CPAP and NIPPV
- How to set up and train a patient to use the equipment
- Importance of physiotherapist input
- Methods available
- Set up patients on CPAP and NIPPV

Skin tests to demonstrate "allergy"

- Indications for skin tests
- How to perform skin tests
- Perform and read skin test to common allergies
- Indications for tuberculin and allergy tests
- Types of tuberculin and allergen tests available
- Awareness of contraindications and precautions associated with tuberculin and allergy testing
- Protocols for treatment of anaphylaxis

Imaging Techniques

- Chest x-rays and CT scans relevant to the respiratory patient use and interpretation
- Magnetic Resonance scans indications
- CT PET interpretation
- CT Scan, basic skill interpreting dynamic, high resolution and GPA
- Ventilation perfusion scans indications and interpretations
- Value of regular meetings with radiologists
- Detailed observation of images produced by varying techniques
- Basic principles of plain chest radiography, CT, MRI, PET-CT, HRCT, ultrasound and nuclear techniques
- Radiological thoracic anatomy
- Radiological features of common pulmonary and pleural diseases
- Indications for particular imaging techniques - for instance thin-slice CT for parenchymal lung disease, mediastinal window settings for central lesions and ultrasound for pleural effusions
- Value of imaging other organs/organ systems, for example, bone scans
- Principles of radiation hazards
- Contra-indications for CT with contrast
- Contra-indications for MRI
- Indications for CT/ultrasound-guided biopsies

SKILLS

- Patient consent and adequate explanation of risks and benefits
- Appropriate guidelines
- Safely perform fibroptic bronchoscopes
- Basic interpretation of chest x-rays and G scans including description classification, preparation of differential diagnosis, use in management decision

Skin Testing:

- Application of the above knowledge
- Appropriate selection of patients for tuberculin and allergy testing
- Tuberculin and allergy testing, techniques of intra-dermal and prick testing and interpretation of results

Pleural procedures

- Appropriate management of a patient with a chest drain
- Awareness of the limitations of pleural procedures

Bronchoscopy

- Safe administration of intravenous sedative
- Safe application of local anaesthetic
- Reversal of excessive sedative effect
- Introduction and manipulation of bronchoscope
- Monitoring by oximetry
- Bronchial biopsy
- Transbronchial lung biopsy
- Measures to deal with bleeding after biopsy
- Transbronchial needle aspiration
- Broncho-alveolar lavage
- Endobronchial ultrasound examination
- Cleaning the bronchoscope
- Infection control
- Transoesophageal ultrasound examination

Pulmonary function testing

- Performance, supervision and interpretation of cardio-pulmonary exercise testing
- Performance, supervision and interpretation of respiratory muscle function tests
- Performance, supervision and interpretation of bronchial provocation testing
- Arterial puncture and interpretation of blood gas analysis
- Interpretation of flight/altitude assessment results
- Fluoroscopy
- Evaluation of impairment/disability
- Appreciate importance of quality control
- Learn to check results of individual tests for consistency

Imaging techniques

- Interpretation of plain chest radiographs (PA, AP and lateral views)
- Interpretation of CT scans – identification of mass lesions, consolidation, collapse, mediastinal/hilar lymphadenopathy, interstitial lung disease, hyperinflation/air-trapping, bronchiectasis, ground-glass shadowing, pneumothorax and pleural effusions/plaques
- Operation of portable bed-side ultrasound scanner to facilitate pleural aspiration/drainage
- Awareness of radiation risks, especially in relation to pregnancy
- Multidisciplinary approach with radiologists, surgeons, oncologists and pathologists

ASSESSMENT & LEARNING METHODS

- Study Day
- X-Ray Conferences
- OSCE Topics:
 - Chest x-rays and CT scans relevant to the respiratory patient use and interpretation
- ACLS certified
- DOPS:
 - Bronchoscopy
 - Lung Function tests
 - Sleep studies
 - Non-invasive ventilation
 - Skin tests to demonstrate allergy
 - Pleural Biopsy

Record of cases:

- Interpret sleep studies
- Fibroptic bronchoscopes

Clinical

Objective: To acquire the knowledge and develop the skills and attitudes necessary for the safe practice of Respiratory Medicine both as an independent practitioner and as a member of a multidisciplinary team.

Asthma

Objective: To be able to carry out specialist assessment and treatment of asthma (Trainees must take care of inpatients and outpatients during their clinical placements)

KNOWLEDGE

- Definition, classification (including clinical forms, phenotypes, staging and level of control) and aetiology of asthma.
- Epidemiology and pathophysiology of asthma, including mechanisms of inflammation, structural changes involved, pathology in allergic and non-allergic asthma, relationship between pathology and asthma severity
- Risk factors for asthma, including host and environment factors
- Genetics of asthma
- Relevant investigations including lung function testing (including bronchodilator and bronchoprovocation tests, as well as peak flow monitoring), chest X-ray, CT, nuclear techniques, skin allergy testing, serum allergy testing, bronchoscopy and bronchial biopsy
- Knowledge of possible differential diagnoses, including early childhood asthma
- Knowledge of possible differential diagnoses, including early childhood asthma, occupational asthma, vocal cord dysfunction, gastro-oesophageal reflux, upper respiratory tract disorders and COPD
- Asthma in special circumstances e.g. Sport, diving, workplace
- Management of asthma and relevant therapeutic measures, including pharmacology of the drugs used in asthma treatment, patient education and thea, development of a written asthma management plan
- Allergen-specific immunotherapy immunoglobulin therapy
- Relevant guidelines.
- Patient education and self-management technique

SKILLS

- Investigation, treatment and management of patients with asthma in emergency setting and in outpatient setting
- Respiratory function testing including bronchial provocation testing
- Evaluation of functional status including bronchodilator and bronchoprovocation tests and disability due to asthma
- Allergy testing
- Pulmonary function
- Bronchoscopy
- Prescription of medication according to level of control
- Patient education including demonstrating use of inhaler devices
- Multidisciplinary approach

ASSESSMENT & LEARNING METHODS

- Self directed – journals/books
- DOPS: Endotracheal intubation/invasive ventilation
- CBD
- Outpatient clinics and laboratory sessions
- Study Day: Asthma
- OSCE Topics: Causes, investigation and differential diagnosis of asthma

Allergic Lung Disorders and Anaphylaxis

Objective: To be able to carry out specialist assessment and treatment of allergic lung disorders and anaphylaxis (Trainees must care for inpatients and outpatients with allergic lung disorders and anaphylaxis during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience as this is not available in all placements).

KNOWLEDGE

- Definition, classification and aetiology of non-asthma allergic and eosinophilic lung diseases including hypersensitivity pneumonitis, Churg Strauss Syndrome, acute and chronic eosinophilic pneumonia, allergic bronchopulmonary aspergillosis and drug-induced disease
- Epidemiology and pathophysiology of non-asthma allergic and eosinophilic lung diseases
- Relevant investigations (including nasal provocation testing and methacholine/histamine bronchoprovocation testing, sputum induction, serology including ANCA and aspergillus/avian precipitins, transbronchial/VATS lung biopsy)
- Pharmacology of drugs used
- Causes, investigations and treatment of allergic lung disorders & anaphylaxis
- Differential diagnosis of allergic lung disorders & anaphylaxis.
- Pharmacology of drugs used
- Complications

SKILLS

- Application of the above knowledge
- Ear, nose and throat examination
- Assessment of the impact of rhinitis on health related quality of life
- Management of allergic disorders other than asthma and of eosinophilic lung diseases (including management of rhinitis)
- Skin testing
- Respiratory function testing
- Advanced Life Support
- Broncho-alveolar lavage and lung biopsy
- bronchoprovocation testing, sputum induction
- Non-invasive investigations (including allergen skin tests, serum allergen tests)
- Pulmonary function tests
- Control of risk factors
- use of epi-pen

ASSESSMENT & LEARNING METHODS

- Study Day
- Advanced training in special cases may be needed

Occupational and Environmental Lung Disease

Objective: To be able to carry out specialist assessment and treatment of occupational and environmental lung disease (Trainees must care for inpatients and outpatients with occupational lung disease during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience, as this is not available in all placements.

KNOWLEDGE

- Definition, classification and aetiology of occupational/environmental lung diseases
- Epidemiology and biological, immunological and inflammatory responses to respiratory irritants (fumes, chemicals, fibres, minerals, and particulates)
- Physiology and pathophysiology of lung deposition and damage
- The biological, immunological, and inflammatory responses to respiratory irritants (fumes, chemicals, fibres, minerals, and particulates)
- Environmental exposure and individual susceptibility
- Hazards encountered in both the industrial and rural environment
- Acute and chronic respiratory effects
- Respiratory and non-respiratory manifestations
- Specific health policy and legislation
- Environmental and individual protective measures
- Basic principles of prevention and treatment
- Psychosocial implications of occupational/environmental lung diseases
- Knowledge of relevant industrial processes, control of air pollution, and epidemiological studies

SKILLS

- Take a detailed occupational history.
- Assessment of workplace safety and/or level of exposure to respiratory hazards
- Assessment of familial and individual susceptibility
- Imaging procedures (chest x-ray including ILO/ BIT classification) HRCT-scan, nuclear techniques
- Evaluation of functional status and of disability
- Performance and interpretation of bronchial provocation testing
- Prevention and early diagnosis
- Diagnosis of specific occupational/environmental lung diseases
- Running of specialised outpatient services
- Prevention, diagnosis and treatment of non-respiratory complications
- Competent communication with patients, workers, employers, and other occupational professionals
- Multidisciplinary approach (cooperation with industrial hygienists, toxicologists, internists, and public health administrators)
- Commitment to regular personal updating of the evolving pattern of industrial processes and technologies

ASSESSMENT & LEARNING METHODS

- DOPS: Bronchoscopy
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of patients with occupational and environmental lung disease.
 - Respiratory function testing

Chronic Obstructive Pulmonary Disease (COPD)

Objective: To be able to carry out specialist assessment and treatment of COPD (Trainees must care for inpatients and outpatients with COPD during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of COPD, chronic bronchitis and emphysema and awareness of its heterogeneity
- Epidemiology and pathophysiology of COPD, including mechanisms of inflammation, structural changes and cell damage and repair
- Risk factors for COPD, including tobacco smoke and anti-protease deficiency (including physiological role of alpha-1-antitrypsin and its genetic characteristics, role of other anti-protease inhibitors, liver disease in antiprotease deficiency)
- Knowledge of possible differential diagnoses /co-existent disorders, including asthma, upper respiratory tract disorders, gastro-oesophageal reflux, obliterative bronchiolitis, bronchiectasis
- Relevant investigations including spirometry, other relevant lung function tests, arterial blood gas analysis, peak flow monitoring, bronchodilator and bronchoprovocation testing
- The use of X-Ray, CT, ultrasound, nuclear techniques and exhaled NO, serum alpha-1-antitrypsin testing, pulmonary artery catheterisation
- Management of COPD including relevant therapeutic measures. Methods of oxygen supplementation including long-term oxygen therapy, non-invasive and mechanical ventilation, pulmonary rehabilitation and early discharge/hospital at home schemes
- Pharmacology of drugs used. Patient education. Peak flow monitoring. Indications for hospitalisation. Alpha-1-antitrypsin supplementation therapy. Relevant vaccinations
- Management of related complications, including pneumothorax, respiratory failure, pulmonary arterial hypertension and cor pulmonale, as well as systemic effects of COPD
- Complications of COPD
- Knowledge of pulmonary rehabilitation
- Sleep studies. As related to overlap syndrome and respiratory failure
- Management of respiratory failure in patients with COPD
- Familiarity in palliative care as applies to COPD
- Indication for transplant in COPD
- Management of COPD in the outpatient

SKILLS

- Manage inpatient and ambulatory outpatient patients with COPD
- Manage BiPap/Treat complications of COPD such as pneumothorax ventilation
- Evaluation of functional status and disability due to COPD
- Assessment of suitability for lung volume reduction surgery and transplantation where appropriate
- Bronchoscopy
- Prescription of medication according to level of control
- Non-invasive ventilatory support

ASSESSMENT & LEARNING METHODS

- DOPS: Non-invasive ventilation, pulmonary function tests interpretation
- Study Day
- Suggested:
 - OSCE: Causes, investigation differential diagnosis treatment and management of COPD
 - Data OSCE:
 - Respiration function testing
 - ABG

Respiratory Failure

Objective: To be able to carry out specialist assessment and treatment of respiratory failure (Trainees must care for inpatients and outpatients with Respiratory Failure during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of acute and chronic respiratory failure (acute respiratory distress syndrome, obstructive lung disease, neuromuscular disease, chest wall diseases, other restrictive diseases)
- Epidemiology and pathophysiology of RF
- Relevant investigations: non-invasive (chest x-ray, ultrasound, fluoroscopy, CT, nuclear techniques, pulmonary function tests) and invasive bronchoscopy
- Relevant therapeutic measures such as systemic/inhaled drug therapy, oxygen therapy, ventilatory support, cardio pulmonary resuscitation, endobronchial therapy, intercostal tube drainage, treatment of sepsis and multi-organ failure
- Assessment of short equation
- Knowledge of A- a gradient and shunt equations
- Investigation of respiratory failure.
- Plethysmography and voluntary ventilation tests
- Ventilation (non-invasive and intubation)

SKILLS

- Ultrasound
- Evaluation of functional status
- Bronchoscopy
- Systemic and inhaled drug therapy
- Ventilatory support
- Management of barotrauma
- End of life management
- Intubation
- Knowledge physiological mechanisms
- Non-invasive ventilation – initiation and training

ASSESSMENT & LEARNING METHODS

- DOPS: Non invasive ventilation
- OSCE Topics:
 - Causes investigation, differential diagnosis treatment and management of respiratory failure
 - Pharmacology
 - Respiratory function testing

Bronchiectasis

Objective: To be able to carry out specialist assessment and treatment of bronchiectasis (Trainees must care for inpatients and outpatients with bronchiectasis during the clinical placements.)

KNOWLEDGE

- Definition, classification and aetiology of bronchiectasis, acute and chronic bronchitis, bronchiolitis, respiratory tract stenosis and tracheobronchomalacia, tracheo-oesophageal fistula, upper respiratory tract disorders, vocal cord dysfunction, foreign body aspiration, gastro-oesophageal reflux
- Epidemiology and pathophysiology of these disorders
- Knowledge of possible differential diagnoses
- Knowledge of surgical indications and referral
- Relevant investigations, including X-ray, CT, nuclear techniques, exhaled NO, arterial blood gas analysis, and bronchoscopy including bronchography
- Management including relevant therapeutic measures and physiotherapy
- Methods of oxygen supplementation including long-term oxygen therapy, non-invasive and mechanical ventilation
- Pharmacology of drugs used
- Patient education
- Peak flow monitoring
- Indications for hospitalisation
- Relevant vaccinations
- Relevant microbiology

SKILLS

- Evaluation of the functional status and disability due to bronchiectasis and other airway diseases
- Assessment of suitability for surgery where appropriate
- Prescribing physiotherapy
- Bronchoscopy
- Interventional bronchoscopic techniques, e.g. stent placement
- Prescription of medication according to level of control
- Non-invasive ventilation.
- Investigation of immunodeficient states that lead to bronchiectasis
- Knowledge and use of physiotherapy tools e.g. cough devices, postural techniques

ASSESSMENT & LEARNING METHODS

- DOPS:
 - Endotracheal intubation/invasive ventilation Bronchoscopy
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of bronchiectasis
 - Skin testing
 - Respiratory function testing

Cystic Fibrosis

Objective: To be able to carry out specialist assessment and treatment of cystic fibrosis (Trainees must care for inpatients and outpatients with CF during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience as this is not available at all placements).

KNOWLEDGE

- Definition, classification and aetiology of respiratory and non-respiratory manifestations of CF (including massive haemoptysis, pneumothorax, gastrointestinal disease, diabetes, problems of fertility and pregnancy and psychosocial problems)
- Epidemiology and pathophysiology of CF
- Relevant investigations (including microbiological investigations)
- Non-invasive imaging modalities: chest X-ray, CT, MR.
- Related complications such as haemoptysis, pneumothorax, respiratory failure
- Pharmacology of inhaled, oral and systemic drugs used
- Chest physiotherapy techniques
- Nutrition
- Indications for lung transplantation

SKILLS

- Management of respiratory and non-respiratory manifestations and their complications
- Interpretation of sputum microbiology
- Evaluation of functional status
- Patient education
- Communication with patients and family
- Collaboration with a specialised CF-centre
- Multidisciplinary team approach
- Respiratory function testing.
- Ventilation
- Management of major bleeding in cystic fibrosis
- Management of respiratory failure in cystic fibrosis
- Indications for referral for transplant assessment
- Microbiological aspects of cystic fibrosis

ASSESSMENT & LEARNING METHODS

- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of patients with CF

Lung Cancer

Objective: To be able to carry out specialist assessment and treatment of lung cancer (Trainees must care for inpatients and outpatients with lung cancer during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of TT: lung cancer (LC), mesothelioma (M), metastatic TT (MTT), benign intrathoracic tumours, mediastinal (MT), chest wall tumours, sarcoma and lymphoma (L)
- Epidemiology of TT
- Risk factors for LC, M and L
- Clinical symptoms, syndromes and physical signs of TT including paraneoplastic syndromes
- Relevant investigations: noninvasive (chest X-ray, ultrasound, fluoroscopy, CT, MR, nuclear techniques, PET-CT) and invasive (sampling methods for cytology and histology)
- Histological and TNM classification of TT
- Performance status
- Therapeutic modalities in LC, M, MT and in other TT: chemotherapy (including targeted molecular therapy), radiotherapy, interventional bronchoscopic techniques, palliative therapy, best supportive care
- Indications for surgical interventions (pathological assessment, functional assessment and pre-operating staging)
- Complications of surgery, chemotherapy and radiotherapy
- Prognosis (survival, functional consequences, disability)
- Rehabilitation
- Relevant guidelines
- Understanding of role of surgeons, physicians, radiologists, chemotherapists, and the multi-disciplinary team in management - organize and involve self
- Palliative care

SKILLS

- Evaluation of functional status
- Sputum induction
- Flexible bronchoscopy,
- Endobronchial ultrasound
- Transbronchial lung biopsy
- Transbronchial needle aspiration
- Percutaneous needle biopsy
- Fine needle lymph node aspiration for cytology
- Pleural ultrasound imaging
- Thoracocentesis
- Interventional bronchoscopic techniques
- Medical thoracoscopy
- Pleural drainage
- Chemotherapy, management of adverse events
- Palliative care

ASSESSMENT & LEARNING METHODS

- Self directed learning
- Study Day
- CBD
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of lung cancer
- Data OSCE; Respiratory function testing, identify histological types, radiological tests
- DOPS:
 - Bronchoscopy including TB needle
 - Pleural biopsy by ultrasound

Diffuse Interstitial Lung Disease (ILD)

Objective: To be able to carry out specialist assessment and treatment of interstitial lung disease (Trainees must care for inpatients and outpatients with IDL during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of ILD and OLD
- Epidemiology and pathophysiology
- Basic biology and immunology of ILD and OLD, including humoral and cellular mechanisms
- Relevant investigations: non-invasive (chest X-ray, high resolution CT-scan, lung function tests), invasive (broncho-alveolar lavage (BAL), transbronchial lung biopsy (TBLB), and VATS biopsy)
- Pulmonary and extrapulmonary manifestations of specific ILD and OLD
- Pharmacology and interactions of drugs used in the treatment of ILD and OLD
- Pharmacology of drugs used in the management of ILD
- Complications e.g. respiratory failure
- Relevant guidelines.
- Interpretation of lung biopsy
- Indications for transplant

SKILLS

- Application of the above knowledge
- Interpretation of chest X-ray and high resolution CT-scan
- Evaluation of functional status
- Bronchoscopy incl. BAL and TBLB
- Prevention and treatment of cardiovascular and systemic involvement
- Assessment of eligibility for lung transplantation
- Exercise testing
- Interpretation of physiology lung function tests
- Interpretation of lung biopsies

ASSESSMENT & LEARNING METHODS

- DOPS: Bronchoscopy
- Study Day
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of patients with IDL
 - Respiratory function testing

Pulmonary Manifestations of Systemic Diseases

Objective: To be able to carry out specialist assessment and treatment of pulmonary manifestations of systemic diseases (Trainees must care for inpatients and outpatients with pulmonary manifestations of systemic diseases during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of pleuro-pulmonary manifestations of systemic disease: pneumonitis, pleurisy, fibrosis, pleural thickening, pneumothorax
- Epidemiology and pathophysiology of pleuro-pulmonary manifestations of systemic disorders (including drug-induced pleuro-pulmonary diseases)
- Biological blood parameters for diagnosis of systemic diseases
- Relevant investigations: non-invasive (laboratory values, chest x-ray, ultrasound, CT, MR, nuclear techniques, lung function tests) and invasive (bronchoscopy including broncho-alveolar lavage, TBLB, thoracentesis, pleural biopsy)
- Related complications
- Relevant therapeutic measures including pharmacology of drugs used

SKILLS

- Diagnosis of underlying diseases
- Non-invasive imaging modalities: chest x-ray, fluoroscopy, ultrasound, nuclear techniques, CT, MR
- Evaluation of functional status
- Broncho-alveolar lavage and TBLB
- Thoracentesis
- Pleural biopsy, pleural drainage
- Medical thoracoscopy
- Management of immunosuppressive drugs.

ASSESSMENT & LEARNING METHODS

- DOPS: Bronchoscopy
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of the pulmonary manifestations of systemic diseases.
 - Respiratory function testing

Pulmonary Infections

Objective: To be able to carry out specialist assessment and treatment of pulmonary infections including the common cold, influenza, pneumonia, bronchitis (Trainees must care for inpatients and outpatients with pulmonary infections during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of NTBRI: upper respiratory tract infections (URTI), lower respiratory tract infections (LRTI) including pneumonias – community acquired pneumonia (CAP), nosocomial pneumonia (NCP), pneumonia in immunocompromised host
- Epidemiology of NTBRI (microbiology, age related factors, geographical issues, occupational considerations, comorbidities, immunological status)
- Clinical manifestations of viral (including epidemic viral), bacterial, fungal and parasitic infection
- Relevant investigations: noninvasive (sputum induction, chest X-ray, fluoroscopy, CT, ultrasound), invasive (bronchoscopy, needle aspiration for microbiological sampling)
- Differential diagnosis of URTI, LRTI, pneumonias of viral, bacterial, fungal and parasitic origin including typical versus atypical pneumonia
- Related complications such as lung abscess, empyema and sepsis
- Relevant therapeutic measures including antibiotics and other antimicrobials and susceptibility testing
- Criteria for hospitalisation and referral to ICU in CAP
- Prognosis, predictive factors for high risk of death
- Detailed knowledge of Causes of pulmonary infections including viral, bacterial, parasitic, fungal
- Knowledge of mechanism of infection and host defense mechanisms

SKILLS

- Evaluation of functional status and severity of disease
- Taking samples for microbiological diagnosis (sputum, blood, pleural fluid, bronchoscopic samples, percutaneous needle aspiration)
- Thoracocentesis (diagnostic and therapeutic)
- Local pleural treatment measures for empyema (pleural drainage, pleural irrigation and fibrinolytic treatment)
- Vaccination

ASSESSMENT & LEARNING METHODS

- Study Day
- DOPS: Bronchoscopy
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of patients with pulmonary infections
 - Respiratory function testing
 - Ventilation

Pulmonary Disease in the Immunosuppressed Host

Objective: To be able to carry out specialist assessment and treatment of pulmonary disease in the immunosuppressed host e.g. AIDs, transplant patients, immunodeficiency patients (Trainees must care for inpatients and outpatients with pulmonary disease in the immunosuppressed host during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience, as this is not available in all placements).

KNOWLEDGE

- Clinical features of respiratory infections in patients with 1) congenital immunodeficiency (immunoglobulin deficiency syndromes and defects in cell-mediated immunity) and 2) acquired immunodeficiency (HIV/AIDS, organ transplantation, lymphoma, cytotoxic chemotherapy, immunosuppressive drugs, malnutrition)
- Emphasis on important pathogens such as *Pneumocystis jirovecii* (carinii) and cytomegalovirus
- Clinical features of non-infectious respiratory manifestations (pulmonary oedema, pulmonary haemorrhage and infarction, malignancy, autoimmune vasculitis, radiation and drug-induced pneumonitis)
- Relevant investigations: noninvasive (chest X-ray, CT, ultrasound, pulmonary function testing, microbiology of spontaneous and induced sputum, invasive (bronchoscopy, broncho-alveolar lavage, transbronchial biopsy, thoracentesis and examination of pleural fluid)
- Relevant antibiotic therapy
- Intravenous immunoglobulin therapy
- Prognostic and predictive outcome factors
- Preventative measures e.g. reverse-barrier nursing and septrin prophylaxis
- Relevant guidelines
- Basic science, physiology and immunology of the body's host defence mechanism

SKILLS

- Sputum induction technique
- Bronchoscopy with BAL/transbronchial biopsy
- Ultrasound
- Thoracentesis
- Relevant pulmonary function tests e.g. transfer factor in suspected pulmonary haemorrhage
- Multidisciplinary approach with haematologists, oncologists, clinical immunologists, transplant physicians and microbiologists
- Skin testing
- Respiratory function testing.
- Ventilation
- Bronchoscopy

ASSESSMENT & LEARNING METHODS

- DOPS: Bronchoscopy
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of patients with ICP
 - Skin testing
 - Respiratory function testing

Tuberculosis (TB)

Objective: To be able to carry out specialist assessment and treatment of tuberculosis (Trainees must care for inpatients and outpatients with TB during their clinical placements).

KNOWLEDGE

Tuberculosis

- Definition, classification and aetiology
- Epidemiology and pathophysiology
- Transmission of mycobacteria
- Risk factors for developing TB
- Pathogenesis of TB (events in nonimmunised host, immunologic response to *M. tuberculosis*, exogenous versus endogenous infection, latent TB infection)
- Immunological features of latent TB (tuberculin sensitivity, interferon gamma release)
- TB in immunocompromised host
- General manifestations of TB
- Clinical and radiological features of pulmonary TB
- Bacteriological evaluation including molecular techniques
- Treatment of TB (general principles, drugs, combination regimens)
- Special problems in treatment (multidrug resistant TB, extensively resistant TB, pregnancy and breast feeding, TB and HIV infection, conditions interfering with or increasing the risk of potential adverse events of anti-TB drugs, latent TB infection and chemotherapy of LTBI)
- Microbiological, clinical, laboratory and radiological control in the course of therapy.
- Supervision of chemotherapy, directly observed therapy (DOT)
- Adjunctive therapy (resection (if appropriate), corticosteroids, drugs to prevent and treat adverse events)
- Surveillance in organised TB control programmes including Advocacy, Communication and Social Mobilisation for TB Control (ACSM)
- Prevention of TB (isolation of smear positive patients including use of negative pressure facilities, BCG vaccination, preventive treatment of persons exposed to MTB and MDR MTB)
- Prognosis of pulmonary TB
- National and WHO regulations in relation to TB as infectious disease

Extra-pulmonary tuberculosis:

- Organs involved (lymphatic system, pleura, pericardium, genitourinary system, bones and joints, abdominal, central nervous system, skin and eyes)
- Relevant imaging methods
- Sampling methods for bacterial diagnosis
- Therapeutic possibilities in EPTB other than anti TB chemotherapy including surgical treatment
- Prognosis of specific organ manifestations of TB
- Disability due to TB
- Rehabilitation

Non-tuberculous (opportunistic) mycobacterial disease

- Bacteria causing NTMD (*M. avium* complex, *M. Kansasi*, other rapidly growing mycobacteria)
- Epidemiology of NTMD and its relation to HIV infection
- Organ manifestations and clinical characteristics of NTMD
- Criteria for diagnosis
- Therapeutic regimens used in NTMD
- Prognosis
- Prevention of NTMD
- Indications for surgical treatment

SKILLS

- Sampling for microbiological examination (sputum induction, gastric washings, thoracentesis, bronchial-, transbronchial-, percutaneous-, pleural- and lymph node biopsy)
- Sputum microscopy
- Inform and educate patient about infective nature of the disease so that they comply with guidelines in the course of longterm treatment
- Be aware of the psychological and sociological aspects of long term disease management
- Multidisciplinary approach, especially in the case of EPTB

ASSESSMENT & LEARNING METHODS

- DOPS:
 - Bronchoscopy
 - Pleural biopsy
- Study Day
- OSCE Topics:
 - Causes, investigation, differential diagnosis, treatment and management of patients with TB
 - Respiratory function testing

HIV and the Lung

Objective: To be able to carry out specialist assessment and treatment of lung diseases occurring in patients with HIV (Trainees may care for inpatients and outpatients with HIV during their clinical placements, but may have to be seconded to a specialised HIV unit to gain experience in HIV disease as this is not available in all placements).

KNOWLEDGE

- The respiratory system in HIV disease – types of infection and non infections complications
- Investigation, treatment and management of patients with HIV lung disease
- Differential diagnosis of HIV lung disease
- Pharmacology of drugs used
- Relevant guidelines
- Mechanisms of host defence, epidemiology and public health aspects of HIV
- Role of vaccines and antiretroviral therapy in HIV

SKILLS

- Respiratory function testing
- Ventilation
- Bronchoscopy

ASSESSMENT & LEARNING METHODS

- DOPS:
 - Endotracheal intubation/ invasive ventilation
 - Bronchoscopy
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of patients with HIV lung disease
 - Respiratory function testing

Sleep Related Disorders

Objective: To be able to carry out specialist assessment and treatment of sleep related disorders (Trainees must care for inpatients and outpatients with Sleep Related Disorders during their clinical placements. Not all centres may be able to provide training).

KNOWLEDGE

- Definition, classification and aetiology of obstructive sleep apnoea syndrome (OSA), central sleep apnoea syndrome (CSA), periodic breathing (PB), obesity hypoventilation syndrome (OHS), periodic limb movement disorder and parasomnias
- Epidemiology and pathophysiology of OSA, CSA, PB, OHS
- Epidemiology, pathophysiology and aetiology of daytime hypersomnolence
- Relevant investigations (including screening over-night oximetry and sleep studies (respiratory polygraphy and polysomnography))
- Complications of OSA, CSA, PB, and OHS
- Methods of treatment (including ventilator support and CPAP)
- Pharmacology of drugs used
- Causes of sleep related disorders including:
 - Obstructive sleep apnoea
 - narcolepsy
 - parasomnias
 - Obesity Hypoventilation
 - insomnia
 - restless legs
- Differential diagnosis of sleep related disorders
- Role of the ENT surgeons, dentists, CBT

SKILLS

- Non-invasive imaging modalities: chest x-ray, cephalometry, CT, MR
- Pulmonary function tests
- Sleep studies (screening over-night oximetry, respiratory polygraphy and polysomnography)
- Management of SRD (including treatment with CPAP)
- Organisation of services for SRD
- Interpretation of sleep studies and imitation of CPAP

ASSESSMENT & LEARNING METHODS

- Study Day : Sleep related disorders

Disorders of Pleural and Mediastinum

Objective: To be able to carry out specialist assessment and treatment of pleura and mediastinum (Trainees must care for inpatients and outpatients with disorders of pleura and mediastinum during their clinical placements).

KNOWLEDGE

Diseases of the chest wall, respiratory muscles and diaphragm (CW, RM, D)

- Definition, classification and aetiology of chest wall diseases including kyphoscoliosis, ankylosing spondylitis, flail chest, pectus excavatum, and pathological effects of thoracoplasty
- Definition, classification and aetiology of diseases of the respiratory muscles (hemiplegia, poliomyelitis, and generalized neuromuscular diseases)
- Definition, classification and aetiology of diseases of the diaphragm, including diaphragmatic paralysis, hiccups, hernia
- Epidemiology and pathophysiology of diseases of CW, RM, and D
- Differential diagnosis of acute chest pain
- Related complications such as respiratory failure
- Relevant investigations: non-invasive (chest X-ray, ultrasound, fluoroscopy, CT, pulmonary function tests)
- Relevant therapeutic measures including ventilatory support
- Indications for surgical intervention

Pleural diseases (PD)

- Definition, classification and aetiology of pleural effusions (serothorax, chylothorax, haemothorax, empyema)
- Epidemiology and pathophysiology of infectious, inflammatory, and neoplastic pleural disorders
- Macroscopic appearance of pleural fluids
- Distinction between transudative and exudative pleural effusions
- Definition, classification and aetiology of pleural thickening including pleural plaques
- Definition, classification and aetiology of pneumothorax (primary and secondary)
- Related complications such as tension pneumothorax
- Relevant investigations: non-invasive (chest X-ray, ultrasound, fluoroscopy, CT, MR, nuclear techniques, pulmonary function tests) and invasive (thoracentesis and biopsy techniques)
- Relevant therapeutic measures including antibiotics, fibrinolytics and pleurodesis
- Indications for surgical intervention

Mediastinal diseases (MD)

- Definition, classification and aetiology of mediastinal diseases including tumours and cysts of the mediastinum, mediastinitis, mediastinal fibrosis, and pneumomediastinum
- Epidemiology and pathophysiology of MD
- Related complications such as superior vena cava syndrome
- Relevant investigations: non-invasive (chest x-ray, fluoroscopy, CT, MR, pulmonary function tests) and invasive (bronchoscopy including transbronchial needle aspiration and endobronchial ultrasound)
- Relevant therapeutic measures
- Indications for surgical intervention (mediastinoscopy, mediastinotomy, VATS)

SKILLS

Diseases of the chest wall, respiratory muscles and diaphragm (CW, RM, D)

- Ultrasound
- Evaluation of functional status
- Invasive and non-invasive ventilatory support
- Home care (oxygen therapy, home ventilation)
- Palliative care

Pleural diseases (PD)

- Application of the above knowledge
- Ultrasound
- Evaluation of functional status
- Thoracentesis (diagnostic and therapeutic)
- Pleural biopsy
- Pleural drainage
- Medical thoracoscopy (pleuroscopy)
- Pleurodesis (talc and other chemical agents)
- Chemotherapy and other local or systemic anti-tumour therapy in selected patients (malignant pleural effusion including mesothelioma)
- Irrigation and fibrinolytic treatment for empyema

Mediastinal diseases (MD)

- Application of the above knowledge
- Evaluation of functional status
- Bronchoscopy
- Transbronchial needle aspiration
- Endobronchial ultrasound
- Insertion procedure
 - Chest drain
 - Seldinger drain
- Respiratory function testing
- Bronchoscopy.
- Pleural ultrasound
- Indications for surgery
- Pleural aspiration imaging
- Interpretation of pleural fluid findings
- Bronchial needle technique

ASSESSMENT & LEARNING METHODS

- DOPS:
 - Seldinger +/- trochar chest drain insertion with pleural ultrasound guidance
 - Bronchoscopy
 - Pleural ultrasound
- Study Day
- OSCE Topics:
 - Respiratory function testing

Pulmonary Vascular Diseases

Objective: To be able to carry out specialist assessment and treatment of pulmonary vascular disease e.g. pulmonary embolism, VTE, and infarction, primary and secondary pulmonary hypertension, pulmonary haemorrhage and pulmonary vasculitides (Trainees must care for inpatients and outpatients with Pulmonary Vascular Disease during their clinical placements).

KNOWLEDGE

- Definition, classification and aetiology of PVDs
- Physiology and pathophysiology of the pulmonary circulation
- Physiology and pathophysiology of coagulation and thrombosis
- Genetic and acquired risk factors for PVDs
- Current epidemiology and relevant pathology of PVDs
- Respiratory and non-respiratory clinical manifestations
- Respiratory and non-respiratory complications.
- Relevant investigations (lab tests (D-dimer), scintigraphy, CT, MRI, pulmangiography, right heart catheterisation)
- Indications for, and special problems of lung transplantation in selected PVD patients, including psychosocial
- Indication for surgical interventions, e.g., in pulmonary embolism (thrombectomy)
- Pharmacology and interactions of drugs used in the treatment of PVDs

SKILLS

- Application of the above knowledge
- ECG, echocardiography and imaging interpretation (scintigraphy, CT-scan, angiography)
- Evaluation of functional status
- Right heart catheterisation
- Assessment of severity of respiratory and systemic involvement
- Prevention, diagnosis and treatment of both cardiovascular and systemic complications
- Identification and management of patients with end-stage disease
- Assessment of eligibility for lung transplantation/thrombectomy

ASSESSMENT & LEARNING METHODS

- Study Day
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of patients with pulmonary vascular diseases
 - Respiratory function testing
 - Right heart catheterisation
 - Echo
 - Exercise stress testing
 - 6 minute walk test

Lung Transplantation

Objective: To be aware of the patients that may benefit from lung transplantation. To carry out initial assessment and refer as appropriate to the lung transplant centre. To be able to administer emergency care to an ill post-transplant patient prior to transfer to the transplant unit (Trainees may care for inpatients and outpatients pre- and post- transplant during their clinical placements but most trainees will have to be seconded to a specialised unit to gain experience as this is not available in all placements.

KNOWLEDGE

- Diseases treatable by lung transplantation (IPF, CF, bronchiectasis, PPH, COPD, sarcoidosis)
- Types of lung transplant (single, double and heart-lung)
- Surgical considerations
- Criteria for patient selection (age, psychological /physical/nutritional status and prognosis)
- Pre-transplant preparation and monitoring (pulmonary rehabilitation and NIV)
- Donor selection
- Immunosuppressive regimens
- Principles of monitoring immunosuppressive drug therapy
- Principles of transbronchial lung biopsy for detection of rejection
- Diagnosis and treatment of acute and chronic complications, including rejection
- Obliterative bronchiolitis
- Diagnosis and treatment of opportunistic infections
- Prognosis

SKILLS

- Assessment of patient suitability for transplantation (physical and psychological)
- Nutritional supplementation
- Immunosuppressive treatment of rejection
- Bronchoscopy with bronchoalveolar lavage and appropriate imaging for detection of opportunistic infection
- Interventional bronchoscopic techniques such as stent placement
- Multidisciplinary approach with thoracic surgeons, microbiologists and psychologists

ASSESSMENT & LEARNING METHODS

- DOPS: Transbronchial biopsy
- Study Day
- OSCE Topics:
 - Indications, investigation, contra-indications and preparation of a patient for lung transplantation

Pulmonary Rehabilitation

Objective: To understand the organisation of specialist pulmonary rehabilitation services (Trainees may care for inpatients and outpatients undergoing pulmonary rehabilitation during their clinical placements but trainees may have to be seconded to a specialised unit to gain experience as this is not available in all placements).

KNOWLEDGE

Pulmonary exercise testing

- Physiological basis of exercise in health
- Pathophysiology of exercise in disease
- Equipment used in pulmonary exercise testing and how it functions
- Personnel involved, and their training
- Quality control and assurance of exercise testing

Pulmonary rehabilitation

- Physiology and pathophysiology underpinning pulmonary rehabilitation
- Evidence supporting a role for pulmonary rehabilitation in the management of patients with COPD and other appropriate respiratory diseases
- Components of a successful pulmonary rehabilitation programme
- Personnel required to set up and run a successful pulmonary rehabilitation service
- Selection of patients who are most likely to benefit from pulmonary rehabilitation
- Cost of setting up a pulmonary rehabilitation programme and its cost effectiveness
- Development and presentation of a business case for pulmonary rehabilitation
- Quality control and assurance of pulmonary rehabilitation
- Smoking cessation methods

SKILLS

- Performance and interpretation of spirometry
- Interpretation of other lung function tests
- Supervision of pulmonary exercise testing and interpretation of results
- Appreciation of the impact of severe COPD and other lung diseases on the life of the patient, including work, driving, sex and exercise
- Non judgmental as to cause
- Be active member of a rehabilitation team
- As above with special emphasis on smoking prevention, return to work, driving, sex and exercise

ASSESSMENT & LEARNING METHODS

- CBD
- Study Day

Smoking Cessation

Objective: To be able to assist patients to stop smoking. During their training, trainees must attend some smoking cessation clinics.

KNOWLEDGE

- Effects of smoking on the health of the individual in relation to lung and other disease
- Burden of smoking on health from a global perspective (health and economy)
- Beneficial effects of smoking cessation in preventing lung and other disease
- Treatment modalities for smoking cessation
- Teaching methods available for smoking cessation
- Effect of vaccination (e.g. against Influenza and Pneumococcus) on lung disease
- Infection control in relation to preventing lung infections
- Health and safety measures in workplaces

SKILLS

- Management of smoking cessation therapy (pharmacological as well as nonpharmacological) in groups and in individuals
- Performance and supervision of vaccination
- Inspection of workplaces for health hazards
- Non judgmental approach

ASSESSMENT & LEARNING METHODS

- CBD
- Study Day

Intensive Care and High Dependency Units (HDU)

Objective: To be able to recognise patients who will benefit from intensive care or high dependency units. Understand care provided in intensive care and high dependency units.

KNOWLEDGE

- Definition and classification of conditions leading to a requirement for respiratory intensive care and high dependency care (including end-stage diseases)
- Definition and classification of principles and modes of ventilatory support
- Equipment used in intensive care and high dependency care units
- Respective place of intensive care versus high dependency care in patient management
- Indications for ventilatory support in endstage diseases
- Indications for tracheostomy
- Complications of laryngeal intubation, tracheostomy, non-invasive ventilation, and mechanical ventilation
- Pharmacology of drugs used
- Conditions requiring ICU and HDU provision
- Requirements for an adequately staffed and equipped unit
- Role of the Multidisciplinary Team in ICU and HDU - interaction of surgeons, anaesthetist, physicians
- Knowledge of measures used to support all vital systems in an intensive care unit
- Advise and manage a respiratory patient on ICU or HDU
- Give advice on the respiratory care of a general patient on ICU
- As outlined in the Generic Curriculum of Training but with special emphasis on legal and ethical issues, teamwork, breaking bad news, communicating with relatives

SKILLS

- Insert Arterial line, manage tracheotomy, set up NIV
- Perform bronchoscopy in ICU
- Mechanical ventilatory support and its monitoring (invasive and non invasive)
- Intubation
- Tracheostomy
- Management of complications associated with mechanical ventilation (airways, barotraumas, infection, haemodynamic disturbances)
- Non-invasive imaging modalities: chest x-ray, ultrasound, CT, fluoroscopy , nuclear techniques
- Palliative care

ASSESSMENT & LEARNING METHODS

- Study Day

Palliative Care

Objective: To be able to recognise when palliative care is appropriate. To understand the services required for effective palliative care. (Trainees must care for inpatients and outpatients receiving palliative care during their clinical placements.)

KNOWLEDGE

- Indications for palliative care in both malignant and non malignant respiratory disease
- Selection of patients who will benefit from palliative care
- Importance of timing and forward planning
- Practice of palliative care
- Drugs
- Oxygen
- Personnel
- Appropriate physical environment
- Importance of team work
- Legal and ethical issues
- Indications for palliative care
- Practice of palliative care
- Importance of teamwork in palliative care
- The use of a palliative care team
- Empathy with patient and their relatives

SKILLS

- Recognising who will benefit
- Breaking bad news
- Communicating with patients and relatives honestly and sensitively
- Communicating with the palliative care team
- Empathy, sensitivity and good communication skills
- Team work
- Non judgmental approach
- As outlined in the Generic Curriculum of Training with special emphasis on legal and ethical issues, teamwork, breaking bad news, communicating with relatives and honesty

ASSESSMENT & LEARNING METHODS

- Study Day
- Ethics
- Communication

Home Care (Hospital at Home and Early Discharge Schemes)

Objective: To develop an understanding of the principles of hospital at home, early discharge schemes and COPD outreach

KNOWLEDGE

- Benefits of home care/early discharge schemes
- Equipment and personnel required
- Cost effectiveness
- Selection of patients who will benefit from home care/early discharge
- Preparation of Home Care package
- Organisation of Home Visits by healthcare professionals
- Management when home care fails
- Development and presentation of a successful patient selection case for home care/early discharge
- Quality control and assurance

SKILLS

- Systemic/inhaled drug therapy
- Oxygen therapy
- Non-invasive ventilatory support
- Care of tracheostoma
- Care of pleural drainage
- Respecting patient preference
- Multidisciplinary team approach (F6)
- Organisational skills
- Team leading skills

ASSESSMENT & LEARNING METHODS

- Study Day
- HST Leadership in Clinical Practice
- Ethics

Patient-Oriented Approach According to Symptoms and Signs

Objective: To develop an ability to interpret history, examination and investigation findings to arrive at a list of appropriate differential diagnosis related to respiratory signs and symptoms

KNOWLEDGE

- Potential causes of dyspnoea, wheeze, stridor, hoarseness, cough, sputum production, haemoptysis, chest pain, snoring and general symptoms of disease
- Potential causes of abnormal examination findings, such as cyanosis, finger clubbing, chest wall deformities, abnormal breathing patterns, superior vena cava syndrome, Horner's syndrome and abnormal findings on inspection, palpation, percussion and auscultation
- Paraneoplastic syndromes
- Underlying pathological processes leading to abnormal respiratory symptoms and signs
- Appropriate approach to the investigations of patients presenting with abnormal respiratory and general symptoms and signs

SKILLS

- Interpretation of history, examination and investigation findings and ability to create a list of appropriate differential diagnoses
- Appropriate investigation of a patient with respiratory and general symptoms and/or signs and ability to interpret these investigations
- Ability to address patient concerns related to respiratory symptoms and signs

ASSESSMENT & LEARNING METHODS

- Study Day
- Mastering Communication Course
- Clinical experience
- Consultant's feedback

Psychological Factors and Quality of Life in Respiratory Diseases

Objective: To develop an understanding of the affect of life-limiting respiratory diseases on psychological well-being and quality of life of patients and how to appropriately manage and refer these patients

KNOWLEDGE

- Hyperventilation syndrome
- Relationship between quality of life, social deprivation and respiratory disease, in particular COPD and tuberculosis
- The social isolation caused by COPD, lung cancer and tuberculosis
- Effects of psychological morbidity on symptom complexes and treatment compliance
- Clinical features and drug treatment of psychiatric syndromes
- Non-pharmacological management of psychological morbidity
- End of life management

SKILLS

- History-taking in relation to psychological morbidity
- Identification of depression and anxiety states
- Use of tools to measure quality of life e.g. St George's Respiratory Questionnaire
- Use of tools to measure psychological morbidity e.g. Hospital Anxiety and Depression Score
- Appropriate referral to psychologist or psychiatrist
- Appropriate referral to liaison nurses for domiciliary support
- Sympathetic and non-judgmental approach to patients
- Willingness to provide social support
- Periodic review in cases of social isolation

ASSESSMENT & LEARNING METHODS

- Study Day
- HST Ethics
- Mastering Communication Course

Public Health and Health Costs in Europe

Objective: To develop an understanding of the public health aspects of respiratory diseases and health promotion and to become involved in public health respiratory-related initiatives

KNOWLEDGE

- Infectiveness and transmission of respiratory diseases
- Principles of disinfection and isolation
- WHO International Health Regulations (2005)
- WHO Epidemic and Pandemic Alert and Responses (EPR)
- Diseases covered by EPR
- List of notifiable diseases in own country
- Financial burden of common respiratory diseases such as COPD including in-patient/out-patient costs and effects on days off work
- Effects of smoking on respiratory diseases
- Industrial compensation law e.g. asbestos related diseases

SKILLS

- Isolation procedures (tuberculosis, SARS and MRSA)
- General measures to reduce spread of infection in hospital wards
- Contact tracing for tuberculosis and tuberculin testing (skin and blood tests)
- Organisation of hospital services in event of epidemics e.g. influenza and bio-terrorist attack
- Vaccination (BCG, pneumococcus and influenza)
- Delivery of smoking cessation programmes
- Preparation of medico-legal reports
- Explain infection risks to contacts of sick patients
- Encourage smoking cessation sympathetically
- Liaise with infection control and public health departments
- Establish links with health economists

ASSESSMENT & LEARNING METHODS

- Study Day
- HST Ethics
- Mastering Communication Course
- HST Leadership in Clinical Practice
- Diploma in Leadership and Quality in Healthcare - optional

Respiratory Epidemiology

Objective: To learn how to utilise epidemiological measures to better understand respiratory disease and develop appropriate prevention mechanisms

KNOWLEDGE

- Definition and classification of epidemiology (e.g. analytical, environmental, etc.) and public health
- Study design
- Disease occurrence measures
- Exposure measures
- Questionnaires
- Functional indices
- Biomarkers
- Determinants/risk factors
- Risk measures
- Basic statistical analyses
- Inference/interpretation
- Introduction to gene - environment interactions

SKILLS

- Application of the above knowledge
- Ability to apply a study design to a research question
- Ability to implement, administer and analyse a questionnaire
- Ability to think and act in a standardized way
- Ability to interpret epidemiological measures (e.g. prevalence rate, odds ratio, relative risk, attributable risk)
- Ability to make and interpret simple statistical analyses (e.g. Chi squared test, analysis of variance, multiple logistic regression...)
- Ability to perform and interpret simple gene - environment interactions
- Knowledge of the epidemiology (distribution and aetiology) of the major respiratory diseases
- Knowledge of relevant diseases processes
- Commitment to regular personal updating of the evolving pattern of environmental and host-related risk factors
- Applying the principle of precaution
- Reading WHO and related documents
- Develop a preventative mentality

ASSESSMENT & LEARNING METHODS

- Study Day
- Health Research – An Introduction

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 |
|---|--------------------|---------------------|--------------------|---------------------|
| Section 1 - Training Plan | | | | |
| Personal Goals Plan (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer) | Required | 1 | Training Post | Personal Goals Form |
| On Call Rota | Required | 1 | Training Post | Clinical Activities |
| GIM Year | Required | 480 | Training Programme | |
| Dual Specialty Year | Required | 480 | Training Programme | |
| Section 2 - Training Activities | | | | |
| Outpatient Clinics | | | | |
| General Respiratory (at least 1 Respiratory Outpatient Clinic per week) | Required | 40 | Year of Training | Clinical Activities |
| Lung Cancer | Required | 6 | Training Programme | |
| Asthma | Required | 6 | Training Programme | |
| Cystic Fibrosis | Required | 6 | Training Programme | |
| COPD | Required | 6 | Training Programme | |
| Interstitial Lung Disease | Required | 6 | Training Programme | |
| Sleep | Required | 6 | Training Programme | |
| TB | Required | 6 | Training Programme | |
| Ward Rounds/Consultations | | | | |
| Consultant Led (minimum 2 per week) | Required | 80 | Year of Training | |
| Independent SpR led (1 per week) | Required | 40 | Year of Training | |
| Consultations – with supervision | Required | 20 | Year of Training | |
| Emergencies/Complicated Cases (Diagnosis of nature of problem and its presentation, emergency case investigation) | Desirable | 1 | Training Programme | Cases |
| Procedures/Practical Skills/Surgical Skills | | | | |
| Seldinger +/- trochar chest drain insertion with pleural ultrasound guidance | Required | 10 | Training Programme | Procedures |

| Curriculum Requirement | Required/Desirable | Minimum Requirement | Reporting Period | Form Name |
|---|--------------------|---------------------|--------------------|------------------------------------|
| Pleural aspiration with ultrasound guidance | Required | 20 | Training Programme | |
| Bronchoscopy | Required | 200 | Training Programme | |
| Interpret and report on Full Pulmonary Function Tests | Required | 50 | Training Programme | |
| Perform Full Pulmonary Function tests on a patient | Required | 2 | Training Programme | |
| Observe full PSG set up | Required | 1 | Training Programme | |
| Sleep studies interpretation of reports in the context of the patient's clinical history and deciding a treatment plan under consultant supervision in dedicated sleep clinics. | Required | 50 | Training Programme | |
| Management of a patient on Non-invasive ventilation | Required | 40 | Training Programme | |
| Skin tests to demonstrate 'allergy' (minimum observe or perform 5 – during training) | Required | 1 | Training Programme | |
| Attend & Present at Radiology MDT's+ | Required | 500 | Training Programme | |
| EBUS (Witnessed or performed) | Required | 50 | Training Programme | |
| General Internal Medicine Procedures/Practical Skills/Surgical Skills | | | | Procedures |
| BIPAP/CPAP | Required | 10 | Training Programme | |
| Emergency DC cardioversion | Required | 10 | Training Programme | |
| ECG interpretation | Required | 50 | Training Programme | |
| Joint aspiration | Required | 4 | Training Programme | |
| Lumbar puncture | Required | 20 | Training Programme | |
| Abdominal paracentesis – under ultrasound | Desirable | 4 | Training Programme | |
| Femoral venous line placement – under ultrasound | Desirable | 1 | Training Programme | |
| Intercostal drain Insertion – under ultrasound | Desirable | 1 | Training Programme | |
| Additional/Special Experience Gained | | | Training programme | Additional Professional Experience |
| Thoracic Surgery (3 months in close liaison, secondment if necessary) | Required | 1 | Training Programme | |
| Radiotherapy & Oncology (close liaison) | Required | 1 | Training Programme | |
| Relatively Unusual Cases | Desirable | 1 | Training Programme | Cases |
| Chronic Cases/Long Term Care | Desirable | 1 | Training Programme | Cases |
| ICU/CCU Cases | | | | Cases |

| Curriculum Requirement | Required/ Desirable | Minimum Requirement | Reporting Period | Form Name |
|---|------------------------|------------------------|--------------------|-----------------------|
| Intensive Care (3 months secondment or 12 months shared patient care) | Desirable | 1 | Training Programme | |
| Management Experience | Desirable | 1 | Training Programme | Management Experience |
| Section 3 - Educational Activities | | | | |
| Mandatory Courses | | | | Course Attendance |
| ACLS | Required | 2 | Training Programme | |
| Ethics Foundation | Required | 1 | Training Programme | |
| Ethics for General Medicine | Required | 1 | Training Programme | |
| An Introduction to Health Research Methods (Year 1) | Required | 1 | Training Programme | |
| HST Leadership in Clinical Practice (Year 3+) | Required | 1 | Training Programme | |
| Mastering Communication (Year 1) | Required | 1 | Training Programme | |
| Performing Audit (Year 1) | Required | 1 | Training Programme | |
| Wellness Matters | Required | 1 | Training Programme | |
| NIHSS Stroke Scale | Required | 1 | Training Programme | |
| Delirium (Online) | Required | 1 | Training Programme | |
| Non – Mandatory Courses | | | | Course Attendance |
| Ultrasound course | Required | 1 | Training Programme | |
| EBUS simulation course | Desirable | 1 | Training Programme | |
| Study Days | Required | 6 | Year of Training | Study Day Attendance |
| Years 1 - 3 For non-GIM Years: Minimum of 3 GIM study days per year: 2 'core' and 1 'non-core' and attend 3 Respiratory Medicine study days per year General Internal Medicine specialty year (Minimum of 6 GIM study days: 3 'core' and 3 'non-core') | | | | |
| Years 4 - 5 Attend 6 approved study days per year | | | | |

| Curriculum Requirement | Required/Desirable | Minimum Requirement | Reporting Period | Form Name |
|---|--------------------|---------------------|--------------------|---------------------------------------|
| National/International Meetings (attend minimum 1 per year) | Required | 1 | Year of Training | Additional Professional Experience |
| Attendance at In-House Activities minimum of 1 per month from the categories below: | | | | Attendance at Hospital Based Learning |
| Grand Rounds (minimum 1 per month) | Required | 10 | Year of Training | |
| Journal Club | Required | 10 | Year of Training | |
| MDT meetings attendance | Required | 5 | Year of Training | |
| MDT meetings presenting | Required | 2 | Year of Training | |
| Radiology Conference | Desirable | 20 | Year of Training | |
| Pathology Conference | Desirable | 10 | Year of Training | |
| Weekly Multidisciplinary Conference (GIM Requirement, 10 per year) | Required | 30 | Training Programme | |
| Examinations | | | | Examinations |
| HERMES | Desirable | 1 | Year 2 | |
| Delivery of Teaching | | | | Delivery of Teaching |
| Lecture | Required | 3 | Year of Training | |
| Tutorial | Required | 3 | Year of Training | |
| Bed side Teaching | Required | 4 | Year of Training | |
| Research | Desirable | 1 | Training Programme | Research Activities |
| Audit activities and Reporting (1 per year either to start or complete, Quality Improvement (QI) projects can be uploaded against audit) | Required | 1 | Year of Training | Audit & QI |
| Publications | Desirable | 1 | Year of Training | Additional Professional Experience |
| Presentations | Required | 1 | Year of Training | Additional Professional Experience |

| Curriculum Requirement | Required/ Desirable | Minimum Requirement | Reporting Period | Form Name |
|---|------------------------|------------------------|--------------------|------------------------------------|
| Committee Attendance | Desirable | 1 | Training Programme | Additional Professional Experience |
| Additional Qualifications | Desirable | 1 | Training Programme | Additional Professional Experience |
| Section 4 - Assessments | | | | |
| CBD (including causes, investigation and differential diagnosis) | | | | CBD |
| Asthma | Required | 1 | Training Programme | |
| COPD | Required | 1 | Training Programme | |
| Respiratory failure | Required | 1 | Training Programme | |
| Lung Cancer | Required | 1 | Training Programme | |
| Tuberculosis (TB) | Required | 1 | Training Programme | |
| Pulmonary infections | Required | 1 | Training Programme | |
| HIV and the Lung | Required | 1 | Training Programme | |
| Bronchiectasis | Required | 1 | Training Programme | |
| Cystic Fibrosis | Required | 1 | Training Programme | |
| Interstitial lung disease | Required | 1 | Training Programme | |
| Manifestations of systemic diseases | Required | 1 | Training Programme | |
| Occupational and environmental lung disease | Required | 1 | Training Programme | |
| Pulmonary vascular disease/Vasculitis | Required | 1 | Training Programme | |
| Lung Transplantation | Required | 1 | Training Programme | |
| DOPS | | | | DOPS |
| Bronchoscopy | Required | 1 | Year of Training | |
| Sleep studies | Required | 1 | Year of Training | |
| Non-invasive ventilation | Required | 1 | Year of Training | |
| Skin tests to demonstrate allergy | Required | 1 | Year of Training | |
| Pulmonary function tests interpretation | Required | 1 | Year of Training | |
| Perform a Pulmonary function test | Required | 1 | Year of Training | |

| Curriculum Requirement | Required/ Desirable | Minimum Requirement | Reporting Period | Form Name |
|--|------------------------|------------------------|--------------------|---|
| Seldinger plus or minus trochar chest drain insertion with pleural ultrasound guidance | Required | 1 | Year of Training | |
| Pleural aspiration with ultrasound guidance | Required | 1 | Year of Training | |
| OSCE: Data Analysis Pulmonary function testing Sleep studies Pharmacology Ventilator Settings Tuberculin skin testing Overnight Oximetry/TOSCA monitoring Echo Exercise testing Six minute walk test Radiology Blood Gases Interpretation Pathology | Required | 1 | Training Programme | Data Analysis OSCE |
| General Internal Medicine DOPS | | | | DOPS |
| BIPAP/CPAP | Required | 1 | Training Programme | |
| Communication e.g. chairing care planning meeting for complex discharge, procedure consent | Required | 1 | Training Programme | |
| DC cardioversion | Required | 1 | Training Programme | |
| ECG interpretation | Required | 1 | Training Programme | |
| Joint aspiration | Required | 1 | Training Programme | |
| Lumbar puncture | Required | 1 | Training Programme | |
| Abdominal paracentesis under ultrasound | Desirable | 1 | Training Programme | |
| Femoral venous line placement under ultrasound | Desirable | 1 | Training Programme | |
| Mini-CEX (At least two Mini-CEX assessments should take place in each year of training) | Required | 2 | Year of Training | Mini CEX |
| Quarterly Assessments/End-of-Post Assessments | Required | 4 | Year of Training | Quarterly Assessments/ End-of-Post Assessments |
| End of Year Evaluation | Required | 1 | Year of Training | End of year Evaluation |

