



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. Michael Henry and Prof. Richard Costello, National Specialty Directors, Dr. Ann O'Shaughnessy, Head of Education and Professional Development and by the Respiratory Medicine Specialty Training Committee. The curriculum was approved by the Irish Committee on Higher Medical Training.

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INDEX:

Introduction	4
Aims	4
Entry Requirements	5
Flexible Training	6
Training Programme	6
Teaching, Research & Audit	6
Logbook.....	7
Assessment Process.....	7
Annual Review – The PeTRA Process	7
Facilities	8
Teaching, Learning & Assessment Methods	10
Record of Training.....	10
Assessment of Competencies.....	10
Learning Methods	11
Assessment Methods	13
Mini-CEx.....	13
DOPS:	13
Case Based Discussion (CBD)	14
Mandatory Training Courses.....	16
Specialty Study Days	16
Annual Assessments.....	16
Generic Components	18
Communication & Interpersonal Skills	19
Professionalism & Autonomy	21
Maintaining Good Practice	25
Standards Of Care	27
Patient Safety.....	30
Therapeutics and Safe Prescribing.....	32
Infection Control	33
Leadership.....	35
Management Information Systems & Management Skills	37
Teaching & Research.....	39
Ethics.....	40
Dealing with and Management of Acutely ill Patients in Appropriate Specialties	43
Specialty Section for Respiratory Medicine	45
Respiratory Anatomy, Physiology Genetic and Development Conditions	46
Genetic and Developmental Lung Disease.....	47
Procedures	48
Clinical.....	53
Asthma	53
Allergic Lung Disorders and Anaphylaxis	55

Occupational and Environmental Lung Disease	56
Chronic Obstructive Pulmonary Disease (COPD)	58
Respiratory Failure	60
Bronchiectasis	61
Cystic Fibrosis	63
Lung Cancer	64
Diffuse Interstitial Lung Disease (ILD)	66
Pulmonary Manifestations of Systemic Diseases	67
Pulmonary Infections	68
Pulmonary Disease in the Immunosuppressed Host	69
Tuberculosis (TB)	71
HIV and the Lung	73
Sleep Related Disorders	74
Disorders of Pleural and Mediastinum	75
Pulmonary Vascular Diseases	77
Lung Transplantation	78
Pulmonary Rehabilitation	79
Smoking Cessation	80
Intensive Care and High Dependency Units (HDU)	81
Palliative Care	82
Home Care (Hospital at Home and Early Discharge Schemes)	83
Patient-Oriented Approach According to Symptoms and Signs	84
Psychological Factors and Quality of Life in Respiratory Diseases	85
Public Health and Health Costs in Europe	86
Respiratory Epidemiology	87
Minimum Requirements for Training	88

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 the potential to develop a sub specialty interest abound. 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 describes the knowledge, skills, attitudes and behaviours expected by patients and society from individuals during the practice of their profession (*as a doctor*). It includes such concepts as:

- The skills of lifelong learning and the maintenance of competence
- Information literacy

- Ethical behaviour
- Integrity, honesty
- Altruism
- Service to, justice and respect for others
- Adherence to professional codes

Entry Requirements

Applicants for Higher Specialist Training (HST) in Respiratory Medicine must have completed a **minimum** of two years Basic Specialist Training (BST) in approved posts and obtained the MRCPI or (UK).

For MRCPI or UK holders, BST* should consist of a minimum of 24 months involved with direct patient care.

GPT in General Internal Medicine (GIM) is defined as follows:

- A minimum of 24 months in approved posts, with direct involvement in patient care and offering a wide range of experience in a variety of specialties.
- At least 12 of these 24 months must be spent on a service or services in which the emergencies are “unselected”.
- (“unselective take” describes the admission of acute medical patients whose problems encompass the broad generality of medicine i.e. not restricted to a single or small group of specialties. If any major component of acute medicine e.g. cerebro-vascular accidents, myocardial infarctions is excluded from the take, this experience must be gained from other posts).
- For further information please review the GPT curriculum

Those who do not hold an MRCP or equivalent qualification must provide evidence of appropriate knowledge, training and experience similar to the above, particularly with regard to dealing with acute (medical) conditions.

The duration of HST in Respiratory Medicine is 4 years, one year of which may be gained from a period of full-time research. Those who wish to obtain dual certification in Respiratory Medicine and e.g. in General (Internal) Medicine will require at least a fifth year of training.

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, mediastinoscopy is mandatory and all trainees should attend such procedures.

No particular order or sequence of training will be imposed and programmes offered should be flexible i.e. capable of being adjusted to meet trainees’ needs. The earlier years 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.

“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 re-affirm 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 SpR’s suitability and ability to become independently capable as a specialist.

Flexible Training

Trainees who are unable to work full-time are entitled to opt for flexible training programmes. EC Directive 93/16/EEC requires that:

Part-time training shall meet the same requirements as full-time training, from which it will differ only in the possibility of limited participation in medical activities to a period of at least half of that provided for full-time trainees;

The competent authorities shall ensure that the total duration and quality of part-time training of specialists are not less than that of full-time trainees.

The above provision must be adhered to. A flexible trainee should undertake a *pro rata* share of the out-of-hours duties (*including on-call and other out of hours commitments*) required of their full-time colleagues in the same programme and at an equivalent stage.

for details of appointment and funding arrangements for flexible trainees, please see the current issue of the HST training Handbook.

Training Programme

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training for Respiratory Medicine programmes will offer posts in both general hospitals and teaching hospitals. Each post within the programme will have a named trainer/educational supervisor and programmes will be under the direction of the National 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.

Teaching, Research & Audit

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

A period of supervised research relevant to Respiratory Medicine is considered highly desirable and will contribute up to 12 months towards the completion of training. Some trainees may wish to spend two or three years in research leading to a MSc, MD, or PhD, by stepping aside from the programme for a time. Additional educational credit may be granted at the discretion of the NSD and STC for clinical work relevant to the Curriculum undertaken during the second and subsequent years of this research, up to a maximum of six months credit. For those intending to pursue an academic path, an extended period of research may be necessary in order to explore a topic fully or to take up an opportunity of developing the basis of a future career. Such extended research may continue after

the CSCST is gained. However, those who wish to engage in clinical medical practice must be aware of the need to maintain their clinical skills during any prolonged period concentrated on a research topic, if the need to re-skill is to be avoided.

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

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

Logbook

Up-to-date training records and a portfolio of achievements will be maintained by the trainee throughout HST. The training records will be countersigned as appropriate by the trainers to confirm the satisfactory fulfilment of the required training experience and the acquisition of the competencies set out in the Respiratory Medicine Curriculum. They will remain the property of the trainee and must be produced at the annual assessment review.

Each trainee is responsible for maintaining an up-to-date record of progress through training and compiling a portfolio of achievements for presentation at annual assessment review. The trainee also has a duty to maximise opportunities to learn, supplementing the training offered with additional self-directed learning in order to fulfil all the educational goals of the curriculum. Trainees must co-operate with other stakeholders in the training process. It is in a SpR’s own interest to maintain contact with the Medical Training Office and Dean of Higher Specialist Training, and to respond promptly to all correspondence relating to training. “Failure to co-operate” will be regarded as, in effect, withdrawal from the HST’s supervision of training (*see the HST Training Handbook*).

At annual review, the Training Record will be examined. The results of any assessments and reports by educational supervisors, filed in the portfolio submitted, together with other material capable of confirming the trainee’s achievements, will be reviewed.

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.

Annual Review – The PeTRA Process

An annual review of progress through training will be undertaken on behalf of HST. The training record will be examined at the review. Assessments and reports by educational supervisors, confirmation of achievements and the contents of the portfolio will be reviewed. A decision is made regarding progress, as detailed in the Training Handbook. At some or all of these annual reviews a non-specialty assessor will be present capable of addressing core competencies. An external

assessor will participate in the penultimate year review (PYA) which is held to a standard format usually 12-18 months before the planned end of training. The award of a CSCST will be determined by a satisfactory outcome after completion of the entire series of PeTRA assessments.

Each year trainees undergo a formal review by a panel including the Dean, the National Specialty Director, and whenever possible, a representative member from another specialty. The panel will review in detail the training record, will explore with the trainee the range of experience and depth of understanding which has been achieved and consider individual trainer's reports. Attendance by the trainer is highly desirable and essential for the first year and PYA assessments. An opportunity is also given to the trainee to comment on the training being provided; identifying in confidence any deficiencies in relation to a particular post.

A decision on progress through training is reached at each of these annual assessments. The determination and the evidence considered is entered on one of a set of standard PeTRA Forms as follows:

successful completion of a year of training – **PeTRA Form C**

completion but with a need for additional targeted training – **PeTRA Form C₁**

repeat training year – **PeTRA Form C₂**

The penultimate year assessment (*the PYA*) reviews the evidence provided in the logbook on the results of the assessment methods employed (*see above*); the evidence provided will be further questioned during the assessment. At the PYA, the panel identifies the residual training outstanding, advising adjustments to the training schedule as necessary, and finally confirming the estimated date for completion (***PeTRA Form T and CSCST issuance***).

Facilities

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

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

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

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

**Teaching, Learning & Assessment
Methods**

Teaching, Learning & Assessment Methods

This section relates to the clinical competencies that are required for your training. During your training you will be assessed by methods such as miniCEX, DOPS and Case Based Discussion. It is extremely important that you read this so that you are aware of the requirements of your training.

Record of Training

The evidence required to confirm progress through training includes:

- Details of the post(s) occupied, the training plan agreed with weekly timetables and duty rosters; case-mixes and volumes, numbers of practical procedures and outcomes.
- Confirmation of attendance at events in the educational programme, at departmental and inter-departmental meetings and other (optional) educational events.
- Confirmation (certificates) of attendance at subject-based/skills-training/instructional courses; (certificate or diploma from appropriate authority).
- Recorded attendance at conferences and meetings.
- A properly completed logbook with entries capable of testifying to the training objectives which have been attained and the standard of performance achieved.
- Evidence of regular contact with trainers, i.e. appraisals; confirmation of workplace/clinical encounters significant in relation to activities specified in the curriculum.
- Evidence of personal study, e.g. journals taken, membership of specialist society, web-based research, special interest developed.
- CPD/CME activity, returns, study leave records.
- Copies/examples of material prepared for presentation e.g. for audit, teaching, best-practice development, collection of cases, topic reviews, output from research.
- Educational supervisor's reports on **observed** performance (in the workplace): of duties, practical procedures, of presentations made and teaching activity: of advising and working with others, of standards of case notes, correspondence, communication with others e.g. at handover. Results of Mini-CEX, CBDs and DOPS encounters.
- Collective opinions – as used to ascertain a range of generic skills e.g. professionalism, maintaining trust.
- Result (diploma, certificate from recognised body) of completed knowledge-based test and/or practical examination.

Assessment of Competencies

The competencies to be acquired during training are listed within the Generic and Specialty Sections of this Curriculum.

The competencies will be assessed on a regular basis during your training programme and must be documented in the Training Record (*Logbook*). Progress through training is confirmed by entries which must be authenticated/ countersigned by the educational supervisors.

Documents which provide evidence of satisfactory completion of other necessary components of the curriculum must be filed in the portfolio of achievements compiled by the trainee and reviewed annually.

A report from the educational supervisor will be included. This will be prepared following appraisal, based on his/her assessment of observed performances by the trainee of practical procedures and other duties. The standard of case notes, summaries, correspondence and other material, of

presentational ability can also be the subjects of such report, as could the trainee's enthusiasm, judgement, team working or professionalism.

The trainer's report will also be based on a structured pro-forma, as used in the short form of clinical evaluation exercise (*Mini-CEX*); following observation and appraisal of the performance of a procedure (*DOPS*); after discussion of the (*clinical*) reasoning involved in the management of a problem faced by a trainee (*Case-Based Discussion, CBD*).

The results of any summative tests of knowledge taken, e.g. *MCQs and problem-solving tests, including self-administered tests*, should be filed and retained. Confirmation of the acquisition at a particular stage of a specified professional examination may be required in order to make progress towards the completion of training.

Learning Methods

This section gives examples of the learning methods that can be used as guidance to acquire competencies as they appear in the curriculum.

Experiential:

- Working under supervision
- Documenting/reporting progress (*case notes*), preparing summaries (*discharge notes*) other professional correspondence; communicating information to patients/to other health professionals.
- Consults, referrals between departments, handover, providing cross-cover.
- (*In certain specialties*), procedure room and investigation/assessment sessions offer practical opportunities to learn and develop skills under supervision and to exercise judgement when to seek assistance.

Self-directed learning:

- Curriculum-based personal study e.g. *textbooks, journals, literature search, retrieval of web-based information.*
- Information gathering and evaluation
- Active participation in audit
- Tests of knowledge

Group learning:

- Workplace discussions
- Multidisciplinary meetings
- Programmed meetings within the workplace

Performance based:

- Observing, learning, assisting, performing, demonstrating a technique or practical procedure.
- Simulations, role-play

Learning through teaching and research:

- Teaching, giving tutorials, lecturing.
- Mentoring and supervising junior colleagues and other staff.
- Presenting at meetings - local and international.
- Research
- Publication

External Courses:

- Specialty study/training days
- Attending mandatory and non-mandatory courses
- Attendance at seminars, relevant conferences, regional, national and international meetings.

Reflection

- In your logbook there is an area to record reflections on training, learning, clinical events and career discussions. In recent years the importance of reflecting as part of the learning process on what you are doing has been shown to improve professional practice. Reflection on what you know and don't know helps to understand that learning is individual and reflection of professional activities can be used to highlight your strengths, weaknesses and areas for development.

Assessment Methods

Mini-CEX

Definition: Mini-CEX is designed to provide feedback on skills essential to the provision of good clinical care by observing an actual clinical encounter.

Description: The mini-CEX is a “snapshot” of a doctor/patient interaction and is based on a 15 minute observation of a single interaction. It is designed to assess the clinical skills and behaviors of trainees assessing such skills as history taking, physical examination skills, clinical judgement, professionalism, organisation/efficiency and overall clinical care. Not all elements will be assessed on each occasion. Immediate feedback should be provided after each encounter by the observer assessing the trainee.

Frequency of assessment: At least two miniCEX assessments should take place in each year of training. Where appropriated, one should be based in an outpatient setting and one in an acute setting. The assessments include assessment of skills in history taking, physical examination, appropriate use of investigations, cost-effectiveness, interpretation of investigations, making medical notes, making a diagnosis, treatment and management of disease, appropriate referral to other specialities, standards of care.

Competencies assessed:

- Consideration/Professionalism:
- Recognises/accepts patient's rights (to consent, confidentiality, information). Establishes trust, shows professional approach.
- Communication:
- Informs, explains, advises using appropriate language. Obtains consent, enlists patient's co-operation.
- Interviewing Skills:
- Active” listening facilitating relevance; effectively using questions, responding to non-verbal clues.
- Examination Skills:
- Prepares patient, minimises discomfort/unease. Proceeds logically, efficiently, thoroughly, completely.
- Judgement:
- Correctly identifies/lists problems, prioritises actions in realistic and timely schedule.

Opportunities for assessment: The assessment should take place in the usual place of work (*in-patient, clinic, office or department*) where the assessor must directly **observe** the trainee's performance.

DOPS:

Definition: Directly Observed Procedural Skills (DOPS) is a method, similar to the mini-CEX that has been designed specifically for the assessment of practical skills. DOPS assess the capabilities of a trainee while they perform a procedure.

Description: The DOPS is a structured assessment of actual performance. Each DOPS should represent a different procedure. The trainee chooses the timing, procedure and observer.

Frequency of Assessments: The number and frequency of assessments of procedural skills will vary from specialty to specialty.

Competencies assessed:

- Understanding of Procedure:
- Relevant anatomy; purpose, indications, contra-indications; outcomes, risks, complications; choice of methods available, technique of procedure.
- Consideration for the Patient:
- Gives reassurance, minimises discomfort, explains procedure fully; confirms informed consent obtained.
- Preparation:
- First re-checks all relevant details correct. Safety check; instrumentation, equipment (drugs); positioning; cleansing/aseptic technique; sedation, analgesia, anaesthesia confirmed.
- Professional/technical ability:
- Dexterity, accuracy, efficiency; obtains, interprets diagnostic material/information; informs, directs staff courteously; recognises own limitations; seeks help where appropriate; manages risk.
- Post-Procedure:
- Completes documentation; regulates recovery phase, observations; anticipates/deals with complications. Informs/counsels patient/relatives.
- Overall ability to perform Procedure:
- Ability to complete/undertake procedure; technical abilities as demonstrated; appropriately confident, team/ leadership skills.

Opportunities for assessment: While supervising, assisting, observing actual performance in appropriate setting (office, theatre, day procedure, ICU etc.). The assessment should be made under appropriate conditions e.g. with all equipment and personnel necessary to support the procedure.

Case Based Discussion (CBD)

Definition: Case-based discussion (CBD) is used to enable the documenting of conversations about, and presentations of, cases by trainees. This activity happens throughout training, but is rarely conducted in a way that provides systematic assessment and structured feedback. CBD is used to evaluate core skills that can be demonstrated during an interactive discussion based on a single case in which the trainee has been actively involved.

Description: CBD is designed to assess clinical decision-making and the application or use of medical knowledge in relation to patient care for which the trainee has been directly responsible. It also enables the discussion of the ethical and legal framework of practice, and in all instances, it allows trainees to discuss why they acted as they did. Although the primary purpose is not to assess medical record keeping, as the actual record is the focus for the discussion, the assessor can also evaluate the record keeping in that instance. The case for discussion can either be selected by the trainee or chosen by the assessor. The assessment will be based on oral discussion and written information available. It includes a bi-lateral (trainee's and trainer's) critical appraisal of the reasoning and judgements made, and of the management of the case. Whenever possible the assessment should include issues such as disease notification, health promotion and screening.

Frequency of Assessment: This method of assessment has not been validated as yet, however it is a very useful method and can be easily incorporated into journal clubs, post-graduate teaching sessions or on-line etc

Competencies assessed:

- **Problem Definition:**
- All relevant facts established, from current/previous history, investigations, interventions; reports, correspondence reviewed.
- **Record Keeping:**
- Legible, tidy, legally defensible records seen.

- **Reasoning:**
- Appropriately selected, sequenced investigations/procedures planned. Evidence-based, logical judgements made; (differential) diagnosis established; action plan made with realistic goals.
- **Case Management:**
- Effective, safe (responsible) prescribing; aware of protocols/guidelines, best practice; monitoring progress, handling complications/mistakes; timely, appropriate referrals, case closure.
- **Reflective Practice:**
- Shows analytical, constructive approach to case, willingness to learn; acknowledges and prepared to consider other management options; aware of change, possible advances, when to seek help.

Opportunities for assessment: The presentation should take place in a suitable environment, with due consideration given to the patient's sensitivities, to confidentiality e.g. in any ward or clinical setting; an office, side- or seminar-room may be found convenient. Case presentations and discussions, e.g. at handover, ward-rounds (inter-) departmental meeting.

Mandatory Training Courses

(Note: this list only included the generic mandatory courses)

Mandatory Communication course:

To be completed in Year 1. The course is a short 1 -2 hour course at the start or the end of specialty study days to reduce time spent away from the hospitals.

Communication skills will be assessed as part of the miniCEX assessments

Audit:

Mandatory 1/2 day on audit to be completed in Year 1.

Audit reports are submitted on a yearly basis

Ethics:

Four mandatory study days are to be completed during the training programme. Three study days are for all specialities - Ethics & Law, Ethics in Research and Professionalism. The fourth day 'End of life' is for all specialties except Public Health Medicine, Occupational Medicine and Histopathology who have a speciality specific ethics day.

Leadership Skills:

Mandatory 3 day course to be taken in year 3 - 5

ACLS:

ACLS compliant in appropriate specialties

Specialty Study Days

The number and topics of the specialty study days are listed as part of the specialty curricula.

Annual Assessments

Consultant feedback:

End of year assessment completed by the Trainers include assessment in areas such as: Team working skills, Leadership skills, Handling of complaints, conflict management

Questions such as the following are included in the assessment form:

- Have there been any complaints from nursing staff, AHP, patients regarding this trainee or their team?
- If so:
 - How did the trainee respond to a complaint about a member of his/her team?
 - How did the trainee respond to a complaint against him/her?.
- Have you any serious issue with your SpR?
- Where there any instances of serious conflict?
- Do you think he/she behaved appropriately?

Audit:

It is difficult to complete the audit cycle in a one year period. Each year the trainee should take part in an audit - either to develop and start an audit or to review and change practice as a result of an audit - the complete audit cycle should be understood. In hospitals that have audit systems set up, the trainee should complete a full audit.

Trainees will be required to submit a full audit report and will be encouraged to present audit results at local, national or international meetings.

Attendance at In- Hospital Speciality Radiology conferences

Time spent in Laboratory/Pathology or attendance at Laboratory/Pathology conferences
(Depending on specialty)

Committee membership:

Many specialty curricula have identified participation in committees.

Teaching skills

Number of undergraduate and postgraduate tutorials, number of membership tutorials.

Presentations/Publications

On-Call take

GENERIC COMPONENTS

Communication & Interpersonal Skills

Objective: To be able to communicate effectively and sensitively with patients, their relatives, carers and with professional colleagues in different situations.

Medical Council Domains of Good Professional Practice: No. 2: Relating to Patients; No 3. Communication and Interpersonal Skills.

KNOWLEDGE

Within a consultation

- How to structure an interview to obtain/convey information; how to identify concerns, expectations, priorities; how to promote understanding, reach conclusions; use/choose appropriate language. Knowledge of procedures/investigations available and alternative options; of strategies to promote compliance through understanding of objectives.
- Able to elicit facts, question using open, followed by closed questions; “active listening”. Gives information clearly, avoids jargon, confirms understanding, is able to encourage co-operation, compliance; obtain informed consent.
- Considerate, shows respect for other’s culture, opinions, patient’s right to be informed, make choices.

In difficult circumstances

- Understands potential areas for difficulty “awkward situations”, knows how and when to break bad news, how to circumvent cultural, language barriers, deal with sensory or mental impairments, how to deal with challenging or aggressive behaviour.
- Able to communicate essential information where difficulties exist, appropriately uses assistant, interpreter, chaperone, relatives. Able to deal with anger, frustration in self and others.
- Selects an appropriate environment; seeks assistance, makes and takes time. Avoids unrealistic optimism or pessimism.
- Respects another’s right to opinions and to accept or reject advice.

With professional colleagues and others

- How best and when to communicate with doctors and other members of the healthcare team; how to provide concise, problem-orientated statement of facts and opinions (*written, verbal or electronic*). Knows legal context status of records and reports, of data protection (*confidentiality*), Freedom of Information (FOI) issues.
- Understands relevance to continuity of care and the importance of legible, accessible, authenticated records. Knows when urgent contact becomes necessary and the appropriate place for verbal, telephone, electronic, written communication.
- Communicates effectively, promptly; recognises roles and skills of other health professionals.
- Able to judge own abilities/limitations and when to seek help or give assistance, advice to others; when to delegate responsibility, when to refer.
- Values perspectives of others contributing to management decisions.

In maintaining continuity of care

- Understands the relevance to outcome of continuity of care, within and between phases of healthcare management.
- The importance of completion of tasks and documentation *e.g. before handover (to another team, department, specialty)*, of identifying outstanding issues, uncertainties.
- Maintains (*legible*) records, is available, contactable, time-conscious, sets (*and attempts to reach*) realistic objectives, identifies/prioritises outstanding problems.
- Alert to avoid potential confusion or misunderstanding through communications failure.

Giving explanations

- The importance of possessing the full facts, and of recognising uncertainty and conflicting evidence on which decisions have to be based.
- How to secure, retain attention avoid distraction. Understand how adults receive information best, the relative value of the spoken, written, visual means of communication, use of reinforcement to assist retention. Risk of information overload.
- Need to interpret results, significance of findings, diagnosis, to explain objectives, limitations, risks of treatment, in terms and by means adjusted to recipients' ability to comprehend.
- Uses language, literature (*leaflets*) diagrams, educational aids and resources appropriately.
- Able to achieve level of understanding necessary to achieve co-operation (*compliance, informed choice, acceptance of opinion, advice, recommendation*).
- Prepared to discuss, repeat information, resolve uncertainty, confusion, respond to questioning, challenge.

Responding to complaints

- Value of hearing and dealing with complaints promptly; the appropriate level, the procedures (*departmental and institutional*); sources of advice, assistance available.
- The importance of obtaining and recording accurate and full information, seeking confirmation from multiple sources.
- Able to establish facts, identify issues and respond quickly and appropriately to a complaint received.
- Accepts responsibility, involves others, consults appropriately.
- Open, prepared to accept criticism, acknowledge shortcomings where they exist, offer an apology.

SKILLS

- Communication
- Conflict resolution
- Dealing with complaints
- Communicate decisions in a clear and thoughtful manner
- Presentation skills

ASSESSMENT & LEARNING METHODS

- 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

Professionalism & Autonomy

Objective: To have the knowledge, skills and attitudes to act in a professional manner at all times and in partnership with patients and colleagues. To develop the attributes of someone trusted to be able to manage complex human, legal and ethical problems.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care; No 2. Relating to Patients; No. 7 Professionalism

KNOWLEDGE

Patient Centred Care;

- The provision of Patient Centre Care should be at the core of the service a doctor provides
- To put the quality and safety of patient care as a prime objective

Behaviour in the workplace;

- **Relationships with patients**
 - Know patients' rights e.g. to be informed sufficiently to enable them to be involved in decisions about their treatment and care. Know boundaries limiting consultations including ethical, duty of care.
 - How to deal with inappropriate behaviour e.g. aggression, threats, violence, harassment, racism.
 - Potential obstacles e.g. cultural, educational, ethical – also preconceptions and prejudices.
 - Ensures confidentiality, respects privacy. Focuses investigation on patient's needs and expectations. Shows sensitivity, develops empathy but avoids personal involvement.
 - Non-judgemental in approaching patient's perceived problems. Prepared to accommodate idiosyncrasies, respecting patients as individuals. Altruistic.
- **Working with colleagues**
 - Know the potential roles and contributions of other specialists – medical, surgical, general practitioners and of other hospital or community-based agencies e.g. social services, also patient support groups and other providers of care.
 - How to arrange cover, safeguarding the handover process, know where responsibility begins and ends, when and where to seek advice.
 - Aware of the extent and limitations of own areas of practice/expertise; recognises and respects others' inputs, capabilities; is able to work co-operatively with other health professionals; refers, delegates appropriately.
 - Realistically schedules and completes tasks and provides full documentation for handover, referral; strives to maintain continuity and standard of care especially across shifts and when arranging rotas and covering absences.
 - Conscientious, reliable, responsible and professional at all times, considerate, shows respect for opinions of others, values good advice, accepts constructive criticism.

Creating an environment conducive to learning and improvement

- Endeavours to foster an environment conducive to learning
- Shares knowledge with trainees, students and other members of the multidisciplinary team
- Encourages and is open to reflective practice
- Seeks out role models and learns from the best practice behaviours of others.
- Participates in quality assurance and clinical improvement systems & training
- Uses evidence based practice in decision making
- Participates in journal clubs, case presentations, grand rounds

Time management & continuity of care

- Is punctual for duty, meetings, handovers and other duties
- Prioritises workload
- Delegates when appropriate to do so
- Knows when to call for help
- Ensures satisfactory handover to ensure continuity of care
- Ensures satisfactory transfer of patients to other medical teams or services when required
- Makes adequate arrangements to cover holidays, study and other leave

Honesty & Integrity

- Acts with honesty and integrity at all times in the delivery of patient care and in working with professional colleagues
- Acts fairly in all situations.

Moral Reasoning & Legal and ethical issues (see also Ethics section)

- Describes and demonstrates an understanding of the main principles of medical ethics including autonomy, justice and confidentiality
- Understands correct procedures for obtaining consent (for treatment, investigations, procedures, research project, post mortem). Legal responsibilities surrounding death/disease certification; regarding mental illness; referrals to coroner; also in criminal cases.
- Understands issues surrounding confidentiality, disclosure/release of information; discovery (FOI) of records. Legal and ethical issues in context of resuscitation, organ donation/transplantation.
- Able to complete certificates, documents, respects patient's wishes, rights, but accepts a doctor's (legal) obligations to society. Able to obtain/provide in full, information relevant to consent.
 - Alert to possible legal implications and ethical aspects of actions
 - Ensures privacy when discussing sensitive issues
 - Seeks timely advice where patient abuse is suspected

Team working and leadership

- How teams work, know how to assign individual and collective responsibilities which respect an individual's (*professional*) status within a team. How to set goals, initiate/ coordinate action, audit performance, give feedback, e.g. developing guidelines, protocols.
- Positively contributes to planning, motivating, organising activity, employs negotiating, human relations, interpersonal skills appropriately.
- Able to set and apportion individual and team objectives, energise and fortify others to sustain efforts to achieve goals, appraise performance.
- Co-operates as team player; respects the contributions, expertise of others; tolerant but determined as team leader.
- Adopts a holistic approach to patient care
- Knowledge of principles of audit and self assessment

Health-Physical health and Handling Stress & Fatigue

- Know how stress can affect performance, how to reduce stress and develop coping mechanisms to deal with pressure. When to enlist support.
- Understand the relevance of personal health to performance at work: the risks of self-medication, potential for drug and alcohol abuse: know that support is available from Occupational Health Services.
- Able to recognise, cope with stress; asks for help when necessary, is aware of responsibility (*to others*) of having health problems dealt with. Willing to take time off; and, if necessary, re-train/redevelop skills.

Commitment to Continuous Improvement in Health care Systems

- Understands the principles of quality and safety improvement
- Participates in quality improvement activities, including standard setting, follows established practice guidelines, research and audit
- Undergoes training in this area where appropriate

SKILLS

- Professionalism
- Multidisciplinary team working
- Ethical issues
- Leadership
- Time management
- Stress management

ASSESSMENT & LEARNING METHODS

- RCPI Ethics programme: Ethics I, Ethics II, Ethics III and Ethics IV (mandatory)
- 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
- Leadership Programme (Year 3 – 5)

Maintaining Good Practice

Objective: To adopt the habits of lifelong learning, and to appreciate and implement the practices of clinical governance.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care, No. 6 Scholarship, No 7 Professionalism, No 8 Clinical Skills

KNOWLEDGE

Lifelong learning

- Aware of CME/CPD obligations, systems/process for competence assurance/revalidation. Understand the role of appraisal, assessment methods available their application.
 - Sources, resources, opportunities for self-directed and group learning including IT. Know how adults learn.
 - Recognises and makes effective use of learning opportunities, maximises the potential for personal study, plans personal development.
 - Self motivated, inquisitive, eager to learn.

Application of clinical governance

- Understand the principles of evidence-based practice, clinical audit and effectiveness, the development/application of best-practice protocols.
- Able to appraise and apply data from research, and to use audit to establish best practice and clinical effectiveness. Utilizes and practices evidence-based medicine.
- Accepts the need for reflective practice and to critically evaluate own work and make changes.

Risk management

- Systems, procedures for identifying (*clinical*) risk; correct procedures and action when things go wrong; how to handle complaints.
- Employes procedures and policy for accidents, injuries; for confirming skill and staffing levels, arranging cross-cover, on-call, for supervision.
- Potential complications or side effects of treatments, procedures and investigations; importance of accurate, recent information and available records. The assessment of risk, relative risk.
- Able to assess, anticipate, risks; recognise failure. Openly discuss bad outcomes, locate system weakness, analyse critical incidents.
- Able to discuss potential risks *e.g. with patients, to analyse and balance risk with benefit*. Able to learn from previous experience, from complaints received, errors.
- Is honest in recognising misjudgements.

Evidence, audit, guidelines

- 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.
- Capable of accessing relevant data (library, internet use). Able to appraise available evidence critically.
- Able to complete an audit cycle relevant to practice; to develop, evaluate, review and update a set of guidelines.
- Uses evidence / guidelines appropriately having due regard for the individual.

SKILLS

- Personal development planning
- Evidence -based practice
- Risk Management
- Audit
- Research

ASSESSMENT & LEARNING METHODS

- Record of attendance at journal clubs, medical grand rounds, SpR teaching sessions, local and national academic meetings
- Record of attendance at CME accredited international meetings
- Attendance at local radiology conferences
- Time spent in laboratory or attendance at laboratory conferences
- Audit Study Day (Year 1)
- Annual Audit
- Leadership Skills Course (Year 3- 5)
- Research Publications
- Consultant feedback at annual assessment
- Workplace based assessment e.g Mini-Cex, DOPS, CBD

Standards Of Care

Objective: To be able to assess patients' problems investigate and treat them appropriately, efficiently, and consistently over time.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care; No. 2 Relating to Patients; No. 3 Communication and Interpersonal Skills; No. 4 Collaboration and Teamwork; No. 5 Management (including Self Management; No. 8 Clinical Skills,

KNOWLEDGE

History taking and examination

- Diagnostic significance of patterns of symptoms, pathophysiology and physical signs.
- Able to take and analyse a clinical history and perform a reliable and appropriate examination, arrive at a differential diagnosis.
- Exhibit empathy and show consideration for all patients, their impairments and attitudes irrespective of cultural and other differences.

Investigation, indications, risks, cost-effectiveness

- Understand the pathophysiological basis of the investigation undertaken.
- Know and be able to explain the procedure for the commonly used investigations, preparations, effects or risks, the reason for the investigation, the information sought and its relevance to management.
- Sensitivity and specificity of results, possible interferences, artefacts.
- Able to understand significance, interpret and explain results of investigations.
- Shows logical approach in choosing, sequencing and prioritising investigations.
- Able to liaise, discuss, negotiate effectively with those undertaking the investigation.
- Careful to select investigations appropriately, considering (*patients'*) needs, risks, value.

Treatment and management of disease

- Understand the pharmacology, therapeutics of treatments prescribed, choice of routes of administration, dosing schedules, compliance strategies; the objectives, risks and complications of treatment cost-effectiveness. Natural history of diseases; quality of life concepts.
- Able to assess accurately patient's needs, to prescribe administer, deliver, arrange treatment; recognise and deal with reactions / side effects. Sets realistic therapeutic goals, utilizes rehabilitation services, palliative care appropriately.
- Able to discuss rationale, objectives, risks and alternative options openly, taking into account patients' / their relatives' attitudes, beliefs or other philosophical concepts.
- Recognises that the degrading effects of illness, especially incapacity which is chronic, impacts on relationships and family, having financial as well as social effects.
- Discusses, plans, delivers care appropriate to patient's needs and wishes.

Disease prevention and health education

- Disease notification; methods of collection and sources of data. Screening for disease, (*methods, advantages and limitations*). Health promotion and support agencies; means of providing and sources of information for patients.
- Risk factors, preventive measures, strategies applicable to smoking, alcohol, drug abuse, lifestyle changes.
- Able to advise on and promote lifestyle change, stopping smoking, control of alcohol intake. Able to assess and explain risk, encourage positive e.g. *immunisation* and negative preventive measures.

- Enlists / requires patients' involvement in solving their health problems, provides information, education. Avails of support provided by voluntary agencies and patient support groups, as well as expert services e.g. detoxification / psychiatric services.
- Non-judgemental approach to patient's problem: values contributions of health education and disease prevention to health in a community.

Notes, records, correspondence

- Understand the functions of medical records, their value as an accurate up-to-date commentary and source of data.
- Understand the need and place for problem-orientated discharge notes, letters, more detailed case reports, concise out-patient reports, focused reviews.
- Compiles adequate case notes, with results of examinations, investigations, procedures performed, sufficient to provide an accurate, detailed account of the diagnostic and management process and outcome. Provides concise, informative progress reports orally.
- Maintains legible, authenticated records, uses dictation, telephone, e-mail appropriately.
- Appreciates importance of up-to-date, accurate information, its availability, transfer and the need for communicating promptly *e.g. with primary care*.

Time management and decision taking

- How to prioritise demands, respond to patients' needs, sequence urgent tasks. Understand how to establish (*clinical*) priorities *e.g. for investigations, intervention; how to set realistic goals; understand the need to allocate sufficient time, know when to seek help*.
- Understands the need to complete tasks, reach a conclusion, make a decision, take action with allocated time.
- Able to recognise when falling behind and can adjust accordingly; able to cope with changing circumstances, variable demand, prepared to re-prioritise and ask for help.
- Able to collate evidence, summarise, recognise when objective has been gained
- Knows how and when to conclude, disengage.
- Has realistic expectations of own and of others' performance. Time-conscious, punctual.

Relevance of professional bodies

- Understand 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*.
- Actively engages with professional/representative/specialist bodies.
- Values the breadth and depth of experience that can be accessed by associating with professional colleagues.

SKILLS

- History taking and examination
- Appropriate use of investigations
- Treatment and management of disease
- Disease notification
- Health promotion
- Screening
- Study Day - Disease prevention & health education
- Personal and professional organisation and planning; goal setting, time management

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)
- Study Days
- Annual Audit

Patient Safety

Objective: To ensure patient safety is at the core of the health service provided by designing safe systems and processes of care and understanding the role of healthcare systems and human factors in adverse events and errors.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care.

KNOWLEDGE

Safe Systems, Competency and Safe practice

- Understands multiple factors involved in failures;
- Safe Healthcare Systems-a Safe working environment
- The relationship between 'Human factors' and patient safety
 - Safe working practice. Role of procedures and protocols in optimal practice
- Patient safety relevance in health care and its role in minimizing the incidence and impact of adverse events and maximize recovery from them.
- Knowledge and understanding of the Swiss cheese model.
- Health care errors and system failures; human and economic costs; blame culture

Communication

- Disclosure – know the principles of open disclosure
- Knowledge and understanding of valid consent
- Teamwork
- Continuity of care

Near Misses and adverse events

- Knowledge of preventing and managing near misses and adverse events. Incident reporting; root cause analysis. Understanding and learning from errors
- Understands and manages clinical risk
- Manages complaints
- Knows when and how to report a near miss or adverse event

Quality improvement

- Standardises common processes and procedures – checklists, vigilance
- Evidence based care
- Infection control; healthcare associated infections
- Patient safety and invasive procedures.
- Improvement medication safety; safe prescribing; common medication errors
- Ethical behaviour

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
- Understand how and why systems break down and why errors are made
- Be able to learn from errors and near misses to prevent future errors
- Know how to use relevant information from complaints, incident reports, litigation and quality improvement reports to control risks
- Minimise infection through improved infection control practice
- Minimise errors during invasive procedures by developing and adhering to best-practice guidelines for safe surgery.
- Minimise medication errors by practicing safe prescribing principles

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):
prioritization of patient safety in practice
- RCPI Patient safety on-line course (recommended)
- Completion of infection control induction in the workplace

Therapeutics and Safe Prescribing

Objective: To progressively develop your 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: No. 1 Patient Safety and Quality of Patient Care.

KNOWLEDGE

- Indications, contraindications, side effects, drug interaction, dosage and route of administration of commonly used drugs
- Knowledge of prescribing for common medical conditions
- Knows range of adverse drug reactions to commonly used drugs, including complementary medicines
- Identifies common prescribing hazards
- Identifies high risk medications
- Knows drugs requiring therapeutic drug monitoring and interprets results
- Knows the effects of age, body size, organ dysfunction and concurrent illness or physiological state e.g. pregnancy on drug distribution and metabolism relevant to the trainees practice
- Recognise the roles of regulatory agencies involved in drug use, monitoring and licensing (e.g. IMB , and hospital formulary committees)
- Knows procedure for monitoring, managing and reporting adverse drug reaction

SKILLS

- Knows how to write a prescription
- Prescribes appropriately in the elderly, childhood, pregnancy and breast feeding
- Make appropriate dose adjustments following therapeutic drug monitoring, or physiological change (e.g. deteriorating renal function)
- Review the continuing need for long term medications relevant to the trainees clinical practice
- Anticipate and avoid defined drug interactions, including complementary medicines
- Advise patients (and carers) about important interactions and adverse drug effects
- Provide comprehensible explanations to the patient, and carers when relevant, for the use of medicines
- Open to advice and input from other health professionals on prescribing
- Participates in adverse drug event reporting

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): prioritization of patient safety in prescribing practice

Infection Control

Objective: To be able to manage and control infection in patients, including controlling the risk of cross-infection, appropriately managing infection in individual patients, and within the wider community to manage the risk posed by communicable diseases.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care; No. 5 Management (including Self Management).

KNOWLEDGE

Within a consultation

- Understand the principles of infection control as defined by the HIQA
- How to minimize the risk of cross-infection during a patient encounter by adhering to best practice guidelines available
- Treat and manage infection in the individual patient
- Understand the principles of preventing infection in high risk groups e.g managing antibiotic use to prevent Clostridium difficile) Knowledge and understanding the local antibiotic prescribing policy
- Aware of infections of concern, eg MRSA, C Difficile,
- Understands best practice in isolation precautions
- Knows when and how to notify relevant authorities in the case of infectious disease requiring disclosure

In surgery or during an invasive procedure

- Understands the increased risk of infection in these patients and adheres to guidelines for minimizing infection in such cases
- Knows the guidelines for needle stick injury prevention and management

During an outbreak

- Adheres to guidelines for minimizing infection in the wider community in cases of communicable diseases and seeks expert opinion or guidance from infection control specialists where necessary

SKILLS

- Practices aseptic techniques, hand hygiene
- Follows guidelines for infection control and management
- Prescribes antibiotics according to antibiotic guidelines Encourages all staff, patients and relatives to observe infection control principles
- Communicates effectively with patients regarding treatment and measures recommended to prevent re-infection or spread
- Collaborates with infection control colleagues to manage more complex or uncommon types of infection including those requiring isolation eg transplant cases, immunocompromised host
- In the case of infectious diseases requiring disclosure:
 - Has knowledge of the diseases requiring disclosure and undertakes notification promptly
 - Collaborates with external agencies regarding reporting, investigating and management of notifiable diseases .
 - Able to advise patients on lifestyle change to minimize the risk of re-infection or spread of infection,
 - Enlists / requires patients' involvement in solving their health problems, provides information, education.
 - Avails of support provided by voluntary agencies and patient support groups, as well as expert services where appropriate

- Non-judgemental approach to patient's problem:
- Utilises and values 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

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: No.1 Patient Safety and Quality of Patient Care; No. 3 Communication and Interpersonal Skill; No. 4 Collaboration and Teamwork; No. 5 Management (including Self Management); No 6 Scholarship.

KNOWLEDGE

Demonstrating Personal Qualities

- Develops self-awareness and understanding of personal style and its impact on others
- Efficiently and effectively manages 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
- Acts with integrity and honesty with all people at all times

Working with others

- Develops networks to expand knowledge and sphere of influence
- Builds and maintains key relationships. Adapts style to work with different people and different situations
- Encourages contributions from others including patients, carers, members of the multidisciplinary team and the wider community
- Aware of own personal style and other styles and their impact on team performance. Understands the importance of good communication in teams and the role of human factors on effectiveness and patient safety

Managing Services

- Knows and understands the structure and function of Irish Health Care System
- Aware of the challenges of managing in healthcare
 - Role of Governance
 - Clinical Directors
- Can contribute to the planning and design of services
- Knows and understands the financing of the health service
 - Preparing a budget
 - Defining value
 - Managing resources
- Knows and Understands the importance of human factors in service delivery.
 - Manages staff training, development and education
- Managing performance
 - Performs staff appraisal and deals effectively with poor staff performance
 - Rewards and incentivises staff for quality and efficiency

Improving Services

- Ensures patient safety by adopting and incorporating a patient safety culture
- Critically evaluates where services can be improved by measuring performance, and acting to raise standards where possible Encourages a culture of improvement and innovation
- Facilitating transformation by creating and living a vision

Setting Direction

- Identifies the external and internal drivers setting the context for change
- Applies knowledge and evidence of systems and resource management to guide service development
- Makes decisions using evidence based medicine and performance measures
- Evaluates 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 Being able to managing resources and people
- Managing performance, performance indicators
- How to write and develop a service plan
- How to prepare and manage a budget

ASSESSMENT & LEARNING METHODS

- Communication course (Year 1)
- Leadership course (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.

Management Information Systems & Management Skills

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: No. 5 Management.

KNOWLEDGE

Health service structure, management and organisation

- The administrative structure of the Health Service, services provided in Ireland and their funding. Department of Health, HSE and Hospital Management structures and systems. The National Regulatory Bodies, health agencies and patient representative groups.
- Can explore, direct, pursue a project, negotiating through the relevant department at an appropriate level. Able to “*operate the system*”. Understand the need for business plans, annual hospital budgets, the relationship between the hospital and PCCC.
- Recognises the advantage of understanding the administrative machinery of the Health Services.

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. Know of the sources which can provide information relevant to national or to local services, publications available.
- Able 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.

Obtaining information of value in maintaining medical knowledge with a view to delivering effective clinical care

- Understands the contribution that current, accurate knowledge can make to establishing clinical effectiveness, best practice, treatment protocols. Know sources providing updates, literature reviews and digests.
- Able 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*.
- Embraces principles of clinical governance.

Delegation skills, empowerment and conflict management

- How to assess, develop personal effectiveness, improve negotiating, influencing and leadership skills. How to manage time more efficiently, deal with pressure and stress. How to motivate and operate within a multidisciplinary team.
- Able to adjust to change, apply management/leadership, negotiating skills to manage change. Self-awareness, able to recognise strengths and weaknesses.
- Appropriately values and uses management techniques and seeks to improve these skills and personal effectiveness.

Leadership

- How to maintain, improve working relationships within a team; appropriately recognise roles, skills, status. Know when and what to delegate, provide support, appraise.
- Motivates and empowers others, knows when help is needed. Able to foresee, forestall, manage conflict.
- Sensitive to and aware of the needs of others.

SKILLS

- Risk Management
- Leadership skills
- Time management
- Delegation skills
- Conflict management
- Clinical governance
- Audit

ASSESSMENT & LEARNING METHODS

- Communication course (Year 1)
- Audit course (Year 1)
- Leadership course (Year 3 – 5)
- Annual audit
- Consultant feedback at annual assessment on management and leadership skills
- Involvement in hospital committees

Teaching & Research

Objective: To recognise the opportunities for personal/professional development that exist for medical teachers, educational supervisors and from involvement with research.

Medical Council Domains of Good Professional Practice: No. 6 Scholarship.

KNOWLEDGE

Teaching, educational supervision and assessment

- Know principles of adult learning, teaching and learning methods available and strategies; educational principles directing assessment, methods, formative vs. summative. Value of regular appraisal / assessment in informing training process.
- Able to identify educational objective. Able to design and deliver an effective teaching event, both small and large group. Uses technology / materials effectively. Adequate preparation, timekeeping.
- Appreciates benefit to learner is key objective of teaching sessions, key resource is adequate knowledge of subject.

Research, methodology and critical evaluation

- How to design and resource a research project, how to obtain ethical approval. Research methodology, valid statistical analysis, writing and publishing papers. Ethical considerations, declaring an interest.
- Reviewing the literature, framing the question, designing a project capable of providing an answer. Able to derive results and conclusions, able to write or present a paper.
- Intellectually honest.
- Present data in a clear, honest and critical fashion.

SKILLS

- Bed-side undergraduate and post graduate teaching
- Lectures
- Ethics of research
- Presentation and writing skills

Ethics

Objectives: *Medicine is predominantly concerned with the diagnosis and treatment of illness. Besides the pathological processes involved and the physical impact of each condition, the requirements for practising medicine in a fair, competent and ethical manner must be understood before a doctor is ready for independent practice.*

*Upon satisfactory completion of specialist training, 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 Irish healthcare system.*

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care; No. 3 Communication and Interpersonal Skill; No. 6 Scholarship; No. 7 Professionalism.

KNOWLEDGE

- Knowledge of 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 informational exchange with individual patients and their families and teamwork with other health professionals, the scientific community and the public.
- Professionalism.

Ethics I: Professionalism

Objectives: *To explore the relationship between ethics of healthcare delivery and professionalism including the challenges and the impact of current developments*

KNOWLEDGE

- Knowledge, skills, attitudes and behaviours expected by patients and society from individuals during the practice of their profession (as a doctor).
 - The skills of lifelong learning and the maintenance of competence
 - Information literacy
 - Ethical behaviour
 - Integrity, honesty
 - Altruism
 - Service to, justice and respect for others
 - Adherence to professional code
- Leadership and Accountability
- Role of the Clinical Director
- Dignity & Respect
- Conflicts of interest
- Personal scope of practice & boundaries
- Adverse Events- open communication when adverse events occur
- Discussing errors

Ethics II: Ethics & Law

Objectives: *To explore the relationship between ethics of healthcare and law including the challenges and the impact of current developments*

KNOWLEDGE

- Ethical patient care and Irish Law including:
- Informed consent
- Consent and capacity
- Disclosure
- Medical Practitioner's Act
- Malpractice
- Misconduct
- Confidentiality
- Data protection
- Coroner's System
- Medical Council Ethical Guide

Ethics III: Research

Objectives: *To explore the ethics of healthcare research including the challenges and the impact of current developments*

KNOWLEDGE

- Principles of research
- Un-ethical conduct
- Genetics
- The Importance of Research in Health Care
- Dept of Health and Children Research Action Plan-implications for researchers
- Reasons for Research being Ethically Regulated
- Genetics
- Researching vulnerable groups
- Data Research/Protection and confidentiality
- Patient information bill
- Human Tissue Act
- Role of Research Ethics Committee
- Conflict of interest

Ethics IV: End of Life

Objectives: *To explore the ethics of end of life challenges and the impact of current developments*

KNOWLEDGE

- Euthanasia/Terminal Sedation
- Artificial nutrition/hydration
- Resuscitation issues
- Advanced Directives
- Organ donation
- Death Certification/Coronial System
- Prolongation
- Futility
- Decision making process

SKILLS

- Recognises the dying patient
- Communicates bad news sensitively
- Explores the options for managing the dying patient including DNR and advanced directives
- To incorporate the above ethical concepts in their everyday practice

ASSESSMENT & LEARNING METHODS

- RCPI Ethics programme: Ethics I, Ethics II, Ethics III and Ethics IV (Mandatory)
- Note of examples of ethical dilemmas encountered in training
- Consultant feedback at annual assessment
- Workplace based assessment e.g CBD
- Educational supervisor's reports on observed performance (in the workplace)

Dealing with and Management of Acutely ill Patients in Appropriate Specialties

Objective: To have the knowledge and skills to be able to assess and initiate management of patients presenting as emergencies with the problems outlined below. For each scenario, trainees should in particular gain knowledge and skills to recognise the critically ill and:

Immediately assess and resuscitate if necessary.

Formulate a differential diagnosis, treat and/or refer as appropriate.

Select relevant investigations and accurately interpret reports.

Communicate the diagnosis and prognosis – see Generic Skills.

Medical Council Domains of Good Professional Practice: No. 1 Patient Safety and Quality of Patient Care, No. 8 Clinical Skills

KNOWLEDGE

Management of acutely ill patients with medical problems

- Know how potentially life-threatening problems present; know the indications for urgent intervention, additional information necessary to support action (e.g. results of investigations) and treatment protocols (see Addendum).
- Know when to seek help, refer/transfer to another specialty. Know ACLS protocols. Know the ethical and legal principles relevant to resuscitation and DNR orders.
- Able to manage acute medical intake, to receive and refer patients appropriately, to interact efficiently and effectively with other members of the medical team, accept/undertake responsibility appropriately.
- Able 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*.
- Able to convey essential information quickly to relevant personnel: maintains legible up-to-date records documenting results of investigations. Lists of problems dealt with or remaining, identifies areas of uncertainty; ensures safe handover.
- Remains calm, delegates appropriately, ensures good communication. Tries to meet patient's/ relatives' needs and concerns, respecting their views and right to be informed.

Discharge planning

- Distinguish between illness and disease, disability and dependency. Understand the potential impact of illness and impairment on activities of daily living, family relationships, status, independence. Be aware of quality of life issues.
- Know role and skills of other members of the healthcare team, how to devise and deliver a care package. Know the support available from other agencies e.g. *specialist nurses, social workers, community care*. Understand the principles of shared care with the general practitioner service.
- Show awareness of the pressures/dynamics within a family, the economic factors delaying discharge but recognise the limit to benefit derived from in-patient care. Establish liaison with family and community care, primary care, communicate / report to agencies involved.
- Demonstrates an awareness of the wide ranging effects of illness and the need to bridge the gap between hospital and home.

SKILLS

- ACLS
- Deal with common medical emergencies
- Interpretation of blood results, ECG/Rhythm strips, Chest X-Ray, CT Brain
- Give clear instructions to both medical and hospital staff
- Order relevant follow up investigations
- Discharge planning
- Knowledge of patient pathways
- Knowledge of HIPE
- Multidisciplinary team working
- Communication
- Early regular and on-going consultation with family members and primary care physicians

ASSESSMENT & LEARNING METHODS

- Certified ACLS
- Record of on call
- miniCEX (acute setting) - each year
- Case based discussions
- Consultant feedback at annual assessment

**Specialty Section
Respiratory Medicine**

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

- 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
- Chest aspiration.
- Bronchoscopy.

ASSESSMENT & LEARNING METHODS

- Self directed - Journals/Books
- Study Day
- DOPS:
 - Pleural biopsy
 - Chest aspiration.
 - Bronchoscopy

Assessment at SpR year 4 -5

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
- Study Day

Assessment at SpR Year 4 - 5

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
- Know how and be competent to 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

Pleural Ultrasound and thoracentesis

- Indications of pleural imaging.
- Techniques of pleural biopsy.
- Patient consent and explanation of risks and benefits.
- Knowledge of appropriate guidelines.
- Safely perform pleural ultrasound and thoracentesis. A minimum of 10 should be recorded in the ICHMT Training Record.
- 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. A minimum of 20 should be inserted and recorded in the ICHMT Training Record. Initially trainee will be supervised

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.
- Document 50 patients in the ICHMT Training Record

Tuberculin skin tests

- Types of tuberculin tests.
- Indications of tuberculin tests.
- How to read tuberculin tests.
- Appropriate guidelines.
- Perform and read tuberculin tests.
- Document 30 patients in ICHMT Training Record.

Skin tests to demonstrate "allergy":

- Indications for skin tests.
- How to perform skin tests.
- Perform and read skin test to common allergies.
- (Document 30 patients skin tested for ICHMT Portfolio)
- 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 fiberoptic 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
- Interventional techniques including fluorescence bronchoscopy, brachytherapy, endobronchial radiotherapy, laser treatment, electrocoagulation, cryotherapy, photodynamic therapy and stent placement
- Rigid bronchoscopy
- 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 ECG and echocardiography (level 2#)
- 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
- Right heart catheterisation
- Interpretation of flight/altitude assessment results
- Fluoroscopy
- Lung compliance measurement
- 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
 - Tuberculin Skin Tests
 - Skin tests to demonstrate allergy
 - Intercostal tube placement
 - Pleural Biopsy

Record of cases:

- Polysomnography (minimum number 50)
- Interpret sleep studies (minimum number of SOPSG 20 limited sleep studies)
- Fibroptic bronchoscopes: A minimum of 200 should be recorded in the ICHMT training record. Initially the trainee will be and an observer and then perform 30 – 40 bronchoscopes under supervision.

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 antibody
- 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: Ventilation
- Case based discussion
- Outpatient clinics and laboratory sessions
- Study Day: Asthma
- OSCE Topics: Causes, investigation and differential diagnosis of asthma

Assessment at SpR Year 1 - 3

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.
- Insert laryngeal airway
- Broncho-alveolar lavage and lung biopsy
- Nasal provocation testing, bronchoprovocation testing, sputum induction
- Non-invasive investigations (including allergen skin tests, serum allergen tests)
- Pulmonary function tests
- Control of risk factors
- Insertion of LMA, use of epi-pen

ASSESSMENT & LEARNING METHODS

- DOPS: Insert laryngeal airway
- Study Day
- Advanced training in special cases may be needed

Assessment at SpR Year 4 - 5

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

Assessment at SpR Year 4 - 5

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

Assessment at SpR Year 1-3

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

Assessment at SpR Year 1- 2

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:
 - Ventilation
 - Bronchoscopy
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of bronchiectasis
 - Skin testing
 - Respiratory function testing

Assessment at SpR Year 1 – 3

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.

Assessment at SpR year 4 – 5

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, rigid bronchoscopy
- Endobronchial ultrasound
- Transbronchial lung biopsy
- Transbronchial needle aspiration
- Percutaneous needle biopsy
- Fine needle lymph node aspiration for cytology
- Pleural ultrasound imaging
- Thoracentesis
- Interventional bronchoscopic techniques
- Medical thoracoscopy
- Pleural drainage
- Chemotherapy, management of adverse events
- Palliative care

ASSESSMENT & LEARNING METHODS

- Self directed learning
- Study Day
- Case based discussion
- 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

Assessment at SpR Year 1

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

Assessment at SpR Year 1 - 3

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

Assessment at SpR Year 1 - 3

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)
- Thoracentesis (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.

Assessment at SpR Year 1- 3

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 jiroveci* (*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.

Assessment at SpR Year 1 - 3

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. Kansasii*, 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, thoracocentesis, bronchial-, transbronchial-, percutaneous-, pleural- and lymph node biopsy)
- Tuberculin skin testing
- 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.
 - Tuberculin skin testing.
 - Respiratory function testing.

Assessment at SpR Year 1 - 3

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 defense, 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:
 - Ventilation
 - Bronchoscopy.
- OSCE Topics:
 - Investigation, differential diagnosis, treatment and management of patients with HIV lung disease.
 - Respiratory function testing

Assessment at SpR year 1 – 3

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 initiation of CPAP

ASSESSMENT & LEARNING METHODS

- Study Day : Sleep related disorders

Assessment at SpR Year 4 - 5

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:
 - Chest drain
 - Seldinger drain.
 - Bronchoscopy.
 - Pleural ultrasound
- Study Day
- OSCE Topics:
 - Respiratory function testing.

Assessment at SpR Year 4 - 5

Pulmonary Vascular Diseases

Objective: To be able to carry out specialist assessment and treatment of pulmonary vascular disease e.g. pulmonary embolism 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.

Assessment at SpR Year 4- 5

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

- Case Based discussion
- Study Day

Assessment at SpR Year 3 - 4

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

- Case Based Discussion
- 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 (Trainees may care for inpatients on ICU and high dependency units during their clinical placements, trainees must also have at least 60 working days in an intensive care unit, ideally in one block. If this is not possible, 4 units of 15 consecutive working days are acceptable. Trainees may have to be seconded to a specialised unit to gain experiences, as this is not available in all placements).

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)

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)
- Good organisational skills
- Good team leading skills

Patient-Oriented Approach According to Symptoms and Signs

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

Psychological Factors and Quality of Life in Respiratory Diseases

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

Public Health and Health Costs in Europe

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.* asbestosrelated 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

Respiratory Epidemiology

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

Minimum Requirements for Training

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Section 1 - Training Plan				
Weekly Timetable (Sample Weekly Timetable for Post/Clinical Attachment)	Required	1	Training Post	Form 045
Personal Goals Plan (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer)	Required	1	Training Post	Form 052
On Call Rota	Required	1	Training Post	Form 064
Section 2 - Training Activities				
Outpatient Clinics				
General Respiratory (at least 1 Respiratory Outpatient Clinic per week)	Required	40	Year of Training	Form 001
Lung Cancer	Required	6	Training Programme	Form 001
Asthma	Required	6	Training Programme	Form 001
Cystic Fibrosis	Required	6	Training Programme	Form 001
COPD	Required	6	Training Programme	Form 001
Interstitial Lung Disease	Required	6	Training Programme	Form 001
Sleep	Required	6	Training Programme	Form 001
TB	Required	6	Training Programme	Form 001
Ward Rounds/Consultations				
Consultant Led (minimum 1 per week)	Required	40	Year of Training	Form 002
Independent SpR led (1 per week)	Required	40	Year of Training	Form 002
Consultations	Desirable	1	Year of Training	Form 002
Emergencies/Complicated Cases (Diagnosis of nature of problem and its presentation, emergency case investigation)				
	Desirable	1	Training Programme	Form 003
Procedures/Practical Skills/Surgical Skills				
Bronchoscopy (minimum 200 independently performed)	Required	200	Training Programme	Form 004
Intercostal tube placement (minimum 40 over training; ultrasound guided chest drain or pleural aspiration)	Required	40	Training Programme	Form 004
Full Pulmonary Function tests (minimum 250 reported over training)	Required	250	Training Programme	Form 004
Full Polysomnography (minimum 50 reported during training)	Required	50	Training Programme	Form 004
Sleep Studies (50 limited home sleep studies, 10 MSLT and Setup of 20 CPAP)	Required	80	Training Programme	Form 004
Non-invasive ventilation (minimum of 80 during training)	Required	80	Training Programme	Form 004

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Tuberculin skin tests (minimum of 80 during training)	Required	80	Training Programme	Form 004
Skin tests to demonstrate 'allergy' (minimum observe or perform 10 during training)	Required	10	Training Programme	Form 004
Imaging techniques (CT, PET etc. Observe minimum 10 during training)	Required	10	Training Programme	Form 004
EBUS (50 over training)	Required	50	Training Programme	Form 004
Additional/Special Experience Gained				
Thoracic Surgery (3 months in close liaison, secondment if necessary)	Desirable	1	Training Programme	Form 005
Radiotherapy & Oncology (close liaison)	Desirable	1	Training Programme	Form 005
Relatively Unusual Cases	Desirable	1	Training Programme	Form 019
Chronic Cases/Long term care	Desirable	1	Training Programme	Form 066
ICU/CCU Cases				
Intensive Care (3 months secondment or 12 months shared patient care)	Desirable	1	Training Programme	Form 090
Management Experience	Desirable	1	Training Programme	Form 110
Section 3 - Educational Activities				
Mandatory Courses				
Mastering Communications (Year 1)	Required	1	Training Programme	Form 006
Audit (Year 1)	Required	1	Training Programme	Form 006
Leadership skills (Year 3+)	Required	1	Training Programme	Form 006
Ethics I: Professionalism	Required	1	Training Programme	Form 006
Ethics II: Ethics & Law	Required	1	Training Programme	Form 006
Ethics III: Research	Required	1	Training Programme	Form 006
Ethics IV: End of Life	Required	1	Training Programme	Form 006
ACLS	Required	1	Training Programme	Form 006
Non – Mandatory Courses	Desirable	1	Training Programme	Form 007
Study Days	Required	6	Year of Training	Form 008
See examples: (Asthma, COPD, Lung Cancer, Pulmonary Infections, Tuberculosis, Diffuse Interstitial Lung Disease, Sleep Related Disorders, Pulmonary Vascular Disease, Disorders of Pleura and Mediastinum, Lung Transplantation, Pulmonary Rehabilitation, Smoking Cessation, Intensive Care and High Dependency Units (HDU), Genetic and Development Lung Disease, Palliative Care, Respiratory Anatomy, Physiology and Microbiology, Imaging Techniques, Allergic Lung Disorders and Anaphylaxis)				
National/International meetings (attend minimum 1 per year)	Required	1	Year of Training	Form 010
In-house activities				
Grand Rounds (minimum 1 per month)	Required	10	Year of Training	Form 011

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Journal Club	Required	10	Year of Training	Form 011
MDT meetings	Required	40	Year of Training	Form 011
Radiology Conference	Desirable	1	Year of Training	Form 011
Pathology Conference	Desirable	1	Year of Training	Form 011
Lecture	Desirable	1	Year of Training	Form 011
Seminar	Desirable	1	Year of Training	Form 011
Examinations				
HERMES	Desirable	1	Training Programme	Form 012
Formal Teaching Activity (1 formal teaching session per month from the categories below:)	Required	10	Year of Training	Form 013
Lecture				
Tutorial				
Bed side Teaching				
Research	Desirable	1	Training Programme	Form 014
Audit activities (1 per year to start or complete)	Required	1	Year of Training	Form 015
Publications	Desirable	1	Year of Training	Form 016
Presentations	Required	1	Year of Training	Form 017
Committee Attendance	Desirable	1	Training Programme	Form 063
Additional Qualifications	Desirable	1	Training Programme	Form 065
Section 4 - Assessments				
CBD	Required	1	Year of Training	Form 020
See examples: (Asthma, Pulmonary Rehabilitation, Smoking Cessation)				
DOPS				
Bronchoscopy	Required	1	Training Programme	Form 021
Lung Function tests	Required	1	Training Programme	Form 021
Sleep studies	Required	1	Training Programme	Form 021
Non-invasive ventilation	Required	1	Training Programme	Form 021
Tuberculin skin tests	Required	1	Training Programme	Form 021
Skin tests to demonstrate allergy	Required	1	Training Programme	Form 021
Intercostal tube placement	Required	1	Training Programme	Form 021
Non-invasive ventilation, pulmonary function tests interpretation	Required	1	Training Programme	Form 021
Ventilation	Required	1	Training Programme	Form 021
Seldinger chest drain with pleural ultrasound guidance and chest aspiration	Required	1	Training Programme	Form 021
Insert larngeal airway	Required	1	Training Programme	Form 021

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Causes, investigation, differential diagnosis of:				
Asthma	Required	1	Training Programme	Form 021
COPD	Required	1	Training Programme	Form 021
Respiratory failure	Required	1	Training Programme	Form 021
Lung Cancer	Required	1	Training Programme	Form 021
Tuberculosis (TB)	Required	1	Training Programme	Form 021
Pulmonary infections	Required	1	Training Programme	Form 021
ICP	Required	1	Training Programme	Form 021
HIV and the Lung	Required	1	Training Programme	Form 021
Bronchiectasis	Required	1	Training Programme	Form 021
Cystic Fibrosis	Required	1	Training Programme	Form 021
Interstitial lung disease	Required	1	Training Programme	Form 021
Manifestations of systemic diseases	Required	1	Training Programme	Form 021
Occupational and environmental lung disease	Required	1	Training Programme	Form 021
Pulmonary vascular disease	Required	1	Training Programme	Form 021
Lung Transplantation	Required	1	Training Programme	Form 021
OSCE: Data Analysis				
Respiratory function testing	Required	1	Training Programme	Form 021
Sleep studies	Required	1	Training Programme	Form 021
Pharmacology	Required	1	Training Programme	Form 021
Ventilation	Required	1	Training Programme	Form 021
Tuberculin skin testing	Required	1	Training Programme	Form 021
Right heart catheterisation	Required	1	Training Programme	Form 021
Echo	Required	1	Training Programme	Form 021
Exercise stress testing	Required	1	Training Programme	Form 021
Six minute walk test	Required	1	Training Programme	Form 021
X-Rays, CT and PET/CT	Required	1	Training Programme	Form 021
ABG	Required	1	Training Programme	Form 021
Identify histological types, radiological tests	Required	1	Training Programme	Form 021
Mini-CEX (At least two Mini-CEX assessments should take place in each year of training)	Required	2	Year of Training	Form 023