

**SPECIALTY TRAINING CURRICULUM**

**FOR**

**RESPIRATORY MEDICINE**

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# 1 Introduction

Together with General Internal Medicine (GIM), Acute Internal Medicine (AIM), Cardiology and Gastroenterology, Respiratory medicine is one of the major medical specialties. Approximately 30% of all acute admissions in GIM/AIM are for a primary respiratory problem – similar figures to Cardiology – and Respiratory Physicians are essential and major contributors to the acute medical take in all acute hospital trusts. Respiratory Medicine also has a close relationship with Critical Care Medicine. Most Respiratory Physicians supervise non-invasive ventilation in the support of patients with acute respiratory failure in the High Dependency Unit environment and some have sessions helping to run Intensive Care services and expertise in the management of the Acute Respiratory Distress Syndrome. Further, Respiratory Physicians have considerable technical skills. They undertake bronchoscopy (both diagnostic and, increasingly, interventional), pleural procedures, including pleural biopsy and chest drain insertion, local anaesthetic “medical” thoracoscopy for the more invasive investigation of pleural effusion and non-invasive ventilation. They have considerable expertise in cardiopulmonary physiology and run lung function laboratories in most hospitals for the interpretation of complex lung function testing, a cornerstone of respiratory diagnosis.

In the outpatient setting, Respiratory Physicians run the services for lung cancer and tuberculosis (TB) in most Trusts. They are referred patients with a vast range of pulmonary and non-pulmonary conditions, the latter since the lung is involved in many nonpulmonary systemic illnesses. A large percentage of their outpatient work involves the investigation, diagnosis and management of patients referred with the non-specific complaints of chest pain, cough and breathlessness of unknown cause such that most Respiratory Physicians have considerable expertise in dealing with diagnostic and therapeutic uncertainty. For this reason, they are often a port of call for other medical practitioners when there are other more general non-specific symptoms for which a diagnostic explanation is elusive. They also run early discharge, hospital at home and pulmonary rehabilitation services for chronic obstructive pulmonary disease (COPD) and have considerable skill in the management of terminally ill patients. Some Respiratory Physicians run services for lung transplantation.

Among specific disease areas that are the principle remit of Respiratory Physicians are a wide spectrum of conditions: inherited (e.g. Cystic Fibrosis), congenital, infective (e.g. pneumonia, empyema, opportunist infection including transplant and HIV-related disorders, bronchiectasis, TB), inflammatory (e.g. eosinophilic lung disease, vasculitis, diffuse parenchymal (interstitial) lung disease), vascular (e.g. pulmonary embolism, idiopathic pulmonary hypertension), malignant (e.g. lung cancer, mesothelioma, mediastinal tumours), allergic, sleep-related, neuromuscular, and airway (asthma, COPD, obliterative bronchiolitis).

The following sections of the curriculum have been set out in accordance with the standards for curricula and assessments agreed by the General Medical Council (GMC). There are seventeen such standards.

## 2 Rationale

### 2.1 Purpose of the Curriculum

The purpose of this curriculum is to describe the process of training in Respiratory Medicine and the competencies needed for the award of a certificate of completion of training (CCT) in the specialty. At CCT level, the doctor should have the knowledge,

skills, behaviours and competencies to practice as an independent specialist practitioner, at Consultant level, within the United Kingdom (UK) National Health Service (NHS).

Specialists are professionals. Professionalism is a difficult quality to define. One definition, proposed by the Royal College of Physicians, is “a set of values, behaviours and relationships that underpin the trust that the public has in the profession.” Professionalism includes the ability to deal with diagnostic and therapeutic uncertainty. Whilst this curriculum attempts to spell out the knowledge, skills and behaviours that underpin training in Respiratory Medicine, the attributes which make up the “professional” specialist are much more than the simple sum of all these added together. The progression from trainee to professional requires, in addition to the simple acquisition of the building blocks described in this curriculum, the development of a high degree of personal and professional maturity and this requires time, experience and the internalisation by the trainee of a whole variety of attributes that he/she is exposed to in the work place. In part, this also involves learning by example, such that it is incumbent on all trainers to ensure that their trainees are exposed to appropriate work place and learning environments.

This curriculum is appropriate for those trainees who have successfully completed core medical training (CMT or ACCS (M)) and who then wish to train in Respiratory Medicine so that they are prepared to apply for a post to practice as a Consultant Respiratory Physician within the UK NHS. Respiratory Medicine is a specialty that is tightly allied to General Internal Medicine (GIM). Most trainees in Respiratory Medicine will therefore also wish to obtain a CCT in GIM and will therefore want to continue training in GIM during specialist training in Respiratory Medicine. This curriculum should be used in conjunction with the 2009 General (Internal) Medicine curriculum produced by the Specialist Advisory Committee (SAC) in General Internal Medicine.

This curriculum is trainee centred and outcome based. Whilst it is not specifically written as a spiral curriculum, many of the subject areas in it will benefit from a spiral approach. In this the trainee revisits, during training, subject areas previously covered, but each time expanding on the sophistication of the knowledge, skills, behaviours, competencies and professionalism required.

There are no statutorily approved subspecialties of Respiratory Medicine. There are, however, a number of internally recognised special interest areas. These include lung transplantation, pulmonary hypertension, adult cystic fibrosis, domiciliary non-invasive ventilation and occupational and environmental lung disease. The training in these areas described in this document is that sufficient for the general respiratory physician and not for one practising as a special interest physician. There are documents, drafted either by the SAC or by the appropriate British Thoracic Society (BTS) Specialist Advisory Group (SAG), that describe suggested training to higher level in some of these areas, but they have no statutory status.

This curriculum should be used in conjunction with the Training e-Portfolio produced by the Joint Royal Colleges of Physicians (UK) Training Board (JRCPTB) and the Respiratory Medicine Specialty Advisory Committee (SAC). This is designed to support trainee development and to enable the collection and recording of the evidence on which decisions on trainee progress are based.

## 2.2 Development

This curriculum was developed by the Specialty Advisory Committee (SAC) for Respiratory Medicine under the direction of the Joint Royal Colleges of Physicians Training Board (JRCPTB). The Respiratory Medicine SAC membership is largely constituted by the training programme directors from each strategic health authority and Local Education and Training Board (LETB) and from each of the devolved nations. As such, it is strongly representative of trainers and teachers. It also includes representatives of the British Thoracic Society and has dean, trainee and lay membership. The current curriculum replaces the previous version of the curriculum, dated December 2007, with changes to ensure that it meets GMC's standards for Curricula and Assessment, and to incorporate revisions to the content and delivery of the training programme. Major changes from the previous version of the curriculum also include the incorporation of generic, leadership and health inequalities competencies and the mapping of the four domains of Good Medical Practice and of the assessment blueprint.

The knowledge content of the UK Respiratory Medicine Curriculum is based on the agreed European Syllabus for specialist training in Respiratory Medicine. This was developed by the European Respiratory Society in conjunction with the European Respiratory School. The committee involved ("HERMES," "Harmonised Education in Respiratory Medicine for European Specialists") included the chair of the UK Respiratory Medicine SAC and several other UK representatives. The method of syllabus development involved the Delphi process. This syllabus is included as appendix III to this curriculum document.

## 2.3 Entry Requirements and Training Pathway

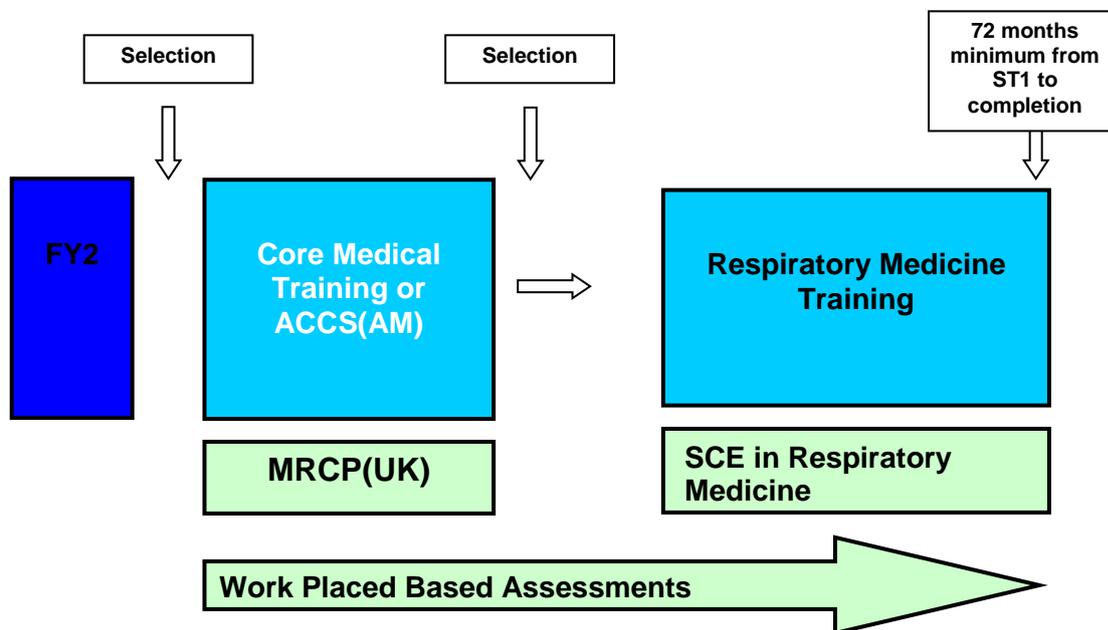
Specialty training in Respiratory Medicine consists of core and higher specialty training. To enter core training in Medicine, trainees must first have successfully completed a Foundation Training Programme or recognised equivalent. Core training provides physicians with (a) the ability to investigate treat and diagnose patients with acute and chronic general medical symptoms and (b) high quality review skills for managing such patients in both the inpatient and outpatient setting. Higher specialty training then builds on these core skills to develop the specific competencies required to practise independently as an NHS consultant in Respiratory Medicine.

Core training may be completed in either a Core Medical Training (CMT) or Acute Care Common Stem (ACCS) programme. The full curriculum for specialty training in Respiratory Medicine therefore consists of the curriculum for either CMT or ACCS plus this current specialty training curriculum.

There are common competencies that should be acquired by all physicians during their training period starting within the undergraduate career and developed throughout the postgraduate career, for example communication, examination and history taking skills. These are initially defined for CMT and then developed further in the specialty. This curriculum supports the spiral nature of learning that underpins a trainee's continual development. It recognises that for many of the competences outlined there is a maturation process whereby practitioners become more adept and skilled as their career and experience progresses. It is intended that doctors should recognise that the acquisition of basic competences is often followed by an increasing sophistication and complexity of that competence throughout their career. This is reflected by increasing expertise in their chosen career pathway.

The approved Curriculum for CMT is a sub-set of the Curriculum for General Internal Medicine (GIM). The MRCP examination has been mapped to assess performance

against the two core training medical curricula (CMT/ACCS(M)) and is a prerequisite for successful completion of core training in Medicine. It is not possible to enter training in Respiratory Medicine without having passed the MRCP or a recognised equivalent examination.



**Diagram 1.0 shows the training pathway of a single specialty Respiratory Trainee**

It is possible to enter training in Respiratory Medicine without having completed a core medical training programme, but having demonstrated acquisition of the same competencies via the equivalence route. Such trainees will not be able to obtain a CCT in Respiratory Medicine but rather should apply to enter the UK Specialty Register via the accelerated CP/CESR route.

In summary, doctors entering Respiratory Medicine training will have achieved the following:

- Basic generic skills as a doctor, as described in the General Medical Council (GMC) document “Good Medical Practice”
- Successful completion of a Foundation Programme, or recognised equivalent
- Core Medical Training (CMT) or ACCS (AM) competencies
- Successful completion of all parts of the MRCP (UK) examination

Additional recommended entry requirements for specialist training in Respiratory Medicine include:

- An Advanced Life Support (ALS) qualification or equivalent.
- Successful competition, at open interview, for selection to a specialty training programme in Respiratory Medicine.
- Demonstration of commitment to the specialty.
- Demonstration of the aptitude to successfully complete specialty training in Respiratory Medicine.

After completing the training described in this curriculum, the trainee should gain a CCT in Respiratory Medicine and be eligible for enrolment in the UK specialty register in Respiratory Medicine.

After gaining a CCT in Respiratory Medicine the doctor will be prepared to:

- Continue his/her medical and professional development
- Consider developing a special interest within Respiratory Medicine if desirable
- Engage with appraisal and revalidation
- Continually review his/her practice in the light of 'Good Medical Practice.'

## **2.4 Enrolment with JRCPTB**

Trainees are required to register for specialist training with JRCPTB at the start of their training programmes. Enrolment with JRCPTB, including the complete payment of enrolment fees, is required before JRCPTB will be able to recommend trainees for a CCT. Trainees can enrol online at [www.jrcptb.org.uk](http://www.jrcptb.org.uk)

## **2.5 Duration of Training**

Although this curriculum is competency based, the duration of training must meet the European minimum of 4 years for full time specialty training adjusted accordingly for flexible training (EU directive 2005/36/EC). The SAC has advised that training from ST1 will usually be completed in 6 years in full time training (2 years core plus 4 years specialty training). For trainees intending to gain, additionally, a CCT in GIM, training will usually be completed in 7 years (2 years core training plus 5 years specialty training).

These are only indicative times which, in the opinion and experience of the SAC, are the usual minimum requirements for most trainees. Since the goal of training is the acquisition of the prerequisite knowledge, skills, behaviours, competencies and professionalism, it is possible that some trainees may achieve this in a shorter time frame and that some may require longer.

## **2.6 Less than Full Time (Flexible) Training**

Trainees who are unable to work full-time are entitled to opt for less than full time training programmes.

Information regarding LTFT training is available via the JRCPTB website and also via the following:

- Medical careers website [www.medicalcareers.nhs.uk/](http://www.medicalcareers.nhs.uk/)
- General Medical Council website [www.gmc.org.uk](http://www.gmc.org.uk)

## **2.7 Academic Training**

Respiratory Medicine is a specialty with a strong research base. Some trainees will have decided to pursue an academic career on qualification and completed an academic foundation training scheme. Others will have decided, later on, during their clinical training, to pursue a more formal academic training programme to equip them to become academic respiratory physicians.

Such trainees should consider applying for an Academic Clinical Fellowship (ACF) or an Academic Clinical Lecturer (ACL) post depending on their level of training. These are available in most LETBs/. The ACF posts can be entered at ST1, 2 or 3 levels

and includes 2 years and 3 months of clinical training and 9 months of research training. The ACF posts are designed to afford the holder an opportunity to generate pilot data prior to undertaking a PhD. Those holding an ACF will be encouraged to apply for an academic clinical training fellowship to support them during their PhD studies (e.g. from MRC, Wellcome or NIHR). The ACL posts are open to trainees already holding a higher degree – MD or PhD. Interested trainees should consult the NIHR website. The Scottish equivalent scheme (“SCREDS”) is an ACL equivalent scheme and not an ACF scheme. It is available to those with or without a higher degree. Wales and Northern Ireland also have their own schemes. Interested trainees should consult their local MMC website.

Academic integrated pathways to CCT are a) considered fulltime CCTs as the default position and b) are run through in nature. The academic programmes are CCT programmes and the indicative time academic trainees to achieve the CCT is the same as the time set for non-academic trainees. If a trainee fails to achieve all the required competencies within the notional time period for the programme, this would be considered at the ARCP, and recommendations to allow completion of clinical training would be made (assuming other progress to be satisfactory). An academic trainee working in an entirely laboratory-based project would be likely to require additional clinical training, whereas a trainee whose project is strongly clinically oriented may complete within the “normal” time (see the guidelines for monitoring training and progress <http://www.academicmedicine.ac.uk/careersacademicmedicine.aspx>). Extension of a CCT date will be in proportion depending upon the nature of the research and will ensure full capture of the specialty outcomes set down by the Royal College and approved by GMC.

Clinical trainees who decide to embark on research training when already holding a clinical SpR/StR post should be encouraged to undertake a PhD. They can also apply for academic training fellowships as above.

On completion of a PhD, the academic trainee can continue training either as an ACL or as a Clinician Scientist.

There are also opportunities for academic medical training in medical education and those interested in this should be made aware of the MSc in medical education.

The management of all of these academic programmes requires considerable co-operation between the specialty training committee and the academic department. The development of, and participation in, such schemes should be encouraged, to ensure Respiratory Medicine continues to have a vibrant academic background.

All applications for research must be prospectively approved by the SAC and the regulator, see [www.jrcptb.org.uk](http://www.jrcptb.org.uk) for details of the process.

## **2.8 Dual CCT**

Most trainees will wish to train in both GIM and Respiratory Medicine. To do so, and to obtain a CCT in each, trainees must have applied for, competed for at open interview, and entered, a training programme which has been designated and advertised as being a dual CCT programme. Trainees will need to achieve the competencies, with assessment evidence, as described in both curricula. Individual assessments may provide evidence towards competencies from both curricula. Postgraduate Deans wishing to advertise such programmes should ensure that they meet the requirements of both SACs. At CCT level in GIM, trainees will be competent

to participate at a senior level in the acute medical take and to provide advice on the investigation and management of inpatients and outpatients with acute and chronic medical problems.

Some trainees may wish to also train in Intensive Care Medicine (ICM). [Further](#) information on dual training in ICM is available on the Faculty of Intensive Care Medicine's website [www.ficm.ac.uk](http://www.ficm.ac.uk).

Some trainees may wish to train in Respiratory Medicine and Allergy. Interested trainees should contact the Allergy SAC in the first instance via the JRCPTB.

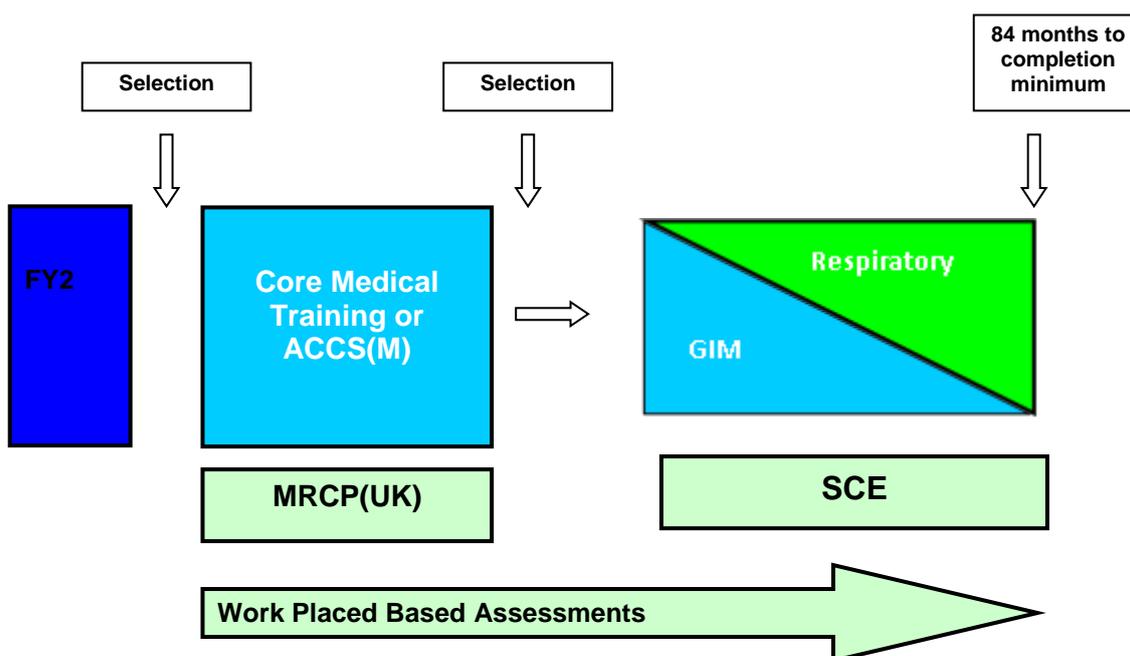


Diagram 2.0 shows the training pathway of a Dual CCT trainee

## 2.9 Special Interest Training in Respiratory Medicine

See section on Special Interest Training on page 14

## 3 Content of Learning

### 3.1 Programme Content and Objectives

The full clinical syllabus is presented in section 10, which provides details of the specific knowledge, skills, and behaviours to be attained and demonstrated during training in Respiratory Medicine.

The following are some general points:

- This curriculum contains detailed recommendations with regard to the knowledge, skills, behaviours and competencies that need to be addressed to satisfactorily complete training in Respiratory Medicine. These are described in greater detail below (see syllabus section, 10, page 45 onwards).
- This curriculum is divided into two clinical conduct subject areas (A), eight core clinical skills areas (B), seventeen medical leadership areas (C), seven symptom/scenario-based presentations (D), twenty-eight clinical subject areas/groups of subjects (E), two generic and thirteen specific procedural skills (F), four patient safety areas (G), four legal and ethical areas (H), one

management and NHS structure area (I), one teaching and training area (J), two evidence and audit areas (K) and one health promotion and public health area (L). These may be organised by the individual training programmes into groupings which are associated in such a way that the delivery of training in them can be usefully considered together. The way in which this is done may legitimately vary between training programmes. The essential principle is the attainment of the necessary competencies and professionalism, and the objective demonstration of such attainment

- The curriculum, training e-Portfolio and ARCP progression grids indicate the stage of training at which the stated competencies should be acquired.
- The curriculum and training e-Portfolio indicate how competence in a subject area can be assessed and/or what the evidence for such competence should be, with particular reference to what the trainee should know, understand, describe, recognise, be aware of and be able to do at the conclusion of training in the subject area(s) specified. Although possible assessment methods have been suggested for each area of the curriculum, it is not expected that all of them should be used. Rather, there should be a “sampling” of assessments across the curriculum.
- The curriculum, training ePortfolio and assessment package indicate the “gateways” that allow continued progression in training and what competencies are required to satisfy them.

The trainee will be given the opportunity to become competent in:

- Establishing a differential diagnosis for patients presenting with clinical features of respiratory disease by appropriate use of history, clinical examination and appropriate investigations.
- Applying knowledge derived from the appropriate basic sciences which are relevant to Respiratory Medicine.
- Applying appropriate and sufficient knowledge and skills in the diagnosis and management of patients with respiratory disease to ensure safe independent practice at NHS Consultant Specialist level.
- Developing a “holistic” management plan for the patient. This should include not only the appropriate treatment, but also take into account health promotion, disease prevention, long-term management plans and palliative care medicine where appropriate.

### **3.2 Good Medical Practice**

Good medical practice is the GMC’s core guidance for doctors. It sets out the values and principles on which good practice is founded.

The guidance is divided into four domains:

1. Knowledge, skills and performance
2. Safety and quality
3. Communication, partnership and teamwork
4. Maintaining trust

Good medical practice is supported by a range of explanatory guidance which provides more detail on various topics that doctors and others ask us about. The “GMP” column in the syllabus defines which of the 4 domains of Good Medical Practice are addressed by each competency.

### 3.3 Structured Training Programme

In this section a list of the areas to be covered by the Structured Training Programme is given:

- Respiratory physiology and pathophysiology, including cardiological aspects of respiratory disease
- Respiratory anatomy and imaging techniques
- Respiratory pharmacology
- Respiratory pathology
- Respiratory microbiology
- Asthma (including patient education and self management)
- Chronic obstructive pulmonary disease (including pulmonary rehabilitation)
- Thoracic oncology
- Pulmonary infections
- Tuberculosis, pulmonary and extra-pulmonary, and opportunist mycobacterial disease
- Pulmonary disease in the immunocompromised host
- Bronchiectasis
- Diffuse parenchymal lung disease
- Sleep breathing related disorders
- Pulmonary vascular diseases
- Allergic lung disorders and anaphylaxis
- Disorders of pleura and mediastinum
- Pulmonary manifestations of systemic disease
- Cystic fibrosis
- Pulmonary disease in the HIV patient
- Occupational and environmental lung disease
- Genetic and developmental lung disorders
- Lung transplantation
- Hospital at home schemes and early discharge
- Imaging Techniques
- Smoking cessation
- Pulmonary rehabilitation
- Intensive Care (ICU)
- Palliative Care Medicine
- Dysfunctional Breathing and Psychological Aspects of Respiratory Symptoms
- Acute and chronic respiratory failure
- Genetic and developmental lung disease
- Managing Long Term Conditions: Integrated Care and the promotion of Self Care
- Generic aspects of medical practice
  - Patient Safety, including safe sedation
  - Ethical and Legal Aspects of Practice, including good practice in consent
  - Management and NHS Structure
  - Medical Leadership
  - Health Promotion and Public Health

The Structured Training Programme will usually aim to cover all of the above topics over a 2-3 year cycle.

### **3.4 Clinical Experience**

The required clinical experiences are spelt out in more detail in the Syllabus section (10) of the curriculum and in the accompanying training e-Portfolio. However, some points are emphasised here:

#### **In-Patient Training and Experience**

In-patient training and experience should occur throughout most of the training programme and involve both secondary and tertiary care experience. A minimum of 12 months should be spent at a DGH and a minimum of 12 months at a tertiary centre.

#### **Out-Patient Training and Experience**

Out-patient training should occur throughout most of the training programme and involve both secondary and tertiary care experience. A minimum of 12 months should be spent at a DGH and a minimum of 12 months at a tertiary centre. In addition, Educational Supervisors should specifically aid trainees to obtain skills in effectively organising outpatient services and in communication with referring physicians and the multidisciplinary team.

#### **Respiratory Anatomy, Physiology, Pathology, Microbiology and Pharmacology**

Trainees should have a sound understanding of respiratory anatomy and physiology/pathophysiology and gain experience in pathology and microbiology as related to Respiratory Medicine during the training period. They should also be competent in the use of drugs employed in the treatment of respiratory disease.

#### **Lung Function Testing**

Dedicated time within the training programme should be allocated for practical training and laboratory experience in the measurement and interpretation of lung function tests. Trainees should be involved, with appropriate supervision, in issuing reports on physiological investigations. A period of attachment to a unit regularly performing more detailed assessments of pulmonary physiology is essential. Experience should be gained in “standard tests,” body plethysmography, assessment of airway hyper-responsiveness, hypoxic challenge and exercise testing. Trainees should also understand the principles of service organisation, quality control, infection control and Health and Safety at work as they apply to the Lung Function Laboratory.

#### **Radiological and Imaging Techniques**

Training in imaging techniques, whether by MDTs, formal teaching or by discussion of imaging in relation to individual patients, should involve Radiologists as well as Respiratory Physicians. Trainees should know the indications for, and be able to independently interpret, anatomical and high resolution computerised tomography, CT pulmonary angiography and ventilation/perfusion lung scans. Trainees should also have understanding of, and experience in, the use of Positron Emission Tomography (PET)-CT in the assessment of patients with lung cancer.

#### **Intensive Care Medicine (ICM)**

Practical training and experience in Intensive Care Medicine are essential for training in Respiratory Medicine. All trainees must spend a minimum of 60 whole working days training in ICM. This should occur in an Intensive Care Unit (ICU) recognised by the Regional Programme Director and STC in Respiratory Medicine as being suitable for this purpose, and does not necessarily have to be in an ICM Intercollegiate Board approved ICU. Ideally, this should be a full time allocation but, if this is not possible,

then it can be done in minimum segments of 15 consecutive working days. The mandatory 60 days does not include allowance for annual leave. It is preferred that annual leave is not taken during the ICU period. If it is, the time should be made up. During the ICU attachment, the trainee should spend a minimum of eight sessions per week in the Intensive Care Unit. Ideally, the trainee should also participate in the on call rota for ICM. It is recognised that many trainees will not have the necessary airway skill competencies. It is preferred, nevertheless, that the trainee participates in the ICU oncall rota, with appropriate cover if not airway competent. It is preferred that trainees do not participate in the on call rota for GIM instead.

### **Palliative Care Medicine**

Trainees should gain experience in Palliative Care Medicine as it pertains to all relevant fields of Respiratory Medicine, but particularly in relation to patients with intra-thoracic malignancy. The trainee should have knowledge of palliative care services and understand the role of specialist palliative care nurses and other relevant health care professionals. Increasingly, palliative care services are becoming relevant to fields of Respiratory Medicine other than lung cancer. This should be reflected in the training programme.

### **Pulmonary Rehabilitation**

Trainees should understand the importance of pulmonary rehabilitation and be given opportunities to gain first hand experience in this area. Knowledge of methods of appropriate patient selection, exercise prescription, administration of supplemental oxygen, multidisciplinary team working and service organisation is essential.

### **Multi-Disciplinary Team Working**

At least half of the training should be undertaken in units with close working links between Respiratory Medicine and Thoracic Surgery. The training timetable should include joint meetings, seminars and consultations between Respiratory Physicians, Radiologists, Pathologists and Surgeons. Similarly, close working links between Respiratory Medicine, Clinical and Medical Oncology and Palliative Care are also of great benefit, so that all trainees can develop basic expertise in the role of Surgery, Radiotherapy, Chemotherapy and Palliative Care Medicine in the treatment of intra-thoracic malignancy. Experience of working as a member of multidisciplinary teams is essential. This applies particularly to the field of intra-thoracic malignancy, but is also increasingly relevant to some other fields, such as COPD and diffuse parenchymal lung disease.

### **Essential Areas of Training**

There are important areas in Respiratory Medicine practice in which some trainees may receive insufficient exposure in their main training units due to local arrangements for the care of certain categories of patients. It may be necessary for them to attend an approved course (for instance, a BTS course, with an end-of-course assessment) or have a secondment to a specialised unit, local or distant, to complete their training experience. These areas include:

- Tuberculosis/opportunist mycobacterial disease
- Cystic fibrosis
- HIV/AIDS
- Respiratory allergy and immunology
- Occupational and environmental lung disease
- Genetic and developmental lung disorders
- Pulmonary hypertension

- Transplantation
- Respiratory disease in the transition from adolescence to adulthood ( for example, cystic fibrosis, difficult asthma, neuromuscular disease) and in pregnancy

The trainee will have to demonstrate, before they receive their CCT, that they have appropriate experience in all these areas. In some very specialised areas this appropriate experience may comprise evidence of attending lectures or seminars, together with attending, in a supernumerary capacity, a number of ward-rounds and/or out-patient clinics dealing with the care of a particular group of patients. This evidence will need to be documented in the training e-Portfolio and countersigned by the appropriate educational supervisor.

### **Special Interest Training (Credentialing)**

The following have been agreed as special interest areas, but not subspecialties, of Respiratory Medicine by the SAC:

- Pulmonary Hypertension.
- Adult Cystic Fibrosis.
- Domiciliary NIV services
- Occupational and environmental lung disease
- Lung Transplantation

The care of such patients is usually organised on a regional basis. All trainees should have understanding and experience of these areas, but a few may wish to undertake additional training such that they are competent to manage one of these special interest areas and to organise and deliver a regional service. Indicative documents for such training have been drafted and are available from the SAC. However, they are not formally recognised and there is no centrally agreed funding for such training at present. This may change in the future as interest in the concept of “credentialing” develops.

Any trainee wishing to undertake such training should discuss this carefully with their Educational Supervisor, Programme Director and Dean first.

The Respiratory Medicine SAC cannot, at present, make recommendations as to how such training should be achieved. Possibilities include as Out of Programme Experience (OOPE), during research into the subject area concerned, or as post CCT training, either agreed as the basis of a proleptic appointment to an NHS Trust, or approved by the Trust as a sabbatical for the purpose.

### **3.5 Practical Procedures**

The core practical skills required of the Respiratory Medicine Trainee are listed in Syllabus Section 10, under sub-section F -“Practical Procedures.” In addition to the assessments set out in that section, for some of these procedures an anonymised log book should be kept by the trainee and incorporated into the e-Portfolio. This should be signed off by the educational supervisor at the end of the attachment. Such sign off is confirmation by the educational supervisor that the log book is a true and accurate record of procedures undertaken by the trainee during that post.

## 4 Learning and Teaching

### 4.1 The Training Programme

The organisation and delivery of postgraduate training has previously been the statutory responsibility of the General Medical Council (GMC). From 2010, the GMC has been incorporated into the General Medical Council (GMC). The GMC devolve responsibility for the local organisation and delivery of training to the LETBs. Each LETB oversees a “School of Medicine” which is comprised of the regional Specialty Training Committees (STCs) in each medical specialty. Responsibility for the organisation and delivery of specialty training in Respiratory Medicine in each LETB is the remit of the regional Respiratory Medicine STC. Each STC has a Training Programme Director who coordinates the training programme in the specialty.

It is envisaged that, at regional level, the trainee will rotate progressively through a linked series of posts, most of which will be 6-12 months in duration, although this may vary. In general, the first two years of training should provide experience in “general” Respiratory Medicine. This will often occur in a District General Hospital (DGH) environment, but this may not always be the case, and local arrangements will prevail. However, it is essential that trainees have at least two years “general” Respiratory Medicine inpatient and outpatient experience at some point during their training, and this must include at least one year in a DGH, and ideally two years. The later stages of training should provide more specialised Respiratory Medicine experience in a tertiary/other suitable centre. In the final stages of training rotational placements should take into account the requirements identified at the Penultimate Year Annual Review of Competence (ARCP), the trainee’s career aspirations and his/her likely working environment as a Consultant. It is emphasised that it is entirely acceptable that local arrangements should differ between regions depending on resources and circumstances.

The sequence of training should ensure appropriate progression in experience and responsibility. In particular, “general” Respiratory Medicine training should occur before the trainee is exposed to more specialised aspects of the specialty. The training to be provided at each training site should be defined to ensure that, during the programme, the entire curriculum is covered and also that unnecessary duplication and educationally unrewarding experiences are avoided. However, the sequence of training should ideally be flexible enough to allow the trainee to develop a special interest.

Throughout training, practical on the job experience should be complemented by a clear programme of educational activities in which the theoretical and scientific basis of practice are taught and discussed. The core of this should be the regional “Structured Training Programme.” However, this will be supplemented by appropriate attendance at courses, national/international meetings and by self-directed and web-based learning. The recommended models of learning and learning experiences are described more fully in section 4.3.

In those regions where some areas of training cannot be provided, it is the responsibility of the Training Programme Director and of the Specialty Training Committee to make alternative arrangements. This may consist of invited speakers, dedicated training days or secondment to a unit elsewhere.

This curriculum, the accompanying training e-Portfolio and the ARCP progression grids (see section 5.5) are intended to be used together. They indicate, for each subject/group of subjects, how and where appropriate experience may be obtained.

However, Training Programme Directors should use this guidance to make arrangements which are locally appropriate and sensible. It is recognised that one model cannot fit all UK regions and that, as long as the current curriculum is delivered in full, the practicalities of how this is achieved can, and often will, vary. In addition to this guidance, the curriculum and training e-Portfolio also contain, in some instances, indicative times which are considered by the SAC to be the minimum times required by most trainees to acquire the stated competencies. However, these suggested times are intended as a guide to trainers and to trainees and are not prescriptive; some trainees may require longer, and some shorter, times. The “end point” of training in a given curriculum area is the acquisition of the necessary knowledge, skills, behaviours and competencies and the achievement of a level of professionalism appropriate to the stage of training.

### **Acting up as a consultant (AUC)**

“Acting up” provides doctors in training coming towards the end of their training with the experience of navigating the transition from junior doctor to consultant while maintaining an element of supervision.

Although acting up often fulfills a genuine service requirement, it is not the same as being a locum consultant. Doctors in training acting up will be carrying out a consultant’s tasks but with the understanding that they will have a named supervisor at the hosting hospital and that the designated supervisor will always be available for support, including out of hours or during on-call work. Doctors in training will need to follow the rules laid down by the Deanery / LETB within which they work and also follow the JRCPTB rules which can be found at [www.jrcptb.org.uk/trainingandcert/Pages/Out-of-Programme](http://www.jrcptb.org.uk/trainingandcert/Pages/Out-of-Programme).

## **4.2 Educational Strategies**

The curriculum describes educational strategies that are suited to work-based experiential learning and to appropriate off-the-job education. The manner in which the training programme is organised to deliver such training will vary between regions, depending on local facilities, and will need to be flexible enough to be tailored to the individual trainee. However, the most important element of training is appropriately supervised direct participation in the care of patients with a wide range of acute and chronic respiratory conditions, and there can be no substitute for this. Training should therefore be structured to allow the trainee to be involved in the care of patients with the full range of respiratory disorders. Since many respiratory conditions are chronic, it is essential that trainees have the opportunity to follow such patients for an appropriate length of time. This may be more difficult in the era of the European Working Time Directive (EWTD) and consequent fragmentation of the traditional “firm” structure.

During the training programme the trainee must demonstrate increasing responsibility and capability across the full range of practice expected of an independent Respiratory Medicine Consultant Specialist.

Training should involve exposure to both general and special interest areas of Respiratory Medicine. These are listed in the syllabus section (10). All trainees should have knowledge and experience of all such conditions, and be competent to manage most, but not necessarily all of them. The curriculum and the accompanying training e-Portfolio indicate where knowledge and experience only are required and where full competence is necessary.

Training should also include exposure to appropriate allied (related) areas to Respiratory Medicine. These include:

- Allergy
- Intensive Care Medicine
- Thoracic Surgery
- Medical Oncology
- Clinical Oncology (Radiotherapy)
- Palliative Care Medicine
- Radiology
- Infectious Diseases (optional)
- Cardiology (optional)

### **4.3 Teaching and Learning Methods**

The curriculum will be delivered through a variety of learning experiences. Trainees will learn from practice clinical skills appropriate to their level of training and to their attachment within the department.

An appropriate balance needs to be struck between work-based experiential learning, appropriate off the job education and independent self-directed learning. Respiratory Medicine is a specialty that encompasses a huge range of clinical conditions and a significant number of practical skills, such that the greater proportion of learning should be work-based experience. The remainder should be made up of the other learning methods described, with particular emphasis on the Regional Structured Training Programme (STP). The curriculum and training e-Portfolio indicate where particular learning methods/experiences are especially recommended. However, it is for the trainee, educational supervisor and Training Programme Director to tailor the exact balance of methods to the particular regional environment and trainee in the most suitable manner.

Trainees should have supervised responsibility for the care of in-patients and outpatients. A guiding principle should be that the degree of responsibility taken by the trainee will increase as competency increases. This means that the degree of clinical supervision will vary as training progresses, with increasing clinical independence and responsibility as learning outcomes and competences are achieved.

The remainder of this section identifies the types of situations in which a trainee can learn.

#### **Learning with Peers**

There are many opportunities for trainees to learn with their peers. Local postgraduate teaching opportunities allow trainees of varied levels of experience to come together for small group sessions. Examination preparation encourages the formation of self-help groups and learning sets.

#### **Work-based Experiential Learning**

The content of work-based experiential learning is decided by the local faculty for education but includes active participation in:

- Respiratory Medicine outpatient clinics. After initial induction, trainees will review patients in outpatient clinics, under direct supervision. The degree of responsibility and independence taken by the trainee will increase as competency

increases. Trainees should assess both 'new' and 'review' patients and present their findings to their clinical supervisor. It is essential that the trainee has exposure to both general respiratory clinics and to special interest clinics. In general, the former occur earlier in training and the latter when the trainee is more experienced. However, this will, of necessity, vary between programmes and trainees. It is recommended that, on average, trainees attend two outpatient clinics per week in which they should see, on average, 6 new patients and 12 follow up patients *per week*. However, this will inevitably vary during the programme according to circumstances and according to any specific special interest area(s) being covered. During some periods of the training programme the number of clinics and patients seen during them will need to be less than this, and during others it will need to be more. However, it is recommended that clinics should not be so busy as to compromise the training experience. In particular, it is essential that there is sufficient time allowed for adequate discussion of the cases seen by the trainee with the supervising consultant. Indicative times would be to allow 30 minutes for a new patient and 15 minutes for a follow up case. These times are not, however, intended to be prescriptive and will need to vary depending on circumstances. Training Programme Directors should continuously monitor the learning environment provided in outpatient clinics at the various placements in the programme.

- Specialty-specific takes
- Post-take consultant-led ward-rounds
- Personal ward rounds and provision of ongoing clinical care for Respiratory Medicine inpatients. Every patient seen, on the ward or in out-patients, provides a learning opportunity, which will be enhanced by following the patient through the course of their illness. Experience of the evolution of patients' problems over time is a critical part both of the diagnostic process and of management. Patients seen should provide the basis for critical reading and reflection on clinical problems
- Seeing ward referrals from other teams
- Consultant-led ward rounds. Every time a trainee observes another doctor, consultant or fellow trainee seeing a patient or their relatives there is an opportunity for learning. Ward rounds, including those post-take, should be led by a consultant and include feedback on clinical and decision-making skills. It is recommended that, in general, the trainee should undertake two consultant-led ward rounds per week during most of the training programme. However, this is an indicative number and it is recognized that this will need to vary during the training period and according to circumstances. At times it may be entirely appropriate for the trainee to undertake a greater or lesser number
- Multi-disciplinary team meetings (MDTs). There are many situations where clinical problems are discussed with clinicians from other disciplines. These provide excellent opportunities for observation of clinical reasoning. MDTs are a particularly important feature of both training and practice in Respiratory Medicine. They may occur in a number of disease areas, but are particularly important for lung cancer and radiology.

### **Indicative Trainee Job Plan**

An indicative job plan for a trainee in Respiratory Medicine is as follows:

- Two consultant-led ward rounds per week
- One trainee-led ward round per week
- Two outpatient clinics per week
- One practical procedures session (usually, but not exclusively, bronchoscopy) per week
- Where and when appropriate protected time for essential educational activities may be agreed between the trainer and trainee.

It is emphasised that the above is intended only as a guide to the general job plan for the average post. It is not expected that this should be rigidly adhered to in all circumstances. It will be quite right and proper that significant deviation from this general plan should occur when personal and local training needs dictate.

The session denoted as protected time for essential activities should be used for specific educational activities, as agreed with the educational supervisor, and there should be agreed specific objectives and outcomes. It need not apply during the ITU attachment. It is not mandatory and should be agreed between the educational/clinical supervisor and the trainee. It may or may not be protected, bleep free time. This will be decided between the trainee and trainer as appropriate. As a guide only, if a significant proportion of the work relates to the local department, such a session may not need to be designated as study leave. If the work is largely personal to the trainee, it may be appropriate that it comes out of the annual study leave allowance. Examples of appropriate use include:

- Respiratory or GIM audit
- WPBAs
- Educational supervision meetings
- Local research
- Teaching
- Local service development projects, guideline writing, business case development
- Attending relevant local courses or training (this does not refer to attendance at the structured training programme)
- Attending clinical specialties relevant to curriculum targets in respiratory medicine, including general examples such as oncology, radiology, thoracic surgery and special interest examples such as cystic fibrosis, pulmonary hypertension, domiciliary NIV and transplantation
- For some trainees the time may be used for completing grant applications, research work or paper or thesis writing that relates to another post. If so, it will be up to the trainer and trainee to agree whether or not the time is subtracted from the trainee's annual study leave allowance.

### **Formal Postgraduate Teaching**

The content of these sessions will be determined by the local STC, educational supervisor and trainees and will be based on the curriculum. There are many opportunities throughout the year for formal teaching in the local postgraduate teaching sessions and at regional, national and international meetings. Many of these are organised by the Royal Colleges of Physicians and the British Thoracic Society.

Suggested activities include:

- A programme of formal bleep-free regular teaching sessions to cohorts of trainees (e.g. a weekly core training hour of teaching within a Trust)
- Case presentations
- Journal clubs
- Research and audit projects
- Lectures and small group teaching
- Grand Rounds
- Clinical skills demonstrations and teaching
- Critical appraisal and evidence based medicine
- Joint specialty meetings
- Attendance at training programmes organised on a LETB or regional basis, which are designed to cover aspects of the training programme outlined in this curriculum.

### **Teaching Others**

- Teaching medical students, junior doctors and allied health care professionals affords an excellent opportunity to learn
- Presenting at grand rounds or similar clinical meetings provides the opportunity for in-depth study of a particular subject area.
- Participation in journal clubs fosters critical thinking and an approach to the evaluation of the medical literature, which is essential for professional practice
- All NHS Consultants should be excellent teachers. All trainees should strongly consider attending a **formal training for teaching course**. Some trainees may wish to become more expert teachers/trainers and to “specialise” in this area when they become a Consultant. They may therefore wish to consider undertaking a more formal training programme and qualification in medical education.
- ST3+ trainees will be expected to carry out some assessments on their more junior colleagues from time to time, for example carrying out work place based assessments, and should be specifically trained to do so.

### **Independent Self-Directed Learning**

Trainees will use this time in a variety of ways depending upon their stage of learning. Suggested activities include:

- Reading, including web-based material
- Maintenance of personal portfolio (self-assessment, reflective learning, personal development plan)
- Audit and research projects
- Reading journals
- Achieving personal learning goals beyond the essential, core curriculum

### **Formal Study Courses**

Making time available for formal courses is encouraged, subject to local conditions of service. Examples include British Thoracic Society courses, management courses and communication courses.

### **Opportunities for Concentrated Practice in Skills and Procedures**

There are a number of skills and practical procedures specific to the practice of Respiratory Medicine.

- These include: lung function testing, fiberoptic bronchoscopy and its allied techniques, thoracic ultrasound, pleural aspiration, intercostal tube drainage, interpretation of sleep studies, nasal continuous positive airway pressure (CPAP) and non-invasive ventilation (NIV). There are, in addition, other skills and practical procedures that it may be appropriate for some trainees to receive training in, including more advanced bronchoscopic techniques and local anaesthetic (“medical”) thoracoscopy.
- It is important that the above skills are acquired at a pace appropriate to the individual trainee.
- Acquisition of these skills will require some initial theoretical training, followed by supervised practice with increasing independence. Guidance on this is given in the appropriate sections of this curriculum (Section 10 F) and the accompanying training e-Portfolio.
- It is essential that the training programme affords the trainee the opportunity to maintain these skills once acquired.

### **Structured Training Programme**

It is recommended that each trainee has the equivalent of 30 working days per annum to be used exclusively for educational purposes. The equivalent of one half day per week (15 free days per year) should be for a “Structured Training Programme” (STP). At least 10 of the 15 days should be in Respiratory Medicine. Two of these 10 days may be used for authorised and confirmed attendance at recognised national/international meetings (such as British Thoracic Society (BTS), European Respiratory Society (ERS) and American Thoracic Society (ATS)). The remainder, a minimum of eight days per year, must be used to attend the regional STP. This is a regular, rolling programme of educational activities that should cover the entire Respiratory Medicine curriculum, usually over a period of 2-3 years, before being repeated. The Training Programme Director is responsible for organising this, although he/she may delegate this responsibility. The STP should provide training covering the theoretical and scientific basis of Respiratory Medicine by means of seminars, discussions, lectures, demonstrations, literature reviews and other suitable educational activities. Attendance at the STP must be properly registered, signed off by the Training Programme Director or deputy and recorded in the e-Portfolio. The yearly record of attendance must be available at the ARCP. Satisfactory attendance at the STP is regarded as an essential prerequisite for progression through training. It is the responsibility of the Training Programme Director to ensure that the dates and times of the regional STP are notified well in advance so that any arrangements necessary to facilitate trainees’ attendance, if required, can be made in good time.

The remaining allocation of annual educational time should be for research, audit, attendance at medical meetings and modular training in subjects not provided at the base hospitals.

#### **4.4 Audit and Guideline Generation**

Audit and quality improvement is an essential component of the quality assurance of clinical practice and therefore of clinical governance. The Respiratory Medicine SAC strongly recommends that all trainees should undertake at least two audits or quality improvement projects in the specialty (Respiratory Medicine) during training. At least one of these should demonstrate effectiveness, ie have led to change in practice that has been re-audited.

Knowledge of national/international guidelines is essential for Consultant practice. Study of such guidelines is an important component of learning and participation in

the local adaptation and implementation of guidelines provides an important opportunity for training.

#### 4.5 Research

Research is central to the provision of high quality health care, contributing significantly to a culture of continuous improvement in quality, safety and clinical effectiveness. The Respiratory Medicine SAC considers properly supervised research to be an important component of training. It allows trainees to acquire and develop a whole range of skills including, in particular, the ability to think and reason critically and to appraise the literature. These are essential skills for any Consultant and a prerequisite for leading the implementation into practice of new developments in their specialty. In originating, planning, and executing a research project, the trainee will have the opportunity to develop and hone a range of other abilities, including leadership attributes, organisational skills, time management skills and presentation skills and will also learn about the economic and ethical aspects of research and practice. The role of research in developing professionalism in the trainee, and its benefits for the wider NHS, cannot be over-stated.

All trainees must achieve research competencies. These can be achieved by:

- applying for appropriate ethical research approval and demonstrating the ability to write a full scientific paper

or

- the attainment of a higher research degree

or

- giving a national/international presentation *and* undertaking an assessed research course.

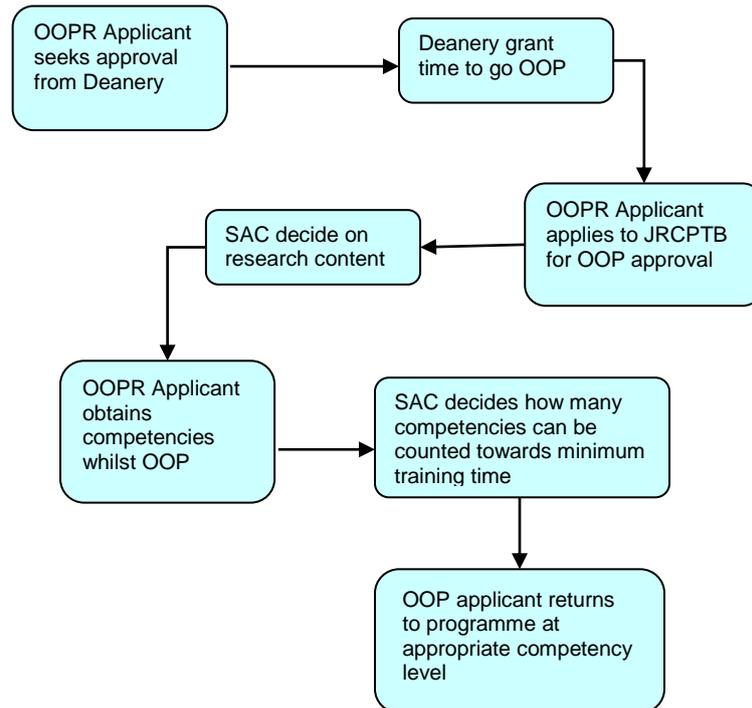
or

- pursuing research/ research degree (eg.MSc) in medical education

Applications to research bodies, the LETB (via an OOPR form) and the JRCPTB (via a Research Application Form) are necessary steps, which are the responsibility of the trainee. The JRCPTB Research Application Form can be accessed via the JRCPTB website. It requires an estimate of the competences that will be achieved and, once completed, it should be returned to JRCPTB together with a job description and an up to date CV. The JRCPTB will submit applications to the relevant SACs for review of the research content including an indicative assessment of the amount of clinical credit (competence acquisition) which might be achieved. This is likely to be influenced by the nature of the research (eg entirely laboratory-based or strong clinical commitment), as well as duration (eg 12 month Masters, 2-year MD, 3-Year PhD). On approval by the SAC, the JRCPTB will advise the trainee and the LETB of the decision. The LETB will then make an application to the GMC for approval of the out of programme research. All applications for out of programme research must be prospectively approved.

Upon completion of the research period the competencies achieved will be agreed by the OOP Supervisor and the Educational Supervisor and communicated to the SAC, accessing the facilities available on the JRCPTB e-Portfolio. The competencies achieved will determine the trainee's position on return to programme; for example if an ST3 trainee obtains all ST4 competencies then 12 months will be recognised towards the minimum training time and the trainee will return to the programme at ST5. This would be corroborated by the subsequent ARCP.

This process is shown in the diagram below:



Funding will need to be identified for the duration of the research period. Trainees need not count research experience or its clinical component towards a CCT programme but must decide whether or not they wish it to be counted on application to the LETB and the JRCPTB.

Up to 3 years out of programme is the accepted normal, but consideration of a longer period may need to be made on a case by case basis. The SAC will usually recognise up to 12 months of the OOPR as educational credit towards the minimum training time. However, it is the SAC's prerogative to decide just how much educational credit should be granted. For OOPR that involves relevant clinical experience, additional educational credit of up to a further six months (ie total of 18 months) may be allowed on a case by case basis but, again, this is at the discretion of the SAC.

Any trainee not wishing to undertake a higher research degree should undertake supervised research during their clinical training and should also consider attending a course on research methodology (please see ARCP decision aid, section 5.5, for details of requirements). Trainees should demonstrate understanding of research principles and methodology and also of statistical methodology. They should be able to show that they are able to critically appraise research literature, including both individual research papers and systematic reviews. One way to assess the attainment of such skills is by the production of short papers and/or case reports. Another is via an assessed course on research methodology. Trainees with an interest in medical education can be encouraged to undertake research in teaching methodology.

#### 4.6 Management Training

Knowledge of the NHS, and of how it is constituted, financed and administered, is essential for those practising within it. So, too, is a whole range of personal attributes required if the modern doctor is to function competently within the NHS, including leadership skills, team working skills, personal organisation abilities and time

management abilities. Many of these have been covered in sections 10 A, B, C, G, H, I, J, K and L of this document. Completion of a recognised management training course is a mandatory requirement for training.

## 5 Assessment

### 5.1 The Assessment System

The purpose of the assessment system is to:

- Enhance learning by providing formative assessment, enabling trainees to receive immediate feedback, measure their own performance and identify areas for development;
- Drive learning and enhance the training process by making it clear what is required of trainees and motivating them to ensure they receive suitable training and experience;
- Provide robust, summative evidence that trainees are meeting the curriculum standards during the training programme;
- Ensure trainees are acquiring competencies within the domains of Good Medical Practice;
- Assess trainees' actual performance in the workplace;
- Ensure that trainees possess the essential underlying knowledge required for their specialty;
- Inform the Annual Review of Competence Progression (ARCP), identifying any requirements for targeted or additional training where necessary and facilitating decisions regarding progression through the training programme;
- Identify trainees who should be advised to consider a change in career direction.

The integrated assessment system incorporated into this curriculum comprises a mixture of workplace-based assessments and knowledge-base assessments. Individual assessment methods are described in more detail below.

Workplace-based assessments will take place throughout the training programme to allow trainees to continually gather evidence of learning and to provide them with formative feedback. They are not individually summative but overall outcomes from a number of such assessments provide evidence for summative decision making. The number and range of these assessments will ensure that the trainee is reliably assessed relative to their stage of training and that the whole curriculum is covered.

### 5.2 Assessment Blueprint

In this updated version of the curriculum, the assessment system has been integrated into the syllabus section (Section 10). The assessment methods shown against each item in the syllabus section are those that are appropriate as *possible* methods that *could* be used to assess each competency. It is not expected that all competencies will be assessed and, where they are assessed, it is not expected that every method shown will be used. However, the number and range of assessments should be chosen to ensure broad coverage of the curriculum.

### 5.3 Assessment Methods

The following assessment methods are used in the integrated assessment system:

## Examinations and Certificates

- **The Specialty Certificate Examination (SCE) in Respiratory Medicine:**  
It is recommended that trainees consider taking this in their third year of training (ST5). There is only one diet of the exam per year. Failure in the exam will not impede progress through training, but a CCT cannot be awarded without it. Once the trainee has gained their CCT in Respiratory Medicine, they will be eligible to use the post-nominal “MRCP (UK) (Resp Med),” provided that the SCE in Respiratory Medicine has been passed.
- **Advanced Life Support Certificate (ALS):** it is a condition of service in all NHS trusts that trainees hold a current, valid ALS certificate. This will need to be renewed every three years.

The SCE has been developed by the Federation of Royal Colleges of Physicians of the UK, in association with the British Thoracic Society. The aim of this national assessment is to assess a trainee’s knowledge and understanding of the clinical sciences relevant to specialist medical practice and of common or important disorders to a level appropriate for a newly appointed consultant.

Information about the SCE, including guidance for candidates, is available on the MRCP(UK) website [www.mrcpuk.org](http://www.mrcpuk.org)

## Workplace-Based Assessments

The following is a list of workplace-based assessments approved by GMC and JRCPTB and used in this curriculum:

- mini-Clinical Evaluation Exercise (mini-CEX)
- Case-Based Discussion (CbD)
- Direct Observation of Procedural Skills (DOPS)
- Acute Care Assessment Tool (ACAT)
- Multi-Source Feedback (MSF)
- Multiple Consultant Report (MCR)
- Audit Assessment (AA)
- Patient Survey (PS)
- Teaching Observation (TO)

The Respiratory Medicine SAC has suggested the following (for more details see Section 5.5):

- A minimum of 6 mini-CEX and/or CbD per year of training, as formative tools of learning of the competences required for the particular stage of training
- At least 2 MSFs, one at the beginning and one near the end of training
- Six bronchoscopy DOPS during the four year single specialty training in Respiratory Medicine. Seven bronchoscopy DOPS during the five year dual training programme in Respiratory Medicine and GIM (see ARCP progression grids, section 5.5)
- At least one satisfactory chest drain DOPs per year for the first two years of training (ST3 & 4)
- One NIV DOPS, ST3
- At least 2 Respiratory Medicine audits during training
- Formal sign off by the Intensive Care Medicine (ICM) educational supervisor for the 60 day period of ICM training
- Formal sign off of competence in Non-invasive Ventilation (NIV).
- A minimum of 4 – 6 MCR per year of training.

The assessment methods are described briefly below. More information about these methods, including guidance for trainees and assessors, is available in the e-Portfolio and on the JRCPTB website [www.jrcptb.org.uk](http://www.jrcptb.org.uk). Workplace-based assessments should be recorded in the trainee's e-Portfolio. The workplace-based assessment methods include feedback opportunities as an integral part of the assessment process; this is explained in the guidance notes provided for each of them.

### **mini-Clinical Evaluation Exercise (mini-CEX)**

This tool evaluates a clinical encounter with a patient and its purpose is to provide an indication of competence in skills essential for good clinical care such as history taking, examination and clinical reasoning. The trainee receives immediate feedback to aid learning. The mini-CEX can be used at any time and in any setting when there is a trainee and patient interaction and an assessor is available.

### **Case based Discussion (CbD)**

The CbD assesses the performance of a trainee in their management of a patient to provide an indication of competence in areas such as clinical reasoning, decision-making and application of medical knowledge in relation to patient care. It also serves as a method to document conversations about, and presentations of, cases by trainees. The CbD should include discussion about a written record (such as written case notes, out-patient letter, discharge summary). A typical encounter might be when presenting newly referred patients in the out-patient department.

### **Direct Observation of Procedural Skills (DOPS)**

A DOPS is an assessment tool designed to assess the performance of a trainee in undertaking a practical procedure, against a structured checklist. The trainee receives immediate feedback to identify strengths and areas for development. In addition to the general DOPS form available on the JRCPTB website, there are 2 DOPS forms specific to Respiratory Medicine – one for chest drain insertion/management and the other for fiberoptic bronchoscopy – which are also available on the website.

### **Acute Care Assessment Tool (ACAT)**

The ACAT is designed to assess and facilitate feedback on a doctor's performance during their practice on the Acute Medical Take. Any doctor who has been responsible for the supervision of the Acute Medical Take can be the assessor for an ACAT.

### **Multisource feedback (MSF)**

This tool is a method of assessing generic skills such as communication, leadership, team working, reliability, across the domains of Good Medical Practice. This provides objective systematic collection and feedback of performance data on a trainee, derived from a number of colleagues. 'Raters' are individuals with whom the trainee works, and include doctors, administration staff, and other allied professionals. The trainee will not see the individual responses given by raters; rather, feedback is given to the trainee by the Educational Supervisor.

### **Audit Assessment Tool (AA)**

The Audit Assessment Tool is designed to assess a trainee's competence in undertaking and completing an audit. The Audit Assessment can be based on review of audit documentation or on a presentation of the audit at a meeting. If possible the trainee should be assessed on the same audit by more than one assessor.

### **Patient Survey (PS)**

The patient survey addresses issues, including behaviour of the doctor and effectiveness of the consultation, which are important to patients. It is intended to assess the trainee's performance in areas such as interpersonal skills, communication skills and professionalism by concentrating solely on their performance during one consultation.

### **Teaching Observation (TO)**

The Teaching Observation form is designed to provide structured, formative feedback to trainees on their competence at teaching. The Teaching Observation can be based on any instance of formalised teaching by the trainee which has been observed by the assessor. The process should be trainee-led (identifying appropriate teaching sessions and assessors).

### **Assessed Courses**

In some instances, some of the competences outlined in this curriculum may be assessed by attendance at a recognised course, such as a BTS course, provided that this has a formal end of course assessment.

### **Annual Educational Supervisor's Report**

This is an essential component of the annual assessment process. It should be provided for the ARCP process. It should be properly evidenced, and the sources of evidence stated. It should be informed by the SCE, when taken, and the WPBAs. It should also include other sources of evidence, including a sampling of the views of all those who have had contact with the trainee during the year, together with the personal views of the educational supervisor. As such, it is an indispensable component of the annual review of progression.

### **Multiple Consultant Report (MCR)**

The Multiple Consultant Report (MCR) captures the views of consultant supervisors on a trainee's clinical performance. The MCR year summary sheet summarises the feedback received, outcomes for clinical areas and comments which will give valuable insight to how well the trainee is performing, highlighting areas of excellence and areas of support required. MCR feedback will be available to the trainee and included in the educational supervisor's report.

## **5.4 Decisions on Progress (ARCP)**

The Annual Review of Competence Progression (ARCP) is the formal method by which a trainee's progression through her/his training programme is monitored and recorded each year. ARCP is not an assessment – it is the review of evidence of training and assessment. The ARCP process is described in "A Reference Guide for Postgraduate Specialty Training in the UK" (the "Gold Guide" – available from <http://specialtytraining.hee.nhs.uk/the-gold-guide/>). Note that there are special arrangements for academic trainees. LETBs are responsible for organising and conducting ARCPs. The evidence to be reviewed by ARCP panels should be collected in the trainee's e-Portfolio. There should be externality in the process.

Two ARCP Decision Aids, one for a single specialty respiratory medicine trainee, the other for a dual specialty trainee also accrediting in GIM, are shown in section 5.5. These give details of the evidence required of trainees for submission to the ARCP panel for each year of training. The decision aids provide guidance for the panel as to what level of achievement is necessary to permit progression of the trainee from his/her current year of training, into the next. Please refer to the JRCPTB website for the most up to date version of the ARCP decision aid.

## 5.5 ARCP Decision Aids

### ARCP Decision Aid for a Single Specialty Respiratory Medicine Trainee

Please see [www.jrcptb.org.uk](http://www.jrcptb.org.uk) for the current version of the ARCP decision aid

	END ST3	END ST4	END ST5	END ST6 (CCT)
<b>Clinical conduct (A1-2)</b>	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report
<b>Core clinical skills (B1-8)</b>	Competent B1-3	Competent B1-8	Competent B1-8	Competent B1-8
<b>Medical leadership (C1-17)</b>	Competent 25%	Competent 50%	Competent 75%	Competent 100%
<b>Patient/Problem Scenarios (D1-7)</b>	Competent 100%	Competent 100%	Competent 100%	Competent 100%
<b>Clinical Subject Areas (E1-28)</b>	Competent 25%	Competent 50%	Competent 75%	Competent 100%
<b>Practical Procedures (F1-13)</b>	Competent F 1,4,7,8	Competent F 1,2,3,4,5,7,8 Experience F 11,12	As for ST 4 plus F 6	Competent F 1-8 Experience F 9-13
<b>Bronchoscopy</b>	2 Satisfactory DOPS plus sign off of experience by Educational Supervisor	2 Satisfactory DOPS Formal sign off of competence by Educational Supervisor	Competence at basic diagnostic bronchoscopy maintained; DOPS evidence; plus sign off of experience by Educational Supervisor	Competence at basic diagnostic bronchoscopy maintained; DOPS evidence; plus sign off of experience by Educational Supervisor

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6 (CCT)</b>
<b>Pleural ultrasound, level 1 competence</b>	Evidence of training/experience	Evidence of training/experience	Competence; formal sign off by Educational Supervisor/ Radiologist/DOPS	Competent maintained (evidence)
<b>Pleural aspiration</b>	Competent. DOPS and/or formal sign off by Educational Supervisor	Competent	Competent	Competent
<b>Chest Drain DOPS</b>	Competent; satisfactory DOPS as evidence	Competence maintained; satisfactory DOPS as evidence	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS
<b>NIV Competence</b>	Competent; DOPS as evidence Formal sign off by Educational Supervisor	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS
<b>Spirometry</b>	Competent	Competent	Competent	Competent
<b>Lung Function Interpretation</b>	Experience	Competent	Competent	Competent
<b>CXR Interpretation</b>	Competent	Competent	Competent	Competent
<b>CT/CTPA/HRCT Interpretation</b>	Experience	Experience	Competent	Competent
<b>ALS</b>	Valid	Valid	Valid	Valid
<b>Full MRCP (UK)</b>	Achieved (from 1.8.11 this is an entry requirement for ST3)			
<b>SCE</b>		Attempt/Pass (optional)	Attempt/Pass	Pass
<b>DOPS</b>	2 Bronchoscopy 1 Pleural aspiration 1 Chest drain 1 NIV	2 Bronchoscopy 1 Pleural aspiration (optional) 1 Chest drain 1 NIV (optional)	1 Bronchoscopy 1 Chest drain (optional)	1 Bronchoscopy 1 Chest drain (optional)

	END ST3	END ST4	END ST5	END ST6 (CCT)
<b>Procedure log book</b>	Satisfactory record of bronchoscopy, pleural procedures, NIV +/- attendance Lung Function Lab	Satisfactory record of bronchoscopy, pleural procedures, NIV +/- attendance Lung Function Lab	Satisfactory record of ongoing bronchoscopy, pleural procedures, NIV experience	Satisfactory record of ongoing bronchoscopy, pleural procedures, NIV experience
<b>mini-CEX/CbD</b>	Minimum of six to sample curriculum	Minimum of six to sample curriculum	Minimum of six to sample curriculum	Minimum of six to sample curriculum
<b>MSF</b>	One satisfactory ST 3 or 4	One satisfactory ST 3 or 4	One satisfactory ST 5 or 6	One satisfactory ST5 or 6
<b>Patient Survey (PS)</b>	One satisfactory ST3 or 4	One satisfactory ST3 or 4	One satisfactory ST5 or 6	One satisfactory ST5 or 6
<b>Use of evidence and audit (K1-2) Audit assessment(AA)</b>	One satisfactory AA ST3 or 4 Satisfactory evidence from e-Portfolio	One satisfactory AA ST3 or 4 Satisfactory evidence from e-Portfolio	One satisfactory AA ST5 or 6 Satisfactory evidence from e-Portfolio	One satisfactory AA ST5 or 6 Satisfactory evidence from e-Portfolio
<b>Teaching and Training, J1 Teaching Observation (TO)</b>	Evidence of involvement in teaching	Evidence of involvement plus satisfactory feedback from TO	As for ST4, plus evidence of understanding principles of adult education	Portfolio evidence of ongoing participation plus evidence of implementation of principles of adult education. Teaching course recommended (optional)
<b>Research</b>	Evidence of critical thinking around relevant clinical questions	Evidence of developing research ideas and questions. Participation in journal clubs. Able to critically review the literature.	Evidence of preparation for ST6 requirements	One or more of: higher degree/ or full publication/ or national/international presentation (abstract) <i>and</i> assessed research course/ or research/research degree (MSc) in medical

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6 (CCT)</b>
				education
<b>Management and NHS structure (I 1)</b>	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio Have attended recognised course
<b>STP Attendance</b>	70%	70%	70%	70% or appropriate alternative educational activities
<b>Educational Supervisor's Report</b>	Satisfactory	Satisfactory	Satisfactory	Satisfactory
<b>Multiple Consultant Report (MCR)</b>	4-6	4-6	4-6	4-6
<b>Courses</b>	Optional	Attendance at number and type appropriate for trainee	Attendance at number and type appropriate for trainee	Attendance at number and type appropriate for trainee
<b>National/International Meetings</b>	Optional attendance	Should have attended at least one since started training	Attendance	Attendance
<b>RCP CPD online diary</b>				Registered

## ARCP decision aid for a dual Respiratory Medicine and GIM CCT trainee

Please see [www.jrcptb.org.uk](http://www.jrcptb.org.uk) for the current version of the ARCP decision aid

	END ST3	END ST4	END ST5	END ST6	END ST7 (CCT)
<b>Clinical conduct (A1-2)</b>	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report	Satisfactory evidence from e-Portfolio and educational supervisor's report
<b>Core clinical skills (B1-8)</b>	Competent B1-3	Competent B1-8	Competent B1-8	Competent B1-8	Competent B1-8
<b>Medical leadership (C1-17)</b>	Competent 20%	Competent 40%	Competent 60%	Competent 80%	Competent 100%
<b>Patient/Problem Scenarios (D1-7)</b>	Competent 100%				
<b>Clinical Subject Areas (E1-28)</b>	Competent 20%	Competent 40%	Competent 60%	Competent 80%	Competent 100%
<b>Clinical subject area E25-ICU and HDU</b>					Formal Sign off of mandatory 60 day experience by ICU Educational Supervisor
<b>Practical Procedures (F1-13)</b>	Competent F 1,4,7,8	Competent F 1,2,3,4,5,7,8 Experience F 11,12	As for ST 4 plus F 6	As for ST5	Competent F 1-8 Experience F 9-13
<b>Bronchoscopy DOPS</b>	2 Satisfactory DOPS; sign off of experience	2 Satisfactory DOPS Formal sign off of	Competence at basic diagnostic	Competence at basic diagnostic	Competence at basic diagnostic bronchoscopy

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6</b>	<b>END ST7 (CCT)</b>
	by Educational Supervisor	competence by educational supervisor	bronchoscopy maintained; DOPS evidence; sign off of experience by Educational Supervisor	bronchoscopy maintained; DOPS evidence; sign off of experience by Educational Supervisor	maintained; DOPS evidence; sign off of experience by Educational Supervisor
<b>Pleural ultrasound, level 1 competence</b>	Evidence of training/experience	Evidence of training/experience	Competence; formal sign off by Educational Supervisor/ RadiologistDOPS	Competent maintained (evidence)	Competent maintained (evidence)
<b>Pleural aspiration</b>	Competent. DOPS and/or formal sign off by Educational Supervisor	Competence maintained (evidence)	Competence maintained (evidence)	Competence maintained (evidence)	Competence maintained (evidence)
<b>Chest Drain DOPS</b>	Competent; satisfactory DOPS as evidence	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS
<b>NIV Competence</b>	Competent; DOPS as evidence. Formal sign off by Educational Supervisor	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS	Competence maintained; evidence required eg satisfactory DOPS
<b>Spirometry</b>	Competent	Competent	Competent	Competent	Competent
<b>Lung Function Interpretation</b>	Experience	Competent	Competent	Competent	Competent

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6</b>	<b>END ST7 (CCT)</b>
<b>CXR Interpretation</b>	Competent	Competent	Competent	Competent	Competent
<b>CT/CTPA/HRCT Interpretation</b>	Experience	Experience	Competent	Competent	Competent
<b>ALS</b>	Valid	Valid	Valid	Valid	Valid
<b>Full MRCP (UK)</b>	Achieved (from 1.8.11 this is an entry requirement for ST3)				
<b>SCE</b>			Attempt/Pass (optional)	Attempt/Pass	Pass
<b>DOPS</b>	2 Bronchoscopy 1 Pleural aspiration 1 Chest drain 1 NIV	2 Bronchoscopy 1 Pleural aspiration (optional) 1 Chest drain 1 NIV (optional)	1 Bronchoscopy 1 Chest drain (optional)	1 bronchoscopy 1 Chest drain (optional)	1 bronchoscopy 1 Chest drain (optional)
<b>Procedure log book with Educational Supervisor sign off</b>	Satisfactory record of bronchoscopy, pleural procedures, NIV +/- attendance Lung Function Lab	Satisfactory record of bronchoscopy, pleural procedures, NIV, +/- attendance Lung Function Lab	Satisfactory record of ongoing bronchoscopy, pleural procedures, NIV experience	Satisfactory record of ongoing bronchoscopy, pleural procedures, NIV experience	Satisfactory record of ongoing bronchoscopy, pleural procedures, NIV experience
<b>mini-CEX/CbD</b>	Minimum of six to sample curriculum	Minimum of six to sample curriculum	Minimum of six to sample curriculum	Minimum of six to sample curriculum	Minimum of six to sample curriculum
<b>MSF</b>	One satisfactory ST 3 or 4	One satisfactory ST3 or 4		One satisfactory ST6 or 7	One satisfactory ST6 or 7
<b>Patient Survey (PS)</b>	One satisfactory ST3 or 4	One satisfactory ST3 or 4		One satisfactory ST6 or 7	One satisfactory ST6 or 7

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6</b>	<b>END ST7 (CCT)</b>
<b>Use of evidence and audit (K1-2) Audit assessment (AA)</b>	One satisfactory AA ST3 or 4 Satisfactory evidence from e-Portfolio	One satisfactory AA ST3 or 4 Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	One satisfactory AA ST6 or 7 Satisfactory evidence from e-Portfolio	One satisfactory AA ST6 or 7 Satisfactory evidence from e-Portfolio
<b>Teaching and Training, J1 Teaching Observation (TO)</b>	Evidence of involvement in teaching	Evidence of involvement plus satisfactory feedback from TO	As for ST4, plus evidence of understanding principles of adult education	Portfolio evidence of ongoing participation plus evidence of implementation of principles of adult education	Portfolio evidence of ongoing participation plus evidence of implementation of principles of adult education. Teaching course recommended (optional)
<b>Research</b>	Evidence of critical thinking around relevant clinical questions	Evidence of developing research ideas and questions. Participation in journal clubs. Able to critically review the literature.	Evidence of preparation for ST7 requirements	Evidence of preparation for ST7 requirements	One or more of: higher degree/ or full publication/ or national/international presentation (abstract) <i>and</i> assessed research course or/ pursue research/research degree (MSc) in medical education
<b>Management and NHS structure (I 1)</b>	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio	Satisfactory evidence from e-Portfolio Have attended recognised course

	<b>END ST3</b>	<b>END ST4</b>	<b>END ST5</b>	<b>END ST6</b>	<b>END ST7 (CCT)</b>
<b>STP Attendance</b>	70%	70%	70%	70% or appropriate alternative educational activities	70% or appropriate alternative educational activities
<b>Educational Supervisor's Report</b>	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
<b>Multiple Consultant Report (MCR)</b>	4-6-6	4-6 4-6	4-6 4-6	4-6 4-6	4-6
<b>Courses</b>	Optional	Attendance at number and type appropriate for trainee	Attendance at number and type appropriate for trainee	Attendance at number and type appropriate for trainee	Attendance at number and type appropriate for trainee
<b>National/International Meetings</b>	Optional attendance	Optional attendance	Should have attended at least one since started training	Attendance	Attendance
<b>RCP CPD online diary</b>					Should have registered

## **5.6 Penultimate Year Assessment (PYA)**

The penultimate ARCP, known as the PYA is undertaken 18 months or less prior to the anticipated CCT date, and will include an external assessor from outside the training programme, often from the SAC. JRCPTB and the LETB will coordinate the appointment of this assessor. ARCPs will be a review of evidence, and not necessarily require an “interview,” the PYA will include a face to face component. Its intention is to confirm the CCT date with the trainee and the local STC, and to decide what further specific training requirements need to be met during the remaining time in training. PYA “Summary of Clinical Experience (SOCE),” CCT date calculator and external assessor marking forms are available from JRCPTB. Trainees and their educational supervisors may find it instructive to review these forms ahead of the PYA.

## **5.7 Complaints and Appeals**

The MRCP (UK) office has complaints procedures and appeals regulations documented on its website which apply to all examinations run by the Royal Colleges of Physicians, including the Respiratory Medicine SCE.

All workplace-based assessment methods incorporate direct feedback from the assessor to the trainee and the opportunity to discuss the outcome. If a trainee has a complaint about the outcome from a specific assessment this is their first opportunity to raise it.

Appeals against decisions concerning in-year assessments will be handled at LETB level and LETBs are responsible for setting up and reviewing suitable processes. If a formal complaint about assessment is to be pursued this should be referred in the first instance to the chair of the Specialty Training Committee who is accountable to the regional LETB. Continuing concerns should be referred to the appropriate Associate Dean.

# **6 Supervision and Feedback**

## **6.1 Supervision**

All elements of work in training posts must be supervised with the level of supervision varying depending on the experience of the trainee and the clinical exposure and case mix undertaken. Outpatient and referral supervision must routinely include the opportunity to personally discuss all cases if required. As training progresses the trainee should have the opportunity for increasing autonomy, consistent with safe and effective care for the patient.

Trainees will at all times have a named Educational Supervisor and Clinical Supervisor, responsible for overseeing their education and clinical practice. Depending on local arrangements these roles may be combined into a single role of Educational Supervisor.

The definitions and responsibilities of educational and clinical supervisors have been stated by GMC in the document “Operational Guide for the GMC Quality Framework.” Some of these are listed below. These definitions have been agreed with the National Association of Clinical Tutors, the Academy of Medical Royal Colleges and the Gold Guide team at MMC:

### ***Educational Supervisor***

*A trainer who is selected and appropriately trained to be responsible for the overall supervision and management of a specified trainee's educational progress during a training placement or series of placements. The Educational Supervisor is responsible for the trainee's Educational Agreement.*

### **Clinical Supervisor**

*A trainer who is selected and appropriately trained to be responsible for overseeing a specified trainee's clinical work and providing constructive feedback during a training placement. Some training schemes appoint an Educational Supervisor for each placement. The roles of Clinical and Educational Supervisor may then be merged.*

The educational supervisor, when meeting with the trainee, should discuss issues of clinical governance, risk management and any report of any untoward clinical incidents involving the trainee. The educational supervisor should be part of the clinical specialty team. Thus if the clinical directorate (clinical director) have any concerns about the performance of the trainee, or if there are issues of doctor or patient safety, these should be discussed with the educational supervisor. These processes, which are integral to trainee development, must not detract from the statutory duty of the trust to deliver effective clinical governance through its management systems.

Opportunities for feedback to trainees about their performance will arise through the use of the workplace-based assessments, regular appraisal meetings with supervisors, other meetings and discussions with supervisors and colleagues, and feedback from ARCP.

At the start of the training programme there should be a formal induction to both the LETB and the specialty. It is also recommended that there should be a formal induction to both the individual NHS Trust and to the Respiratory Department of each Trust at the start of each new attachment on the training programme.

It is essential that the educational supervisor is given sufficient time to properly carry out their role. This time should be formally identified in their job plan. A suggested time allowance would be 0.25 SPA per trainee per week. Some of the duties of the educational supervisor are listed below. This is not an exhaustive list:

- ensuring induction takes place and agreeing and signing an educational agreement at the start of the post.
- meeting the trainee(s) formally at least once per week
- undertaking formal appraisals at least 3 times per year
- writing the yearly educational supervisor's report to inform the yearly ARCP
- carrying out, or arranging for others to carry out, the formal work place based assessments, including collating the multi-source feedback (MSF)
- formally training their trainees "on the job"
- providing career advice
- dealing with trainees in difficulty
- attending to the pastoral care of trainees

## **6.2 Appraisal**

A formal process of appraisals and reviews underpins training. This process ensures adequate supervision during training, provides continuity between posts and different supervisors and is one of the main ways of providing feedback to trainees. All appraisals should be recorded in the e-Portfolio.

### **Induction Appraisal**

The trainee and their educational supervisor should have an appraisal meeting at the beginning of each post, ideally within the first 2 weeks, to review the trainee's progress so far, agree learning objectives for the post ahead and identify the learning opportunities presented by the post. Reviewing progress through the curriculum will help trainees to compile an effective Personal Development Plan (PDP) of objectives for the forthcoming post. This PDP should be agreed during the Induction Appraisal. The trainee and supervisor should both sign the educational agreement in the e-Portfolio at this time, recording their commitment to the training process.

### **Mid-point Review**

This meeting between trainee and educational supervisor is mandatory (except when an attachment is shorter than 6 months), but is encouraged particularly if either the trainee or educational or clinical supervisor has training concerns or the trainee has been set specific targeted training objectives at their ARCP. At this meeting trainees should review their PDP with their supervisor using evidence from the e-portfolio. Workplace-based assessments and progress through the curriculum can be reviewed to ensure trainees are progressing satisfactorily, and attendance at educational events should also be reviewed. The PDP can be amended at this review.

### **End of Attachment Appraisal**

Trainees should review the PDP and curriculum progress with their educational supervisor using evidence from the e-Portfolio. Specific concerns may be highlighted from this appraisal. The end of attachment appraisal form should record the areas where further work is required to overcome any shortcomings. Further evidence of competence in certain areas may be needed, such as planned workplace-based assessments, and this should be recorded. If there are significant concerns following the end of attachment appraisal then the programme director should be informed. Ideally, the educational supervisor should produce an end of post Educational Supervisor's Report, which covers the trainee's progress during the post, identifies any weak areas that will need addressing in the next post and makes recommendations for the direction of future training. This will normally form part of the evidence reviewed by the ARCP panel. With the trainee's full knowledge and permission, it should ideally also be made available to the trainee's educational supervisor at the next post.

### **GMC Annual Trainee Survey**

This must be completed annually by the trainee. An automatic email acknowledging receipt is sent to the trainee by GMC. Some LETBs may request that this email be shown at the ARCP.

## **7 Managing Curriculum Implementation**

This section of the document suggests how the curriculum should be managed within local programmes.

The organisation of training programmes for Respiratory Medicine is the responsibility of the postgraduate LETBs. The LETBs have established schools of medicine to oversee training in the medical specialties, including Respiratory Medicine. The responsibility for implementing the curriculum is delegated by the LETB and the school of medicine to the specialty training committee (STC) which, amongst others, has the following functions:

- Overseeing recruitment from core training, or equivalent, into specialty training in Respiratory Medicine

- Allocating trainees into particular rotations appropriate to their training needs and wishes
- Overseeing, and obtaining feedback on, the quality of training posts provided locally
- Interfacing with other relevant LETB Specialty Training faculties, such as ICM
- Ensuring curriculum implementation across the training programme
- Overseeing the workplace-based assessment process within the Respiratory Medicine programme
- Coordinating the ARCP process for trainees
- Ensuring adequate provision of appropriate local educational activities, including the Structured Training Programme.
- Providing adequate and appropriate careers advice
- Providing systems to identify and assist doctors with training difficulties
- Providing less than full time (flexible) training Recognising the potential of specific trainees to progress into an academic career

It is essential that educational and clinical supervisors are appropriately trained for their roles. Educational programmes to train educational and clinical supervisors and assessors in their roles and in the work place based assessments may be delivered by LETBs, the colleges or by both.

Implementation of this curriculum is the responsibility of the JRCPTB via its Specialty Advisory Committee (SAC) for Respiratory Medicine. The SAC is formally constituted with representatives from each LETB in England, from the devolved nations and also has trainee and lay representation. The SAC supervises and reviews all training posts in Respiratory Medicine and provides external representatives at all Penultimate Year Assessments (PYAs). Between them, members of the SAC attend PYA's for all Respiratory Medicine trainees at the appropriate stage of training. In addition, most SAC members are themselves Training Programme Directors. This thus ensures that the committee has wide experience of how the curriculum is being implemented in the training centres.

It is the responsibility of the committee Chair and Secretary to ensure that curriculum developments are communicated to Heads of Specialty Schools, LETB Specialty Training Committees and TPDs. The SAC also produces and administers the regulations which govern the curriculum.

Not only the SAC, but also the STCs, should all have trainee representation. Trainee representatives on the SAC provide feedback on the curriculum at each of the SAC committee meetings. The introduction of the e-Portfolio allows members of the SAC to remotely monitor progress of trainees, ensuring that they are under proper supervision and are progressing satisfactorily.

It is intended that this curriculum and the accompanying training e-Portfolio are used by the Training Programme Director/Specialty Advisor, STC, educational/clinical supervisors and the trainees to guide training. Although exact arrangements will vary, the overall structure and delivery of training should comply with the statements contained in these documents.

The curriculum and training e-Portfolio provide information on the suggested roles of the Postgraduate Dean, School of Postgraduate Medicine, Programme Director/Specialty Advisor, STC and educational/clinical supervisors in the delivery of the training contained therein. It also indicates the responsibilities of the trainees in

this regard. Further, it makes recommendations as to how the whole programme, individual posts and attachments should be involved in curriculum delivery.

## **7.1 Intended Use of Curriculum by Trainers and Trainees**

This curriculum and e-Portfolio are web-based documents which are available from the Joint Royal Colleges of Physicians Training Board (JRCPTB) website [www.jrcptb.org.uk](http://www.jrcptb.org.uk).

The educational supervisors and trainers can access the up-to-date curriculum from the JRCPTB website and will be expected to use this as the basis of their discussions with trainees. Both trainers and trainees are expected to have a good knowledge of the curriculum and should use it as a guide for their training programme.

Each trainee will engage with the curriculum by maintaining an e-Portfolio. The trainee will use the curriculum to develop learning objectives and reflect on learning experiences.

## **7.2 Recording Progress**

On enrolling with JRCPTB, trainees will be given access to the e-Portfolio for Respiratory Medicine. The e-Portfolio allows evidence to be built up to inform decisions on a trainee's progress and provides tools to support trainees' education and development.

The trainee's main responsibilities are to ensure that the e-Portfolio is kept up to date, arrange assessments and ensure they are recorded, prepare drafts of appraisal forms, maintain their personal development plan, record their reflections on learning and record their progress through the curriculum.

The supervisor's main responsibilities are to use e-Portfolio evidence such as outcomes of assessments, reflections and personal development plans to inform appraisal meetings. They are also expected to update the trainee's record of progress through the curriculum, write end-of-attachment appraisals and supervisor's reports.

All appraisal meetings, personal development plans and workplace based assessments (including MSF) should be recorded in the e-Portfolio. Trainees and supervisors should electronically sign the educational agreements. Trainees are encouraged to reflect on their learning experiences and to record these in the e-Portfolio. Reflections can be kept private or shared with supervisors.

Reflections, assessments and other e-Portfolio content should be linked to curriculum competencies in order to provide evidence towards acquisition of these competencies. If they so wish, trainees can add their own self-assessment ratings to record their view of their progress. The aims of the self-assessment are:

- To provide the means for reflection and evaluation of current practice
- To inform discussions with educational and clinical supervisors to both help gain insight and to assist in developing personal development plans.
- To identify shortcomings between experience, competency and areas defined in the curriculum so as to guide future clinical exposure and learning.

Supervisors can sign-off and comment on curriculum competencies to build up a holistic view of progression and to inform ARCP panels.

Trainees should, in addition, include in their e-Portfolio:

- An anonymised record of bronchoscopy experience, including details of exact techniques used, for example, transbronchial biopsy and transbronchial needle biopsy, as well as a record of the positive histology rate for visible tumour.
- An anonymised record of pleural interventional experience
- Formal sign off of their ICM experience
- Formal sign off of their NIV competence
- Details of training in appropriate specific subject areas within Respiratory Medicine, such as lung cancer and sleep breathing disorders
- Details of special interest training, particularly in transplantation, pulmonary hypertension, adult cystic fibrosis, domiciliary NIV and occupational and environmental disease.

## **8 Curriculum Review and Updating**

The Federation of Royal Colleges of Physicians will oversee evaluation of this curriculum and e-Portfolio. Responsibility for this will be delegated to JRCPTB and thence to the Respiratory Medicine SAC. The curriculum should be regarded as a living document, and the SAC structure, being comprised of Training Programme Directors, trainee representatives and lay personnel, with good communication mechanisms, will ensure that it will be able to respond swiftly to new developments. The curriculum will be evaluated annually for any essential changes, with more major review every 3 years.

Evaluation of the curriculum will seek to ascertain:

- Learner response to the curriculum
- Modification of attitudes and perceptions
- Learner acquisition of knowledge and skills
- Learner behavioural change
- Change in organisational practice

Evaluation methods will include:

- Trainee questionnaire
- Discussion with Programme Directors at SAC meetings
- Focused local discussions with LETBs, heads of schools of medicine, trust directors of medical education, educational supervisors and trainees, fed back to the SAC by the training programme directors who constitute a major part of the SAC membership.

Monitoring will be the responsibility of the training programme directors within the local faculties for education.

Trainee involvement in curriculum review will be facilitated through:

- Trainee involvement in the Respiratory Medicine SAC. There are 3 trainee representatives. Their names are suggested by the British Thoracic Society, which has mechanisms in place to ensure full and active trainee representation in the Society's functions. Most UK trainees are members of the BTS. On the SAC there is one trainee representative for the devolved nations, one representing academic trainees and the third is the chair of the BTS Trainee Special Advisory

Group (SAG). The SAG has processes in place to ensure appropriate representation and consultation.

- Involvement of trainees in local faculties of education
- Informal feedback during appraisal, ARCP, College meetings

The Respiratory Medicine SAC strongly supports patient and carer involvement in medical education and training and seeks to promote the doctor-patient partnership as a central tenet of practice. Lay involvement in the drafting of this curriculum has been ensured by involvement of lay members of the Royal Colleges of Physicians. The SAC strongly recommends that individual local training programmes have the doctor-patient partnership model as a central focus of training.

## **9 Equality and Diversity**

The Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of equality and diversity legislation set out in the Equality Act 2010.

The Federation of the Royal Colleges of Physicians believes that equality of opportunity is fundamental to the many and varied ways in which individuals become involved with the Colleges, either as members of staff and Officers; as advisers from the medical profession; as members of the Colleges' professional bodies or as doctors in training and examination candidates. Accordingly, it warmly welcomes contributors and applicants from as diverse a population as possible, and actively seeks to recruit people to all its activities regardless of race, religion, ethnic origin, disability, age, gender or sexual orientation.

LETB quality assurance will ensure that each training programme complies with the equality and diversity standards in postgraduate medical training as set by GMC.

Compliance with anti-discriminatory practice will be assured through:

- monitoring of recruitment processes;
- ensuring all College representatives and Programme Directors have attended appropriate training sessions prior to appointment or within 12 months of taking up post;
- LETBs must ensure that educational supervisors have had equality and diversity training (for example, an e learning module) every 3 years
- LETBs must ensure that any specialist participating in trainee interview/appointments committees or processes has had equality and diversity training (at least as an e module) every 3 years.
- ensuring trainees have an appropriate, confidential and supportive route to report examples of inappropriate behaviour of a discriminatory nature. LETBs and Programme Directors must ensure that on appointment trainees are made aware of the route in which inappropriate or discriminatory behaviour can be reported and supplied with contact names and numbers. LETBs must also ensure contingency mechanisms are in place if trainees feel unhappy with the response or uncomfortable with the contact individual.
- monitoring of College Examinations;
- ensuring all assessments discriminate on objective and appropriate criteria and do not unfairly disadvantage trainees because of gender, ethnicity, sexual orientation or disability (other than that which would make it impossible to practise safely as a physician). All efforts shall be made to ensure the participation of people with a disability in training.

## 10 Syllabus

In the tables below, the “Assessment Methods” shown are those that are appropriate as **possible** methods that could be used to assess each competency. It is not expected that all competencies will be assessed and that where they are assessed not every method will be used. See section 5 for more details.

The “GMP” column defines which of the 4 domains of the Good Medical Practice Framework for Appraisal and Assessment are addressed by each competency. See section 3.2 Good Medical Practice for more details.

The syllabus is divided into the following 12 sections:

- Learning objectives for 2 clinical conduct areas (A)
- Learning objectives for 8 core clinical skills (B)
- Learning objectives for 17 medical leadership competencies (C)
- Learning objectives for 7 key patient/problem orientated scenarios (D)
- Learning objectives for 28 clinical subject areas (E)
- Learning objectives for 2 generic and 13 specific practical procedural areas (F)
- Learning objectives for 4 areas of ensuring patient safety (G)
- Learning objectives for 4 areas concerning the legal and ethical aspects of clinical practice (H)
- Learning objectives for management and NHS structure (I)
- Learning objectives for teaching and training (J)
- Learning objectives for use of evidence and audit (K)
- Learning objectives for health promotion and public health (L)

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## A. Learning Objectives for Clinical Conduct

### A1. The Patient as Central Focus of Care

<b>To develop the ability to prioritise the patient's agenda, encompassing their beliefs, concerns expectations and needs</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Outlines health needs of particular populations e.g. ethnic minorities, and recognises the impact of health beliefs, culture and ethnicity in presentations of physical and psychological conditions	CbD	1
Ensures that all decisions and actions are in the best interests of the patient and the public good	CbD	1
<b>Skills</b>		
Gives adequate time for patients and carers to express their beliefs ideas, concerns and expectations	mini-CEX	1, 3, 4
Responds to questions honestly and seeks advice if unable to answer	CbD, mini-CEX	3
Encourages the health care team to respect the philosophy of patient focussed care	ACAT, CbD, mini-CEX, MSF	3
Develops a self-management plan with the patient	ACAT, CbD, mini-CEX	1, 3
Supports patients, parents and carers where relevant to comply with management plans	CbD, mini-CEX, PS	3
Encourages patients to voice their preferences and personal choices about their care	mini-CEX, PS	3
<b>Behaviours</b>		
Supports patient self-management	CbD, PS	3
Recognises the duty of the medical professional to act as patient advocate	CbD, MSF, PS	3, 4
Responds to people in an ethical, honest and non-judgmental manner	CbD, MSF, PS	3, 4
Adopts assessments and interventions that are inclusive, respectful of diversity and patient-centred	CbD, MSF, PS	3, 4

## A2. Personal Behaviour and the development of an appropriate professional style

To develop the behaviours that will enable the doctor to become a senior leader able to deal with complex situations and difficult behaviours and attitudes. To work increasingly effectively with many teams and to be known to have the quality and safety of patient care as a prime objective

To develop the attributes of someone who is trusted to be able to manage complex human, legal and ethical problems. To become someone who is trusted and is known to act fairly in all situations

Knowledge	Assessment Methods	GMP
<p>Recalls and builds upon the competences defined in the Foundation Programme Curriculum:</p> <ul style="list-style-type: none"> <li>Deals with inappropriate patient and family behaviour</li> <li>Respects the rights of children, elderly, people with physical, mental, learning or communication difficulties</li> <li>Adopts an approach to eliminate discrimination against patients from diverse backgrounds including age, gender, race, culture, disability and sexuality</li> <li>Places needs of patients above own convenience</li> <li>Behaves with honesty and probity</li> <li>Acts with honesty and sensitivity in a non-confrontational manner</li> <li>Knows the main methods of ethical reasoning: casuistry, ontology and consequential</li> <li>Understands the overall approach of value-based practice and how this relates to ethics, law and decision-making</li> </ul>	ACAT, CbD, mini-CEX, MSF, PS	1, 2, 3, 4
Defines the concept of modern medical professionalism	CbD	1
Outlines the relevance of professional bodies (Royal Colleges, JRCPTB, GMC, Postgraduate Dean, BMA, specialist societies, medical defence societies)	CbD	1
Skills		
<p>Practises with professionalism including:</p> <ul style="list-style-type: none"> <li>Integrity</li> <li>Compassion</li> <li>Altruism</li> <li>Continuous improvement</li> <li>Aspiration to excellence</li> <li>Respect of cultural and ethnic diversity</li> <li>Regard to the principles of equity</li> </ul>	ACAT, CbD, mini-CEX, MSF, PS	1, 2, 3, 4
Works in partnership with patients and members of the wider healthcare team	CbD, mini-CEX, MSF	3
Liaises with colleagues to plan and implement work rotas	MSF, CbD	3
Promotes awareness of the doctor's role in utilising healthcare	CbD, mini-CEX, MSF	1, 3

resources optimally and within defined resource constraints		
Recognises and responds appropriately to unprofessional behaviour in others	CbD	1
If appropriate and permitted, is able to provide specialist support to hospital and community-based services	CbD, MSF	1
Is able to handle enquiries from the press and other media effectively	CbD, DOPS	1, 3
<b>Behaviours</b>		
Recognises personal beliefs and biases and understands their impact on the delivery of health services	CbD, mini-CEX, MSF	1,3,4
Where personal beliefs and biases impact upon professional practice, ensures appropriate referral of the patient	CbD, mini-CEX, MSF	1,3,4
Recognises the need to use all healthcare resources prudently and appropriately	ACAT, CbD, mini-CEX	1, 2
Recognises the need to improve clinical leadership and management skills	ACAT, CbD, mini-CEX	1
Recognises situations when it is appropriate to involve professional and regulatory bodies	ACAT, CbD, mini-CEX	1
Shows willingness to act as a leader, mentor, educator and role model	ACAT, CbD, mini-CEX, MSF	1
Is willing to accept mentoring as a positive contribution to promote personal professional development	ACAT, CbD, mini-CEX	1
Participates in professional regulation and professional development	CbD, mini-CEX, MSF	1
Takes part in 360 degree feedback as part of appraisal	CbD, MSF	1, 2, 4
Recognises the right for equity of access to healthcare	ACAT, CbD, mini-CEX,	1
Recognises the need for reliability and accessibility throughout the healthcare team	ACAT, CbD, mini-CEX, MSF	1

## B. Learning Objectives for Core Clinical Skills

### B1. History Taking

**Be able to elicit a relevant focused history from patients with increasingly complex issues and in increasingly challenging circumstances**

**Be able to record the history accurately and synthesise this with relevant clinical examination**

**Be able to establish a problem list increasingly based on pattern recognition and including differential diagnoses**

**Be able to formulate a management plan that takes account of likely clinical evolution**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understand pathophysiology of symptoms	CbD, mini-CEX	1
Recognise importance of different elements of history, including the role of smoking, occupational, environmental and domestic exposures	mini-CEX, CbD	1
Recognise that patients do not present history in structured fashion	mini-CEX	1,3
Know likely causes and risk factors for conditions relevant to mode of presentation	mini-CEX	1
Recognise that the patient's agenda and the history should inform examination, investigation and management	mini-CEX	1
Recognise the importance of social and cultural issues and practices that may have an impact on health	mini-CEX	1
<b>Skills</b>		
Identify and overcome possible barriers to effective communication	mini-CEX	1,3
Communicate effectively with patients from diverse backgrounds and those with special communication needs, including the use of interpreters where appropriate	mini-CEX, PS	1,3
Manage time and draw consultation to a close appropriately	mini-CEX	1,3
Recognise that effective history taking in non-urgent cases may require several discussions with the patient and other parties over time	mini-CEX	1,3
Know when to supplement history with standardised instruments or questionnaires	mini-CEX	1,3
Able to manage alternative and conflicting views from family, carers, friends and members of the multi-professional team	ACAT, mini-CEX	1, 3
Able to assimilate history from the available information from patient and other sources, including members of the multi-professional team	mini-CEX	1,3
Where values and perceptions of health and health promotion conflict, can facilitate balanced and mutually respectful decision making	mini-CEX	1
Able to recognise and interpret appropriately the use of non verbal communication from patients and carers	mini-CEX	1,3
Able to focus on relevant aspects of history	mini-CEX	1,3
Able to maintain focus despite multiple and often conflicting agendas	mini-CEX	1,3
<b>Behaviours</b>		
Show respect and behave in accordance with Good Medical Practice	ACAT, mini-CEX	3,4

## B2. Clinical Examination

**Be able to perform a focused, relevant and accurate clinical examination in patients with increasingly complex issues and in increasingly challenging circumstances**

**Be able to relate physical findings to history in order to establish diagnosis(es) and formulate a management plan**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understand the anatomical and physiological basis for clinical signs and the relevance of positive and negative physical signs	ACAT, CbD, mini-CEX	1
Understand the need for a relevant and targeted physical examination	CbD, mini-CEX	1
Recognise constraints (including those that are cultural or social) to performing physical examination and strategies that may be used to overcome them	CbD, mini-CEX	1
Recognise the limitations of physical examination and the need for adjunctive forms of assessment to confirm diagnosis	ACAT, CbD, mini-CEX	1
Recognise when the offer/use of a chaperone is appropriate or required	ACAT, CbD, mini-CEX	1
<b>Skills</b>		
Can perform an examination relevant to the presentation and risk factors that is valid, targeted and time efficient	ACAT, CbD, mini-CEX	1
Can recognise the possibility of deliberate harm (both self harm and harm by others) in vulnerable patients and the need to report to appropriate agencies	ACAT, CbD, mini-CEX	1,2
Can actively elicit important clinical findings	CbD, mini-CEX	1
Can perform relevant adjunctive examinations	CbD, mini-CEX	1
<b>Behaviours</b>		
Show respect and behave in accordance with Good Medical Practice	CbD, mini-CEX, MSF	1,4
Ensure that examination, whilst clinically appropriate, considers social, cultural and religious boundaries; appropriately communicate findings and make alternative arrangements where necessary	CbD, mini-CEX, MSF	1,4

### B3. Therapeutics and Safe Prescribing

<b>Be able to prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice including non-medication-based therapeutic and preventative interventions</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Indications, contraindications, side effects, interactions and dosages of commonly used drugs	CbD, mini-CEX	1
Can recall range of adverse reactions to commonly used drugs, including complementary medicines	CbD, mini-CEX	1
Can recall drugs requiring therapeutic monitoring and is able to interpret results	CbD, mini-CEX	1
Able to outline tools to promote patient safety in prescribing, including electronic clinical record systems and other IT systems	CbD, mini-CEX	1,2
Can define the effects of age, body size, organ dysfunction and concurrent illness on drug distribution and metabolism relevant to the trainee's practice	CbD, mini-CEX	1,2
Able to understand and recognise the roles of regulatory agencies involved in drug use, monitoring and licensing (e.g. National Institute for Clinical Excellence [NICE], Committee on Safety of Medicines [CSM], Healthcare Products Regulatory Agency and hospital formulary committees)	ACAT, CbD, mini-CEX	1,2
<b>Skills</b>		
Able to review the continuing need for, effect of, and adverse effects of, long term medications relevant to the trainee's clinical practice	ACAT, CbD, mini-CEX	1,2
Able to anticipate and avoid defined drug interactions, including with complementary medicines	CbD, mini-CEX	1
Able to advise patients (and carers) about important drug interactions and adverse effects	ACAT, CbD, mini-CEX	1,3
Can prescribe appropriately in pregnancy, and during breast feeding	CbD, mini-CEX	1
Able to make appropriate dose adjustments following therapeutic drug monitoring, or physiological change (e.g. deteriorating renal function)	ACAT, CbD, mini-CEX	1
Can use IT prescribing tools where available to improve safety	CbD, mini-CEX	1,2
Can employ validated methods to improve patient compliance with prescribed medication	ACAT, mini-CEX	1,3
Can provide comprehensible explanations for the use of drugs to the patient and to carers when relevant; understands the principles of compliance in ensuring that drug regimens are followed	CbD, mini-CEX	1,3
Can demonstrate understanding of the importance of non-medication based therapeutic interventions, including the legitimate role of placebos	CbD, mini-CEX	1,3
Where involved in "repeat prescribing," ensures safe systems for monitoring, review and authorisation	ACAT, CbD, mini-CEX	1
<b>Behaviours</b>		
Recognise the benefit of minimising number of medications taken by a patient to a level compatible with best care	CbD, mini-CEX	1
Appreciate the role of non-medical prescribers	ACAT, CbD, mini-	1,3

	CEX	
Remain open to advice from other health professionals on medication issues	CbD, mini-CEX	1,3
Recognise the importance of resources when prescribing, including the role of drug formularies and electronic prescribing systems	ACAT, CbD, mini-CEX	1,2
Ensure prescribing information is shared promptly and accurately with a patient's health providers, including between primary and secondary care	CbD	1,3
Participate in adverse drug event reporting processes	mini-CEX, CbD	1
Remain up to date with therapeutic alerts, and respond appropriately	ACAT, CbD	1

## B4. Time Management and Decision Making

**Demonstrate increasing ability as training progresses to prioritise and organise clinical and clerical duties in order to optimise patient care**

**Demonstrate improving ability as training progresses to make appropriate clinical and clerical decisions in order to optimise the effectiveness of the clinical team resource**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understand that effective organisation is key to time management	CbD	1
Understand that some tasks are more urgent and/or more important than others	CbD	1
Understand the need to prioritise work according to urgency and importance	CbD	1
Maintain focus on individual patient needs whilst balancing multiple competing pressures	CbD	1
Understand that some tasks may have to wait or be delegated to others	CbD	1
Understand the roles, competencies and capabilities of other professionals and support workers	CbD	1
Can outline techniques for improving time management	CbD	1
Understand the importance of prompt investigation, diagnosis and treatment in disease and illness management	CbD, mini-CEX	1,2
<b>Skills</b>		
Identifies clinical and clerical tasks requiring attention or predicted to arise	ACAT, CbD, mini-CEX	1,2
Estimates the time likely to be required for essential tasks and plans accordingly	ACAT, CbD, mini-CEX	1
Groups together tasks when this will be the most effective way of working	ACAT, CbD, mini-CEX	1
Recognises the most urgent/important tasks and ensures that they are managed expeditiously	ACAT, CbD, mini-CEX	1
Regularly reviews and re-prioritises personal and team work load	ACAT, CbD, mini-CEX	1
Organises and manages workload effectively and flexibly	ACAT, CbD, Mini-CEX	1
Makes appropriate use of other professionals and support workers	ACAT, CbD, mini-CEX	1
<b>Behaviours</b>		
Able to work flexibly and deal with tasks in an effective and efficient fashion	CbD, MSF	3
Recognises when self or others are falling behind and takes steps to rectify the situation	ACAT, CbD, MSF	3
Communicates changes in priority to others	MSF	1
Remains calm in stressful or high pressure situations and adopts a timely, rational approach	MSF	1
Appropriately recognises and handles uncertainty within the	MSF	1

consultation

## B5. Decision Making and Clinical Reasoning

**Be able to formulate a diagnostic and therapeutic plan for patients according to the clinical information available**

**Be able to prioritise the diagnostic and therapeutic plan**

**Be able to communicate the diagnostic and therapeutic plan appropriately**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Can define the steps of diagnostic reasoning:	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Interprets information obtained from history and physical examination appropriately</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Conceptualises/abstracts the clinical problem</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Understands the psychological component of disease and illness presentation</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Generates hypotheses within context of clinical likelihood</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Tests, refines and verifies hypotheses</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Develops problem list and action plan</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Recognises how to use expert advice, clinical guidelines and algorithms</li> </ul>	CbD, mini-CEX	1
<ul style="list-style-type: none"> <li>Recognises and appropriately responds to sources of information accessed by patients</li> </ul>	CbD, mini-CEX	1
Able to recognise the need to determine the most clinically and cost effective treatment, both for the individual patient and for the patient cohort	CbD, mini-CEX	1,2
Understands the concepts of disease natural history and assessment of risk	CbD, mini-CEX	1
Knows and understands the methods for quantifying risk e.g. number needed to treat, and is aware of the pitfalls in interpretation	CbD, mini-CEX	1
Knows and understands commonly used statistical methodology	CbD, mini-CEX	1
Knows how relative and absolute risks are derived and the meaning of the terms positive and negative predictive value, sensitivity and specificity in relation to diagnostic tests	CbD, mini-CEX	1
<b>Skills</b>		
Recognises critical illness and responds with due urgency	CbD, mini-CEX	1
Able to cope with diagnostic and therapeutic uncertainty	CbD, mini-CEX	1
Correctly interprets clinical features, their reliability and relevance to clinical scenarios, including recognition of the breadth of presentation of common disorders	CbD, mini-CEX	1
Able to incorporate an understanding of the psychological and social elements of clinical scenarios into decision making through a robust process of clinical reasoning	CbD, mini-CEX	1
Can generate plausible hypothesis(es) following patient assessment	CbD, mini-CEX	1
Can construct a concise and applicable problem list using available information	ACAT, CbD, mini-CEX	1
Can construct an appropriate management plan in conjunction with the patient, family, carers and other members of the clinical team and	ACAT, CbD, mini-CEX	1,3,4

can communicate this effectively to the patient, parents, family and carers where relevant		
Can define the relevance of an estimated risk of a future event to an individual patient	CbD, mini-CEX	1
Uses risk calculators appropriately	CbD, mini-CEX	1
Considers the risks and benefits of screening investigations	CbD, mini-CEX	1
Able to apply knowledge of quantitative data of risks and benefits of therapeutic interventions to an individual patient	CbD, mini-CEX	1
Makes appropriate use of the medical literature to guide reasoning	AA, CbD	1
<b>Behaviours</b>		
Recognises the difficulties in predicting occurrence of future events	ACAT, CbD, mini-CEX	1
Shows willingness to discuss intelligibly with a patient the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic interventions	ACAT, CbD, mini-CEX	3
Shows willingness to adapt and adjust approaches according to the beliefs and preferences of the patient and/or carers	ACAT, CbD, mini-CEX	3
Is willing to facilitate patient choice	ACAT, CbD, mini-CEX	3
Shows willingness to search for evidence to support clinical decision making	ACAT, CbD, mini-CEX	1,4
Demonstrates ability to identify own biases and inconsistencies in clinical reasoning	ACAT, CbD, mini-CEX	1,3

## B6. Evidence and Guidelines

**Able to make the optimal use of current best evidence in making decisions about the care of patients**

**Able to construct evidence based guidelines and protocols in relation to medical practice**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the role of ethics in research	CbD, research ethics committee approval letter	1,2,3,4
Understands the application of statistics in scientific medical practice	CbD	1
Understands the advantages and disadvantages of different study methodologies (randomised control trials, case controlled cohort trials etc)	CbD	1
Understands the principles of critical appraisal	CbD	1
Understands levels of evidence and quality of evidence	CbD	1
Understands the role and limitations of evidence in the development of clinical guidelines and protocols	CbD	1
Understands the advantages and disadvantages of guidelines and protocols	CbD	1
Understands the processes that result in nationally applicable guidelines (e.g. NICE and SIGN)	CbD	1
Understands the relative strengths and limitations of both quantitative and qualitative studies, and the different types of each	CbD	1
<b>Skills</b>		
Able to search the medical literature, including use of PubMed, Medline, Cochrane reviews and the internet	CbD	1
Able to appraise retrieved evidence to address a clinical question	CbD	1
Applies conclusions from critical appraisal to clinical care	CbD	1
Able to identify the limitations of research	CbD	1
Able to contribute to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine	CbD	1
<b>Behaviours</b>		
Keeps up to date with national reviews and guidelines of practice (e.g. NICE and SIGN)	CbD	1
Aims for best clinical practice (clinical effectiveness) at all times, responding to evidence-based medicine	ACAT, CbD, mini-CEX	1
Recognises the occasional need to practise outside clinical guidelines	ACAT, CbD, mini-CEX	1
Encourages discussion amongst colleagues on evidence-based practice	ACAT, CbD, mini-CEX, MSF	1

## B7. Relationships with Patients and Communication within a Consultation

**Can recognise the need for, and has developed the ability to, communicate effectively and sensitively with patients, relatives and carers**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
How to structure a consultation appropriately	ACAT, CbD, mini-CEX, PS	1
The importance of the patient's background, culture, education and preconceptions (beliefs, ideas, concerns, expectations) in the consultation process	ACAT, CbD, mini-CEX, PS	1
<b>Skills</b>		
Able to establish a rapport with the patient and any relevant others (e.g. carers)	ACAT, CbD, mini-CEX, PS	1,3
Can use open and closed questioning appropriately	CbD, mini-CEX	1,3
Able to listen actively and to question sensitively in order to guide the patient and to clarify information	mini-CEX, PS	1,3
Can recognise and manage communication barriers, tailoring language to the individual patient and others, using interpreters when indicated	CbD, mini-CEX, PS	1,3
Can deliver information compassionately, being alert to, and managing, patient's/carer's and own emotional responses (anxiety, antipathy etc)	CbD, mini-CEX	1,3,4
Uses, and refers patients to, appropriate written and other evidence based information sources	CbD, mini-CEX	1,3
Checks the patient's/carer's understanding, ensuring that all their concerns/questions have been covered	CbD, mini-CEX	1,3
Indicates when the consultation is nearing its end and concludes with a summary and appropriate action plan; asks the patient to summarise back to check his/her understanding	ACAT, CbD, mini-CEX	1,3
Makes accurate contemporaneous records of the discussion	CbD, mini-CEX	1, 3
Manages follow-up effectively and safely, utilising a variety of methods (e.g. phone call, email, letter)	CbD, mini-CEX	1
Ensures appropriate referral and communication with other healthcare professionals resulting from the consultation are made accurately and in a timely manner	CbD, mini-CEX	1,3,4
<b>Behaviours</b>		
Approaches the clinical situation with courtesy, empathy, compassion and professionalism, especially by using appropriate body language and by endeavouring to ensure an appropriate physical environment; acts as an equal not as a superior	ACAT, CbD, mini-CEX, MSF, PS	1, 3, 4
Ensures appropriate personal language and behaviour	CbD	1,3
Ensures that the approach is inclusive and patient-centred, and respects the diversity of values in patients, carers and colleagues	ACAT, CbD, mini-CEX, MSF, PS	1, 3
Is willing to provide patients with a second opinion	ACAT, CbD, mini-CEX, MSF, PS	1, 3
Uses different methods of ethical reasoning to come to a balanced decision where complex and conflicting issues are involved	ACAT, CbD, mini-CEX, MSF	1, 3

Is confident and positive in own values

ACAT, Cbd, mini-  
CEX

1, 3

## B8. Breaking Bad News

**Be able to recognise the fundamental importance of breaking bad news**

**To have developed strategies for skilled delivery of bad news according to the needs of individual patients and their relatives/carers**

Knowledge	Assessment Methods	GMP
Understand that how bad news is delivered irretrievably affects the subsequent relationship with the patient	ACAT, CbD, mini-CEX, MSF, PS	1
Understand that every patient may desire different levels of explanation and have different responses to bad news	ACAT, CbD, mini-CEX, PS	1, 4
Know that bad news is confidential but that the patient may wish to be accompanied	ACAT, CbD, mini-CEX, PS	1
Realise that, once the news is given, patients are unlikely to take in any subsequent information, so that an early further appointment should be made	CbD, mini-CEX, PS	1
Realise that breaking bad news can be extremely stressful for the doctor or professional involved	CbD, mini-CEX	1, 3
Realise that the interview at which bad news is given may be an educational opportunity	CbD, mini-CEX	1
Know that it is important to: <ul style="list-style-type: none"> <li>• Prepare for breaking bad news</li> <li>• Set aside sufficient uninterrupted time</li> <li>• Choose an appropriate private environment and ensure that there will be no unplanned disturbances</li> <li>• Have sufficient information regarding prognosis and treatment</li> <li>• Ensure the individual has appropriate support if desired</li> <li>• Structure the interview</li> <li>• Be honest, factual, realistic and empathic</li> <li>• Be aware of relevant guidance documents</li> </ul>	CbD, mini-CEX	1, 3
Know that 'bad news' may be expected or unexpected and cannot always be predicted	CbD, mini-CEX	1
Understand that sensitive communication of bad news is an essential part of professional practice	CbD, mini-CEX	1
Know that 'bad news' has different connotations depending on the context, the individual, the social and the cultural circumstances	ACAT, CbD, mini-CEX, PS	1
Realise that a post mortem examination may be required and understand what this involves	ACAT, CbD, mini-CEX, PS	1
Be familiar with the local organ retrieval process	CbD, mini-CEX	1
Skills		
Demonstrates to others good practice in breaking bad news	CbD, DOPS, MSF	1, 3
Involves patients and carers in decisions regarding their future management	CbD, DOPS, MSF	1, 3, 4
Recognises the impact of the bad news on the patient, carer, supporters, staff members and self	CbD, mini-CEX, PS	1,3
Encourages questioning and ensures comprehension	CbD, DOPS, MSF	1, 3

Responds to verbal and visual cues from patients and relatives	CbD, DOPS, MSF	1, 3
Acts with empathy, honesty and sensitivity, avoiding undue optimism or pessimism	CbD, DOPS, MSF	1, 3
Structures the interview, for example:	CbD, DOPS, MSF	1, 3
<ul style="list-style-type: none"> <li>• Sets the scene</li> <li>• Establishes understanding</li> <li>• Discusses diagnosis(es), implications, treatment, prognosis and subsequent care</li> </ul>		
<b>Behaviours</b>		
Takes leadership in breaking bad news	CbD, DOPS, MSF	1
Respects the different ways people react to bad news	CbD, DOPS, MSF	1
Ensures appropriate recognition and management of the impact of breaking bad news on the doctor	CbD, MSF	1,3

## C. Medical Leadership

The Medical Leadership Competency Framework, developed by the Academy of Medical Royal Colleges and the NHS Institute for Innovation and Improvement, has informed the inclusion of leadership competencies in this curriculum. The Framework has suggested possible assessment methods but, on reviewing these, the need for more specific methods was identified. JRCPTB and the RCP Education Department has established a working group to develop and evaluate leadership assessment methods. These may include variants of CbD and ACAT, as well as the Case Conference Assessment Tool currently being piloted. Future iterations of this document may therefore be changed accordingly.

### C1. Self Awareness

<b>Trainee should recognise and articulate their own values and principles, appreciating how these may differ from those of other individuals and groups</b>		
<b>Trainee should identify their own strengths and limitations and realise the impact of their own behaviour</b>		
<b>Trainee should identify their own emotions and prejudices and understand how these can affect behaviour</b>		
<b>Trainee should obtain, value and act on feedback from a variety of sources</b>		
Knowledge	Assessment Methods	GMP
Ways in which individual behaviours impact on others; personality types, group dynamics, learning styles, leadership styles	MSF, PS, CbD, mini-CEX	1,2,3,4
Methods of obtaining feedback from others	MSF, PS, ACAT, CbD, TO, mini-CEX	3,4
Skills		
Maintain and routinely practice critical self awareness, including ability to discuss strengths and weaknesses with supervisor, recognising external influences and changing behaviour accordingly	MSF, PS, ACAT, CbD, TO, mini-CEX	3,4
Show awareness of, and sensitivity to, the way in which cultural and religious beliefs affect approaches and decisions, and respond respectfully	mini-CEX, PS	3,4
Behaviours		
Adopt a patient-focused approach to decisions that acknowledges the rights, values and strengths of patients and the public	mini-CEX, PS, CbD	3,4
Recognise and show respect for diversity and differences in others	mini-CEX, PS, CbD	3,4

## C2. Self Management

Trainee should be able to manage the impact of their own emotions on behaviour and actions  
Trainee should be reliable in meeting their responsibilities and commitments to a consistently high standard

Trainee should plan their workload and activities to fulfil work requirements and commitments with regard to their own personal health

Knowledge	Assessment Methods	GMP
The role and responsibility of occupational health and other support networks.	MSF	2,3
The limitations of own professional competence	MSF, AA	2,3
Skills		
Recognise the manifestations of stress on self and others and know how, where and when to look for support	MSF, AA	2,3
Balance personal and professional roles and responsibilities. Prioritise tasks, having realistic expectations of what can be completed by self and others	MSF	2,3
Behaviours		
Be conscientious, able to manage own time and able to delegate appropriately	MSF	2,3,4
Recognise personal health as an important issue	MSF	2,3

### C3. Self Development

**Participate in continuous professional development activities throughout professional life**  
**Be prepared to change behaviour in the light of feedback and reflection**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Local processes for dealing with and learning from clinical errors	mini-CEX, CbD	2,3
The importance of best practice, transparency and consistency	MSF, TO, SCE	2,3
<b>Skills</b>		
Use a reflective approach to practice and be able to learn from previous experience	MSF, ACAT, mini-CEX, CbD, AA	2,3
Use assessment, appraisal, complaints and other feedback tools to discuss and develop an understanding of own development needs.	MSF, ACAT, mini-CEX, CbD, AA	2,3
<b>Behaviours</b>		
Be prepared to accept appropriate responsibility	MSF, PS	2,3
Show commitment to continuing professional development which involves seeking training and self development opportunities, learning from colleagues and accepting constructive criticism throughout professional life	MSF, PS, TO, AA	2,3

## C4. Developing Networks

Identify opportunities where working with others can bring added benefits

Create opportunities to bring individuals and groups together to achieve goals

Actively seek the views of others

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
The role of team dynamics in the way a group, team or department functions	MSF, CbD	1,2,3,4
Team structures and the structure, roles and responsibilities of multidisciplinary teams within the broader health context relevant to the specialty, including other agencies	MSF, CbD	1,2,3,4
<b>Skills</b>		
Support bringing together different professionals, disciplines, and other agencies, to provide high quality healthcare	MSF, CbD	1,2,3,4
<b>Behaviours</b>		
Interact effectively with professionals in other disciplines and agencies	MSF, CbD	1,2,3,4
Respect the skills and contributions of colleagues	MSF, CbD	3,4

## C5. Building and Maintaining Relationships

<b>Empathise and take into account the needs and feelings of others</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Specific techniques and methods that facilitate effective and empathic communication	MSF	1,3,4
<b>Skills</b>		
Develop effective working relationships with colleagues and other staff through good communication skills, building rapport and articulating own view□	MSF	3,4
Communicate effectively in the resolution of conflicts, providing feedback, and identifying and rectifying team dysfunction	MSF	3,4
<b>Behaviours</b>		
Recognise good advice and continuously promote values based on non prejudicial practice	MSF	2,3,4
Use authority appropriately and assertively, but show willingness to follow advice when necessary	MSF	2,3,4

## C6. Working within Teams

**Adopt a team approach, acknowledging and appreciating the efforts and contributions of others**  
**Willing to compromise when appropriate**

**Recognise the common purpose of the team and respect team decisions**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Be aware of a wide range of leadership styles and approaches and know their applicability to different situations and people	MSF, CbD	1,3,4
<b>Skills</b>		
Enable individuals, groups and agencies to implement plans and decisions	MSF,CbD	3,4
Identify and prioritise tasks and responsibilities and be able to delegate and supervise safely	MSF,CbD	2,3,4
<b>Behaviours</b>		
Show recognition of value of a team approach and willingness to consult and work as part of a team	MSF,CbD	3,4
Respect colleagues, including non-medical professionals.	MSF, CbD	3,4

## C7. Planning

<b>Be able to appraise options in terms of benefits and risks</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
The requirements for running a department, unit or practice relevant to the specialty	MSF	1,2,3,4
<b>Skills</b>		
Able to develop protocols & guidelines and to implement these	MSF, CbD, MSF	1,2,3,4
Able to analyse feedback and comments and to integrate them into plans for service development	CbD	2,3,4
<b>Behaviours</b>		
Demonstrate awareness of importance of equity in healthcare access and delivery	CbD, MSF	3,4

## C8. Managing Resources

### Minimise waste

Take action where resources are not being used efficiently and effectively

Knowledge	Assessment Methods	GMP
Efficient use of clinical resources in order to provide care		2,3,4
Commissioning, funding and contracting arrangements relevant to the specialty		1,2,3,4
How financial pressures experienced by the specialty department and organisation are managed		1,2,3,4
Skills		
Use clinical audit with the purpose of highlighting resources required	MSF	2
Behaviours		
Commitment to the proper use of public money.	MSF	2
Commitment to taking action when resources are not used efficiently or effectively		2,4
Awareness that, in addition to patient specific clinical records, clinical staff also have responsibilities for other records (eg research)		2,4

## C9. Managing People

**Provide guidance and direction for others and use the skills of team members effectively**  
**Review performance of team members to ensure that planned service outcomes are met**  
**Support team members to develop their roles and responsibilities**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Relevant legislation (e.g. Equality and Diversity, Health and Safety, Employment Law) and local Human Resource policies	SCE	1,2
The duties, rights and responsibilities of an employer, and of a co-worker (e.g. looking after occupational safety of fellow staff)	SCE	1,2
Individual performance review; purpose, techniques and processes, including difference between appraisal, assessment and revalidation	SCE	1,2,3,4
<b>Skills</b>		
Prepare rotas; delegate; organise and lead teams	MSF, CbD	2,3
Contribute to the recruitment and selection of staff	MSF	2,3
Contribute to staff development and training, including mentoring, supervision and appraisal.	MSF, CbD	2,3
<b>Behaviours</b>		
A willingness to supervise the work of less experienced colleagues	MSF	2,3

## C10. Managing Performance

Analyse information from a range of sources about own and colleagues' performance  
Build learning from experience into future plans

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
How complaints arise and how they are managed	CbD	2,3,4
<b>Skills</b>		
Use and adhere to clinical guidelines and protocols, morbidity and mortality reporting systems, and complaints management systems	MSF, CbD	1,2,3,4
Improve services following evaluation/performance management	MSF	2,3
<b>Behaviours</b>		
Respond constructively to the outcome of reviews, assessments or appraisals of performance	MSF, CbD	2,3,4

## C11. Ensuring Patient Safety

Identify and quantify risks to patients using information from a range of sources  
 Use above evidence to identify options  
 Use systematic methods to assess and minimise risk  
 Monitor the effects of, and outcomes of, change

	Assessment Methods	GMP
<b>Knowledge</b>		
How healthcare governance influences patient care, research and educational activities at a local, regional and national level	CbD	1,2
<b>Skills</b>		
Assess and analyse situations, services and facilities in order to minimise risk to patients and the public	CbD	2,3
<b>Behaviours</b>		
Be willing to take responsibility for clinical governance, risk management and audit activities in order to improve the quality of the service	CbD	2,3,4

## C12. Encouraging Innovation

**Question the status-quo**

**Encourage dialogue and debate with a wide range of people**

**Develop creative solutions to transform services**

	<b>Assessment Methods</b>	<b>GMP</b>
<b>Knowledge</b>		
A variety of methodologies for developing creative solutions to improving services	MSF, CbD, AA	1,2
<b>Skills</b>		
Question existing practice in order to improve services	MSF, CbD, AA	3,4
Apply creative thinking approaches (or methodologies or techniques) in order to propose solutions to service issues	MSF, CbD, AA	1,2,3
<b>Behaviours</b>		
Be receptive to new ideas	MSF, CbD, AA	3
Support colleagues in voicing their own ideas	MSF, CbD, AA	3

### C13. Facilitating Transformation

**Model the change expected**

**Articulate the need for change and its impact on people**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
The implications of change on systems and people	AA	1
Project management methodology	AA	1
<b>Skills</b>		
Provide medical expertise in situations beyond those involving direct patient care	MSF, AA	1
<b>Behaviours</b>		
Strive for continuing improvement in delivering patient care services	MSF, CbD, AA	1,2

## C14. Identifying the Contexts for Change

**Look to the future by scanning for ideas, best practice and emerging trends that will shape the system**

**Develop and communicate aspirations**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
The responsibilities of the various Executive Board members and Clinical Directors or leaders	CbD, AA	1
The function and responsibilities of national bodies such as DH, HCC, NICE, NPSA, NCAS; Royal Colleges and Faculties, specialty specific bodies, representative bodies; regulatory bodies; educational and training organisations	CbD, AA	1
<b>Skills</b>		
Compare and benchmark healthcare services	CbD, AA, MSF	1
Use a broad range of scientific and policy publications relating to delivering healthcare services	CbD, AA, MSF	1
<b>Behaviours</b>		
The ability to understand issues and potential solutions before acting	MSF, CbD	1

## C15. Applying Knowledge and Evidence

Use appropriate methods to gather data and information  
 Undertake analysis against evidence based criteria  
 Use information to challenge existing practices and processes  
 Influence others towards innovation and change

	Assessment Methods	GMP
<b>Knowledge</b>		
Patient outcome reporting systems within the specialty and the organisation, and how these relate to national programmes.	AA	1,3
Research methods and how to evaluate scientific publications, including the use and limitations of different methodologies for collecting data	CbD, AA	1
<b>Skills</b>		
Use a broad range of scientific and policy publications relating to delivering healthcare services	CbD, AA	1
<b>Behaviours</b>		
The ability to understand issues and potential solutions before acting	MSF, AA	1

## C16. Making Decisions

**Educate and inform key people who influence and make decisions**

**Contribute a clinical perspective to organisation and system decisions**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
How decisions are made by individuals, teams and the organisation	MSF, AA	1
Effective communication strategies within organisations	MSF, AA	1,3
<b>Skills</b>		
Prepare for meetings - reading agendas, understanding minutes, action points and background research on agenda items	MSF	1
Work collegiately and collaboratively with a wide range of people outside the immediate clinical setting	MSF	1,3
<b>Behaviours</b>		
Appreciate the importance of involving the public and communities in developing health services	MSF	1,3
Willingness to participate in decision making processes beyond the immediate clinical care setting	MSF	1

## C17. Evaluating Impact

<b>Overcomes barriers to implementation</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Barriers to change	AA	1
<b>Skills</b>		
Evaluate outcomes and re-assess the solutions through research, audit and quality assurance activities	AA	1
<b>Behaviours</b>		
Commitment to implementing proven improvements in clinical practice and services	AA	1
Obtaining the evidence base before declaring effectiveness of changes	AA	1
Attitudes and behaviours that assist dissemination of good practice	AA	1,3

## D. Learning Objectives for Patient/Problem Orientated Scenarios

### D1. Breathlessness

**Be competent to carry out specialist assessment of severity and form a structured differential diagnosis leading to appropriate further investigation and management**

**Trainee must have experience (minimum of 2 years) in dealing with patients presenting with:**

- **Chronic symptoms in outpatient department**
- **Acute symptoms in acute/emergency admissions unit**

**Be able to manage the breathless patient effectively**

Knowledge	Assessment Methods	GMP
Causes of breathlessness	SCE, mini-CEX, CbD, ACAT	1,2
Differentiate cardiac, respiratory, neuromuscular and metabolic causes	SCE, mini-CEX, CbD, ACAT	1,2
Know and understand pathogenesis of causes	SCE, mini-CEX, CbD, ACAT	1
Know and understand management/treatment	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Take a thorough, focused history	mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	mini-CEX, CbD, ACAT	1,2
Plan appropriate investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD,	1
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD,	1
Interpretation of Chest Radiology: <ul style="list-style-type: none"> <li>• Chest X-Ray (competence)</li> <li>• V/Q scans (competence)</li> <li>• Chest CT scans (competence)</li> </ul>	SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Use of inhaled and nebulised drug therapy (competence)	mini-CEX, CbD, ACAT	1,2
Behaviours		

Able to recognise, where necessary, the urgency of the situation and to expedite management appropriately.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Appreciates the need to relieve the distress of breathlessness, when appropriate.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Explains the possible causes to patient and relatives and outlines the investigation and management plan.	mini-CEX, CbD, ACAT, MSF	1,2,3,4

## D2. Cough

**Be competent to carry out specialist assessment and form a structured differential diagnosis of causes leading to appropriate further investigation and management**

**Trainee must have experience in assessing patients referred to the outpatient department with cough (minimum of 2 years)**

**Be able to manage the patient with cough effectively**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of cough with: <ul style="list-style-type: none"> <li>• Normal CXR</li> <li>• Abnormal CXR</li> </ul>	SCE, mini-CEX, CbD, ACAT	1,2
Respiratory causes	SCE, mini-CEX, CbD, ACAT	1,2
ENT causes	SCE, mini-CEX, CbD, ACAT	1,2
Upper GI causes	SCE, mini-CEX, CbD, ACAT	1,2
How to formulate an appropriate differential diagnosis	SCE, mini-CEX, CbD, ACAT	1,2
Appropriate investigation of cough, including specialist studies	SCE, mini-CEX, CbD, ACAT	1,2
Management/treatment of cough linked to underlying diagnosis	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Take a thorough, focused history	mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	mini-CEX, CbD, ACAT	1,2
Plan appropriate investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1
Interpretation of Chest Radiology (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Special investigations (experience/competence)	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Use of inhaled and nebulised drug therapy (competence)	mini-CEX, CbD,	1,2

		ACAT
<b>Behaviours</b>		
Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Explains the possible causes to patient and relatives and outlines the investigation and management plan.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Involves the multi-disciplinary team when appropriate	mini-CEX, CbD, ACAT, MSF	1,2,3,4

### D3. Haemoptysis

**Be competent to undertake specialist assessment and form a structured differential diagnosis in patients with haemoptysis leading to appropriate further investigation and management**

**Trainee must have experience (minimum of 2 years) of patients presenting with:**

- **Haemoptysis in outpatient setting**
- **Acute severe haemoptysis in acute/emergency admissions unit setting**

**Be able to manage the patient with haemoptysis effectively**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of haemoptysis	SCE, mini-CEX, CbD, ACAT	1,2
How to assess severity and formulate diagnostic strategy	SCE, mini-CEX, CbD, ACAT	1,2
How to formulate management plan, appropriate to degree of urgency	SCE, mini-CEX, CbD, ACAT	1,2
Need for interventional radiology/surgery	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Take a thorough, focused history	mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	mini-CEX, CbD, ACAT	1,2
Plan appropriate investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of Chest Radiology (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2,3,4
Resuscitation, including basic airway skills (competence)	ALS certificate, SCE, mini-CEX, CbD, ACAT	1,2,3,
<b>Behaviours</b>		
Able to recognise, where necessary, the urgency of the situation and to expedite management appropriately, immediately addressing issues of patient safety.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Appreciates the need to relieve distress in the case of "massive" haemoptysis.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Explains the possible causes to patient and relatives and outlines the	mini-CEX, CbD,	1,2,3,4



## D4. Pleuritic Chest Pain

**Be competent to undertake specialist assessment and form structured differential diagnosis in patients with pleuritic chest pain**

**Trainee must have experience (minimum of 2 years) in dealing with patients presenting with:**

- **Chronic symptoms in outpatient department**
- **Acute symptoms in acute/emergency admissions unit**

**Be able to manage the patient with pleuritic chest pain effectively**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of pleuritic chest pain	SCE, mini-CEX, CbD, ACAT	1,2
Understand pathogenesis of causes	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of causes	SCE, mini-CEX, CbD, ACAT	1,2
How to formulate a plan of investigation, including appropriate use of relevant further investigations	SCE, mini-CEX, CbD, ACAT	1,2
Treatments and Management	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Take a thorough, focused history	SCE, mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	SCE, mini-CEX, CbD, ACAT	1,2
Plan appropriate investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of Chest Radiology including Chest X-Ray, V/Q scans, CT scans, CTPA scans (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Closed pleural biopsy (optional)(competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2,3,4
Pleural (Chest) Ultrasound (level I training mandatory)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2,3
Local Anaesthetic ("Medical") Thoracoscopy (only required to have knowledge of; however, some trainees may gain experience in [optional])	DOPS, SCE, mini-CEX, CbD, ACAT	1,2,3,4
<b>Behaviours</b>		
Able to recognise, where necessary, the urgency of the situation and to expedite management appropriately.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic.	mini-CEX, CbD, ACAT, MSF	1,2,3,4

Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Appreciates the need to relieve pain and distress.	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Explains the possible causes to patient and relatives and outlines the investigation and management plan.	mini-CEX, CbD, ACAT, MSF	1,2,3,4

## D5. Abnormal Chest X-Ray

Be competent to assess and form differential diagnosis in patients with:

- Localised abnormalities on chest x-ray, for instance mass lesions
- Diffusely abnormal chest x-ray, for instance interstitial pulmonary fibrosis

Trainee must have experience in dealing with patients presenting with the following throughout training:

- Abnormal chest x-ray in outpatient department
- Abnormal chest x-ray in acute/emergency admissions unit

Be able to formulate an appropriate plan for investigation and management

Knowledge	Assessment Methods	GMP
Thorough knowledge of both normal and abnormal anatomy as appropriate to radiology of the chest	SCE, mini-CEX, CbD, ACAT	1,2
Causes of abnormal Chest X-Ray	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of causes	SCE, mini-CEX, CbD, ACAT	1,2
Know and understand pathogenesis of causes	SCE, mini-CEX, CbD, ACAT	1,2
Know how to formulate plan for further investigation and management	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Interpretation of Chest Radiology (competence); ability to relate normal and abnormal radiology to underlying normal and abnormal chest anatomy	SCE, mini-CEX, CbD, ACAT	1,2
Take a thorough, relevant, focused history	mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	mini-CEX, CbD, ACAT	1,2
Plan appropriate further investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Behaviours		
Able to recognise, where necessary, the urgency of the situation and to expedite management appropriately.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic	mini-CEX, CbD, ACAT	1,2,3,4
Explains the possible causes to patient and relatives and outlines the investigation and management plan. Involves the multi-disciplinary team where appropriate.	mini-CEX, CbD, ACAT	1,2,3,4
Displays skill and sensitivity in breaking bad news where appropriate	mini-CEX, CbD, ACAT	1,2,3,4

## D6. Respiratory Failure

**Be competent to carry out specialist assessment of severity and form a structured differential diagnosis leading to appropriate further investigation and management**

**Trainee must have experience in dealing with patients presenting with acute as well as chronic symptoms (minimum 2 years)**

**Be competent to manage effectively**

Knowledge	Assessment Methods	GMP
Know and understand the causes of respiratory failure including lung, chest wall and neuromuscular (including CNS) diseases and other causes	SCE, mini-CEX, CbD, ACAT	1,2
Understand pathogenesis of causes	SCE, mini-CEX, CbD, ACAT	1,2
Know differential diagnosis of respiratory failure	SCE, mini-CEX, CbD, ACAT	1,2
Know appropriate investigations and their use	SCE, mini-CEX, CbD, ACAT	1,2
Know and understand treatment and management strategies	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Understand use of hospital and domiciliary oxygen, including LTOT and ambulatory oxygen	SCE, mini-CEX, CbD, ACAT	1,2
Know and understand principles and appropriate use of NIV and of intubation and ventilation	SCE, mini-CEX, CbD, ACAT	1,2
Experience of HDU and ICU (note mandatory requirement)	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Take a thorough, focused history	SCE, mini-CEX, CbD, ACAT	1,2
Elicit relevant physical signs	SCE, mini-CEX, CbD, ACAT	1,2
Plan appropriate investigations	SCE, mini-CEX, CbD, ACAT	1,2
Able to formulate an appropriate differential diagnosis and management plan	SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of other appropriate Lung Function Tests (competence )	SCE, mini-CEX, CbD, ACAT	1,2
Arterial blood gases, performance and interpretation (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of Chest Radiology (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Basic airway skills and CPR (competence)	ALS certificate, SCE, mini-CEX, CbD, ACAT	1,2

NIV (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Invasive Ventilation (experience)	SCE, mini-CEX, CbD, ACAT	1,2
Assessment for domiciliary oxygen, short burst and long term (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Use of inhaled and nebulised drug therapy, including whether to drive with oxygen or air (competence)	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Able to recognise, where necessary, the urgency of the situation and to expedite management appropriately, ensuring patient safety.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Considers most important and serious causes first and seeks to exclude them.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Safely relieves symptoms and distress.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Shows understanding of the patient's anxiety and is sympathetic.	mini-CEX, CbD, ACAT	1,2,3,4
Explains the possible causes to patient and relatives and outlines the investigation and management plan.	mini-CEX, CbD, ACAT	1,2,3,4
Involves other healthcare teams, particularly critical care/HDU, in a timely fashion, when and where appropriate.	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Displays skill and sensitivity in breaking bad news where appropriate.	mini-CEX, CbD, ACAT	1,2,3,4

## D7. Pleural Effusion

**Be competent to assess and form a differential diagnosis in patients with pleural effusion**

**Trainee must have experience (minimum 2 years) in dealing with patients presenting with pleural effusion in:**

- **Outpatient department setting**
- **Acute/emergency admissions unit setting**
- **Patients in hospital with pre-existing illness(es) where pleural effusion is present as either a complication of the illness or the treatment of the illness**

**Be able to formulate an appropriate plan for the investigation and management of pleural effusion**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes and differential diagnosis of pleural effusions, including understanding of the difference between transudates and exudates	SCE, mini-CEX, CbD	1
Know and understand pathogenesis of pleural effusions	SCE, mini-CEX, CbD	1
Know how to differentiate between transudates and exudates	SCE, mini-CEX, CbD	1
Know how to formulate a plan of investigation, including the use of further imaging - pleural ultrasound, CT scans, pleural aspiration, closed and CT-guided biopsy and local anaesthetic and surgical (VATS) thoracoscopy	SCE, mini-CEX, CbD, ACAT	1,2
Know when drainage of a pleural effusion is appropriate, including safety aspects of chest drain insertion	SCE, mini-CEX, CbD, ACAT	1,2
Have knowledge of chest drain management, including indwelling pleural catheters	SCE, mini-CEX, CbD, ACAT	1,2
Have knowledge of treatments for pleural effusion	SCE, mini-CEX, CbD	1,2
Have knowledge of chemical pleurodesis	SCE, mini-CEX, CbD	1,2
Have knowledge of the role of surgery in the management of pleural effusions	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Pleural fluid aspiration	DOPS	1,2,3,4
Interpretation of Chest X-ray, Ultrasound and CT scans	SCE, mini-CEX, CbD, DOPS	1,2
Insertion of chest drains, including "seldinger" drains (mandatory) and large bore 'surgical' drains (optional)	DOPS	1,2,3,4
Pleural Ultrasound to level 1 competence	DOPS	1,2
Closed pleural biopsy (optional)	DOPS	1,2
Local Anaesthetic (Medical) Thoracoscopy (optional)	DOPS	1,2
<b>Behaviours</b>		
Able to recognise, when appropriate, the urgency of the situation and to expedite management appropriately	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Considers most important causes first and seeks to exclude them	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Able to recognise when emergent intervention is and is not necessary	SCE, mini-CEX, CbD, ACAT	1,2,3,4

Appreciates the need to relieve breathlessness	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Explains the possible causes to the patient and relatives/carers and outlines the investigation and management plan	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Displays skill and sensitivity in breaking bad news where appropriate	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Involves the multidisciplinary/palliative care team where appropriate	SCE, mini-CEX, CbD, ACAT	1,2,3,4

## E. Learning Objectives for Clinical Subject Areas

### E1. Respiratory Anatomy, Physiology, Pathology, Microbiology and Pharmacology

**To have sufficient knowledge of basic respiratory anatomy and physiology to properly underpin specialist consultant practice and to be competent in the application of this knowledge**  
**To be competent in the application of pathology, microbiology and pharmacology expertise to the management of patients with respiratory diseases**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Anatomy as applied to patients with respiratory diseases, including an understanding of the development, structure and function of the normal chest and lung and an understanding of how disease processes can disturb normal anatomical structure and function	SCE, mini-CEX, CbD	1,2
Physiology as applied to patients with respiratory diseases, including relevant cardiovascular physiology, and an understanding of the causes and consequences of disturbance of normal physiology	SCE, mini-CEX, CbD	1,2
Understand the basic histopathological changes that occur in respiratory diseases and know how to use the information provided by pathologists in patient care	SCE, mini-CEX, CbD	1,2
Understand the normal and abnormal flora of the respiratory tract and recognise the importance of infection as a cause of respiratory diseases	SCE, mini-CEX, CbD	1,2
Pharmacology as applied to patients with respiratory diseases	SCE, mini-CEX, CbD	1,2
Value of communication and meetings with radiologists, pathologists, microbiologists and pharmacists	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Able to integrate basic science information, and a knowledge of its disturbance, into patient care	SCE, mini-CEX, CbD	1,2
Able to select appropriate investigations in specific clinical situations	SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Demonstrates willingness to understand relevance of a thorough grounding in basic science and its disturbance to all aspects of Respiratory Medicine	SCE, mini-CEX, CbD, MSF	1,2,3,4
Good team working with a range of specialists from other disciplines relevant to the practice of Respiratory Medicine	mini-CEX, CbD, MSF	1,2,3,4

## E2. Asthma

**Be competent to undertake specialist assessment and management of adolescent and adult patients with asthma**

**Trainees must care for sufficient inpatients and outpatients with asthma during their clinical placements (minimum 2 years)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of asthma	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of asthma	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of asthma, including from other causes of wheeze such as vocal cord dysfunction, hyperventilation, laryngeal disease, foreign body, tumour, COPD and obliterative bronchiolitis	SCE, mini-CEX, CbD, ACAT	1,2
Factors which may be associated with poor asthma control, including smoking, environmental factors, psychosocial factors, drugs, poor inhaler technique, poor compliance, chronic rhinosinusitis, ABPA, bronchiectasis and gastro-oesophageal reflux	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with asthma	SCE, mini-CEX, CbD, ACAT	1,2
Principles of mechanical ventilation in asthma	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications, including ABPA and bronchiectasis	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Patient education and self management	SCE, mini-CEX, CbD, ACAT	1,2
Factors impacting management at the transition between childhood/teenage and adult care	SCE, mini-CEX, CbD, ACAT	1,2
Newer treatment modalities, such as anti-IgE therapy	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Able to take a relevant, focused history, elicit relevant physical signs, formulate a differential diagnosis, plan appropriate further investigations and formulate an appropriate management plan	SCE, mini-CEX, CbD, ACAT	1,2
Skin testing (knowledge/experience)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry and peak flow measurements (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of other appropriate Lung Function Tests (competence )	SCE, mini-CEX, CbD, ACAT	1,2
Collaborate with patient to produce an appropriate management plan	mini-CEX, CbD, ACAT	1,3,4
Use of inhaled and nebulised drug therapy (competence), including recognising importance of good inhaler technique	SCE, mini-CEX, CbD, ACAT	1,2

Management options for refractory disease	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Awareness of importance of taking a detailed history to determine factors contributing to poor asthma control	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Awareness of importance of checking inhaler technique and treatment compliance	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise asthma as a chronic condition requiring ongoing care in the appropriate (primary/secondary/tertiary) care setting	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to establish a trusting doctor-patient relationship	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of appropriately trained nurses and other health care professionals in long term care	mini-CEX, CbD, ACAT, MSF	1,2,3,4

### E3. Chronic Obstructive Pulmonary Disease (COPD)

**Be competent to undertake specialist assessment and management of patients with COPD  
Trainee must care for sufficient inpatients and outpatients with COPD during their clinical placements (minimum 2 years)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of COPD	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of COPD	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of COPD, including from asthma, obliterative bronchiolitis and bronchiectasis	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with COPD	SCE, mini-CEX, CbD, ACAT	1,2
Pulmonary rehabilitation (see section E 24)	SCE, mini-CEX, CbD, ACAT	1,2
Hospital at home/Early discharge schemes (see section E 21)	SCE, mini-CEX, CbD, ACAT	1,2
Principles of mechanical ventilation in COPD	SCE, mini-CEX, CbD, ACAT	1,2
Principles of oxygen therapy	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Role of lung volume reduction surgery in emphysema	SCE, mini-CEX, CbD, ACAT	1,2
Complications of COPD	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines/NSF	SCE, mini-CEX, CbD, ACAT	1,2
Smoking cessation methods (see section E 23)	SCE, mini-CEX, CbD, ACAT	1,2
Medicolegal implications of advanced patient directives	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Able to take a relevant, focused history, elicit relevant physical signs, formulate a differential diagnosis, plan appropriate further investigations and formulate an appropriate management plan	SCE, mini-CEX, CbD, ACAT	1,2
Use of tools to assess quality of life and breathlessness, including the St George's Questionnaire, Hospital Anxiety and Depression Score, MRC and Borg scores	SCE, mini-CEX, CbD, ACAT	1,2
Skin testing (knowledge/experience)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry and peak flow measurements (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of other appropriate Lung Function Tests (competence )	SCE, mini-CEX, CbD, ACAT	1,2

Performance and interpretation of arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Use of inhaled and nebulised drug therapy (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Assessment of suitability for pulmonary rehabilitation, early discharge schemes and hospital at home schemes	SCE, mini-CEX, CbD, ACAT	1,2
Assessment for domiciliary oxygen therapy - LTOT, short burst, ambulatory (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Non-invasive ventilation (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Role of mechanical ventilation and use of appropriate ventilation strategies	SCE, mini-CEX, CbD, ACAT	1,2
Sleep studies (competence in screening studies; experience of more advanced studies)	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Awareness of importance of taking a detailed history to determine factors contributing to poor COPD control	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Awareness of importance of checking inhaler technique and treatment compliance	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise COPD as a chronic condition requiring ongoing care in the appropriate (primary/secondary/tertiary) care setting; appreciate role of early discharge/hospital at home schemes	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to establish a trusting doctor-patient relationship	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise the importance of establishing a "ceiling of care"	mini-CEX, CbD, ACAT	1,2,3,4
Skill and sensitivity in discussing clinical situation and prognosis with patient and relatives/carers	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Demonstrate sensitivity in dealing with life-style modifications such as smoking cessation	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of appropriately trained nurses and other health care professionals in long term care	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise possible role of palliative care team where appropriate	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4

## E4. Thoracic Oncology

**Be competent to undertake specialist assessment and management of patients with lung cancer, mesothelioma and other thoracic malignancies**

**Trainee must care for sufficient inpatients and outpatients with lung cancer during their clinical placements (minimum 2 years)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of lung cancer, mesothelioma and other thoracic malignancies	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of lung cancer, mesothelioma and other thoracic malignancies, including newer modalities such as PET-CT scanning	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of lung cancer, mesothelioma and other thoracic malignancies	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with lung cancer, mesothelioma and other thoracic malignancies, including the roles of surgery, radiotherapy, chemotherapy and best supportive care	SCE, mini-CEX, CbD, ACAT	1,2
Skills of physicians, radiologists, surgeons, clinical and medical oncologists and of the multi-disciplinary team in management	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Medicolegal implications of advance directives	mini-CEX, CbD	1,2
Palliative care	SCE, mini-CEX, CbD, ACAT	1,2
Understand arguments for and against screening and surveillance	SCE, mini-CEX, CbD, ACAT	1,2
Current "Improving Outcomes Guidance" (IOG) targets, organisation of care and role of peer review	mini-CEX, CbD	1,2
<b>Skills</b>		
Interpretation of Chest X-Ray and Chest CT (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Pleural ultrasound (level 1 competence), aspiration (competence) and closed pleural biopsy (optional) (competence where considered appropriate)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Chest drain insertion	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Insertion of chronic indwelling tunnelled chest drains (knowledge;	DOPS, SCE, mini-	1,2

competence where considered appropriate [trainee intending to specialise in thoracic oncology])	CEX, CbD, ACAT	
Local Anaesthetic ("Medical") Thoracoscopy (knowledge of; some trainees may gain experience in if intending to specialise in thoracic oncology)	SCE, mini-CEX, CbD, ACAT	1,2
Staging and performance status (competence)	SCE, mini-CEX, CbD, ACAT	1,2
With increasing seniority, be able to select most appropriate modality of care	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Recognise importance of relieving physical, psychological and spiritual suffering	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Be able to work in a multidisciplinary team	mini-CEX, CbD, MSF	1,2,3
Be able to break bad news sensitively but honestly	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of good patient information, including access to sources of financial support	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Be able to discuss ethics of prolonging life and to help patient to weigh this up against quality of life	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Be able to communicate sensitively and empathically but with honesty with patient, family, friends and carers	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise the importance of audit	mini-CEX, CbD, MSF	1,2,3
Recognise the importance of peer review	mini-CEX, CbD, MSF	1,2,3

## E5. Thoracic Surgery

Have knowledge of thoracic surgery

Have seen some thoracic surgical procedures

Be competent in the assessment of patient fitness for thoracic surgery

Have knowledge of the short and long term complications of thoracic surgery

Have experience of MDT working

	Assessment Methods	GMP
<b>Knowledge</b>		
Basic principles of “open” thoracic surgery and of VATS	SCE, mini-CEX, CbD,	1,2
Procedures available for surgical lung and mediastinal lymph node biopsy, including mediastinoscopy and VATS	SCE, mini-CEX, CbD,	1,2
Surgery for pneumothorax, including techniques to achieve pleurodesis	SCE, mini-CEX, CbD,	1,2
Bullectomy	SCE, mini-CEX, CbD,	1,2
Lung volume reduction surgery	SCE, mini-CEX, CbD,	1,2
Lobectomy	SCE, mini-CEX, CbD,	1,2
Pneumonectomy	SCE, mini-CEX, CbD,	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence )	SCE, mini-CEX, CbD	1,2
Performance and interpretation of arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of exercise tests	SCE, mini-CEX, CbD	1,2
Interpretation of CXR, V/Q scans/CT scans/PET-CT scans	SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Have attended at least one thoracic surgical list, and seen a variety of procedures	Record in ePortfolio	1
Be able to explain the basics of thoracic surgical procedures to patients, their families and their carers	SCE, mini-CEX, CbD, MSF	1,2,3,4
Be able to explain the risks/benefits/complications of thoracic surgical procedures to patients, their families and their carers	SCE, mini-CEX, CbD, MSF	1,2,3,4

## E6. Pulmonary Infections

**Be competent to undertake specialist assessment and management of patients with pulmonary infections including the common cold, influenza, bronchitis, pneumonia**  
**Trainee must care for sufficient inpatients and outpatients with pulmonary infections during their clinical placements (minimum 2 years)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of pulmonary infections, common and less common	SCE, mini-CEX, CbD, ACAT	1,2
Microbiology of pulmonary infections	SCE, mini-CEX, CbD, ACAT	1,2
Predisposing conditions	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of pulmonary infections	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of pulmonary infections	SCE, mini-CEX, CbD, ACAT	1,2
Management of patients with pulmonary infections, including oxygen therapy, intravenous fluids and other supportive care.	SCE, mini-CEX, CbD, ACAT	1,2
Know place for, and limitations of, non-invasive ventilation. Know indications for, and principles of, mechanical ventilation	SCE, mini-CEX, CbD, ACAT	1,2
Principles of selection of antibiotic therapy including, when appropriate, empirical therapy	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications, including empyema, sepsis, ARDS and respiratory failure	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines, including severity scoring and monitoring systems	SCE, mini-CEX, CbD, ACAT	1,2
Infection control	SCE, mini-CEX, CbD, ACAT	1,2
Know principles of management of pandemic influenza, both on an individual and a societal level	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Pleural ultrasound (level 1 competence) and aspiration (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Chest drain insertion (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
NIV (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2

Mechanical ventilation (experience)	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Ability to determine the urgency of the clinical presentation	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to quickly escalate care when necessary and to determine the appropriate environment for care – ward/HDU/ICU	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Prompt recognition of infection control issues	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to communicate and liaise with other health care professionals, particularly the ICU team	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Communication skills with patient and family/carers	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise the importance of establishing a “ceiling of care” when there are serious and important underlying co-morbidities	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise possible role of palliative care team when there are serious and important underlying co-morbidities	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Skill and sensitivity discussing clinical situation and prognosis with patient and relatives/carers when outcome is uncertain or there are serious and important underlying co-morbidities	mini-CEX, CbD, ACAT, MSF	1,2,3,4

## E7. Tuberculosis (TB) and Opportunist Mycobacterial Disease (OMD)

Have knowledge of the Global Impact of TB and the impact of co-infection with HIV  
Be competent to undertake specialist assessment and management of patients with tuberculosis/ OMD

Trainee must care for sufficient inpatients and outpatients with TB/OMD during their clinical placements (minimum 1 year)

If training programme is in a low prevalence area for TB, a secondment to an appropriate unit elsewhere may be necessary

Trainee must have knowledge of management of multi-drug resistant TB, including use of negative pressure rooms

Knowledge	Assessment Methods	GMP
Causes of TB/OMD	SCE, mini-CEX, CbD, ACAT	1,2
Predisposing causes of TB/OMD, including HIV, and the need to test for this	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of TB/OMD, including imaging and use of sputum analysis, bronchoscopy, pleural aspiration and biopsy, skin tests, gamma interferon tests	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of TB/OMD	SCE, mini-CEX, CbD, ACAT	1,2
Management of patients with TB/OMD, including DOT	SCE, mini-CEX, CbD, ACAT	1,2
Principles of management of multi-drug resistant and extensively drug resistant TB	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with TB/OMD: understand attitudes to TB in differing cultures	mini-CEX, CbD	1,2,3
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines including contact tracing, screening and vaccination programmes	SCE, mini-CEX, CbD	1,2
Infection control, including contact tracing and its organisation and appropriate use of isolation and negative pressure rooms	SCE, mini-CEX, CbD, ACAT	1,2
Role of HIV testing	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Tuberculin skin testing (knowledge/experience)	SCE, mini-CEX, CbD	1,2
Performance and Interpretation of spirometry, including knowledge of infection control (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Bronchoscopy, including infection control (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Pleural ultrasound (level 1 competence) and aspiration (and closed pleural biopsy, optional) (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2

Be able to communicate effectively with patients and families from diverse backgrounds including use of interpretation services	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Recognise importance of primary care and respiratory nurse specialist in management	mini-CEX, CbD, MSF	1,2,3,4
Recognise importance of methods to achieve compliance with treatment	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of contact tracing, know own role in this and know how to organise and lead services for this	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of immigration screening and know own role in this	SCE, mini-CEX, CbD, MSF	1,2,3,4
Recognise and act upon public health aspects of care	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Communication skills with patients, family, carers and contacts	mini-CEX, CbD, ACAT, MSF	1,2,3,4

## E8. Pulmonary Disease in the Immuno-Compromised Host

**Be competent to undertake specialist assessment and management of immuno-compromised patients with pulmonary disease e.g. transplant patients, patients on immunosuppressive drugs, immunodeficiency patients**

**Trainee may care for sufficient inpatients and outpatients with pulmonary disease in the immuno-compromised host during their clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of immuno-compromise in patients (ICP), congenital, acquired and drug related	SCE, mini-CEX, CbD, ACAT	1,2
Causes of lung disease in ICP	SCE, mini-CEX, CbD,	1,2
Investigation of lung disease in ICP	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of lung disease in ICP	SCE, mini-CEX, CbD,	1,2
Treatment and management of lung disease in ICP	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Infection control	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry, including infection control (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD,	1,2
Bronchoscopy, including infection control (competence)	DOPS, SCE, mini-CEX, CbD,	1,2
Ability to recognise when appropriate to recommend HIV testing and able to perform pre-test HIV counselling (competence)	mini-CEX, CbD	1,2
NIV, including infection control (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Mechanical ventilation (experience)	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Ability to determine the urgency of the clinical presentation	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to quickly escalate care when necessary and to determine the appropriate environment for care – ward/HDU/ICU	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Prompt recognition of infection control issues	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise the role for HIV testing in appropriate situations	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4

Communication skills with patient and family/carers	mini-CEX, Cbd, ACAT, MSF	1,2,3,4
Non-judgemental approach	mini-CEX, Cbd, ACAT, MSF	1,2,3,4

## E9. Bronchiectasis

**Be competent to undertake specialist assessment and management of patients with bronchiectasis**

**Trainee must care for sufficient inpatients and outpatients with bronchiectasis during clinical placements (minimum 2 years)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of bronchiectasis	SCE, mini-CEX, CbD, ACAT	1,2
Microbiology	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of bronchiectasis	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of bronchiectasis	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with bronchiectasis, including the role of physiotherapy	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Role of permanent venous access devices	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Use of inhaled and nebulised drug therapy (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2
NIV (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Awareness of importance of taking a detailed history to determine factors contributing to aetiology and poor control	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4
Awareness of importance of checking physiotherapy technique and treatment compliance	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise bronchiectasis as a chronic condition requiring ongoing care in the appropriate (primary/secondary/tertiary) care setting, including the role of home treatment with intravenous antibiotics	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise importance of appropriately trained nurses and other health care professionals, particularly physiotherapists, in long term care	mini-CEX, CbD, ACAT, MSF	1,2,3,4

## E10. Interstitial Lung Disease (ILD)

**Be competent to undertake specialist assessment and management of patients with interstitial lung disease.**

**Be competent in the management of the common disease entities in this category; have adequate knowledge/experience of the less common diseases, including orphan lung diseases**

**Trainee must care for sufficient inpatients and outpatients with ILD during clinical placements (minimum 1 year)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Thorough knowledge of the common diseases included in this category, working knowledge of less common disease entities	SCE, mini-CEX, CbD, ACAT	1,2
Causes of ILD	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of ILD	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of ILD	SCE, mini-CEX, CbD, ACAT	1,2
Assessment of disease severity	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with ILD	SCE, mini-CEX, CbD, ACAT	1,2
Role of transplantation	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used, and understanding of risk/benefit issues in treatment	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Bronchoscopy/TBB/BAL (competence)	DOPS, SCE, mini-CEX, CbD	1,2
CXR/CT/HRCT interpretation (competence) )	SCE, mini-CEX, CbD	1,2
Non-invasive ventilation (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Mechanical ventilation (experience)	SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Awareness of need to involve patient in management decisions, particularly with regard to risk/benefit issues of treatment and “ceiling of care” apropos mechanical ventilation	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Awareness of need to inform patient, where appropriate, of prognosis	mini-CEX, CbD, ACAT, MSF	1,2,3,4

Awareness of need for patient/carer support in poorer prognosis disease	mini-CEX, Cbd, ACAT, MSF	1,2,3,4
Awareness of need to relieve symptoms where disease course cannot be beneficially affected	mini-CEX, Cbd, ACAT, MSF	1,2,3,4
Awareness of possible role for palliative care team	mini-CEX, Cbd, ACAT, MSF	1,2,3,4
Recognise potential role for MDT approach to management	mini-CEX, Cbd, ACAT, MSF	1,2,3,4

## E11. Sleep Breathing Related Disorders

**Be competent to undertake specialist assessment and management of patients with sleep breathing disorders**

**Trainee must care for sufficient inpatients and outpatients with sleep breathing disorders during clinical placements**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of excessive daytime sleepiness, including not only sleep breathing disorders but also other non respiratory conditions	SCE, mini-CEX, CbD	1,2
Causes of sleep breathing disorders; aware of causes of changing incidence	SCE, mini-CEX, CbD,	1,2
Differential diagnosis of sleep breathing disorders	SCE, mini-CEX, CbD,	1,2
Investigation of sleep breathing disorders	SCE, mini-CEX, CbD,	1,2
Assessment of disease severity, including sleepiness ratings and interpretation of sleep studies	SCE, mini-CEX, CbD,	1,2
Treatment and management of patients with sleep breathing disorders, including "sleep hygiene," mandibular advancement devices, surgery, Nasal CPAP and NIV	SCE, mini-CEX, CbD,	1,2
Complications	SCE, mini-CEX, CbD,	1,2
Relevant guidelines/NICE technology appraisals	SCE, mini-CEX, CbD,	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD,	1,2
Role of the ENT surgeon	SCE, mini-CEX, CbD,	1,2
Medicolegal aspects/patient confidentiality	SCE, mini-CEX, CbD,	1,2
Patterns of service organisation	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Performance and interpretation of arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of screening sleep studies (competence) and of more advanced sleep studies (experience)	SCE, mini-CEX, CbD	1,2
Nasal CPAP (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Non-invasive ventilation (competence)	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Recognise role of lifestyle modifications	SCE, mini-CEX, CbD, MSF	1,2,3,4
Non-judgemental approach with respect to patient lifestyle	mini-CEX, CbD, MSF	1,2,3,4
Sensitive approach to discussion of medicolegal issues, particularly with respect to driving and occupation	mini-CEX, CbD, MSF	1,2,3,4
Understand principles of service organisation	mini-CEX, CbD, MSF	1,2,3,4

## E12. Pulmonary Vascular Diseases

Be competent to undertake specialist assessment and management of patients with pulmonary vascular diseases, including pulmonary embolism and infarction, secondary pulmonary hypertension, pulmonary haemorrhage and pulmonary vasculitides

Have adequate knowledge/experience of the management of idiopathic (“primary”) pulmonary hypertension.

Some trainees may have the opportunity for a short secondment to a specialised unit. However not all trainees will have the opportunity and in such cases the minimum training requirements are: attend the regional teaching programme session (or equivalent) on pulmonary hypertension plus attend two outpatient sessions and a specialist centre or satellite clinic and undertake a case based discussion (CbD)

Knowledge	Assessment Methods	GMP
Causes of pulmonary vascular diseases	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of pulmonary vascular diseases	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of pulmonary vascular diseases, including D-dimer, V/Q scanning, CTPA, role of echocardiography	SCE, mini-CEX, CbD, ACAT	1,2
Assessment of disease severity	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with pulmonary vascular diseases, including role of tertiary centres, surgery and transplantation	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Performance and interpretation of arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of echocardiography reports	SCE, mini-CEX, CbD	1,2
Interpretation of CXR/VQ Scan/CTPA/ HRCT (competence)	SCE, mini-CEX, CbD	1,2
Behaviours		
Ability to determine the urgency of the clinical presentation	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Ability to quickly escalate care when necessary and to determine the appropriate environment for care – ward/HDU/ICU	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise when to refer to a tertiary centre	SCE, mini-CEX, CbD, ACAT, MSF	1,2,3,4

## E13. Allergic Lung Disorders and Anaphylaxis

Have knowledge/experience of the specialist assessment and management of patients with allergic lung disorders and anaphylaxis

Trainee may care for inpatients and outpatients with allergic lung disorders and anaphylaxis during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements

Knowledge	Assessment Methods	GMP
Causes of allergic lung disorders and anaphylaxis	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of allergic lung disorders and anaphylaxis	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of allergic lung disorders and anaphylaxis	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with allergic lung disorders and anaphylaxis, including the role of desensitisation	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
Role of tertiary centre	SCE, mini-CEX, CbD, ACAT	1,2
Skills		
Skin testing (knowledge/experience)	SCE, mini-CEX, CbD	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other appropriate Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Use of Inhaled and nebulised drug therapy (competence)	SCE, mini-CEX, CbD	1,2
Educating patients in the use of self-administered adrenaline (competence)	SCE, mini-CEX, CbD	1,2
Advanced life support (competence)	ALS Course, mini-CEX, CbD	1,2
Behaviours		
Recognise potentially serious disease in both the acute and outpatient setting and act appropriately	mini-CEX, CbD, ACAT, MSF	1,2,3,4
Recognise role of nurse specialist in management	mini-CEX, CbD, MSF	1,2,3,4
Appreciate when to refer to tertiary/specialist services	mini-CEX, CbD, MSF	1,2,3,4

## E14. Disorders of Pleura and Mediastinum, including Pneumothorax

**Be competent to carry out specialist assessment and management of patients with disorders of the pleura and mediastinum**

**Trainee must care for sufficient inpatients and outpatients with disorders of the pleura and mediastinum during clinical placements (minimum 2 years for pneumothorax)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of disorders of pleura and mediastinum	SCE, mini-CEX, CbD, ACAT	1,2
Investigation of disorders of pleura and mediastinum	SCE, mini-CEX, CbD, ACAT	1,2
Appropriate use of various pleural biopsy techniques	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of disorders of pleura and mediastinum	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with disorders of pleura and mediastinum	SCE, mini-CEX, CbD, ACAT	1,2
Role of Local Anaesthetic ("Medical") Thoracoscopy, VATS and chronic indwelling tunnelled pleural catheters	SCE, mini-CEX, CbD, ACAT	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Complications	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Performance (knowledge/experience) and interpretation (competence) of TB skin testing and gamma-interferon tests	SCE, mini-CEX, CbD	1,2
Pleural ultrasound (level 1 competence) and aspiration (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Pleural biopsy (where appropriate) (knowledge/experience/competence)	DOPS, SCE, mini-CEX, CbD	1,2
Chest drain insertion (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Chemical pleurodesis (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Local Anaesthetic ("Medical") Thoracoscopy (knowledge; competence where considered appropriate [trainee intending to specialise in thoracic oncology/pleural diseases])	SCE, mini-CEX, CbD	1,2
Chronic indwelling tunnelled chest drains (knowledge; experience/competence where considered appropriate [trainee	SCE, mini-CEX, CbD	1,2

intending to specialise in thoracic oncology/pleural diseases])

**Behaviours**

Recognise role of MDT in management	mini-CEX, CbD, MSF	1,2,3,4
Appropriate and timely liaison with, and referral to, thoracic surgical services	mini-CEX, CbD, MSF	1,2,3,4
Skill and sensitivity in breaking bad news	mini-CEX, CbD, MSF	1,2,3,4
Communication skills with relatives and carers	mini-CEX, CbD, MSF	1,2,3,4
Appropriate and timely liaison with palliative care services	mini-CEX, CbD, MSF	1,2,3,4

## E15. Pulmonary Manifestations of Systemic Disease

**Be competent to carry out specialist assessment and management of patients with pulmonary manifestations of systemic disease**

**Trainee must care for sufficient inpatients and outpatients with pulmonary manifestations of systemic disease during clinical placements**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Systemic diseases which have significant pulmonary manifestations	SCE, mini-CEX, CbD, ACAT	1,2
Causes of pulmonary manifestations of systemic disease	SCE, mini-CEX, CbD, ACAT	1,2
Drugs that can cause pulmonary disease, including those used to treat systemic disease	SCE, mini-CEX, CbD	1,2
Investigation of pulmonary manifestations of systemic disease	SCE, mini-CEX, CbD, ACAT	1,2
Differential diagnosis of pulmonary manifestations of systemic disease	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of patients with pulmonary manifestations of systemic disease	SCE, mini-CEX, CbD, ACAT	1,2
<b>Skills</b>		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Pleural ultrasound (level 1 competence) and aspiration (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
<b>Behaviours</b>		
Awareness that systemic diseases, and their treatments, may have significant pulmonary complications and may first present with pulmonary manifestations	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Willingness to seek advice from appropriate other specialists	mini-CEX, CbD, ACAT	1,2,3,4
Ability to liaise with specialists in other disciplines	mini-CEX, CbD, ACAT	1,2,3,4

## E16. Cystic Fibrosis (CF)

Have knowledge/experience of the specialist assessment and management of adolescent and adult patients with cystic fibrosis

Some trainees may have the opportunity for a three month attachment to a recognised specialist adult CF unit, or weekly attendance at a CF clinic and a CF MDT/Ward Round for 3-4 months. However not all trainees will have this opportunity and in such cases, minimum requirements are: attendance at a regional training programme session (or equivalent), plus attend a minimum of two outpatient sessions, one MDT and carry out a focussed case based discussion (CbD).

Knowledge	Assessment Methods	GMP
Causes of CF, including genetics, pathophysiology and epidemiology	SCE, mini-CEX, CbD	1,2
Investigation of CF	SCE, mini-CEX, CbD	1,2
CF microbiology and the importance of cross infection and segregation	SCE, mini-CEX, CbD	1,2
Differential diagnosis of CF	SCE, mini-CEX, CbD	1,2
Treatment and management of patients with CF emergencies, including pneumothorax, massive haemoptysis, acute abdomen (distal intestinal obstruction, intussusception, acute pancreatitis, cholecystitis)	SCE, mini-CEX, CbD, ACAT	1,2
Treatment and management of CF infections, principles of bronchiectasis management, acute infections, aggressive antibiotic management	SCE, mini-CEX, CbD, ACAT	1,2
Role of physiotherapist and dietician	SCE, mini-CEX, CbD	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD, ACAT	1,2
Respiratory complications and their management, including ABPA	SCE, mini-CEX, CbD, ACAT	1,2
Non-respiratory complications and their management, including diabetes and liver disease	SCE, mini-CEX, CbD, ACAT	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Assessment of disease severity	SCE, mini-CEX, CbD	1,2
Indications for transplantation	SCE, mini-CEX, CbD	1,2
Role of the multidisciplinary team	SCE, mini-CEX, CbD	1,2
Factors impacting management at the transition between childhood/teenage and adult care	SCE, mini-CEX, CbD	1,2
Skills		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Use of inhaled and nebulised drug therapy (competence)	SCE, mini-CEX, CbD, ACAT	1,2
Non-invasive ventilation (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2

Chest drain insertion (competence)	DOPS, SCE, mini-CEX, CbD, ACAT	1,2
Insertion of PICC lines	DOPS, SCE, mini-CEX, CbD	1,2
Assessment of permanent venous access devices	SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Awareness that CF may present for the first time in adulthood and that presentation may be atypical	SCE, mini-CEX, CbD, ACAT	1,2,3,4
Importance of multidisciplinary working	mini-CEX, CbD, ACAT	1,2,3,4
Importance of collaboration with a recognised CF centre	mini-CEX, CbD, ACAT	1,2,3,4
Importance of psychological support	mini-CEX, CbD, ACAT	1,2,3,4
Communication skills with patient, family and carers	mini-CEX, CbD, ACAT	1,2,3,4
Principles of the organisation of care	mini-CEX, CbD, ACAT	1,2,3,4

## E17. Pulmonary Disease in the HIV Patient

**Be competent to carry out specialist assessment and management of pulmonary problems in patients with HIV**

**Trainee should care for sufficient inpatients and outpatients with HIV during clinical placements or may have to be seconded to a specialised unit to gain experience if this is not available in trainee's placements**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of HIV lung disease, both infectious and non-infectious	SCE, mini-CEX, CbD	1,2
Relevant microbiology	SCE, mini-CEX, CbD	1,2
Investigation of HIV lung disease	SCE, mini-CEX, CbD	1,2
Differential diagnosis of HIV lung disease	SCE, mini-CEX, CbD	1,2
Treatment and management of patients with HIV lung disease	SCE, mini-CEX, CbD	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD	1,2
Complications	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Infection control	SCE, mini-CEX, CbD	1,2
Role of the multidisciplinary team	SCE, mini-CEX, CbD	1,2
Have understanding of attitudes to HIV in varying cultural settings	mini-CEX, CbD	1,2
Impact of access to healthcare, education and social instability on HIV incidence	mini-CEX, CbD	1,2
Understand impact of HIV diagnosis on an individual and the attitudes of others including employers	mini-CEX, CbD	1,2
<b>Skills</b>		
Performance and interpretation of spirometry, including infection control (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Sputum induction (knowledge/experience)	SCE, mini-CEX, CbD	1,2
Be able to sensitively discuss risk factors, HIV testing and prevention of transmission (competence)	mini-CEX, CbD	1,2,3,4
Bronchoscopy, including infection control (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Pleural ultrasound (level 1 competence) and aspiration (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Chest drain insertion (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Ventilation (competence in NIV, experience of mechanical ventilation)	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Recognise importance of liaising with specialists in other disciplines	mini-CEX, CbD	1,2
Recognise importance of multidisciplinary approach	mini-CEX, CbD	1,2
Non-judgemental approach	mini-CEX, CbD	1,2

## E18. Occupational and Environmental (including flying and diving) Lung Disease

**Be competent to carry out specialist assessment and management of patients with occupational and environmental lung disease**

**Trainee may care for inpatients and outpatients with occupational and environmental lung disease during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of acute and chronic occupational and environmental lung disease, including domiciliary, industrial and rural	SCE, mini-CEX, CbD	1,2
Immunological and inflammatory responses to inhaled agents	SCE, mini-CEX, CbD	1,2
Pathophysiology	SCE, mini-CEX, CbD	1,2
Investigation of occupational and environmental lung disease, including interpretation of lung function tests and the role of challenge testing where appropriate	SCE, mini-CEX, CbD	1,2
Differential diagnosis of occupational and environmental lung disease	SCE, mini-CEX, CbD	1,2
Treatment and management of patients with occupational and environmental lung disease	SCE, mini-CEX, CbD	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD	1,2
Complications	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Preventative measures	SCE, mini-CEX, CbD	1,2
Medicolegal aspects	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Ability to take a detailed history of possible environmental and occupational exposures	mini-CEX, CbD	1,2
Ability to assess functional status and degree of disability	mini-CEX, CbD	1,2
Performance (knowledge/experience) and interpretation (competence) of skin tests	DOPS, mini-CEX, CbD	1,2
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Interpretation of chest radiology and of ILO status	SCE, mini-CEX, CbD	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Performance and interpretation of challenge testing (knowledge/experience)	SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Continued awareness of possibility of occupational and environmental causes of lung disease	SCE, mini-CEX, CbD, MSF	1,2,3,4
Awareness of importance of early diagnosis	SCE, mini-CEX, CbD, MSF	1,2,3,4
Awareness of importance of exposure avoidance where appropriate	SCE, mini-CEX, CbD,	1,2,3,4

	MSF	
Ability to liaise with specialised units	mini-CEX, CbD, MSF	1,2,3,4
Good communication skills with patient, co-workers, employers	mini-CEX, CbD, MSF	1,2,3,4
Sensitive handling of occupational and medicolegal implications	mini-CEX, CbD, MSF	1,2,3,4

## E19. Genetic and Developmental Lung Diseases

Have, where appropriate, knowledge/experience/competence in the specialist assessment and management of adolescent and adult patients with genetic and developmental lung diseases

Have knowledge and experience of the problems that may arise in managing lung diseases at the transition from childhood to adult life

Trainee may care for inpatients and outpatients with genetic and developmental lung diseases during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements

Knowledge	Assessment Methods	GMP
Causes of genetic and developmental lung diseases	SCE, mini-CEX, CbD	1,2
Presentation of genetic and developmental lung diseases, including late presentation	SCE, mini-CEX, CbD	1,2
Long term sequelae	SCE, mini-CEX, CbD	1,2
Investigation of genetic and developmental lung diseases	SCE, mini-CEX, CbD	1,2
Differential diagnosis of genetic and developmental lung diseases	SCE, mini-CEX, CbD	1,2
Treatment and management of patients with genetic and developmental lung diseases	SCE, mini-CEX, CbD	1,2
Pharmacology of drugs used	SCE, mini-CEX, CbD	1,2
Complications and their management	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Indications for genetic counselling	SCE, mini-CEX, CbD	1,2
Know and understand disability discrimination legislation	SCE, mini-CEX, CbD	1,2
Skills		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Bronchoscopy (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Able to manage patients at the transition from paediatric to adult care	mini-CEX, CbD, MSF	1,2,3,4
Good communication skills, with patients, parents, carers	mini-CEX, CbD, MSF	1,2,3,4
Good liaison with specialists in other disciplines	mini-CEX, CbD, MSF	1,2,3,4
Recognise importance of, and potential difficulties with, genetic counselling	mini-CEX, CbD, MSF	1,2,3,4
Recognise importance of multidisciplinary management	mini-CEX, CbD, MSF	1,2,3,4

## E20. Lung Transplantation

Have knowledge and experience of the patients that may benefit from lung transplantation

Be competent to carry out an initial assessment and know, and have experience of, when it is appropriate to refer to a lung transplant centre

Be competent to administer emergency care to an ill post-transplant patient prior to transfer to the transplant unit

Some trainees may have the opportunity to be seconded to a specialised unit to gain experience

Some trainees may not have the opportunity to be seconded to a specialised unit. In such cases, minimum requirements are: attend the regional teaching programme session (or equivalent), plus attend a minimum of two outpatient sessions in a specialist centre or satellite clinic and undertake a case based discussion (CbD)

Knowledge	Assessment Methods	GMP
Diseases for which transplantation is a possible management modality (IPF, sarcoidosis, CF, bronchiectasis, PPH, emphysema)	SCE, mini-CEX, CbD	1,2
Indications for lung transplantation	SCE, mini-CEX, CbD	1,2
Principles of patient selection (age, comorbidities, lung function, prognosis, physical status, nutritional status, psychological status)	SCE, mini-CEX, CbD	1,2
Investigation (work up) for lung transplantation	SCE, mini-CEX, CbD	1,2
Contra-indications to lung transplantation	SCE, mini-CEX, CbD	1,2
Preparation of patients for lung transplantation	SCE, mini-CEX, CbD	1,2
Outline of surgical procedures	SCE, mini-CEX, CbD	1,2
Basic knowledge of pre- and post-operative care	SCE, mini-CEX, CbD	1,2
Pharmacology of drugs used and their complications	SCE, mini-CEX, CbD	1,2
Complications	SCE, mini-CEX, CbD	1,2
Emergency management of the ill transplant recipient	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Legal and ethical issues	SCE, mini-CEX, CbD	1,2
Skills		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other Lung Function Tests (competence)	SCE, mini-CEX, CbD	1,2
Ventilation (competence in NIV; experience of mechanical ventilation)	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Able to time referral for lung transplantation correctly	SCE, mini-CEX, CbD, MSF	1,2,3,4
Able to provide patient and carers with appropriate information	mini-CEX, CbD, MSF	1,2,3,4
Able to support patient medically and patient and carers psychologically	mini-CEX, CbD, MSF	1,2,3,4
Good communication skills	mini-CEX, CbD, MSF	1,2,3,4
Good liaison with specialist centres, including timely transfer of the ill transplant recipient	mini-CEX, CbD, MSF	1,2,3,4

## E21. Hospital at Home / Early Discharge Schemes

**Be competent in selecting patients who will benefit from home care/early discharge schemes**  
**Have knowledge and experience of the equipment, staff and skills necessary to operate a high quality home care/early discharge service**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
What can be achieved by providing home care/appropriate early discharge for respiratory patients	SCE, mini-CEX, CbD	1,2
Requirements for successful care in the community	SCE, mini-CEX, CbD	1,2
Appreciation of appropriate early discharge/home care as a cost saving measure for the NHS	SCE, mini-CEX, CbD	1,2
Appreciation of home care as a preferred method of treatment for many patients	SCE, mini-CEX, CbD	1,2
Importance of the multidisciplinary team and of high quality team working	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Use of inhaled and nebulised drug therapy (competence)	SCE, mini-CEX, CbD	1,2
Organisation of home intravenous drug therapy, including care of permanent venous access devices	SCE, mini-CEX, CbD	1,2
Insertion of (knowledge only), and issues related to home care of, chronic indwelling pleural catheters	SCE, mini-CEX, CbD	1,2
Assessment for, and management of, oxygen therapy (competence)	SCE, mini-CEX, CbD	1,2
Non-invasive ventilation (competence)	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Leadership, organisational and team working skills	mini-CEX, CbD, MSF	1,2,3,4
Respecting patient choice	mini-CEX, CbD, MSF	1,2,3,4
Good liaison with primary care	mini-CEX, CbD, MSF	1,2,3,4

## E22. Imaging Techniques

### Be competent to request and interpret appropriate imaging investigations for the investigation of the patient with respiratory disease

Knowledge	Assessment Methods	GMP
Basic principles of plain chest radiography, CT/CTPA, HRCT, MRI, PET-CT, ultrasound and nuclear techniques	SCE, mini-CEX, CbD	1,2
Radiological thoracic anatomy	SCE, mini-CEX, CbD	1,2
Radiological features of common pulmonary, pleural and mediastinal diseases	SCE, mini-CEX, CbD	1,2
Chest X-rays and CT scans (anatomical/CTPA/ HRCT) relevant to the respiratory patient; indications, contraindications (CT), techniques and interpretation	SCE, mini-CEX, CbD	1,2
Thoracic ultrasound and its role in facilitating sampling/drainage of pleural fluid, both radiologist/radiographer performed and chest physician performed; indications, techniques and interpretation	SCE, mini-CEX, CbD	1,2
Ventilation/perfusion scans; indications, technique and interpretation	SCE, mini-CEX, CbD	1,2
Bone scans; indications, technique (basic knowledge) and interpretation	SCE, mini-CEX, CbD	1,2
PET-CT scans; indications, technique (basic knowledge) and interpretation	SCE, mini-CEX, CbD	1,2
Indications for magnetic resonance scans	SCE, mini-CEX, CbD	1,2
Value of imaging other organ systems	SCE, mini-CEX, CbD	1,2
Value of regular meetings with radiologists	SCE, mini-CEX, CbD	1,2
IRMER guidelines; hazards of radiation; other relevant guidelines	SCE, mini-CEX, CbD	1,2
Good working knowledge of risks of ionising radiation, particularly in relation to pregnancy and cancer induction risk	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Able to select most appropriate imaging technique(s) to aid management of the specific clinical situation (competence)	SCE, mini-CEX, CbD	1,2
Interpretation of CXRs, VQ scans and CT scans (anatomical/CTPA/HRCT) (competence)	SCE, mini-CEX, CbD	1,2
Interpretation of images produced by other imaging techniques e.g. PET-CT, bone scans (experience/competence)	SCE, mini-CEX, CbD	1,2
Pleural ultrasound (level 1) (competence) (see section F6)	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Recognise importance of liaison with radiological colleagues	mini-CEX, CbD, MSF	1,2,3,4
Recognise importance of MDTs	mini-CEX, CbD, MSF	1,2,3,4
Able to advise patients appropriately of risks versus benefits of a variety of radiological techniques, particularly in relation to ionising radiation	SCE, mini-CEX, CbD, MSF	1,2,3,4

## E23. Smoking Cessation

**Be competent to assist patients to stop smoking**

**During training, trainee must attend some smoking cessation clinics**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Effects of smoking on general and respiratory health	SCE, mini-CEX, CbD	1,2
Global situation and economics of smoking	SCE, mini-CEX, CbD	1,2
Burden of smoking on health from a population perspective	SCE, mini-CEX, CbD	1,2
Burden of smoking on health from an economic perspective	SCE, mini-CEX, CbD	1,2
Pharmacological and non-pharmacological treatments available for smoking cessation	SCE, mini-CEX, CbD	1,2
Health and safety legislation and measures in the workplace and other public places	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Ability to advise patients on smoking cessation and support measures available for smoking cessation (competence)	SCE, mini-CEX, CbD	1,2
Utilise opportunities to actively promote health benefits of smoking cessation for patient and those around them including children.	mini-CEX, CbD	1,2,3
<b>Behaviours</b>		
Non-judgmental approach	mini-CEX, CbD, MSF	1,2,3,4

## E24. Pulmonary Rehabilitation

### Knowledge and experience of the components of, and of the organisation and delivery of, pulmonary rehabilitation services

Trainee should have participated in pulmonary rehabilitation services

Knowledge	Assessment Methods	GMP
Evidence base supporting pulmonary rehabilitation in COPD/other lung diseases	SCE, mini-CEX, CbD	1,2
Components of a successful pulmonary rehabilitation programme	SCE, mini-CEX, CbD	1,2
Selection of patients most likely to benefit from pulmonary rehabilitation	SCE, mini-CEX, CbD	1,2
Principles of exercise prescription	SCE, mini-CEX, CbD	1,2
Principles of oxygen therapy, particularly ambulatory oxygen	SCE, mini-CEX, CbD	1,2
Breathlessness and quality of life rating scales	SCE, mini-CEX, CbD	1,2
Personnel required to set up and run a pulmonary rehabilitation service	SCE, mini-CEX, CbD	1,2
Role of the multidisciplinary team including GPs, consultants, nurses, dieticians, physiotherapists, occupational therapists, medical social workers	SCE, mini-CEX, CbD	1,2
Role of patient education and access to local patient services and agencies	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Cost/benefit issues and how to develop a business case	SCE, mini-CEX, CbD	1,2
Skills		
Performance and interpretation of spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpretation of appropriate other lung function tests (competence)	SCE, mini-CEX, CbD	1,2
Have experience as an active member of a pulmonary rehabilitation team	SCE, mini-CEX, CbD	1,2
Behaviours		
Understand the impact of severe COPD and other lung diseases on patients' lives, including work, driving, sex and exercise	mini-CEX, CbD, MSF	1,2,3,4
Non judgemental approach	mini-CEX, CbD, MSF	1,2,3,4
Leadership, organisational and team working skills	mini-CEX, CbD, MSF	1,2,3,4
Audit	mini-CEX, CbD, MSF, AA	1,2,3,4

## E25. Intensive Care (ICU) and High Dependency Units (HDU)

Understand the role of the respiratory physician in the management of critically ill patients

Be competent to recognise patients who will and will not benefit from intensive care or from care in a high dependency unit

Have knowledge and experience of the care provided in intensive care and high dependency units

Trainee may care for inpatients in ICU and HDU during their general clinical placements

However, trainee must also spend at least 60 working days in an intensive care unit approved by the Regional Respiratory Medicine STC/TPD. Ideally this should occur in one block. If this is not possible, 4 units of 15 consecutive working days is acceptable. This mandatory time provision does not include any allowance for annual leave. It is strongly preferred that trainees should be on call for ICU rather than GIM during this period (recommendation/guidance only)

Critical Care Educational Supervisor must provide a report and formally sign off trainee's critical care experience

Knowledge	Assessment Methods	GMP
Understand the role of critical care outreach services, including the interaction between the critical care team and the general/specialty wards	SCE, mini-CEX, CbD, ACAT	1,2
Know and understand the levels of critical care provision	SCE, mini-CEX, CbD, ACAT	1,2
Know how to assess and initially manage patients with critical illness	SCE, mini-CEX, CbD, ACAT	1,2
Know how to arrange safe transfer of critically ill patients to HDU/ICU	SCE, mini-CEX, CbD, ACAT	1,2
Know how to use and interpret basic critical care monitoring techniques, including pulse oximetry, arterial blood gases, portable monitoring	SCE, mini-CEX, CbD, ACAT	1,2
Know the indications for, applications of and complications of, non-invasive ventilatory support in acute respiratory failure	SCE, mini-CEX, CbD, ACAT	1,2
Know the indications for, and potential problems with, intubation and mechanical ventilation in the critically ill patient	SCE, mini-CEX, CbD, ACAT	1,2
Knowledge of the principles of and use of: <ul style="list-style-type: none"> <li>Advanced haemodynamic monitoring</li> <li>Cardiovascular support, including inotropic/vasopressor support</li> <li>Modes of mechanical ventilation</li> <li>Renal rescue/replacement therapy</li> </ul>	SCE, mini-CEX, CbD	1,2
Chest imaging in the critically ill patient (CXR, CT, CTPA, Chest U/S)	SCE, mini-CEX, CbD, ACAT	1,2
Understand and have experience of the critical care management of: <ul style="list-style-type: none"> <li>Asthma</li> <li>COPD</li> <li>Neuromuscular Disease</li> <li>Chest wall disease</li> <li>Immunocompromised patients (HIV, post-transplant, post-chemotherapy)</li> <li>Acute Lung Injury (ALI) and Acute Respiratory Distress Syndrome</li> </ul>	SCE, mini-CEX, CbD, ACAT	1,2

<b>(ARDS)</b>			
• Sepsis syndromes			
Understand the multidisciplinary approach to tracheostomy care	SCE, mini-CEX, CbD	1,2	
Know how to recognise and manage patients with weaning failure	SCE, mini-CEX, CbD	1,2	
Know the requirements for an adequately staffed and equipped unit	SCE, mini-CEX, CbD	1,2	
Know and understand the role of the multidisciplinary team in ICU/HDU, including the interaction of anaesthetists, physicians, surgeons, nurses, microbiologists, physiotherapists, dieticians	SCE, mini-CEX, CbD	1,2	
Relevant guidelines	SCE, mini-CEX, CbD	1,2	
Relevant legal and ethical issues	SCE, mini-CEX, CbD, ACAT	1,2	
<b>Skills</b>			
ALS skills (competence)	Valid ALS certificate, ACAT	1,2,3	
Use of basic airway support skills and airway adjuncts in non-intubated patients (competence)	Valid ALS certificate, ACAT, DOPS	1,2,3	
Assessment and initial management of critically ill patients (competence)	Valid ALS, SCE, mini-CEX, CbD	1,2,3	
Able to decide which patients will and will not benefit from critical care and to make decisions with regard to ceilings of treatment (competence)	SCE, mini-CEX, CbD, MSF	1,2,3,4	
Use and interpretation of basic critical care monitoring equipment	SCE, mini-CEX, CbD	1,2	
Ventilatory support modalities (competence in C-PAP and NIV; knowledge and experience of mechanical ventilation and mechanical ventilation strategies)	SCE, mini-CEX, CbD	1,2	
Ability to advise on and manage respiratory patients on ICU and HDU (competence)	SCE, mini-CEX, CbD, MSF	1,2,3,4	
Ability to advise on the respiratory care of general patients on ICU and HDU (competence)	SCE, mini-CEX, CbD, MSF	1,2,3,4	
Chest imaging in critically ill patients (competence)	SCE, mini-CEX, CbD	1,2	
Chest drain insertion (competence)	DOPS, SCE, mini-CEX, CbD	1,2	
Bronchoscopy in patients receiving mechanical ventilation(indications and performance) (competence)	DOPS, SCE, mini-CEX, CbD	1,2	
<b>Behaviours</b>			
Demonstrate good leadership skills	mini-CEX, CbD, MSF	1,3	
Recognise the importance of multidisciplinary team working	mini-CEX, CbD, MSF	1	
Awareness of legal and ethical issues	SCE, mini-CEX, CbD, MSF	1	
Be able to break bad news (to patient/carers) sensitively but honestly	mini-CEX, CbD, MSF	1,3	
Be able to discuss ethics of prolonging life and to help patient/carers to weigh this up against quality of life	mini-CEX, CbD, MSF	1	
Be able to communicate sensitively and empathically but with honesty with patient, family, friends and carers	mini-CEX, CbD, MSF	1,3	
Be able to discuss organ donation issues sensitively with family/carers	mini-CEX, CbD, MSF	1,3,4	

## E26. Palliative Care

**Be competent to recognise when palliative care is appropriate**

**Have knowledge and experience of the services required for effective palliative care**

**Trainees must care for inpatients and outpatients receiving palliative care during their clinical placements (minimum 2 years)**

**Trainees may consider an attachment to a palliative care facility**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Indications for palliative care, in both malignant and non-malignant pulmonary diseases	SCE, mini-CEX, CbD,	1,2
Selection of patients who will benefit from palliative care	SCE, mini-CEX, CbD,	1,2
Importance of timing and forward planning	mini-CEX, CbD,	1,2
Practice of palliative care	SCE, mini-CEX, CbD,	1,2
Principles of drug and oxygen use	SCE, mini-CEX, CbD,	1,2
Personnel involved	mini-CEX, CbD,	1,2
Importance of team work in palliative care	mini-CEX, CbD,	1,2
The use of the palliative care team	mini-CEX, CbD,	1,2
Legal and ethical issues	SCE, mini-CEX, CbD,	1,2
Understand needs and values may differ in patients from diverse backgrounds	mini-CEX, CbD	1,2
<b>Skills</b>		
Recognising which patients will benefit	SCE, mini-CEX, CbD, MSF	1,2,3,4
Relieving physical, psychological and spiritual suffering	mini-CEX, CbD, MSF	1,2,3,4
Breaking bad news	mini-CEX, CbD, MSF	1,2,3,4
Communicating with patients and their relatives/carers honestly and sensitively	mini-CEX, CbD, MSF	1,2,3,4
<b>Behaviours</b>		
Empathy, sensitivity and good communication skills with patients and carers	mini-CEX, CbD, MSF	1,2,3,4
Non judgemental approach	mini-CEX, CbD, MSF	1,2,3,4
Good communication skills with other health care professionals	mini-CEX, CbD, MSF	1,2,3,4
Ability to work in a multidisciplinary team	mini-CEX, CbD, MSF	1,2,3,4

## E27. Dysfunctional Breathing and Psychological Aspects of Respiratory Symptoms

Be competent to recognise when breathlessness/other respiratory symptoms occur in the absence of an organic cause

Be competent to carry out specialist assessment and management of patients with dysfunctional breathing/other respiratory symptoms

Have knowledge and experience of psychological factors which may cause or exacerbate breathlessness/other respiratory symptoms

Have knowledge and experience of managing psychological causes of breathlessness/other respiratory symptoms in co-operation with other appropriate health care professionals

Knowledge	Assessment Methods	GMP
Causes and manifestations of dysfunctional breathing/other respiratory symptoms in the absence of an organic cause	SCE, mini-CEX, CbD	1,2
Understanding of the impact of psychological factors on the respiratory system	mini-CEX, CbD, MSF	1,2
Diagnostic strategies for dysfunctional breathing/other respiratory symptoms	SCE, mini-CEX, CbD	1,2
Assessment tools including St George's Questionnaire, Hospital Anxiety and Depression Score, MRC and Borg breathlessness scores	SCE, mini-CEX, CbD	1,2
Management strategies for dealing with psychological factors in breathlessness and other respiratory symptoms	SCE, mini-CEX, CbD	1,2,3,4
Importance of team work	mini-CEX, CbD, MSF	1,2,3,4
Skills		
Be able to recognise when psychological factors are important	mini-CEX, CbD,	1,2
Recognise the importance of excluding significant serious pathology by appropriate clinical assessment and further investigation	SCE, mini-CEX, CbD	1,2
Identify underlying psychiatric disease, when present	mini-CEX, CbD,	1,2
Assess severity by using the assessment tools mentioned above	SCE, mini-CEX, CbD	1,2
Able to formulate a management plan	mini-CEX, CbD	1,2
Empathy with patient	mini-CEX, CbD, MSF	1,2,3,4
Recognise when to refer to other health care professionals	mini-CEX, CbD, MSF	1,2,3,4
Behaviours		
Non judgemental, sensitive approach	mini-CEX, CbD, MSF	1,2,3,4
Reassure patient when appropriate	mini-CEX, CbD, MSF	1,2,3,4
Respect the distress the symptoms are causing	mini-CEX, CbD, MSF	1,2,3,4
Recognise cultural differences in presentation	mini-CEX, CbD, MSF	1,2,3,4
Involve psychiatric services when appropriate	mini-CEX, CbD, MSF	1,2,3,4
Recognise the importance of the primary care team in management	mini-CEX, CbD, MSF	1,2,3,4

## E28. Managing Long Term Conditions: Integrated Care and the Promotion of Self Care

To develop a holistic approach to the management of chronic respiratory conditions which addresses the medical and social aspects of disease both in hospital and in the community and which encourages patients to play an active part in the management of their disease.

Minimum level of experience and knowledge of intergrated care should be aquired through training via attachment to a training unit or attendance at a training course, in addition with attendance at a meeting with commissioners in any appropriate area (e.g. COPD, lung cancer, asthma or TB).

Knowledge	Assessment Methods	GMP
Know the natural history of chronic respiratory diseases and in particular COPD, asthma, interstitial pulmonary fibrosis and cystic fibrosis	SCE, mini-CEX, CbD,	1
Understand the role of care pathways in providing integrated care of chronic respiratory diseases	mini-CEX, CbD	1,2,3
Understand the relevant clinical knowledge, competences and skills that the whole multidisciplinary team requires in order to deliver integrated care	mini-CEX, CbD	1,2,3
Outline the concept of quality of life and how this can be measured	mini-CEX, CbD	1,2,3
Know, understand and be able to compare medical and social models of disability	mini-CEX, CbD	1,2,3
Understand the impact that living with a long term condition has on a patient and carer in psychological and social terms	mini-CEX, CbD, MSF	1,2,3
Understand the concept of patient self care	mini-CEX, CbD, MSF	1,2,3
Know the role and content of pulmonary rehabilitation	SCE, mini-CEX, CbD	1,2,3
Know and understand the indications for domiciliary oxygen and be able to describe the different systems for oxygen provision	SCE, mini-CEX, CbD	1,2,3
Understand the role of early discharge schemes and acute care at home services for respiratory patients	mini-CEX, CbD	1,2,3
Know and understand the requirements for appropriate end of life care in chronic respiratory disease	mini-CEX, CbD	1,3,4
Understand the relationships between acute hospitals, PCT's, general practice, community based health services, social services and the voluntary sector, including patient support and advocacy groups, in delivering integrated care	mini-CEX, CbD, MSF	1,2,3,4
Know and understand the principles of commissioning of health services	AA	1,2,3,4
Skills		
Be able to develop and sustain supportive relationships with patients and carers	MSF	3,4
Provide effective patient education and enable patients to access relevant information	TO, PS, MSF	3,4
Promote and encourage the involvement of patients (and carers) in appropriate support networks, both to receive support and to give it to others	PS, MSF	3,4
Develop and agree management plans with patients and others involved in delivering care with the aim of ensuring understanding and	mini-CEX, CbD, PS,	2,3,4

maximising the potential for self-care	MSF	
Develop the managerial skills necessary to support the development of integrated respiratory care across the primary and secondary care sectors	MSF	2,3
Be able to ensure the development and maintenance of relevant clinical skills within the care team irrespective of employing organisation	AA, MSF	2,3,4
Be able to create systems or to embrace existing systems to monitor quality of care and know the appropriate use of equipment (e.g. ensuring good quality spirometry)	CbD, AA	2,3
Where appropriate develop referral pathways	AA	3
<b>Behaviours</b>		
Show willingness to act as a patient advocate	MSF	3,4
Recognise the impact of long term conditions on the patient, family and friends	MSF	3,4
Recognise and respect the role of the family, friends and carers in the management of the patient with a long term condition	MSF	3,4
Show willingness to maintain a close working relationship with other members of the integrated care team	MSF	3
Show willingness to facilitate access to appropriate training and skills in order to develop the patient's confidence and competence to self-care	MSF, PS	3,4
Where patients need to use equipment and devices, ensure that these are provided and that they are properly trained in their use (e.g. inhalers, nebulisers and oxygen delivery systems)	AA, MSF	2,3,4
Be prepared to act as a resource for all those involved in delivering integrated respiratory care	MSF	1,2,3,4

## F. Learning Objectives for Practical Procedural Areas

### (a) Obtaining Valid Consent

<b>To be able to obtain valid consent from the patient/next of kin/carer/independent medical capacity advocate</b>		
<b>To apply training in taking consent to all procedures undertaken in Respiratory Medicine</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Can outline GMC guidance on consent	mini-CEX, CbD, DOPS	1,2
Understands that consent is a process that may culminate in, but is not limited to, the completion of a consent form	mini-CEX, CbD, DOPS	1,2
Understands the particular importance of considering the patient's level of understanding and mental state (and also that of the parents, relatives or carers when appropriate) and how this may impair their capacity for informed consent	mini-CEX, CbD, DOPS	1,2,3,4
Mental Capacity Act	mini-CEX, CbD, DOPS, SCE	1
Role of the independent medical capacity advocate	mini-CEX, CbD, DOPS	1
Role of advanced directives	mini-CEX, CbD, DOPS	1
<b>Skills</b>		
Present all information to patients (and carers) in a format they understand, both verbal and written, allowing time for reflection on the decision to give consent	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Provide a balanced view of all care options	mini-CEX, CbD, DOPS, MSF	1,2,3,4
<b>Behaviours</b>		
Respect a patient's rights of autonomy even in situations where their decision might put them at risk of harm	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Avoid exceeding the scope of authority given by a patient	mini-CEX, CbD, DOPS, MSF	1,3,4
Avoid withholding information relevant to proposed care or treatment in a competent adult	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Show willingness to seek advance directives	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Show willingness to obtain a second opinion, senior opinion and/or legal advice in difficult situations of consent or capacity	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Inform a patient and seek alternative care where personal, moral or religious belief prevents a usual professional action	mini-CEX, CbD, DOPS, MSF	1,2,3,4

## (b) Safe Intravenous Sedation/Local Anaesthesia/Topical Anaesthesia Practice

Be able to administer intravenous sedation, local anaesthesia and topical anaesthesia effectively and safely

There must be formal sign off of competence in safe sedation during bronchoscopy DOPS (on at least two separate occasions with two separate assessors) – see F5 Bronchoscopy

Knowledge	Assessment Methods	GMP
Safe environment for drug administration, including ability to quickly summon an anaesthetist if required	mini-CEX, CbD, DOPS	1,2,3
Appropriate monitoring, particularly pulse oximetry, and staffing	mini-CEX, CbD, DOPS	1,2,3
Appropriate use of oxygen and awareness of limitations of pulse oximetry in detecting hypercapnia	mini-CEX, CbD, DOPS	1,2,3
Safe doses of drugs concerned	mini-CEX, CbD, DOPS, SCE	1,2,3
Appropriate route of administration and knowledge that safe dose may be route dependent	mini-CEX, CbD, DOPS, SCE	1,2,3
Appropriate method of drug administration i.e. by titration	mini-CEX, CbD, DOPS	1,2,3
That use of a <i>single</i> intravenous sedating drug is preferred	mini-CEX, CbD, DOPS	1,2,3
Drug interactions, particularly if more than one intravenous sedative is used	mini-CEX, CbD, DOPS, SCE	1,2,3
National and local safe sedation guidelines and protocols	mini-CEX, CbD, DOPS	1,2,3
Skills		
Careful titration of drugs used against effect on patient, with continuous monitoring	mini-CEX, CbD, DOPS	1,2,3
ALS	Current ALS certificate, mini-CEX, CbD, DOPS	1,2,3
Behaviours		
Appropriate communication with patient throughout procedure to assess level of sedation and comfort; ability of patient to communicate should be maintained throughout procedure	mini-CEX, CbD, DOPS,	1,2,3
Appropriate communication with other staff	mini-CEX, CbD, DOPS, MSF	1,2,3
Liaison with anaesthetists when appropriate	mini-CEX, CbD, DOPS, MSF	1,2,3

## F1. Advanced Life Support

<b>Be competent to carry out and supervise effective resuscitation</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Causes of cardio-pulmonary arrest	ALS certificate, ACAT, CbD, mini-CEX	1
Principles of cardio-pulmonary resuscitation – recall ALS algorithm for adult cardiopulmonary arrest	ALS certificate, ACAT, CbD, mini-CEX	1
Know the indications for and how to safely deliver drugs used as per ALS algorithm	ALS certificate, ACAT, CbD, mini-CEX	1,2
Demonstrate knowledge of when advanced life support should be discontinued, in consultation with colleagues assisting with the case	ACAT, CbD, mini-CEX, AA	1,3
Organ donation issues	ACAT, CbD, mini-CEX	1,3,4
Relevant guidelines	ALS certificate, ACAT, CbD, mini-CEX	1
<b>Skills</b>		
Be proficient and competent in basic and advanced life support	ALS certificate, ACAT, CbD, mini-CEX	1
Be proficient and competent in the use of defibrillators	ALS certificate, ACAT, CbD, mini-CEX	1
Be proficient and competent in the use of relevant drugs	ALS certificate, ACAT, CbD, mini-CEX	1
Be competent in judging when ALS is not appropriate	ACAT, CbD, mini-CEX, MSF	1,2,3,4
Be competent to lead a cardiac arrest team and to delegate tasks appropriately	ACAT, CbD, mini-CEX, MSF	1,2,3
Trainees must show they have performed successful resuscitation	ACAT, CbD, mini-CEX	1,2,3
<b>Behaviours</b>		
Recognise and intervene in critical illness promptly to prevent cardiopulmonary arrest	ACAT, CbD, mini-CEX, MSF	1,2,3,4
Competence in making “do not resuscitate” decisions	ACAT, CbD, mini-CEX, MSF	1,2,3,4
Maintain safety of environment for patient and health care workers	ACAT, CbD, mini-CEX, MSF	1,2,3,4
Be able to break bad news sensitively and, where appropriate, to discuss organ donation issues	ACAT, CbD, mini-CEX, MSF	3,4
Be able to debrief resuscitation team	ACAT, CbD, mini-CEX, MSF	3

Undergo ALS re-certification every three years (mandatory)

ALS certificate

1,2

## F2. Respiratory Physiology and Lung Function Testing

**Have knowledge and experience of all lung function tests**

**Be competent in performing simple lung function tests; have experience of the performance of more complex tests**

**Be competent in interpreting all lung function tests**

**Trainees must have experience of interpreting lung function tests in the course of caring for inpatients and outpatients during clinical placements (minimum 2 years)**

**Trainees should spend some dedicated time in the lung function laboratory and in supervised reporting of lung function test results**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Ventilation and the mechanics of breathing	SCE, mini-CEX, CbD	1,2
Ventilation-perfusion relationships	SCE, mini-CEX, CbD	1,2
Control of ventilation	SCE, mini-CEX, CbD	1,2
Pulmonary blood flow and relationship between heart and lungs	SCE, mini-CEX, CbD	1,2
Diffusion	SCE, mini-CEX, CbD	1,2
Alveolar gas equation	SCE, mini-CEX, CbD	1,2
Pulmonary physiology during exercise, diving and at altitude	SCE, mini-CEX, CbD	1,2
Theory of simple spirometry and flow-volume loops	SCE, mini-CEX, CbD	1,2
Theory of measurement of static lung volumes and gas transfer	SCE, mini-CEX, CbD	1,2
Theory of body plethysmography	SCE, mini-CEX, CbD	1,2
Assessment of airway hyper-responsiveness	SCE, mini-CEX, CbD	1,2
Hypoxic challenge/fitness to fly tests	SCE, mini-CEX, CbD	1,2
Exercise testing (exercise - induced broncho-constriction, six minute walk, shuttle walk tests, cardiopulmonary exercise tests)	SCE, mini-CEX, CbD	1,2
Respiratory muscle assessment	SCE, mini-CEX, CbD	1,2
Tools for assessing respiratory disability, for instance Borg scale, MRC scale, St George's questionnaire	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
How to set up/supervise the running of a lung function laboratory	SCE, mini-CEX, CbD	1,2
Relevant infection control, quality control and safety at work issues	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Be able to perform, interpret and supervise spirometry (competence)	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Be able to perform, interpret and supervise pulse oximetry (competence)	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Be able to perform, interpret and supervise capillary and arterial blood gases (competence)	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Interpretation of static lung volumes and single breath diffusing capacity (competence)	SCE, mini-CEX, CbD	1,2,3
Interpretation of body plethysmography (competence)	SCE, mini-CEX, CbD	1,2,3
Interpretation of shunt measurements (competence)	SCE, mini-CEX, CbD	1,2,3
Interpretation of cardiopulmonary exercise testing (experience)	SCE, mini-CEX, CbD	1,2,3

Interpretation of bronchial provocation tests (competence)	SCE, mini-CEX, CbD	1,2,3
Interpretation of basic respiratory muscle tests (competence)	SCE, mini-CEX, CbD	1,2,3
Interpretation of fitness to fly tests (competence)	SCE, mini-CEX, CbD	1,2,3
Assessment of impairment/disability (competence)	SCE, mini-CEX, CbD	1,2,3
<b>Behaviours</b>		
Leadership	mini-CEX, CbD, MSF	1,2,3,4
Team working	mini-CEX, CbD, MSF	1,2,3,4
Recognise importance of quality control	mini-CEX, CbD, MSF	1,2,3,4
Implement and review processes for ensuring infection control and safety at work	SCE, mini-CEX, CbD, MSF	1,2,3,4
Audit	mini-CEX, CbD, MSF	1,2,3,4
Record time spent in the lung function laboratory	mini-CEX, CbD, ePortfolio	1,2,4

### F3. Sleep Studies

Have experience of screening studies, multi-channel studies and polysomnography

Be competent in the interpretation of screening studies

Have experience of the interpretation of multi-channel studies and polysomnography

Knowledge	Assessment Methods	GMP
Causes of sleep breathing disorders	SCE, mini-CEX, CbD	1,2
Differential diagnosis of sleep breathing disorders	SCE, mini-CEX, CbD	1,2
Methods of screening for sleep breathing disorders	SCE, mini-CEX, CbD	1,2
Multi-channel studies	SCE, mini-CEX, CbD	1,2
Polysomnography	SCE, mini-CEX, CbD	1,2
CPAP, including auto-titration, and NIV	SCE, mini-CEX, CbD	1,2
Other treatment methods	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Skills		
Perform and interpret screening sleep studies (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Interpret multi - channel sleep studies (experience) (may require secondment to a specialised unit)	SCE, mini-CEX, CbD	1,2
Interpret polysomnography (knowledge) (may require secondment to a specialised unit)	SCE, mini-CEX, CbD	1,2
Know how the differential diagnosis of sleep breathing disorders informs interpretation of the various types of sleep study	SCE, mini-CEX, CbD	1,2
Initiate CPAP and NIV (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Respect patient confidentiality	SCE, mini-CEX, CbD, MSF	1,2,3,4
Non-judgemental approach with respect to patient lifestyle	SCE, mini-CEX, CbD, MSF	1,3,4
Understand medicolegal issues and deal with these sensitively	SCE, mini-CEX, CbD, MSF	1,2,3,4
Understand the need for quality assurance/audit	SCE, mini-CEX, CbD, MSF	1,2,3
Understand the principles of service organisation	SCE, mini-CEX, CbD, MSF	1,2,3

## F4. Non-invasive Ventilation and CPAP

<b>Be competent in initiating and supervising CPAP and NIV</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Indications for, and contraindications to, CPAP and NIV	SCE, mini-CEX, CbD	1,2
How to set up and train a patient to use the equipment	SCE, mini-CEX, CbD	1,2
Importance of input from physiotherapists/other health care professionals	SCE, mini-CEX, CbD	1,2
How to monitor response	SCE, mini-CEX, CbD	1,2
Equipment available	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Set up patients on CPAP and NIV. Sufficient patients should be documented in the e-portfolio. The trainee should be supervised until formally signed off as competent by the Educational Supervisor	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Deal quickly and efficiently with complications	DOPS, SCE, mini-CEX, CbD	1,2
Maintenance of equipment	SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Be able to draw up an appropriate management plan and communicate this efficiently to other staff	SCE, mini-CEX, CbD, MSF	1,2,3,4
Understand principles of service organisation	SCE, mini-CEX, CbD, MSF	1,2,3,4
Trainee should have a satisfactory DOPS in ST3 and be formally signed off as competent by the educational supervisor. Thereafter, there should be yearly evidence of maintenance of competence whilst in programme ie at the ARCP	DOPS, SCE, mini-CEX, CbD	1,2,3,4

## F5. Bronchoscopy

**Be safe, efficient and competent at flexible fibreoptic bronchoscopy and relevant associated techniques** **Note requirements for formal sign off of competence in safe sedation (section F(b))**

Knowledge	Assessment Methods	GMP
Normal, variant and abnormal bronchial anatomy	DOPS, SCE, mini-CEX, CbD	1,2
Relationships of bronchial tree to other important intra-thoracic structures	DOPS, SCE, mini-CEX, CbD	1,2
Full working knowledge of all the equipment involved, and its care	DOPS, SCE, mini-CEX, CbD	1,2
Indications for and contraindications to fibreoptic bronchoscopy	DOPS, SCE, mini-CEX, CbD	1,2
Safe sedation and local anaesthesia for fibreoptic bronchoscopy	DOPS, SCE, mini-CEX, CbD	1,2
Techniques of fibreoptic bronchoscopy	DOPS, SCE, mini-CEX, CbD	1,2
Bronchoalveolar lavage	DOPS, SCE, mini-CEX, CbD	1,2
Transbronchial biopsies	DOPS, SCE, mini-CEX, CbD	1,2
Be aware of more advanced diagnostic and therapeutic bronchoscopic techniques, including TBNA, EBUS, diathermy, laser, photodynamic therapy, cryotherapy, endobronchial radiotherapy and stent placement (knowledge only required)	SCE, mini-CEX, CbD,	1,2
Informed consent and proper explanation of risks and benefits	DOPS, SCE, mini-CEX, CbD	1,2
Relevant guidelines	DOPS, SCE, mini-CEX, CbD	1,2
Infection control/safety at work issues	DOPS, SCE, mini-CEX, CbD	1,2
Skills		
Safe administration of intravenous sedation and how to reverse excessive sedation (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Safe administration of local anaesthetic including appreciation of potential toxicity (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Monitoring appropriate to procedure (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Valid ALS	ALS certificate	1,2
Introduction of bronchoscope and examination to subsegmental level (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Endobronchial biopsy (competence)	DOPS, SCE, mini-CEX, CbD	1,2
Transbronchial biopsy (experience, some may gain competence)	DOPS, SCE, mini-CEX, CbD	1,2
Transbronchial needle aspiration (experience, some may gain	DOPS, SCE, mini-	1,2

competence)	CEX, CbD	
Bronchoalveolar lavage (experience, some may gain competence)	DOPS, SCE, mini-CEX, CbD	1,2
Advanced diagnostic and therapeutic bronchoscopic techniques (only knowledge of these is required; although some trainees may gain experience [eg specialising in thoracic oncology], very few will gain competence)	DOPS, SCE, mini-CEX, CbD	1,2
Be competent to safely perform fiberoptic bronchoscopy. A minimum of 100 procedures should be undertaken supervised and should be recorded, appropriately anonymised, in the e-Portfolio.	DOPS, SCE, mini-CEX, CbD	1,2
Initially the trainee will be an observer. Subsequently he/she will perform bronchoscopy under supervision, with appropriate increasing independence as training progresses	DOPS, SCE, mini-CEX, CbD	1,2
Trainees should not bronchoscope unsupervised until their educational supervisor has assessed them as being competent to do so and signed them off	DOPS, SCE, mini-CEX, CbD	1,2
Trainees should not perform any advanced diagnostic or therapeutic bronchoscopic techniques unless formally assessed and certified as competent to do so by educational supervisor	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Communication skills	DOPS, SCE, mini-CEX, CbD, MSF	3,4
Leadership skills	DOPS, SCE, mini-CEX, CbD, MSF	3,4
Ability to sensitively break bad news	DOPS, SCE, mini-CEX, CbD, MSF	3,4
The percentage positive histology rate for visible tumour should be audited	AA	1,2
Be able to draw up an appropriate management plan following the procedure and to communicate this efficiently to other staff	DOPS, SCE, mini-CEX, CbD, MSF	1,2,3,4
Understand the principles of service organisation	SCE, mini-CEX, CbD, MSF	1,2,3,4
The trainee should have 2 satisfactory DOPS per year in ST3 & 4 and be formally signed off as competent by the educational supervisor. Thereafter, there should be one satisfactory DOPS per year of in-programme training	DOPS, SCE, mini-CEX, CbD, MSF	1,2,3,4

## F6. Focused Pleural Ultrasound Level 1 (mandatory)

Be safe, efficient and competent at performing focused pleural ultrasound

Be able to interpret focused pleural ultrasound

Know the role of focused pleural ultrasound in the diagnostic evaluation of patients with pleural disease

Knowledge	Assessment Methods	GMP
Understand basic ultrasound physics and technology, and techniques relevant to thoracic ultrasound	SCE, mini-CEX, CbD,	1,2
The cross-sectional and ultrasound anatomy of the right and left hemidiaphragms	DOPS, SCE, mini-CEX, CbD	1,2
The basic cross-sectional and ultrasound anatomy of the heart	DOPS, SCE, mini-CEX, CbD	1,2
The basic cross-sectional and ultrasound anatomy of the liver and spleen	DOPS, SCE, mini-CEX, CbD	1,2
The cross-sectional and ultrasound anatomy of rib and intercostal spaces	DOPS, SCE, mini-CEX, CbD	1,2
The pathology and ultrasound appearances of pleural effusions	DOPS, SCE, mini-CEX, CbD	1,2
The pathology and ultrasound appearances of pleural thickening	DOPS, SCE, mini-CEX, CbD	1,2
The pathology and ultrasound appearances of consolidated lung	DOPS, SCE, mini-CEX, CbD	1,2
The pathology and ultrasound appearances of the paralysed hemidiaphragm	DOPS, SCE, mini-CEX, CbD	1,2
The pathology and ultrasound appearances of pericardial effusion	DOPS, SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Skills		
Recognition of normal anatomy of pleura and diaphragm	DOPS, SCE, mini-CEX, CbD	1,2
Identification of the heart, liver and spleen	DOPS, SCE, mini-CEX, CbD	1,2
Able to recognise pleural effusions, including the different echogenic patterns	DOPS, SCE, mini-CEX, CbD	1,2
Able to recognise pleural thickening and to differentiate it from pleural fluid using colour flow Doppler if appropriate	DOPS, SCE, mini-CEX, CbD	1,2
Able to recognise consolidated lung and differentiate it from pleural effusion	DOPS, SCE, mini-CEX, CbD	1,2
Able to estimate depth of effusion and perform measurements	DOPS, SCE, mini-CEX, CbD	1,2
Able to perform guided thoracocentesis and drain placement	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Should observe at least 20 focused pleural ultrasound procedures*	DOPS, mini-CEX, CbD	1,2,3,4

Should perform at least 20 focused pleural ultrasound examinations on normal patients*	DOPS, mini-CEX, CbD	1,2,3,4
Should perform at least 20 focused pleural ultrasound examinations on patients with pleural effusions*	DOPS, mini-CEX, CbD	1,2,3,4
Should perform at least 20 thoracenteses or drain placements using focused pleural ultrasound guided techniques*	DOPS, mini-CEX, CbD	1,2,3,4
Formal sign off of competence to level 1 by ST5; thereafter there should be evidence of maintenance of competence yearly ie at the ARCP, during in-programme training	Educational supervisor's report; DOPS	
Be aware of limitations of own ability at pleural ultrasound, and know when to ask for more expert help	DOPS, mini-CEX, CbD	1,2,3,4
Demonstrate good judgement in knowing when and when not to perform pleural procedures, even if ultrasound guided	DOPS, mini-CEX, CbD	1,2,3,4
Be able to draw up an appropriate management plan to follow the pleural procedure and to communicate this effectively to other staff and sensitively to patient and family/carers	mini-CEX, CbD	1,2,3,4

\*Royal College of Radiologists Focused Ultrasound Training Standards, 2012

## F7. Pleural Aspiration (mandatory) and Closed Pleural Biopsy (optional)

**Be safe, efficient and competent at pleural aspiration (mandatory)**

**Be safe, efficient and competent at pleural biopsy (optional)**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Relevant anatomy of the chest wall, lungs and other important intrathoracic and relevant intraabdominal structures	DOPS, SCE, mini-CEX, CbD	1,2
Safe and effective local anaesthesia for pleural techniques	DOPS, SCE, mini-CEX, CbD	1,2
Indications for, and contraindications to, pleural aspiration	DOPS, SCE, mini-CEX, CbD	1,2
Equipment used for pleural aspiration	DOPS, SCE, mini-CEX, CbD	1,2
Safe technique for pleural aspiration	DOPS, SCE, mini-CEX, CbD	1,2
How to assess pleural fluid	DOPS, SCE, mini-CEX, CbD	1,2
Indications for, and contraindications to, closed pleural biopsy, including knowledge of risks/benefits and of appropriate other diagnostic techniques	DOPS, SCE, mini-CEX, CbD	1,2
Equipment used for closed pleural biopsy	DOPS, SCE, mini-CEX, CbD	1,2
Techniques used for closed pleural biopsy, both "blind" and image guided	DOPS, SCE, mini-CEX, CbD	1,2
The role of radiologist/radiographer/physician - practised thoracic ultrasound in guiding safe closed pleural biopsy	DOPS, SCE, mini-CEX, CbD	1,2
How to assess pleural biopsies	DOPS, SCE, mini-CEX, CbD	1,2
Informed consent and explanation of risks and benefits	DOPS, SCE, mini-CEX, CbD	1,2
Relevant guidelines	DOPS, SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Safe selection of appropriate sampling site	DOPS, SCE, mini-CEX, CbD	1,2
Sterile technique	DOPS, SCE, mini-CEX, CbD	1,2
Safe and effective local anaesthesia	DOPS, SCE, mini-CEX, CbD	1,2
Be safe and competent at pleural aspiration	DOPS, SCE, mini-CEX, CbD	1,2
If trainee elects to be trained in closed pleural biopsy, he/she should be competent in safely performing the procedure supervised before independent practice is allowed. As a guide, a minimum of 10 procedures should be recorded in the e-Portfolio. The educational supervisor should formally sign off the trainee as competent. Note that training in closed pleural biopsy is optional	DOPS, SCE, mini-CEX, CbD	1,2

## Behaviours

Ensure selection of safest and most reliable diagnostic technique	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Full explanation of alternative approaches to diagnosis	DOPS, SCE, mini-CEX, CbD	1,2,3,4
Trainee should have been previously formally signed off as competent to perform pleural aspiration during their Core Medical Training, but should have a further satisfactory DOPS during ST3 and demonstrate maintenance of competence on a yearly basis thereafter ie at the ARCP, whilst undertaking in-programme training	DOPS, SCE, mini-CEX, CbD	1,2,3,4

## F8. Intercostal Tube Placement and “Medical” Pleurodesis

<b>Be safe, efficient and competent at intercostal tube placement and “medical” pleurodesis</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Indications for intercostal tube placement, particularly whether or not it is really necessary, especially out of hours	DOPS, SCE, mini-CEX, CbD	1,2
Appropriate use of imaging	DOPS, SCE, mini-CEX, CbD	1,2
Selection of appropriate environment and use of sterile technique	DOPS, SCE, mini-CEX, CbD	1,2
Appropriate analgesia and/or safe sedation	DOPS, SCE, mini-CEX, CbD	1,2
Safe, effective local anaesthetic technique	DOPS, SCE, mini-CEX, CbD	1,2
Safe techniques for intercostal tube placement, both “Seldinger” and “surgical”	DOPS, SCE, mini-CEX, CbD	1,2
Methods for preventing tube displacement	DOPS, SCE, mini-CEX, CbD	1,2
Indications for suction	DOPS, SCE, mini-CEX, CbD	1,2
Portable drainage systems	DOPS, SCE, mini-CEX, CbD	1,2
Drugs and techniques used for pleurodesis	DOPS, SCE, mini-CEX, CbD	1,2
Patient consent and explanation of risks and benefits	DOPS, SCE, mini-CEX, CbD	1,2
Relevant guidelines	DOPS, SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Selection of appropriate environment for procedure	DOPS, SCE, mini-CEX, CbD	1,2
Sterile technique	DOPS, SCE, mini-CEX, CbD	1,2
Safe, effective local anaesthetic technique	DOPS, SCE, mini-CEX, CbD	1,2
Positioning and selection of appropriate (safe) site for insertion	DOPS, SCE, mini-CEX, CbD	1,2
Handling and care of equipment and technical ability with insertion	DOPS, SCE, mini-CEX, CbD	1,2
Securing drain	DOPS, SCE, mini-CEX, CbD	1,2
Setting up and managing underwater seal and suction	DOPS, SCE, mini-CEX, CbD	1,2
Awareness and management of complications	DOPS, SCE, mini-CEX, CbD	1,2
Trainee should be competent in safely performing “Seldinger”	DOPS, SCE, mini-	1,2

intercostal tube placement. As a guide, a minimum of 20 procedures should be performed and recorded in the e-Portfolio. A satisfactory DOPS is mandatory in the first (ST3) year of training. Maintenance of competence must be demonstrated on a yearly basis thereafter ie at the ARCP, whilst undertaking in-programme training	CEX, CbD	
Trainees should have experience of “surgical” intercostal tube placement; some trainees may gain full competence in this	DOPS, SCE, mini-CEX, CbD	1,2
Be competent at “medical” pleurodesis	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Demonstrate good judgement in knowing when and when not to insert an intercostal tube	DOPS, SCE, mini-CEX, CbD	1,2
Be able to draw up an appropriate management plan to follow the procedure and communicate this efficiently to other staff	DOPS, SCE, mini-CEX, CbD	1,2,3,4
The trainee should have been formally signed off as competent by the educational supervisor during core training, but needs to be formally re-assessed early during Respiratory Medicine (ST3) training.	DOPS, SCE, mini-CEX, CbD	1,2,3,4

## F9. Local Anaesthetic (Medical) Thoracoscopy

Have knowledge of the procedure of local anaesthetic (“medical”) thoracoscopy.  
Some trainees may have some experience of the procedure.  
Neither experience nor competence is a mandatory requirement.

Knowledge	Assessment Methods	GMP
Indications for local anaesthetic thoracoscopy (LAT)	SCE, mini-CEX, CbD	1,2
Alternatives to LAT	SCE, mini-CEX, CbD	1,2
Guidelines for management of pleural effusions	SCE, mini-CEX, CbD	1,2
Use of appropriate imaging modalities	SCE, mini-CEX, CbD	1,2
Appropriate environment for procedure	SCE, mini-CEX, CbD	1,2
Safe sedation for LAT	SCE, mini-CEX, CbD	1,2
Safe and effective local anaesthesia for LAT	SCE, mini-CEX, CbD	1,2
Equipment used	SCE, mini-CEX, CbD	1,2
Basics of the procedure	SCE, mini-CEX, CbD	1,2
Informed consent and adequate explanation of risks, benefits and alternatives	SCE, mini-CEX, CbD	1,2
Skills		
Have witnessed medical thoracoscopy (knowledge) (optional); It is not necessary to have had “hands on” experience of the technique	SCE, mini-CEX, CbD	1,2
Behaviours		
Be able to manage patients after LAT	SCE, mini-CEX, CbD, MSF	1,2,3,4

## F10. Chronic Indwelling Pleural Catheters

Have knowledge of the indications for placement of chronic indwelling pleural catheters, the technique for their insertion and how to subsequently manage them

Some trainees may gain some experience of the procedure

Neither experience nor competence is a mandatory requirement

Knowledge	Assessment Methods	GMP
Indications for chronic indwelling pleural catheters	SCE, mini-CEX, CbD	1,2
Alternatives to chronic indwelling pleural catheters	SCE, mini-CEX, CbD	1,2
Guidelines for management of malignant pleural effusions	SCE, mini-CEX, CbD	1,2
Use of appropriate imaging modalities	SCE, mini-CEX, CbD	1,2
Appropriate environment for procedure	SCE, mini-CEX, CbD	1,2
The need for full sterile technique	SCE, mini-CEX, CbD	1,2
Safe and effective local anaesthesia for insertion	SCE, mini-CEX, CbD	1,2
Equipment used	SCE, mini-CEX, CbD	1,2
Basics of the procedure	SCE, mini-CEX, CbD	1,2
Informed consent and adequate explanation of risks, benefits and alternatives	SCE, mini-CEX, CbD	1,2
Skills		
Have witnessed insertion of chronic indwelling pleural catheters (knowledge) (optional); it is not necessary to have had "hands on" experience of the technique	SCE, mini-CEX, CbD	1,2
Be able to manage chronic indwelling pleural catheters subsequent to placement	SCE, mini-CEX, CbD	1,2
Behaviours		
Be able to draw up and efficiently communicate an appropriate management plan	SCE, mini-CEX, CbD, MSF	1,2,3,4

## F11. Tuberculin Skin Tests

**Understand the role of (experience), and be able to interpret (competence), tuberculin skin tests. Trainees are not expected to be competent in performing tuberculin skin tests, only to have knowledge and experience of them and to be able to interpret them**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Science underlying tuberculin skin tests and gamma interferon tests	SCE, mini-CEX, CbD	1,2
Types of tuberculin test	SCE, mini-CEX, CbD	1,2
Indications for, and contraindications to, tuberculin skin tests in both the adult and the paediatric population	SCE, mini-CEX, CbD	1,2
How tuberculin skin tests and gamma interferon tests are performed	SCE, mini-CEX, CbD	1,2
How to read tuberculin skin tests	SCE, mini-CEX, CbD	1,2
Pitfalls in interpretation of tuberculin skin tests and gamma interferon tests	SCE, mini-CEX, CbD	1,2
Complications of tuberculin skin tests	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Understand roles and relative roles of tuberculin skin tests and gamma interferon tests	SCE, mini-CEX, CbD	1,2
<b>Skills</b>		
Be able to read/interpret (competence) tuberculin tests	DOPS, SCE, mini-CEX, CbD	1,2
Be able to use results to inform patient management	DOPS, SCE, mini-CEX, CbD	1,2
<b>Behaviours</b>		
Respect professionalism of healthcare workers performing tuberculin skin tests.	SCE, mini-CEX, CbD, MSF	1,2,3,4
Be able to draw up and efficiently communicate an appropriate management plan	SCE, mini-CEX, CbD, MSF	1,2,3,4

## F12. Skin Tests to Demonstrate “Allergy”

Understand the role of (experience), and be able to interpret (competence), skin tests for allergy  
 Trainees are not expected to be competent in performing allergy skin tests, only to have knowledge and experience of them and to be able to interpret them

Knowledge	Assessment Methods	GMP
Science underlying allergy skin tests	SCE, mini-CEX, CbD	1,2
Indications for skin tests	SCE, mini-CEX, CbD	1,2
How to perform skin tests	SCE, mini-CEX, CbD	1,2
Pitfalls in interpretation	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Skills		
Be able to read/interpret (competence) skin tests for common allergies	SCE, mini-CEX, CbD	1,2
Be able to use results to inform patient management	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Respect professionalism of healthcare workers performing allergy skin tests.	SCE, mini-CEX, CbD, MSF	1,2,3,4
Be able to draw up and efficiently communicate an appropriate management plan	SCE, mini-CEX, CbD, MSF	1,2,3,4

### F13. Fine Needle Aspiration (FNA) of Peripheral Lymph Nodes

Have knowledge of the role and technique of lymph node FNA. Some trainees may have experience of the procedure. Some trainees may wish to become competent (optional)

Knowledge	Assessment Methods	GMP
Anatomy of peripheral lymph nodes relevant to chest disease, and of the patterns of lymphatic drainage	SCE, mini-CEX, CbD	1,2
Role of lymph node FNA in diagnostic work up of chest disease, particularly of malignant disease	SCE, mini-CEX, CbD	1,2
How to perform FNA; equipment used; sterile technique; local anaesthetic technique; safety (important nearby anatomical structures); role of ultrasound guidance	SCE, mini-CEX, CbD	1,2
How to prepare sample taken to ensure optimal results	SCE, mini-CEX, CbD	1,2
How to assess results and pitfalls in interpretation	SCE, mini-CEX, CbD	1,2
Relevant guidelines	SCE, mini-CEX, CbD	1,2
Skills		
Safe selection of appropriate sampling site, including use of imaging, particularly ultrasound, where indicated	DOPS, SCE, mini-CEX, CbD	1,2
Sterile technique	DOPS, SCE, mini-CEX, CbD	1,2
Local anaesthetic technique	DOPS, SCE, mini-CEX, CbD	1,2
Be safe and competent at FNA (optional)	DOPS, SCE, mini-CEX, CbD	1,2
Ensure sample is properly prepared once taken and is delivered in optimal condition to laboratory	DOPS, SCE, mini-CEX, CbD	1,2
Behaviours		
Good communication skills in liaising with pathologist/cytologist	mini-CEX, CbD, MSF	1,2,3,4
Good communication skills with patient/family/carers	mini-CEX, CbD, MSF	1,2,3,4
Be able to draw up and efficiently communicate an appropriate management plan	mini-CEX, CbD, MSF	1,2,3,4

# G. Learning Objectives for Ensuring Patients Safety

## G1. Prioritisation of Patient Safety in Clinical Practice

To understand that patient safety depends on the effective and efficient organisation of care, and on health care staff working well together

To understand that patient safety depends on safe systems, not just individual competency and safe practice

To never compromise patient safety

To understand the risks of treatments and to discuss these honestly and openly with patients so that patients are able to make decisions about risks and treatment options

To ensure that all staff are aware of risks and work together to minimise risk

Knowledge	Assessment Methods	GMP
Outlines the features of a safe working environment	ACAT, mini-CEX, CbD	1,2,
Outlines the hazards of medical equipment in common use	ACAT, CbD	1,2
Recalls side effects and contraindications of medications prescribed	ACAT, mini-CEX, CbD, SCE	1,2
Recalls principles of risk assessment and management	CbD	1,2
Recalls the components of safe working practice in the personal, clinical and organisational settings	ACAT, CbD	1,2,3
Outlines local procedures and protocols for optimal practice e.g. GI bleed protocol, safe prescribing	ACAT, mini-CEX, CbD	1,2
Understands the investigation of significant events, serious untoward incidents and near misses	ACAT, mini-CEX, CbD	1,2,3,4
Skills		
Recognises limits of own professional competence and only practises within these	ACAT, mini-CEX, CbD	1,2
Recognises when a patient is not responding to treatment and reassesses the situation; encourages others to do the same	ACAT, mini-CEX, CbD	1,2
Ensures the correct and safe use of medical equipment, ensuring faulty equipment is reported appropriately	ACAT, mini-CEX, CbD	1,2,3
Improves patients' and colleagues' understanding of the side effects and contraindications of therapeutic intervention	ACAT, mini-CEX, CbD	1,2, 3
Sensitively counsels a colleague following a significant untoward event, or near incident, to encourage improvement in practice of individual and unit	ACAT, CbD, MSF	3
Recognises and responds to the manifestations of a patient's deterioration or lack of improvement (symptoms, signs, observations, and laboratory results) and supports other members of the team to act similarly	ACAT, mini-CEX, CbD, MSF	1,2,3
Behaviours		
Continues to maintain a high level of safety awareness and consciousness at all times	ACAT, mini-CEX, CbD, MSF	1,2
Encourages feedback from all members of the team on safety issues	ACAT, mini-CEX, CbD, MSF	2,3

Reports serious untoward incidents and near misses and co-operates with the investigation of the same	ACAT, mini-CEX, CbD, MSF	1,2,3
Shows willingness to take action when concerns are raised about performance of members of the healthcare team, and acts appropriately when these concerns are voiced by others	ACAT, mini-CEX, CbD, MSF	2,3
Continues to be aware of own limitations, and operates within them competently	ACAT, mini-CEX, CbD	1,2

## G2. Team Working and Patient Safety

To develop the ability to work well in a variety of different teams and team settings – for example the ward team and the infection control team – and to contribute to discussion on the team's role in patient safety

To develop the leadership skills necessary to lead teams so that they are more effective and better able to deliver safer care

Knowledge	Assessment Methods	GMP
Outlines the components of effective collaboration and team working	ACAT, CbD	1,2,3
Describes the roles and responsibilities of members of the healthcare team	ACAT, CbD	1,2,3
Outlines factors adversely affecting a doctor's and team's performance and methods to rectify these	CbD	1,2,3
Skills		
Practises with attention to the important steps of providing good continuity of care	ACAT, mini-CEX, CbD	1,2, 3, 4
Accurate attributable note-keeping, including appropriate use of electronic clinical record systems	ACAT, mini-CEX, CbD	1,2,3
Prepares patient lists with clarification of problems and ongoing care plan	ACAT, mini-CEX, CbD, MSF	1,2,3
Detailed hand over between shifts and areas of care	ACAT, mini-CEX, CbD, MSF	1,2,3
Demonstrates leadership and management in the following areas: <ul style="list-style-type: none"> <li>• Education and training of junior colleagues and other members of the healthcare team</li> <li>• Deteriorating performance of colleagues (e.g. stress, fatigue)</li> <li>• High quality care</li> <li>• Effective handover of care between shifts and teams</li> </ul>	ACAT, mini-CEX, CbD	1,2,3
Leads and participates in interdisciplinary team meetings	ACAT, mini-CEX, CbD	1,3
Provides appropriate supervision to less experienced colleagues	ACAT, CbD, MSF	3
Behaviours		
Encourages an open environment to foster and explore concerns and issues about the functioning and safety of team working	ACAT, CbD, MSF	3
Recognises limits of own professional competence and only practises within these	ACAT, CbD, MSF	2,3
Recognises and respects the request for a second opinion	ACAT, CbD, MSF	2,3
Recognises the importance of induction for new members of a team	ACAT, CbD, MSF	2,3
Recognises the importance of prompt and accurate information sharing with Primary Care team following hospital discharge	ACAT, mini-CEX, CbD, MSF	2,3

### G3. Principles of Quality and Safety Improvement

**To recognise the desirability of monitoring performance, learning from mistakes and adopting no blame culture in order to ensure high standards of care and optimise patient safety**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the elements of clinical governance	CbD, MSF	1,2
Recognises that clinical governance safeguards high standards of care and facilitates the development of improved clinical services	CbD, MSF	1,2
Defines local and national significant event reporting systems relevant to specialty	ACAT, mini-CEX, CbD	1,2,3
Recognises importance of evidence-based practice in relation to clinical effectiveness	ACAT, mini-CEX, CbD, MSF	1,2
Outlines local health and safety protocols (fire, manual handling etc)	CbD	1,2
Understands risks associated with the trainee's specialty work including biohazards and outlines mechanisms to reduce risk	ACAT, mini-CEX, CbD, SCE	1,2,3
Outlines the use of patient early warning systems to detect clinical deterioration where relevant to the trainee's clinical specialty	ACAT, mini-CEX, CbD	1,2,3
Keeps abreast of national patient safety initiatives including National Patient Safety Agency, NCEPOD reports, NICE guidelines etc	ACAT, mini-CEX, CbD, MSF	1,2
<b>Skills</b>		
Adopts strategies to reduce risk e.g. pause in procedure	ACAT, CbD	1,2,3
Contributes to quality improvement processes e.g. <ul style="list-style-type: none"> <li>• Audit of personal and departmental/directorate/practice performance</li> <li>• Errors/discrepancy meetings</li> <li>• Critical incident and near miss reporting</li> <li>• Unit morbidity and mortality meetings</li> <li>• Local and national databases</li> </ul>	CbD, AA	2
Maintains a portfolio of information and evidence, drawn from own medical practice	CbD	1,2
Reflects regularly on own standards of medical practice in accordance with GMC guidance on licensing and revalidation	AA	1,2,3,4
<b>Behaviours</b>		
Shows willingness to participate in safety improvement strategies such as critical incident reporting	ACAT, mini-CEX, CbD, MSF	2,3
Develops reflection in order to achieve insight into own professional practice	CbD, MSF	2,3
Demonstrates personal commitment to improve own performance in the light of feedback and assessment	CbD, MSF	2,3
Engages with an open no blame culture	CbD, MSF	3,4
Responds positively to outcomes of audit and quality improvement	CbD, MSF	1,3
Co-operates with changes necessary to improve service quality and safety	CbD, MSF	1,2,3

## G4. Infection Control

**To develop the ability to manage and control infection in patients, including controlling the risk of cross-infection, appropriately managing infection in individual patients, and working appropriately within the wider community to manage the risk posed by communicable diseases**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the principles of infection control as defined by the GMC	ACAT, mini-CEX, CbD	1,2
Understands the principles of preventing infection in high risk groups (e.g. managing antibiotic use to reduce Clostridium difficile infection,) including understanding the local antibiotic prescribing policy	ACAT, mini-CEX, CbD	1,2
Understands the role of Notification of diseases within the UK and identifies the principle notifiable diseases for UK and international purposes	ACAT, mini-CEX, CbD	1,2,3
Understands the role of the Health Protection Agency and Consultants in Health Protection (previously Consultants in Communicable Disease Control – CCDC)	ACAT, mini-CEX, CbD	1,2,3
Understands the role of the local authority in relation to infection control	ACAT, mini-CEX, CbD	1,2,3
<b>Skills</b>		
Recognises the potential for infection in patients being cared for	ACAT, mini-CEX, CbD	1, 2
Counsels patient on matters of infection risk, transmission and control	ACAT, mini-CEX, CbD, PS	2,3,4
Actively engages in local infection control procedures	ACAT, mini-CEX, CbD	1,2
Actively engages in local infection control monitoring and reporting processes	ACAT, mini-CEX, CbD	1,2,3
Prescribes antibiotics according to local antibiotic guidelines and works with microbiological services where this is not possible	ACAT, mini-CEX, CbD	1,2,3
Recognises potential for cross-infection in clinical settings	ACAT, mini-CEX, CbD	1,2,3,4
Practices aseptic technique whenever relevant	DOPS	1,2
<b>Behaviours</b>		
Encourages all staff, patients and relatives to observe infection control principles	ACAT, CbD, MSF	1,2,3,4
Recognises the risk of personal ill-health as a risk to patients and colleagues in addition to its effect on performance	ACAT, CbD, MSF	1,2,3

# H. Learning Objectives for Legal and Ethical Aspects of Clinical Practice

## H1. Principles of Medical Ethics and Confidentiality

To know, understand and apply appropriately the principles, guidance and laws regarding medical ethics and confidentiality

Knowledge	Assessment Methods	GMP
Demonstrates knowledge of the principles of medical ethics	ACAT, mini-CEX, CbD	1
Outlines and follows the guidance given by the GMC on confidentiality	ACAT, mini-CEX, CbD	1
Defines the provisions of the Data Protection Act and Freedom of Information Act	ACAT, mini-CEX, CbD	1
Defines the principles of Information Governance	mini-CEX, CbD	1
Defines the role of the Caldicott Guardian and Information Governance lead within an institution, and outlines the process of attaining Caldicott approval for audit or research	ACAT, mini-CEX, CbD	1
Outlines situations where patient consent, while desirable, is not required for disclosure e.g. serious communicable diseases, public interest	ACAT, mini-CEX, CbD	1,2,3
Outlines the procedures for seeking a patient's consent for disclosure of identifiable information	ACAT, mini-CEX, CbD	1
Recalls the obligations for confidentiality following a patient's death	ACAT, mini-CEX, CbD	1,4
Recognises the problems posed by disclosure in the public interest, without patient's consent	ACAT, mini-CEX, CbD	1,4
Recognises the factors influencing ethical decision making, including religion, personal and moral beliefs, cultural practices	ACAT, mini-CEX, CbD	1,4
Do not resuscitate decisions – defines the standards of practice defined by the GMC when deciding to withhold or withdraw life-prolonging treatment	ACAT, mini-CEX, CbD	1,3,4
Recognises the role and legal standing of advanced directives	ACAT, mini-CEX, CbD	1,4
Outlines the principles of the Mental Capacity Act	ACAT, mini-CEX, CbD	1
Skills		
Uses and shares information with the highest regard for confidentiality, and encourages such behaviour in other members of the team	ACAT, mini-CEX, CbD, MSF	1,2,3,4
Uses and promotes strategies to ensure confidentiality is maintained e.g. anonymisation	CbD	1,2,4
Counsels patients on the need for information distribution within members of the immediate healthcare team	ACAT, CbD, MSF	1,3,4
Counsels patients, family, carers and advocates tactfully and effectively when making decisions about resuscitation status, and	ACAT, mini-CEX, CbD, PS	1,3,4

## withholding or withdrawing treatment

**Behaviours**

Encourages informed ethical reflection in others	ACAT, Cbd, MSF	3
Shows willingness to seek advice of peers, legal bodies, and the GMC in the event of ethical dilemmas over disclosure and confidentiality	ACAT, mini-CEX, Cbd, MSF	1,2,3
Respects patients' requests for information not to be shared, unless this puts the patient, or others, at risk of harm	ACAT, mini-CEX, Cbd, PS	1,4
Shows willingness to share information regarding care with patients, unless they have expressed a wish not to receive such information	ACAT, mini-CEX, Cbd	1,3,4
Shows willingness to seek the opinion of others when making decisions about resuscitation status, and withholding or withdrawing treatment	ACAT, mini-CEX, Cbd, MSF	1,3,4

## H2. Legal Framework for Practice

**To understand the legal framework within which healthcare is provided in the UK and/or devolved administrations in order to ensure that personal clinical practice is always provided in line with this legal framework**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
All decisions and actions must be in the best interests of the patient	ACAT, mini-CEX, CbD	1,2,4
Understands the legislative framework within which healthcare is provided in the UK and/or devolved administrations, in particular: death certification and the role of the Coroner/Procurator Fiscal; child protection legislation; mental health legislation (including powers to detain a patient and give emergency treatment against a patient's will under common law); advanced directives and living wills; withdrawing and withholding treatment; decisions regarding resuscitation; surrogate decision making; organ donation and retention; communicable disease notification; medical risk and driving; Data Protection and Freedom of Information Acts; provision of continuing care and community nursing care by local authorities	ACAT, mini-CEX, CbD, SCE	1,2
Understands the differences between health related legislation in the four countries of the UK	CbD	1
Understands sources of medical legal information	ACAT, mini-CEX, CbD	1
Understands disciplinary processes in relation to medical malpractice	ACAT, mini-CEX, CbD, MSF	1
Understands the role of the medical practitioner in relation to personal health and substance misuse, including understanding the procedure to be followed when such abuse is suspected	ACAT, CbD, MSF	1,2,3,4
<b>Skills</b>		
Ability to cooperate with other agencies with regard to legal requirements, including reporting to the Coroner's/Procurator's Officer, the Police or the proper officer of the local authority in relevant circumstances	ACAT, mini-CEX, CbD	1,2,3
Ability to prepare appropriate medical legal statements for submission to the Coroner's Court, Procurator Fiscal, Fatal Accident Inquiry and other legal proceedings	CbD, MSF	1,2,3
Is prepared to present such material in Court	CbD	1,3
Incorporates legal principles into day-to-day practice	ACAT, mini-CEX, CbD	1,2,3
Practises and promotes accurate documentation within clinical practice	ACAT, mini-CEX, CbD	1,2,3
<b>Behaviours</b>		
Shows willingness to seek advice from the employer, appropriate legal bodies (including defence societies) and the GMC on medico-legal matters	ACAT, mini-CEX, CbD, MSF	1,2,3,4
Promotes informed reflection on legal issues by members of the team; ensures that all decisions and actions must be in the best interests of the patient	ACAT, mini-CEX, CbD, MSF	1,2,3,4

### H3. Ethical Research

<b>To ensure that research is undertaken using relevant ethical guidelines</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Outlines the GMC guidance on good practice in research	mini-CEX, CbD, SCE	1,2
Understands the principles of research governance	AA, CbD, mini-CEX	1,2
Outlines the differences between audit and research	CbD	1
Describes how clinical guidelines are produced	mini-CEX, CbD	1,2,3
Demonstrates a knowledge of research principles	mini-CEX, CbD	1
Outlines the principles of formulating a research question and designing a project	mini-CEX, CbD	1
Comprehends principle qualitative, quantitative, bio-statistical and epidemiological research methods	CbD	1
Outlines sources of research funding	CbD	1
Understands the differences between population-based and unit-based studies and is able to evaluate outcomes for epidemiological work	CbD, AA	1
<b>Skills</b>		
Demonstrates the use of literature databases	CbD	1,2
Develops good critical appraisal skills and applies these when reading the literature	mini-CEX, CbD, AA	1,2
Applies for appropriate ethical research approval	Educational Supervisor's Report, Publication	1,2
Demonstrates the ability to write a scientific paper	Publication	1
Demonstrates good verbal and written presentations skills	TO	1
<b>Behaviours</b>		
Follows guidelines on ethical conduct in research and consent for research	Educational Supervisor's Report, MSF	1
Shows willingness to promote involvement in research	CbD, MSF	1

## H4. Complaints and Medical Error

**To recognise the causes of error and to learn from them; to realise the importance of honesty and effective apology and to take a leadership role in the handling of complaints**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
<p>Basic consultation techniques and skills described for Foundation Programme, including:</p> <ul style="list-style-type: none"> <li>• Describes the local complaints procedure</li> <li>• Recognises factors likely to lead to complaints (poor communication, dishonesty, clinical errors, adverse clinical outcomes etc)</li> <li>• Adopts behaviour likely to prevent causes for complaints</li> <li>• Deals appropriately with concerned or dissatisfied patients or relatives</li> <li>• Recognises when something has gone wrong and identifies appropriate staff to communicate this to</li> <li>• Acts with honesty and sensitivity in a non-confrontational manner</li> </ul>	mini-CEX, CbD, DOPS, MSF	1,2
Outlines the principles of an effective apology	CbD, MSF	1,3,4
Identifies sources of help and support for patients and self when a complaint is made about self or a colleague	mini-CEX, CbD, MSF	1,3,4
<b>Skills</b>		
Contributes to processes whereby complaints are reviewed and learned from	CbD, MSF	1,2,3,4
Explains comprehensibly to the patient the events leading up to a medical error or serious untoward incident, and sources of support for patients and their relatives	mini-CEX, CbD, DOPS, MSF	1,2,3,4
Delivers an appropriate apology and explanation (either of error or for process of investigation of potential error and reporting of the same)	mini-CEX, CbD, DOPS, MSF	1,3,4
Distinguishes between system and individual errors (personal and organisational)	mini-CEX, CbD, MSF	1,2
Shows an ability to learn from previous error	CbD, DOPS, MSF	1,2,4
<b>Behaviours</b>		
Takes leadership over complaint issues	CbD, DOPS, MSF	1,3
Recognises the impact of complaints and medical error on staff, patients, and the National Health Service	CbD, MSF	1,3
Contributes to a fair and transparent culture around complaints and errors	CbD, MSF	1,4
Recognises the rights of patients, family members and carers to make a complaint	CbD, MSF	1,4
Recognises the impact of a complaint upon self and seeks appropriate help and support	CbD, MSF	1,4

# I. Learning Objectives: Management and NHS Structure

## I1. Management and NHS Structure

**To understand the structure of the NHS and the management of local healthcare systems in order to be able to participate fully in managing healthcare provision**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the guidance given on management and doctors by the GMC	CbD	1
Understands the local structure of NHS systems in the locality, recognising the potential differences between the four countries of the UK	CbD	1,3
Understands the structure and function of healthcare systems as they apply to Respiratory Medicine	mini-CEX, CbD, SCE	1,3
Understands the consistent debates and changes that occur in the NHS including the political, social, technical, economic, organisational and professional aspects that can impact on provision of service	CbD	1,3
Understands the importance of local demographic, socio-economic and health data and their use to improve system performance	CbD, AA	1,2,3
Understands the principles of: <ul style="list-style-type: none"> <li>• Clinical coding</li> <li>• European Working Time Regulations including rest provisions</li> <li>• National Service Frameworks e.g. COPD</li> <li>• Health regulatory agencies (e.g. NICE, Scottish Government)</li> <li>• NHS structure and relationships</li> <li>• NHS finance and budgeting</li> <li>• Consultant contract and the contracting process</li> <li>• Resource allocation</li> <li>• The role of the Independent Sector as providers of healthcare</li> <li>• Patient and public involvement processes and roles</li> </ul>	ACAT, mini-CEX, CbD	1,2,3
Understands the principles of recruitment and appointment procedures	MSF	1
<b>Skills</b>		
Participates in managerial meetings	MSF	1,2,3
Takes an active role in promoting the best use of healthcare resources	ACAT, mini-CEX, CbD	1,2,3
Works with stakeholders to create and sustain a patient-centred service	ACAT, mini-CEX, CbD	1,2,3
Employs new technologies appropriately, including information technology	ACAT, mini-CEX, CbD, DOPS	1,2,3
Conducts an assessment of the community needs for specific health	mini-CEX, CbD	1,2

improvement measures

**Behaviours**

Recognises the importance of equitable allocation of healthcare resources and of commissioning	mini-CEX, CbD, MSF	1,2
Recognises the role of doctors as active participants in healthcare systems	mini-CEX, CbD, MSF	1,2,3
Responds appropriately to health service objectives and targets and takes part in the development of services	mini-CEX, CbD, AA, MSF	1,2,3
Recognises the role of patients and carers as active participants in healthcare systems and service planning	mini-CEX, CbD, AA, MSF, PS	1,2,3
Shows willingness to improve managerial skills (e.g. management courses) and engage in management of the service	CbD, MSF	1,2,3

## J. Learning Objectives: Teaching and Training

### J1. Teaching and Training

To develop the ability to teach a variety of different audiences in a variety of different ways

To be able to assess the quality of the teaching

To be able to train a variety of different trainees in a variety of different ways

To be able to plan and deliver a teaching programme with appropriate assessments

Knowledge	Assessment Methods	GMP
Describes relevant educational theories and principles	TO	1
Outlines adult learning principles relevant to medical education	TO	1,3
Demonstrates knowledge of literature relevant to developments and challenges in medical education and other sectors	TO	1
Outlines the structure of an effective appraisal interview	TO	1,3
Defines the roles of the various bodies involved in medical education and other sectors	TO	1
Identifies a variety of learning methods and effective learning objectives and outcomes	TO	1,3
Describes the differences between learning objectives and outcomes	TO	1
Differentiates between appraisal, assessment and performance review and is aware of the need for all	MSF, TO	1,3
Differentiates between formative and summative assessments and defines their role in medical education	MSF, TO	1
Outlines the structure of the effective appraisal review	TO	1,3
Outlines the role of workplace-based assessments, the assessment tools in use, their relationship to course learning outcomes, the factors that influence their selection and the need for monitoring and evaluation	TO	12,3
Outlines the appropriate local course of action to assist a trainee experiencing difficulty in making progress within their training programme	MSF, TO	1,2,3
Skills		
Is able to critically evaluate relevant educational literature	SCE, TO	1,2
Varies teaching format and stimulus as appropriate to situation and subject	CbD, TO	1,3
Provides effective and appropriate feedback after teaching, and promotes learner reflection	CbD, MSF, TO	1,2,3
Conducts developmental conversations as appropriate; for example, appraisal, supervision, mentoring	CbD, MSF, TO	1,2,3
Demonstrates effective lecture, presentation, small group and bedside teaching performance	MSF, TO	1,3
Provides appropriate career support, or refers trainee to an alternative effective source of career information	MSF, TO	1,3
Participates in strategies aimed at improving patient education e.g. talking at support group meetings	CbD, MSF, TO	1,3,4

Is able to lead departmental teaching programmes, including journal clubs	CbD, MSF, TO	1,2,3
Recognises the trainee in difficulty and takes appropriate action including, where relevant, referral to other services	MSF, TO	1,2,3
Is able to identify and plan learning activities in the workplace	TO	1,3
Contributes to educational research or projects e.g. through the development of research ideas or data/information gathering	AA, TO	1
Is able to manage personal time and resources effectively to the benefit of the educational faculty and the needs of the learners	MSF	1,3
<b>Behaviours</b>		
In discharging educational duties acts to maintain the dignity and safety of patients at all times	mini-CEX, CbD, MSF, TO	1,2,3,4
Recognises the importance of the role of the physician as an educator within the multi-professional healthcare team and uses medical education to enhance the care of patients	MSF, TO	1,3
Balances the needs of service delivery with education	CbD, MSF, TO	1
Demonstrates willingness to teach trainees and other healthcare and social workers in a variety of settings to maximise effective communication and practical skills and to improve patient care	MSF, TO	1,2,3
Demonstrates consideration for learners, including their emotional, physical and psychological wellbeing, along with their development needs; acts to ensure equality of opportunity for students, trainees, staff and professional colleagues	MSF, TO	1,2,3,4
Encourages discussions with colleagues in clinical settings to share knowledge and understanding	mini-CEX, CbD, MSF, TO	1,2,3
Maintains honesty and objectivity during appraisal and assessment	MSF, TO	1,2,3,4
Shows willingness to participate in workplace-based assessments and demonstrates a clear understanding of their purpose	MSF, TO	1
Shows willingness to take up formal training as a trainer and responds to feedback obtained after teaching sessions	MSF, TO	1,3
Demonstrates a willingness to become involved in the wider medical education activities and fosters an enthusiasm for medical education activity in others	MSF, TO	1,3
Recognises the importance of personal development as a role model to guide trainees in aspects of good professional behaviour	MSF, TO	1,3
Demonstrates a willingness to advance own educational capability through continuous learning	MSF, TO	1
Acts to enhance and improve educational provision through evaluation of own practice	MSF, TO	1,2
Contributes to educational policy and development at local or national levels	MSF, TO	1

# K. Learning Objectives: The Use of Evidence and Audit

## K1. Evidence and Guidelines

**To develop the ability to make the optimal use of current best evidence in making decisions about the care of patients**

**To develop the ability to construct evidence based guidelines and protocols in relation to medical practise**

Knowledge	Assessment Methods	GMP
Understands of the application of statistics in scientific medical practice	mini-CEX, CbD, SCE, AA, TO	1,2
Understands the advantages and disadvantages of different study methodologies (randomised control trials, case controlled cohort etc)	mini-CEX, CbD, SCE, AA, TO	1,2
Understands the principles of critical appraisal	mini-CEX, CbD, AA, TO	1,2
Understands levels of evidence and quality of evidence	mini-CEX, CbD, SCE, AA, TO	1,2
Understands the role and limitations of evidence in the development of clinical guidelines and protocols	mini-CEX, CbD, SCE, AA, TO	1,2
Understands the advantages and disadvantages of guidelines and protocols	mini-CEX, CbD, SCE, AA, TO	1,2
Understands the processes that result in nationally applicable guidelines (e.g. NICE and SIGN)	mini-CEX, CbD, AA, TO	1,2
Understands the relative strengths and limitations of quantitative and qualitative studies, and the different types of each	CbD, SCE, AA, TO	1,2
Skills		
Ability to search the medical literature including use of PubMed, Medline, Cochrane reviews and the internet	mini-CEX, CbD, AA, TO	1,2
Appraises retrieved evidence to address a clinical question	mini-CEX, CbD, AA, TO	1,2
Applies conclusions from critical appraisal into clinical care	mini-CEX, CbD, AA	1,2
Identifies the limitations of research	mini-CEX, CbD, AA, TO	1,2
Contributes to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine	AA	1,2,3,4
Behaviours		
Keeps up to date with national reviews and guidelines of practice (e.g. NICE and SIGN)	mini-CEX, CbD, SCE, MSF, AA, TO	12,4
Aims for best clinical practice (clinical effectiveness) at all times, responding to evidence-based medicine	ACAT, mini-CEX, CbD, SCE, AA, TO	1,2,3,4
Recognises the occasional need to practise outside clinical guidelines	ACAT, mini-CEX, CbD	1,3,4
Encourages discussion amongst colleagues on evidence-based	ACAT, mini-CEX,	1,2,3



## K2. Audit

**To develop the ability to perform an audit of clinical practice, to apply the findings appropriately and to complete the audit cycle**

<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the different methods of obtaining data for audit, including patient feedback questionnaires, hospital sources and national reference data	CbD, AA	1,3
Understands the role of audit (improving patient care and services, risk management etc)	CbD, AA	1,2,4
Understands the steps involved in completing the audit cycle	CbD, AA	1
Understands the working of, and uses of, national and local databases for audit, such as specialty data collection systems, cancer registries etc;	CbD, AA	1
Understands the working of, and uses of, local and national systems available for reporting and learning from clinical incidents and near misses in the UK	AA	1,2
<b>Skills</b>		
Designs, implements and completes audit cycles	CbD, MSF, AA	1,2,3
Contributes to local and national audit projects as appropriate (e.g. NCEPOD, SASM)	CbD, MSF, AA	1,2
Supports audit by junior medical trainees and within the multi-disciplinary team	CbD, MSF, AA	1,2,3
<b>Behaviours</b>		
Recognises the need for audit in clinical practice to promote standard setting and quality assurance	CbD, AA	1,2,4

# L. Learning Objectives: Health Promotion and Public Health

## L1. Health Promotion and Public Health

<b>To develop the ability to work with individuals and communities to reduce levels of ill health, remove inequalities in healthcare provision and improve the general health of the community</b>		
<b>Knowledge</b>	<b>Assessment Methods</b>	<b>GMP</b>
Understands the factors which influence the incidence and prevalence of common conditions	mini-CEX, CbD, SCE	1,2
Understands the factors which influence health and illness – psychological, biological, social, cultural and economic, especially poverty	mini-CEX, CbD, SCE	1,2
Understands the influence of lifestyle on health and the factors that influence an individual to change their lifestyle	mini-CEX, CbD, SCE	1,2
Understands the influence of culture and beliefs on patients' perceptions of health, on access to healthcare and on health outcomes, including in migrants and refugees	mini-CEX, CbD	1,2
Understands the purposes of screening programmes and knows in outline the common programmes available within the UK	mini-CEX, CbD, SCE	1,2
Understands the positive and negative effects of screening on the individual	mini-CEX, CbD	1,2
Understands the possible positive and negative implications of health promotion activities (e.g. immunisation)	mini-CEX, CbD, SCE	1,2,3
Understands the relationship between the health of an individual and that of a community and vice versa	mini-CEX, CbD	1,2
Knows the key local concerns about health of communities such as smoking and obesity and their potential determinants	mini-CEX, CbD	1,2,3
Understands the role of other agencies and factors, including the impact of globalisation in increasing disease and in protecting and promoting health	mini-CEX, CbD, SCE	1,2,3
Demonstrates knowledge of the determinants of health worldwide and strategies to influence policy relating to health issues, including the impact of the developed world's strategies on the third world	mini-CEX, CbD, SCE	1
Outlines the major causes of global morbidity and mortality and effective, affordable interventions to reduce these	mini-CEX, CbD, SCE	1
Recalls the effect of addictive and self harming behaviours, especially substance misuse and gambling, on personal and community health and poverty	mini-CEX, CbD	1,2
<b>Skills</b>		
Identifies opportunities to prevent ill health and disease in patients	mini-CEX, CbD, ACAT, AA, TO, PS	1,2,3,4
Identifies opportunities to promote changes in lifestyle and other actions which will positively improve health and/or disease outcomes.	mini-CEX, CbD, ACAT, AA, TO, PS	1,2,3,4
Identifies the interaction between mental, physical and social wellbeing in relation to health	mini-CEX, CbD	1,2
Counsels patients appropriately on the benefits and risks of screening	mini-CEX, CbD,	1,2,3,4

and health promotion activities	ACAT, TO, PS	
Identifies patients' ideas, concerns and health beliefs regarding screening and health promotions programmes and is capable of appropriately responding to these	mini-CEX, CbD, TO, PS	1,2,3,4
Works collaboratively with other agencies to improve the health of communities	mini-CEX, CbD	1,3
Recognises and is able to balance autonomy with social justice	mini-CEX, CbD	1,3,4
<b>Behaviours</b>		
Engages in effective team-working around the improvement of health	CbD, ACAT, MSF	1,2,3
Encourages, where appropriate, screening to facilitate early intervention	CbD	1,2,3

# 11 Appendices

## Appendix I: SAC Membership

### 1. SAC members chiefly involved in the drafting of the 2010 Version of the Curriculum:

Professor Paul Corris, Regional Cardiothoracic Centre, Freeman Hospital (representing the British Thoracic Society),  
Dr Ian Coutts, Consultant Physician, Royal Cornwall Hospital (Representative for Specialty Certificate Examination),  
Dr Jo Congleton, Worthing General Hospital (representing KSS LETB),  
Dr Craig Davidson, Intensive Care & Respiratory Medicine, St. Thomas Hospital, London (Chair Education & Training Committee BTS; representing BTS),  
Dr Chris Davies, Department of Respiratory Medicine, Royal Berkshire Hospital (Representing South Central LETB),  
Dr Lisa Davies, Aintree Chest Centre, University Hospital Aintree (Representing Mersey and North West LETB),  
Dr Mark Pasteur, Dept of Respiratory Medicine Norfolk and Norwich Hospital (Representing East of England LETB),  
Dr Gerrard Phillips, Dorset County Hospital FT (SAC Chair; principle curriculum writer; representing RCP London),  
Dr Trevor Rogers, Doncaster Royal Infirmary (SAC Secretary)

### 2. SAC Membership Responsible for Drafting the 2005 Version of the Curriculum:

Prof Paul Corris, Freeman Hospital, Newcastle (representing the British Thoracic Society)  
Dr Philip Ebdon, Singleton Hospital, Swansea, (Secretary, representing RCP London),  
Dr Alasdair Innes, Western General Hospital, Edinburgh (representing RCP Edinburgh)  
Dr J MacMahon, Belfast City Hospital, Observer  
Dr TJ McDonnell, St Vincents University Hospital, Dublin, Observer  
Dr Terry McMurray, Northern Ireland Medical Dental Training Agency, Lead Dean  
Dr Michael Morgan, Glenfield General Hospital, Leicester  
Dr Gerrard Phillips, Dorset County Hospital, Dorchester, Dorset (Chair; principal curriculum writer; representing RCP London),  
Dr Robin Stevenson, Glasgow Royal Infirmary, UEMS representative  
Dr Mark Wilkinson, X Hospital, trainee representative

### 3. Past SAC Members Involved in Curriculum Drafting:

Prof Derek Gallen, Cardiff University (Lead Dean)  
Dr Jane Gravid, Royal Alexandra Hospital, Paisley (RCP Glasgow)  
Dr JP Hayes, Cavan General Hospital, Ireland (observer)  
Prof Margaret Hodson, Royal Brompton Hospital (past SAC Chair, wrote initial draft of curriculum, represented RCP London)  
Dr Duncan MacIntyre, Victoria Infirmary Glasgow (represented RCP Glasgow)

Prof Martyn Partridge, Charing Cross Hospital, London (presented RCP London and UEMS)

Dr NJ Stevenson, University Hospital Aintree, Liverpool (trainee representative)

## **Appendix II: Those Involved in Curriculum Consultation Process 2009**

Respiratory Medicine SAC

British Thoracic Society Executive Committee

British Thoracic Society Education and Training Committee

Joint Specialty Committee, Royal College of Physicians, London

Regional Training Programme Directors, Respiratory Medicine

Regional Trainee Representatives, Respiratory Medicine

## **Appendix III: European Respiratory Society Syllabus for Training in Respiratory Medicine:**

### **Module A.1: Structure and Function of the Respiratory System:**

- A.1.1 Anatomy
- A.1.2 Development and aging of respiratory system
- A.1.3. Physiology
- A.1.4. pathophysiology
- A.1.5. Microbiology
- A.1.6. Genetics
- A.1.7. Pharmacology
- A.1.8. Pathology
- A.1.9. Immunology and defense mechanisms
- A.1.10. Molecular biology
- A.1.11. Biochemistry

See also module: I

### **B: Knowledge of Respiratory Diseases**

#### **Module B.1: Airway Diseases:**

- B.1.1 Asthma
- B.1.2 Acute bronchitis
- B.1.3. Chronic bronchitis
- B.1.4. COPD (chronic obstructive bronchitis and / or emphysema)
- B.1.5. Bronchiolitis
- B.1.6. Bronchiectasis
- B.1.7. Airway stenosis and malacia
- B.1.8. Tracheo-eosophageal fistula
- B.1.9. Upper airways disease
- B.1.10. Vocal cord dysfunction
- B.1.11. Foreign body aspiration
- B.1.12. Gastro-eosophageal reflux

See also modules: B.2, B.4, B.6, B.8, B.9, B.10, B.14, B.15, B.16, B.17, B.18, B.19, B.20, B.21

#### **Module B.2: Thoracic Tumours**

- B.2.1 Lung cancer
- B.2.2 Metastatic pulmonary tumours
- B.2.3. Mesothelioma
- B.2.4. Metastatic and other pleural tumours
- B.2.5. Benign intra-thoracic tumours
- B.2.6 Mediastinal tumours
- B.2.7 Chest wall tumours
- B.2.8. Sarcoma
- B.2.9. Lymphoma

See also modules: B.1, B.6, B.11, B.12, B.13, B.14

#### **Module B.3: Non-TB Respiratory Infections**

- B.3.1 upper respiratory tract infections
- B.3.2 lower respiratory tract infections
- B.3.3. community-acquired pneumonia

- B.3.4. nosocomial pneumonia
- B.3.5. pneumonia in the immunocompromised host
- B.3.6. other pneumonia
- B.3.7. parapneumonic effusion and empyema
- B.3.8. lung abscess
- B.3.9. fungal infection
- B.3.10. parasitic infection
- B.3.11. epidemic viral infection

See also modules: B1.6, B.7, B.8, B.10, B.11, B.12, B.13, B.15, B.16, B.17, B.18, B20

#### **Module B.4: Tuberculosis**

- B.4.1 Pulmonary TB
- B.4.2 Extrapulmonary TB
- B.4.3. TB in the immunocompromised host
- B.4.4. Latent tuberculous infection
- B.4.5. Non-tuberculous mycobacterial diseases

See also modules: B.1, B.6, B.10, B.11, B.12, B.13, B.16, B.20

#### **Module B.5: Pulmonary Vascular Diseases**

- B.5.1 Pulmonary embolism
- B.5.2 Primary pulmonary hypertension
- B.5.3. Secondary pulmonary hypertension
- B.5.4. Vasculitis and diffuse pulmonary haemorrhage
- B.5.5. Abnormal a-v communication

See also modules: B.1, B.7, B.10, B.11, B.14, B.15, B.16

#### **Module B.6: Occupational and Environmental**

##### **Diseases**

- B.6.1 Occupational asthma
- B.6.2 Reactive airway dysfunction syndrome
- B.6.3. Pneumoconiosis and asbestos-related disease
- B.6.4. Hypersensitivity pneumonitis
- B.6.5. Dust and toxic gas inhalation disease
- B.6.6. Indoor pollution related disease
- B.6.7. Outdoor pollution related disease
- B.6.8. Smoking related disease
- B.6.9. High-altitude disease
- B.6.10. Diving-related disease

See also modules: B.1, B.2, B.3, B.4, B.7, B.9, B.10, B.11, B.17, B.18

#### **Module B.7: Diffuse Parenchymal (Interstitial) Lung Diseases**

- B.7.1 Sarcoidosis
- B.7.2 Idiopathic interstitial pneumonias including Idiopathic Pulmonary Fibrosis (IPF), Nonspecific Interstitial Pneumonia (NSIP), Cryptogenic Organising Pneumonia (COP), Acute Interstitial Pneumonia (AIP), Respiratory Bronchiolitis-Associated Interstitial Lung Disease (RB-ILD), Desquamative Interstitial Pneumonia (DIP), Lymphoid Interstitial Pneumonia (LIP)
- B.7.3. Cryptogenic Organising Pneumonia (COP) of unknown

aetiology/ Bronchiolitis obliterans organizing pneumonia (BOOP)

See also modules: B.3, B.5, B.6, B.8, B.10, B.14, B.15, B.18, B.19, B.20, B.21

### **Module B.8: Iatrogenic Diseases**

- B.8.1 Drug-induced disease
- B.8.2 Complications of invasive procedures
- B.8.3. Radiation-induced disease

See also modules: B.1, B.3, B.7, B.9, B.10, B.11, B.12, B.13, B.14, B.17, B.19, B.20

### **Module B.9: Acute Injury**

- B.9.1 Inhalation lung injury
- B.9.2 Traumatic thoracic injury

See also modules: B.1, B.6, B.8, B.10, B.11, B.12, B.13

### **Module B.10: Respiratory Failure**

- B.10.1 Acute respiratory distress syndrome
- B.10.2 Obstructive lung disease
- B.10.3. Neuromuscular disease
- B.10.4. Chest wall disease
- B.10.5. Other restrictive diseases

See also modules: B.1, B.3, B.4, B.5, B.6, B.7, B.8, B.9, B.11, B.12, B.13, B.14, B.15, B.16, B.17, B.18, B.19, B.20, B.21

### **Module B.11: Pleural Diseases**

- B.11.1 Pleural effusion
- B.11.2 Chylothorax
- B.11.3. Haemothorax
- B.11.4. Fibrothorax
- B.11.5. Pneumothorax

See also modules: B.2, B.3, B.4, B.5, B.6, B.8, B.9, B.10, B.13, B.14, B.15, B.16, B.19, B.20, B.21

Module B.12: Diseases of the chest wall and respiratory muscles including the diaphragm

- B.12.1 Chest wall deformities
- B.12.2 Neuromuscular disorders
- B.12.3. Phrenic nerve palsy
- B.12.4. Diaphragmatic hernia

See also modules: B.2, B.3, B.4, B.8, B.9, B.10, B.14, B.15, B.19

### **Module B.13: Mediastinal Diseases Excluding Tumours**

- B.13.1 Mediastinitis
- B.13.2 Mediastinal fibrosis
- B.13.3. Pneumomediastinum

See also modules: B.2, B.3, B.4, B.8, B.9, B.10, B.11, B.15

### **Module B.14: Pleuro-Pulmonary Manifestations of Systemic / Extrapulmonary Disorders**

- B.14.1 Collagen vascular disease
- B.14.2 Cardiac disease
- B.14.3. Abdominal disease
- B.14.4. Haematological disease
- B.14.5. Obesity
- B.14.6. Hyperventilation syndrome

See also modules: B.1, B.2, B.5, B.7, B.8, B.10, B.11, B.12, B.16, B.19, B.20

### **Module B.15: Genetic and Developmental Disorders**

- B.15.1 Cystic fibrosis
- B.15.2 Primary ciliary dyskinesia
- B.15.3. Alpha-1 antitrypsin deficiency
- B.15.4. Malformations

See also modules: B.1, B.3, B.5, B.7, B.10, B.11, B.12, B.13, B.16, B.19, B.20, B.21

### **Module B.16: Respiratory Diseases and Pregnancy**

- B.16.1 Asthma
- B.16.2 Cystic fibrosis
- B.16.3. Tuberculosis
- B.16.4. Sarcoidosis
- B.16.5. Restrictive lung diseases
- B.16.6. Pregnancy-induced respiratory diseases

See also modules: B.1, B.3, B.4, B.5, B.10, B.11, B.14, B.15, B.17, B.19

### **Module B.17: Allergic Diseases (IgE-mediated)**

- B.17.1 Upper airway disease
- B.17.2 Asthma
- B.17.3. Bronchopulmonary aspergillosis
- B.17.4. Anaphylaxis

See also modules: B.1, B.3, B.6, B.8, B.10, B.16, B.18

### **Module B.18: Eosinophilic Diseases**

- B.18.1 Nonasthmatic eosinophilic bronchitis
- B.18.2 Acute and chronic eosinophilic pneumonia
- B.18.3. Hypereosinophilic syndrome
- B.18.4. Churg-Strauss syndrome

See also modules: B.1, B.3, B.6, B.7, B.10, B.17

### **Module B.19: Sleep-Related Disorders**

- B.19.1 Obstructive sleep apnoea syndrome
- B.19.2 Central sleep apnoea syndrome
- B.19.3. Obesity hypoventilation syndrome

See also modules: B.1, B.7, B.8, B.10, B.11, B.12, B.14, B15, B16

### **Module B.20: Respiratory Manifestations of Immunodeficiency Disorders**

- B.20.1 Congenital immunodeficiency syndrome
- B.20.2 Acquired immunodeficiency syndrome
- B.20.3. HIV-related disease
- B.20.4. Drug-induced disease
- B.20.5. Graft versus host disease
- B.20.6. Post-transplantation immunodeficiency

See also modules: B.1, B.3, B.4, B.7, B.8, B.10, B.11, B.14, B.15

### **Module B.21: Orphan Lung Diseases**

- B.21.1 Langerhans cell histiocytosis
- B.21.2 Lymphangiomyomatosis (LAM)
- B.21.3. Pulmonary alveolar proteinosis
- B.21.4. Amyloidosis

See also modules: B.1, B.7, B.10, B.11, B15

### **C: Symptoms and Signs**

- C.1.1 Dyspnoea
- C.1.2 Wheeze
- C.1.3. Stridor
- C.1.4. Hoarseness
- C.1.5. Cough
- C.1.6. Sputum production
- C.1.7. Chest pain
- C.1.8. Haemoptysis
- C.1.9. Snoring
- C.1.10. General symptoms of disease including fever, weight loss, oedema, nocturia and daytime somnolence
- C.1.11. Abnormal findings on inspection including cyanosis, abnormal breathing patterns, finger clubbing, chest wall deformities, superior vena cava syndrome and Horner's syndrome
- C.1.12. Abnormal findings on palpation and percussion
- C.1.13. Abnormal findings on auscultation

### **D1: Pulmonary Function Testing**

- D.1.1 Static and dynamic lung volumes - interpretation and performance
- D.1.2 Body plethysmography - interpretation
- D.1.3. Gas transfer - interpretation
- D.1.4. Blood gas assessment and oximetry - interpretation and performance
- D.1.5. Bronchial provocation testing - interpretation and performance
- D.1.6. Exercise testing including walking tests and spiroergometry (cardio-pulmonary exercise testing) - interpretation and performance
- D.1.7. Assessment of respiratory mechanics - interpretation
- D.1.8. Compliance measurements - interpretation
- D.1.9. Respiratory muscle assessment - interpretation
- D.1.10. Ventilation-perfusion measurement - interpretation
- D.1.11. Shunt measurement - interpretation
- D.1.12. Sleep studies - interpretation and performance

D.1.13. Measurement of regulation of ventilation - interpretation

## **D.2: Other Procedures**

D.2.1 Analysis of exhaled breath components including NO, CO and breath condensate

D.2.2 Sputum induction

D.2.3. Sputum analysis

D.2.4. Tuberculin skin testing

D.2.5. Allergy skin testing

D.2.6. Pleural ultrasound imaging

D.2.7. Thoracentesis

D.2.8. Closed pleural needle biopsy

D.2.9. Pleuroscopy (medical thoracoscopy)

D.2.10. Flexible bronchoscopy

D.2.11. Transbronchial lung biopsy

D.2.12. Transbronchial needle aspiration

D.2.13. Endobronchial ultrasound

D.2.14. Broncho-alveolar lavage

D.2.15. Bronchography

D.2.16. Rigid bronchoscopy

D.2.17. Interventional bronchoscopic techniques including fluorescence bronchoscopy, brachytherapy, endobronchial radiotherapy, afterloading laser and electrocoagulation, cryotherapy, photodynamic therapy, airway stents

D.2.18. Percutaneous needle biopsy

D.2.19. Fine needle lymph node aspiration for cytology

D.2.20. Right heart catheterisation

D.2.21. Chest X-Ray

D.2.22. Fluoroscopy

## **D.3: Procedures Performed Collaboratively**

D.3.1. Thoracic imaging (X-Ray, CT, MRI, angiography)

D.3.2. Nuclear medicine techniques (pulmonary and bone scan, PET)

D.3.3. Electrocardiogram

D.3.4. Echocardiography

D.3.5. Ultrasound

D.3.6. Transoesophageal ultrasound

D.3.7. Oesophageal pH-monitoring

D.3.8. Cytology/histology

D.3.9. Microbiology testing

## **E: Treatment Modalities and Prevention Measures**

E.1.1. Systemic / inhaled drug therapy

E.1.2. Chemotherapy

E.1.3. Other systemic anti-tumour therapy

E.1.4. Immunotherapy including de- / hyposensitisation

E.1.5. Oxygen therapy

E.1.6. Ventilatory support (invasive / non-invasive / CPAP)

E.1.7. Cardiopulmonary resuscitation

E.1.8. Assessment for anaesthesia / surgery

E.1.9. Endobronchial therapies

E.1.10 Intercostal tube drainage

E.1.11. Pleurodesis

E.1.12. Home care

- E.1.13. Palliative care
- E.1.14 Pulmonary rehabilitation
- E.1.15. Nutritional interventions
- E.1.16. Surfactant therapy
- E.1.17. Gene therapy
- E.1.18. Principles of stem cell therapy
- E.1.19. Smoking cessation
- E.1.20. Vaccination and infection control
- E.1.21. Other preventative measures

#### **F: Core Generic Abilities**

- F.1. Communication including patient education and public awareness
- F.2. Literature appraisal
- F.3. Research
- F.4. Teaching
- F.5. Audit / Quality assurance of clinical practice
- F.6. Multidisciplinary teamwork
- F.7. Administration and management
- F.8. Ethics

#### **G: Competence in Fields Shared With Other Specialties**

- G.1 Intensive care
- G.2 High-dependency unit (HDU)

#### **H: Knowledge of Associated Fields Relevant to Adult Respiratory Medicine**

- H.1. Thoracic surgery (including lung transplantation)
- H.2. Radiotherapy
- H.3. Paediatric respiratory medicine
- H.4. Chest physiotherapy
- H.5. Other medical specialties

#### **I: Further Areas Relevant to Respiratory Medicine**

- I.1. Epidemiology
- I.2. Statistics
- I.3. Evidence-based medicine
- I.4. Quality of life measures
- I.5. Psychological aspects of respiratory disease
- I.6. Psychological effects of chronic respiratory disease
- I.7. Public health issues
- I.8. Organisation of health care
- I.9. Economics of health care
- I.10. Compensation and legal issues