SPECIALTY TRAINING CURRICULUM

FOR

RESPIRATORY MEDICINE

DECEMBER 2007

MINOR AMENDMENTS TO MAY CURRICULUM APPROVED BY PMETB DEC 2007

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INTRODUCTION:

Together with General Internal Medicine (Acute) and Cardiology, Respiratory medicine is one of the three major medical specialties. Approximately 30% of all acute admissions in GIM(Acute) 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 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 many have sessions helping to run Intensive Care services and expertise in the management of the Adult Respiratory Distress Syndrome. Respiratory Physicians have considerable technical skills. They undertake bronchoscopy (both diagnostic and, increasingly, interventional), pleural procedures including pleural biopsy and chest drain insertion, 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 non-pulmonary 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 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 principal 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, primary pulmonary hypertension), *malignant* (e.g. lung cancer, mesothelioma, mediastinal tumours), *allergic, sleep-related, neuromuscular,* and *airway* (asthma, COPD, obliterative bronchiolitis).

PMETB CURRICULUM STANDARDS:

The following section of the curriculum has been set out in accordance with the standards for curricula agreed by the Postgraduate Medical Education and Training Board (PMETB) (March 2005). There are eight such standards.

1. CURRICULUM RATIONALE:

(a) Purpose of the curriculum:

The purpose of this curriculum is to provide the basis for training in the specialty of Respiratory Medicine to the level of award of a Certificate of Completion of Training (CCT). At this level, the doctor should have the knowledge, skills, attitudes 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 attitudes 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.

Trainees entering the phase of training described in this curriculum should have successfully completed a recognised Foundation Programme, followed by either : Core Medical Training [CMT] (years ST1 and ST2 or the equivalent), or Acute Care Common Stem Training (Medicine) (ACCS (M)). They should also have achieved competency level one in General Internal Medicine (Acute), including having passed the MRCP (UK) Part I examination, which is the accepted knowledge based assessment for General Internal Medicine (Acute) level 1 competencies. At exit from the stage of training described in this curriculum, the trainee should be ready to apply for enrolment on the UK specialty register in Respiratory Medicine and to compete for a senior medical specialist appointment, at Consultant level, in the NHS.

This curriculum should be used in conjunction with the Training e-Portfolio/Doctors Online Training System (DOTS) produced by the Joint Royal Colleges of Physicians (UK) Training Board (JRCPTB) (previously the Joint Committee on Higher Medical Training, JCHMT) and the Respiratory Medicine Specialty Advisory Committee (SAC), which contains detailed advice with regard to how the necessary competencies in each area of the specialty should be achieved, and the Respiratory Medicine Assessment Blueprint which spells out how attainment of the competencies specified in this curriculum are to be assessed.

This curriculum should also be used in conjunction with the Generic curriculum produced by the JRCPTB and with the General Internal Medicine (Acute) curriculum produced by the Specialist Advisory Committee (SAC) in General Internal Medicine (Acute):

(i) Generic Curriculum:

This covers the generic aspects of training and is appropriate for all the medical specialties. It encompasses the period from entry into specialty training in General Internal Medicine (Acute) at Core Medical Training level (or ACCS (M)) (ST1 and ST2) following successful completion of an appropriate Foundation Programme, through to attainment of a CCT in General Internal Medicine (Acute) and/or in one of the medical specialties - in the current instance, Respiratory Medicine.

(ii) General Internal Medicine (Acute) Curriculum:

This covers "run through" training in General Internal Medicine (Acute). It encompasses training in the specialty from completion of an appropriate Foundation Programme and subsequent competitive entry into the specialty at the level of commencement of Core Medical Training (CMT or ACCS (M)) (ST1 and ST2), through to attainment of a CCT in General Internal Medicine (Acute). It envisages three levels of competency in General Internal Medicine (Acute). Competency level one will be that achieved at completion of core training and will usually require two years of training in the specialty. It is the level of competency required for allocation into further specialty training, in the present case, into Respiratory Medicine. It is anticipated that most trainees in Respiratory Medicine will wish to pursue training in General Internal Medicine (Acute) to competency level 2 in parallel with the Respiratory Medicine training described in the current curriculum. This is the level of competency required to equip a doctor to supervise and participate in the "acute medical take" in most UK NHS hospitals. It is possible that some trainees will wish to pursue more advanced training in General Internal Medicine (Acute), to competency level 3. This is the level of a full CCT in the specialty, and will allow the doctor to apply for a post which involves running an Emergency Medical Admitting Unit.

(b) Development and validation:

The Respiratory Medicine curriculum was originally drafted in 1999 by a subgroup of the SAC in Respiratory Medicine, the UK representative body acknowledged by PMETB and JRCPTB to be responsible for overseeing training in the specialty (see appendix 1 for SAC membership). The PMETB is the UK body with the statutory authority to oversee all postgraduate medical education in the UK. The Respiratory Medicine SAC consists of UK Respiratory Medicine Consultants who are trainers with a high level of expertise and interest in training. The SAC includes two trainee members and a lay member. The SAC constitution is currently under review.

The current version of the Respiratory Medicine curriculum was drafted in 2003 - 2006 by a subgroup of the Respiratory Medicine SAC who were also involved in drafting the training portfolio which was to be used in conjunction with it. The curriculum was then discussed with the full Respiratory SAC membership. The original draft version of the training portfolio is likely to be replaced by the e-portfolio/DOTS currently under development.

During 2006, the curriculum and training record were circulated widely within the UK Respiratory community for comment (see appendix II). Particular efforts were made to ensure that the curriculum was circulated to both trainers and to trainees. Feedback that was considered by the Respiratory SAC to represent the majority view within the Respiratory Community was incorporated into the curriculum.

The core of this curriculum has already been in use in the UK for more than ten years and, as such, has been validated in practice.

(c) Appropriateness:

This curriculum is appropriate for those trainees who have completed core 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 subspecialty that is tightly allied to General Internal Medicine (Acute). Most trainees in Respiratory Medicine will therefore want to achieve competency level 2 in GIM (Acute) and will want to continue training in GIM (Acute) during specialist training in Respiratory Medicine. As already mentioned, some trainees may wish to achieve competency level 3 (CCT) in GIM (Acute).

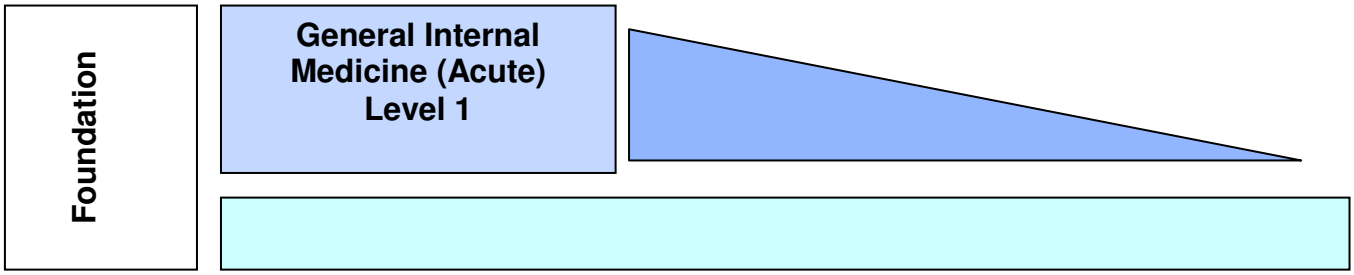
Dual Accreditation:

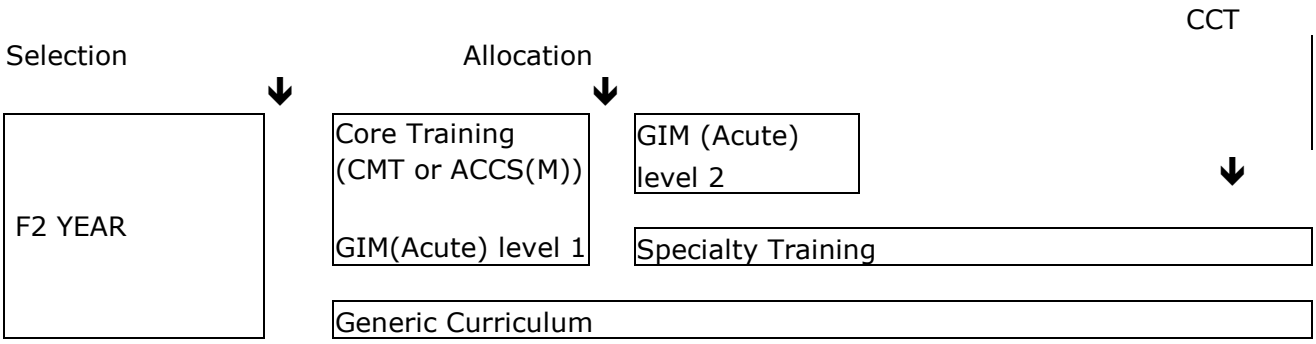
Trainees may wish to dual train and accredit in Respiratory Medicine and GIM (Acute), Intensive Care Medicine or Allergy to achieve two CCTs. The regulations for such dual CCT training are currently under review by PMETB and may change. At present, the situation is that trainees wishing to attain dual CCTs must have applied for, and successfully entered, a training programme which has been advertised openly as a dual training programme. This programme will need to deliver the competencies described in both the curricula concerned and there must be jointly agreed assessments (proposed by both the SACs concerned and approved by PMETB). Postgraduate deans wishing to advertise such programmes should ensure that they meet the requirements of both the SACs involved.

Special interest training in Respiratory Medicine:

This is recognised by the SAC for a number of subject areas. It is generally viewed that trainees interested in such training will undertake it either during CCT training, or by taking Out of Programme Experience (OOPE), if allowed, or post CCT, but a number of different models for such training are possible. It is possible that, in the future, such training will be recognised in the form of a "credential" added to the trainee's entry in the specialist register. Only PMETB can approve a subject area as a "subspecialty" and, at present, there are no PMETB-approved subspecialties in Respiratory Medicine.

Diagrammatic representation of the curricula for those entering through core training (CMT, or ACCS(M)) with and without level two GIM (acute) competencies:





(d) Linkages:

Doctors entering Respiratory Medicine training will have achieved the following:

1. Basic generic skills as a doctor, as described in the document "Good Medical Practice"
2. Successful completion of a Foundation programme
3. Core training (CMT or ACCS(M)) and level one competencies in GIM (Acute) which will include success in the MRCP (UK) Part 1 examination.

Additional recommended Entry Requirements for specialist training in Respiratory Medicine include:

1. An Advanced Life Support (ALS) qualification or equivalent.
2. Successful competition, at open interview, for allocation to a specialty training programme in Respiratory Medicine.
3. Demonstration of commitment to the specialty.
4. 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
- review his/her practice in the light of "Good Medical Practice."

(e) Relationship of Curriculum to Programme and Posts; Duration and Organisation of Training:

In the UK the organisation and delivery of postgraduate training is the statutory responsibility of the Postgraduate Medical Education and Training Board (PMETB) which devolves responsibility for the "local" organisation and delivery of training to the Regional Deaneries. Each deanery overseas a "School of Postgraduate 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 deanery is, therefore, the remit of the Regional Respiratory STC. Each STC has a Programme Director/Regional Specialty Advisor who assumes overall responsibility for training.

In order to attain competency in the knowledge, skills and attitudes required to qualify for a CCT in single specialty Respiratory Medicine, as well as the essential level of professionalism, most trainees will usually require four years of training post CMT or ACCS(M), whilst dual specialty training with General Internal Medicine (Acute) to level 2 competency will usually require five years. This is equivalent to six and seven years from ST1 respectively. However, these are only indicative times which, in the opinion of the SAC, are the usual minimum requirements. Since the goal of training is the acquisition of the prerequisite knowledge, skills, attitudes, competencies and professionalism, it is possible that some trainees may achieve this in a shorter time frame and that some may require longer.

However, although this curriculum is competency based, the duration of training must meet the European minimum of 4 (four) years post registration in full time training, adjusted appropriately for flexible training (EU directive 93/16/EEC requires that flexible training can be no less than 50% of the whole time equivalent).

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 the next section.

In those regions where some areas of training cannot be provided, it is the responsibility of the 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/DOTS and the accompanying assessment package are to be used together. They indicate, for each subject/group of subjects, how and where appropriate experience may be obtained. However, 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 training e-portfolio/DOTS also contains, 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 stated 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, attitudes, competencies and a level of professionalism appropriate to the stage of training.

2. CONTENT OF LEARNING:

(a) General Professional and Specialty–specific Content:

(i) Good Medical Practice:

All trainees must adhere to the precepts of the document "Good Medical Practice" published by the UK General Medical Council (GMC) in 2005. Recommendations as to how to achieve these are set out in the JRCPTB Generic Curriculum.

(ii) General Professional Content:

This is also set out in the Generic Curriculum produced by the JRCPTB, which is to be used in conjunction with the present curriculum.

(iii) Specialty-specific Curriculum:

- For broad recommendations on the overall sequence of training see above.
- This curriculum contains detailed recommendations with regard to the knowledge, skills, attitudes and competencies that need to be addressed to satisfactorily complete training in Respiratory Medicine. These are described in greater detail below.
- This curriculum is divided into six symptom–based presentations, twenty-six subject areas/groups of subjects and ten procedural skills. The accompanying training e-portfolio/DOTS has arranged these areas into groupings which are associated in such a way that the delivery of training in them can be usefully considered together. However, these groupings are not intended to be prescriptive, and Regional Programme Directors and STCs may chose to organise them differently. The essential principle is the attainment of the necessary competencies and professionalism, and the objective demonstration of such attainment

(b) Outcomes of Learning and Bench Marking to Stages of Training:

- This curriculum and the accompanying training e-portfolio/DOTS set out, for each subject area/group of areas, the knowledge, skills and attitudes that should be acquired, the competencies that should be achieved and what the outcome(s) of training should be.
- The curriculum and training e-portfolio/DOTS indicate the stage of training at which the stated competencies should be acquired.
- The curriculum and training e-portfolio/DOTS indicate how competence in a subject area should 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.
- The curriculum, training e-portfolio/DOTS and assessment package indicate the "gateways" that allow continued progression in training and what competencies are required to satisfy them.

(c) Recommended Learning Experiences:

- For each subject area/group of subject areas the curriculum indicates, where appropriate, what the recommended learning experiences should be. These are described in more detail below.

3. MODELS OF LEARNING:

- One of the principle aims of the present curriculum is to help both the trainee and the trainer to first identify what needs to be learned. In order for training to be effective, the trainee should be involved in planning his/her education and training. Particular opportunities for this exist at the start of the entire training programme and at the start of each attachment on the programme. It is strongly recommended that, at these times, the trainer and trainee should discuss and sign up to an educational agreement which describes what is to be achieved. Important additional opportunities for the trainee to be involved in planning his/her own training in the context of the requirements of this curriculum exist at the Annual Review of Competence Progression (ARCP) and at the penultimate year (PYA) ARCP. The latter, attended by an external SAC representative, is a particularly important opportunity for the trainee to agree with the STC and its Programme Director what outstanding areas of training need to be completed during the final year of the programme.

- Throughout training it is important that the trainee reflects on the training experiences and builds on these.

- The curriculum indicates the possible learning methods to be used in training. These are described in detail in the next section. 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/DOTS indicate where particular learning methods/experiences are especially recommended. However, it is for the trainee, educational supervisor and Programme Director to tailor the exact balance of methods to the particular regional environment and trainee in the most suitable manner.

- Each subject area/group in the curriculum is presented in a grid describing the objectives of training and the knowledge, skills and attitudes that the trainee needs to acquire to achieve them.

- Each subject/group of subjects in the training record is presented in the form of what the outcomes of training in those subject(s) should be in terms of the knowledge/understanding, skills, attitudes, experiences and competences that the trainee should have achieved and be able to demonstrate at the conclusion of training.

4. LEARNING EXPERIENCES:

(a) Recommended Learning Experiences:

The learning experiences that are considered relevant to training in Respiratory Medicine include the following:

i. Learning From Practice:

- Managing individual patients, with appropriate supervision, in the inpatient and the outpatient setting.
- Observing and learning from other doctors and health care professionals.
- The care of inpatients. Trainees will spend most of their training, usually a minimum of four years, actively involved in the care of respiratory inpatients.
- Formal consultant lead ward rounds, including post take, which should include feedback to the trainee on clinical and decision making skills. It is recommended that, in general, the trainee should undertake two such ward rounds per week during most of the training programme. However, this is an indicative number and it is recognised 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.
- Ward rounds lead by the trainee. It is recommended that, in general, the trainee should undertake one such ward round per week. However, the above comments with regard to variation apply.
- Seeing ward referrals. There should be the opportunity to discuss these with the supervising consultant.
- Supervised consultations in the outpatient setting. It is essential that the trainee participates in outpatient clinics throughout the training programme. It is also essential that the trainee has exposure to both general respiratory clinics and to special interest clinics. In general, the former will occur early in the training programme and the latter when the trainee is more experienced, but this will of necessity vary between programmes and trainees. It is recommended that, on average, the trainee should attend two outpatient clinics per week in which he/she should see, on average, at least 4-6 new patients and 10-12 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.
- Multi-disciplinary Team Meetings (MDTs). These are a particularly important feature of both training and practice in Respiratory Medicine. They may occur in a number of subject areas, but of particular importance are MDTs for Lung Cancer and Radiology. As well as being essential to proper clinical practice, they are a vital learning experience for trainees.
- The trainee must be given the opportunity to develop, during the training programme, the ability to make increasingly independent management decisions with regard to clinical care. This should always occur in a manner appropriate to his/her

level of experience and competence and always consistent with maintaining patient safety. This gives the educational supervisor the opportunity to assess the acquisition by the trainee of the range of attributes that can be best encompassed by the term "professionalism."

ii. Opportunities for concentrated practice in skills and procedures

- There are a number of skills and practical procedures specific to the practice of Respiratory Medicine, particularly lung function testing, fibreoptic bronchoscopy and its allied techniques, intercostal tube drainage, 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 medical thoracoscopy.
- It is important that the above skills are acquired at the 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 and the accompanying training portfolio/DOTS.
- It is essential that the training programme affords the trainee the opportunity to maintain these skills once acquired.

iii. 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 Regional 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 Programme Director or deputy and kept in the training 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 Regional 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.

iv. Small Group Learning:

- Case presentations and small group discussion, particularly of more complex cases.
- Small group bedside teaching, particularly addressing issues identified by trainees.
- Small group discussion of data interpretation.
- Participation in audit meetings, research meetings, journal clubs.

v. One –to-one Teaching:

- The trainee should understand that reflecting on practice is a crucial part of learning. Both the trainee and the supervisor should explore the thinking that underlies practice.
- Discussion of acute admissions, inpatients, ward referrals and outpatients with the supervising Consultant.
- Reviewing, with the supervising Consultant, selected notes, letters and case summaries.
- Critical incident analysis.
- Discussion of national and local guidelines with the trainer.
- Feedback following mini-CEX/CBD (case based discussion) assessment exercises.

vi. **Personal Study:**

- Acquiring and demonstrating ability in self-directed learning is an essential part of training to be a professional.
- Methods include reading textbooks, journals and review articles, web based learning and research in the process of writing presentations for teaching.
- Trainees must have excellent IT skills.

vii. 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 to 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.

viii. Research:

The Respiratory 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 the ability to appraise the literature. These are essential skills for any Consultant and a prerequisite for leading the implementation into practice of new developments in his/her 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 understated.

All trainees must achieve the research competencies set out in the Generic Curriculum, section 1.7, "Ethical Research." These include "apply(ing) for appropriate ethical research approval" and "demonstrate(ing) (the) ability to write a scientific paper." Whilst there are a number of ways to achieve these competencies, the Respiratory Medicine SAC strongly recommends that trainees with the necessary desire, ability and aptitude should undertake supervised research as out of programme experience leading to a higher degree. The attainment of a higher degree will provide a summative assessment of the acquisition of research competencies. Funding will need to be identified for the duration of the research period and a maximum of three years out of programme will be allowed. The recent move to competency based, rather than time limited, training allows for the possibility that some trainees may acquire all the necessary clinical competencies for dual training in Respiratory Medicine/GIM(Acute) in four, rather than the stated indicative time of five, years. This may thus enable such trainees to mitigate, in part, some of the prolongation of training that undertaking out of programme research results in. It is no longer within the remit of the SAC to grant educational credit for time spent out of programme in research.

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.

ix. Audit and Guideline Generation:

Audit 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 in the specialty (Respiratory Medicine) during training. These should ideally lead to change in practice, and the trainee should be able to demonstrate how the audit loop has been closed.

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.

(b) 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 conditions. Since many respiratory conditions are chronic, it is essential that trainees have the opportunity to follow such patients for an appropriate length of time.

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 occur, in series, at a number of different locations and should include an appropriate mix of District General Hospitals and Tertiary Centres. However, local arrangements will need to be appropriate to the particular regional training programme and be tailored to the individual trainee. Training should involve exposure to a variety of different trainers, ideally at least two at each training location. All elements of work must be supervised, but the level of supervision will need to vary depending on the experience of the trainee and the case mix undertaken. As training progresses, the trainee should have the opportunity to develop increasing autonomy.

Training should involve exposure to both general and special interest areas of Respiratory Medicine. These are listed in the curriculum. All trainees should have knowledge and experience of all such conditions, and be competent to manage some. The curriculum and the accompanying training e-portfolio/DOTS 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)

Where appropriate, more detail is provided later in this curriculum.

(c) Learning Locations:

- Where appropriate, the curriculum and training e-portfolio/DOTS indicate the necessary and recommended locations for learning in each subject(s). This may be in primary, secondary and/or tertiary sites; inpatient, outpatient or other clinical settings; and in specialised units.

- As facilities for training will vary between the regions, it is for the Regional Programme Director and STC to decide how best to use the local opportunities available and when and whether to rely on lectures/seminars by outside speakers or attachments to out of region units to fill in any local gaps in the provision of training opportunities.

5. SUPERVISION AND FEEDBACK:

- The Programme Director and STC will have overall responsibility for training and will be responsible to the Head of the Postgraduate School of Medicine and to the Postgraduate Dean.

- The training programme will be quality managed by the deanery with input, as appropriate, from the SAC/JRCPTB. Quality assurance is the responsibility of PMETB.

- At each training site in the programme, the trainee will have a nominated educational supervisor and clinical supervisor, who may or may not be the same person. The clinical supervisor will have ultimate responsibility for the safety of practice and for the safety of the trainee and of the patients.

- It is recommended that there should be a formal induction to the deanery and to the training programme, and a formal educational agreement.

- It is 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.

- At the start of each new attachment on the training programme, the trainee and educational supervisor should meet, ideally within the first two weeks, to agree and sign an educational agreement. This should be undertaken with reference to the previous educational supervisor's report and to the training e-portfolio.

- There should be a minimum of three educational appraisals, initial, midterm and end, during working hours, but in "bleep-free" time, during each year of training. These should culminate in a full written assessment towards the end of the attachment/year which should inform the Annual Review of Competence Progression (ARCP).

- It is essential that the educational supervisor/consultant trainer is given sufficient time to properly carry out his/her role. This time should be formally identified in his/her job plan. A suggested time would be 0.5 SPA for one trainee and additional *pro rata* time for more than one trainee. Some of the duties of the educational supervisor are listed below. This is not an exhaustive list:

    - arranging induction and agreeing and signing an educational agreement at the commencement 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

- In each region, the Programme Director should make arrangements to formally gather, on a yearly basis, information from the trainees on the quality of training at each site.

This may be achieved by questionnaire, interview, or a combination of the two. Ideally, this should be separate from the ARCP.

6. MANAGING CURRICULUM IMPLEMENTATION:

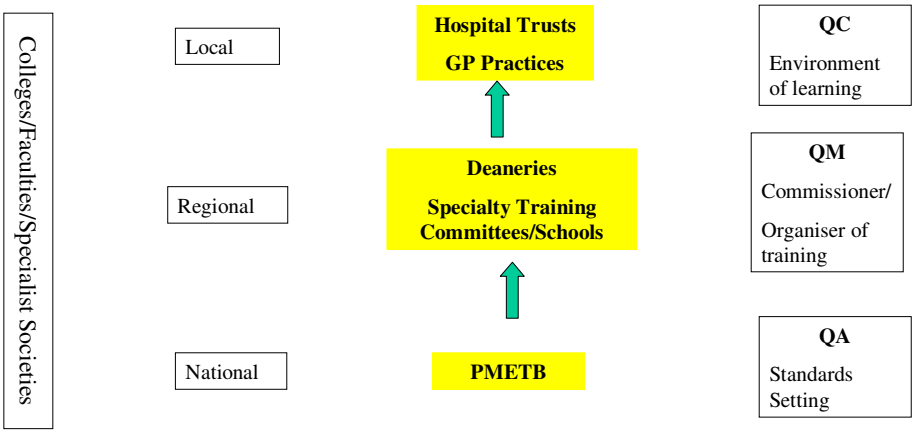
- The curriculum and the accompanying training e-portfolio/DOTS are intended to be used by the Regional Programme Director/Specialty Advisor, STC, educational/clinical supervisors and the trainees to guide training. Although exact arrangements will vary, the overall structure and delivery of training should comply with the statements contained in these documents.

- The training portfolio/DOTS provides the supporting documentation to enable coverage of the curriculum to be tracked.

- The curriculum and training portfolio/DOTS 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.

- Deaneries are responsible for the quality management (QM) of postgraduate training, PMETB will quality assure (QA) the deaneries and educational providers are responsible for local quality control (QC), to be managed by the deaneries. The role of the Colleges in quality management remains important and will be delivered in partnership with the deaneries. The College role is one of quality review of deanery processes and this will take place within the SACs on a regular basis.

The Organisation and Quality Assurance of PG Training



7. CURRICULUM REVIEW AND UPDATING:

This curriculum and the accompanying training portfolio are "living documents." It is intended that they should be reviewed and updated on a regular basis. Curriculum review will be informed by a number of different processes. For instance, the SAC will be able to use information gathered from specialty heads, specialty deans and the National Health Service. It will have available to it results of the trainee survey, which will include questions pertaining to their specialty. Interaction with the NHS will be particularly important to understand the performance of specialists within the NHS and feedback will be required as to the continuing needs for that specialty as defined by the curriculum. It is likely that the NHS will have a view as to the balance between generalist and specialist skills, the development of generic competencies and, looking to the future, the need for additional specialist competencies and curricula.

8. EQUALITY AND DIVERSITY:

In the exercise of these powers and responsibilities, the Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of relevant legislation, such as the:

Race Relations (Amendment) Act 2000
Disability Discrimination Act 1995 (Amendment) 2004 and Special Educational Needs and Disabilities Act 2001
The Disability Discrimination Act 1995 (amendment) (further and higher education) Regulations 2006
Data Protection Acts 1984 and 1998
Age Discrimination Act October 2006

The Federation of 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.

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

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
- Ensuring trainees have an appropriate, confidential and supportive route to report examples of inappropriate behaviour of a discriminatory nature
- 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.

STATUTORY RESPONSIBILITIES

The Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of legislation, such as the:

Human Rights Act 1998
Freedom of Information Act 2001
Data Protection Acts 1984 and 1998

ASSESSMENT METHODOLOGIES

The domains of Good Medical Practice will be assessed using an integrated package of workplace-based assessments and examination of knowledge and clinical skills, which will sample across the domains of the curriculum (e.g. knowledge, skills and attitudes). The assessments will generate structured feedback for trainees within Core Medical Training and Specialist Training. Assessment tools will be both formative and summative and will be selected on the basis of their fitness for purpose.

It is likely that the workplace-based assessment tools will include the mini-Clinical Examination Exercise (mini-CEX), Case-Based Discussion (CBD), Direct Observation of Procedural Skills (DOPS) and multi-source feedback (MSF). The Federation of the Royal Colleges of Physicians has piloted these methods and has demonstrated their validity and reliability. It is also proposed that there will be a formal examination and assessment of core knowledge, a "Knowledge-Based Assessment" (KBA). This will utilise elements of the MRCP (UK) examination, relevant to the level of training, and will have to be successfully completed prior to the trainee proceeding to the later stages of training.

An assessment blueprint will be developed which will map the assessment methods on to the curriculum in an integrated way. The blueprint will ensure that there is appropriate sampling across the curriculum. It will be available as a separate document. It will be accompanied by an "ARCP decision aid" which will provide guidance against which decisions can be made as to whether or not a trainee's progress is sufficient at each stage of training to allow progression to the next stage of training.

Other elements of the trainee's abilities will be reflected in the yearly educational supervisor's report, properly structured and evidenced. This will be a key component of the evidence considered at the ARCP at which decisions on suitability for continued progression through training will be made.

TRAINING PORTFOLIO/DOCTORS ONLINE TRAINING SYSTEM (DOTS)

A Training Portfolio/DOTS will be developed to be used alongside this curriculum. This will be web based. It is the duty of the trainee to maintain this. It must be counter-signed as appropriate by the educational supervisors to confirm the satisfactory fulfilment of the required training experiences and the acquisition of the competencies that are set out in the Specialty and Generic Curricula. It will remain the property of the trainee, and must be

produced at the annual assessments. A CCT will not be awarded unless this is properly completed.

GENERIC CURRICULUM:

(a) Compliance:

Trainees must comply with the Generic Curriculum as set out by the JRCPTB.

(b) Teaching, Management Audit, Research:

As already indicated, a period of supervised research or other appropriate non-service training (including specific training in medical education) is considered a highly desirable part of training in Respiratory Medicine. This curriculum has already given guidance as to the minimum essential experience for research and audit expected of trainees.

Gaining overseas experience is encouraged but trainees must obtain prior agreement from the STC, Postgraduate Dean and PMETB. Such experience will only be allowed to count towards training if it has been prospectively agreed by PMETB.

Holders of the newly introduced "Academic" National Training Numbers (NTN-As) for trainees intending to pursue a career in Academic Medicine must achieve the same clinical training competencies as their non-academic trainee colleagues.

Trainees are required to perform at least two audits in Respiratory Medicine during their training period and to provide evidence of the resulting recommendations and of closure of the audit loop. These must be documented in the training portfolio.

It is an objective of the training programme that consultants of the future will be competent teachers of undergraduate, postgraduate and paramedical staff. Evidence will be required that the trainee has experience of teaching these three groups. Trainees should be able to demonstrate that they have received training in teaching, that they have been observed whilst teaching and that they have received appropriate feedback. This may be done by attending a short course. In some instances, trainees may wish to undertake a more formal course leading to a certificate, diploma or MSc in Medical Education. These can be done by distance learning or as out of programme experience in a similar manner to research training. However, the same comments with regard to the need to obtain prospective agreement and the issue of clinical training credit as mentioned for research also apply here.

It is also necessary for consultants of the future to be adept at managing their service. Therefore, satisfactory completion of an appropriate approved management course is mandatory.

GENERAL INTERNAL MEDICINE (ACUTE) CURRICULUM:

As already stated, most respiratory medicine trainees will also wish to gain level 2 competency in General Internal Medicine (Acute). The training requirements for this are set out in the GIM (Acute) curriculum.

RESPIRATORY MEDICINE SPECIALTY CURRICULUM:

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

1. Establishing a differential diagnosis for patients presenting with clinical features of respiratory disease by appropriate use of history, clinical examination and appropriate investigations.

2. Applying knowledge derived from the appropriate basic sciences which are relevant to Respiratory Medicine.

3. Applying appropriate and sufficient knowledge and skills in the diagnosis and management of patients with respiratory disease to ensure safe independent practice at NHS independent Consultant Specialist level.

4. Developing a management plan for the "whole 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.

SECTION I: SYLLABUS:

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 during 2005-2006. The committee involved ("HERMES") included the chair of the UK Respiratory SAC and several other UK representatives. The method of syllabus development involved the Delphi process. This syllabus is included as appendix III.

SECTION II : STRUCTURED TRAINING PROGRAMME:

This has already been described. In this section a list of the areas to be covered by the STP is given:

- Respiratory physiology - theory and practice
- Respiratory anatomy and imaging techniques
- Respiratory pharmacology
- Respiratory pathology
- Respiratory microbiology
- Pulmonary infections
- Tuberculosis, pulmonary and extra-pulmonary, and opportunist mycobacterial disease
- Pulmonary disease in the immunocompromised host
- Pulmonary disease in the HIV patient
- Asthma (including patient education and self management)
- Allergic lung disorders and anaphylaxis
- Chronic obstructive pulmonary disease (including pulmonary rehabilitation)
- Early discharge and hospital at home schemes
- Bronchiectasis
- Adult cystic fibrosis

- Obliterative bronchiolitis
- Thoracic oncology
- Palliative Care Medicine
- Smoking cessation
- Genetic and developmental lung disorders
- Sleep breathing disorders
- Acute and chronic respiratory failure
- Hyperventilation syndrome and psychological aspects of breathlessness
- Disorders of pleura and mediastinum
- Diffuse parenchymal lung disease
- Pulmonary vascular diseases
- Occupational and environmental lung disease
- Pulmonary manifestations of systemic disease
- Cardiological aspects of respiratory disease
- Critical and high dependency care of respiratory disease, including the Acute Respiratory Distress Syndrome (ARDS)
- Genetic and developmental lung disease
- Lung transplantation

SECTION III: CLINICAL EXPERIENCE:

The required clinical experiences are spelt out in more detail in the "Grids for Learning Objectives" section of the curriculum and in the accompanying Training Portfolio/DOTS . However, some points are emphasised here:

In-patient training and experience

In – patient training and experience should occur throughout most of the training period 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 period 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.

Respiratory anatomy, physiology, pathology and microbiology

Trainees should have a sound understanding of respiratory anatomy and physiology and gain experience in pathology and microbiology as related to Respiratory Medicine during the training period.

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 segments of 15

consecutive working days. During this time, the trainee should spend an indicative minimum of eight sessions per week in the Intensive Care Unit. Ideally, the trainee should also participate in the on call rota for ICM, but it is recognised that this may not be possible as many trainees will not have the necessary airway skill competencies and will only be able to do this if they are on call with another doctor who does have these. The trainee may therefore participate in the on call rota for GIM(Acute) instead, but this should only be for out of hours and, if during the day, must not compromise the required eight sessions per week in the ICU.

Palliative Care Medicine

Trainees should gain experience in Palliative Care Medicine as it pertains to 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.

Pulmonary rehabilitation

Trainees should understand the importance of pulmonary rehabilitation and seek opportunities to gain first hand experience in this area. A knowledge of methods of administration of supplemental oxygen and the appropriate selection of patients for this is essential.

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 highly desirable. Experience should be gained in "standard tests," body plethysmography, assessment of airway hyper-responsiveness, hypoxic challenge and exercise testing.

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. A short period of formal attachment to a nuclear medicine department and to a Computerised Tomography (CT) or Magnetic Resonance (MR) unit should be considered if there are not very close day-to-day links between these activities and respiratory practices in the training unit. Trainees should be aware of the indications for 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.

Essential areas of training

It should be ensured that care of patients with the following conditions occurs during clinical placements:

- asthma including patient education and self management
- allergic lung disorders and anaphylaxis
- chronic obstructive pulmonary disease
- pulmonary rehabilitation, early discharge schemes, hospital at home schemes
- thoracic oncology including surgical management, chemotherapy, radiotherapy and palliative care

- pulmonary infections including the pneumonias
- tuberculosis – pulmonary and non-pulmonary , and opportunist mycobacterial disease
- pulmonary disorders in the immuno-compromised host
- bronchiectasis
- diffuse parenchymal lung disease
- sleep related breathing disorders
- pulmonary vascular disease including pulmonary embolism and infarction, primary and secondary pulmonary hypertension, pulmonary haemorrhage and pulmonary vasculitis
- Intensive Care Medicine (60 days – see above)
- respiratory failure due to obstructive lung disease, adult respiratory distress syndrome and neuromuscular disorders and the use of invasive and non-invasive ventilation (acute and chronic) in the management of these conditions
- disorders of the pleura and mediastinum
- cardiopulmonary resuscitation (trainees must possess a valid ALS(UK) certificate)
- pulmonary manifestations of systemic diseases including collagen vascular diseases
- smoking cessation methods
- Palliative Care Medicine
- hyperventilation syndrome and psychological aspects of breathlessness
- pulmonary disease in adolescence, pregnancy and the elderly

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 "short" 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
- cystic fibrosis
- HIV/AIDS
- respiratory allergy and immunology
- occupational and environmental lung disease
- pulmonary rehabilitation
- genetic and developmental lung disorders
- pre and post operative transplantation
- hospital at home schemes, early discharge programmes and specialist services delivered at home
- respiratory disease in the transition from adolescence to adulthood
- other areas which, in the opinion of the SAC, have not been adequately covered by the trainee (detailed guidance will be given to the trainee and the Chairman of the Regional Training Committee at the Penultimate Year ARCP)

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 or out-patient clinics dealing with the care of a particular group of patients. This evidence will be documented in the training portfolio and countersigned by the appropriate educational supervisor.

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 members of multidisciplinary teams is essential.

Training in Respiratory Medicine and Intensive Care Medicine (ICM):

Training and experience in Intensive Care Medicine is an essential component of a Respiratory Medicine programme. It is mandatory for all Respiratory Medicine trainees to have a minimum of 60 working days' experience in the specialty. Some trainees may, however, wish to pursue additional training in ICM in order to obtain a dual CCT in ICM and Respiratory Medicine. They may also wish to combine this with the attainment of competency level two in GIM(Acute). This should be discussed with their Educational Supervisor, Programme Director and Dean in the first instance. Please refer to the comment about dual training in section 1 (c) above.

Details of training requirements for ICM can be obtained from the Secretariat to the Intercollegiate Board on Intensive Care Medicine, 48-49 Russell Square, London WC1B 4JY. Tel 020 7908 7343, email:ehayes@rcoa.ac.uk and the Intensive Care Society website www.ics.ac.uk.

Training in Respiratory Medicine and Allergy:

Some trainees may wish to train in Allergy as well as in Respiratory Medicine. At present it is not certain whether or not this will be possible. Interested trainees should contact the Allergy SAC for further information. Please refer to the comment in section 1 (c) above.

Special Interest Training (Credentialing):

The following have been agreed as special interest areas of Respiratory Medicine:

- Lung Transplantation.
- Pulmonary Hypertension
- Adult Cystic Fibrosis.
- Domiciliary NIV services.

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 by the Trust as a sabbatical for the purpose.

SECTION IV: PRACTICAL PROCEDURES

The core practical skills required of the Respiratory Medicine Trainee are listed below, together with a brief summery of the appropriate assessment methodologies. These latter are spelt out in more detail in the accompanying assessment blueprint document.

Objective	Procedure	Teaching/ Learning Method	Assessment	Evidence of competence for inclusion in Training Portfolio
To provide trainees with the knowledge, skills, attitudes and behaviours to be able to use and/or perform specialist investigations at consultant level	Advanced life support	ALS course (UK)	Certificate of ALS (UK)	ALS Certificate Educational Supervisor's report CBD MSF
	Respiratory Physiology and Lung Function Testing	Observe Perform some (spirometry) Discuss with senior staff	Indications for, & reporting of, Lung Function Tests: KBA DOPS Mini-CEX CBD MSF	Logbook of spirometry undertaken and Lung Function Tests reported Educational supervisor's report KBA DOPS (spirometry) Please delete this spaceMini-CEX CBD
	Bronchoscopy	Observe & subsequently perform under supervision with increasing independence as training progresses	Please delete this space KBA DOPS Mini-CEX CBD MSF	Please delete this space Logbook, including percentage positive histology when tumour is visible Educational supervisor's report KBA DOPS Mini-CEX CBD MSF
	Closed Pleural biopsy and Thoracic Ultrasound	Observe & subsequently perform under supervision with increasing independence as training progresses	Observe ability & test knowledge of indications and risks: KBA DOPS Mini-CEX CBD MSF	Logbook, including percentage positive rate for obtaining pleural tissue. Educational supervisor's report KBA DOPS Mini-CEX CBD MSF

	Intercostal tube placement and pleurodesis	Observe & perform under supervision with increasing independence as training progresses	Observe ability & test knowledge of indications and risks KBA DOPS Mini-CEX CBD MSF	Logbook Educational supervisor's report KBA DOPS Mini-CEX CBD MSF
	Sleep studies	Observe. Discuss with senior staff	KBA Mini-CEX CBD MSF	Logbook. Educational supervisor's report KBA Mini-CEX CBD MSF
	Nasal CPAP and Non-Invasive Ventilation	Observe & perform under supervision	Observe ability KBA DOPS Mini-CEX CBD MSF	Logbook. Educational supervisor's report KBA DOPS Mini-CEX CBD MSF
	Tuberculin skin testing	Observe and perform under supervision	Observe ability KBA Mini-CEX CBD MSF	Logbook Educational supervisor's report KBA Mini-CEX CBD MSF
	Skin Tests to Demonstrate Allergy	Observe and perform under supervision	Observe ability KBA Mini-CEX CBD MSF	Logbook Educational supervisor's report KBA Mini-CEX CBD MSF
	Medical Thoracoscopy	Observe (possibly perform under supervision – optional) Discuss with supervisor	KBA Mini-CEX CBD	Educational Supervisor's report KBA Mini-CEX CBD MSF

SECTION V: GRIDS FOR LEARNING OBJECTIVES

The "Grids" in this section form the main substance of the curriculum and outline the objectives to be achieved in the course of training in each subject area of Respiratory Medicine. In addition, they indicate the knowledge, skills and attitudes that the trainee must acquire in order to achieve these training objectives. They are divided into problem orientated subjects, clinical subject areas and procedural skills. They should be used in conjunction with the training e-portfolio/DOTS.

(i). Learning methods

These have been outlined in section 4 (a) above

(ii). Assessment methods

Please refer to the assessment blueprint document that accompanies this curriculum.

(iii). The Grids:

These are divided into four sections:

1. Learning objectives for assessment and management of patients referred for a specialist respiratory opinion.

2. Learning objectives for 6 key patient/problem orientated subject areas

3. Learning objectives for 26 clinical subject areas

4. Learning objectives for 10 practical procedural areas

(iv). Levels of ability required:

The grids contain reference to a hierarchical list of levels of ability required as training outcomes in the various subjects and subject areas. The same terms are used in the Training e-Portfolio/DOTS. These terms have specific meanings as described below:

1. Knowledge:
This means awareness and understanding of a subject, and appreciation of the application of that knowledge and of the need to refer, if appropriate, to a more expert colleague/centre.

2. Experience:
This means exposure to a subject/area of clinical practice sufficient to understand the principles of care and management and to be able either to manage the patient(s) with supervision or to refer to a more expert colleague/centre

3. Competence:
This means the ability to look after such patients or clinical situations at the level of an independent consultant specialist.

Learning Objectives for Assessment and Management of Patients Referred for a Specialist Respiratory Opinion

JUDY layout of table not good; I don't seem to be able to correct. Can you remove 2nd bullets in columns 1 & 2 (leave the text as it is) and tidy up column 5. Thanks.

Objective	Subject	Teaching/ Learning method	Assessment	Evidence of competence
• To provide the trainee with the knowledge and skills to be competent in undertaking • a specialist assessment of a patient referred for a specialist opinion in Respiratory Medicine	• History taking from patient (competence) • Physical examination (competence) • Appropriate investigations (competence) • Formulating an effective management plan (competence)	• Observation of, assisting and discussion with, senior staff • Supervised clinical experience • Task specific on the job training • Personal study • Appropriate postgraduate education courses	• Observation by supervisor • Detailed & reliable history taking and recording of appropriate clinical details • Detailed, correct, appropriate and reliable physical examination • Accurate diagnosis of conditions & formulation of appropriate management plans • Appropriate successful patient outcome • Observable confidence of junior staff • KBA, DOPS, Mini-CEX, CBD, MSF	• Educational supervisors' reports • Correctly maintained up-to-date training portfolio/DOTS • KBA, DOPS, Mini-CEX, CBD, MSF • Detailed observation of ward rounds, outpatients, practical procedures • Discharge Summaries, Clinic Letters • Views of colleagues and patients

Learning Objectives for Patient/Problem Orientated Subject Areas

Patient/Problem Oriented Subjects **1 Breathlessness**

Objective	Knowledge	Skills	Attitudes
• 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 o chronic symptoms in outpatient department o acute symptoms in acute/emergency admissions unit • Be able to manage the breathless patient effectively	• Causes of breathlessness • Differentiate cardiac, respiratory, neuromuscular and metabolic causes • Know and understand pathogenesis of causes • Know and understand management/treatment • Pharmacology of drugs used • Relevant guidelines	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Interpretation of Chest Radiology: - Chest X-Ray - V/Q scans - Chest CT scans (competence)) • Performance and interpretation of arterial blood gases (competence) • Use of inhaled and nebulised drug therapy (competence)	• As outlined in generic curriculum

Patient/Problem Oriented Subjects **2 Cough**

Objective	Knowledge	Skills	Attitudes
• 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	• Causes of cough with: o Normal CXR o Abnormal CXR • How to formulate an appropriate differential diagnosis • Appropriate investigation of cough, including specialist studies • ENT causes • Management/treatment of cough linked to underlying diagnosis • Pharmacology of drugs used • Relevant guidelines	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Interpretation of Chest Radiology (competence)) • Special investigations, including bronchoscopy (experience/competence) • Use of inhaled and nebulised drug therapy (competence)	• As outlined in generic curriculum

Patient/Problem Oriented Subjects 3 Haemoptysis

Objective	Knowledge	Skills	Attitudes
• 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 of patients presenting with: o haemoptysis in outpatient setting o acute severe haemoptysis in acute/emergency admissions unit setting (minimum of 2 years) • Be able to manage the patient with haemoptysis effectively	• Causes of haemoptysis • How to assess severity and formulate diagnostic strategy • How to formulate management plan, appropriate to degree of urgency • Need for interventional radiology/surgery • Relevant guidelines	• Interpretation of Chest Radiology (competence)) • Bronchoscopy (competence) • Resuscitation, including basic airway skills (competence)	• As outlined in generic curriculum

Patient/Problem Oriented Subjects 4 Pleuritic Chest Pain

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and form structured differential diagnosis in patients with pleuritic chest pain • Trainee must have experience in dealing with patients presenting with o chronic symptoms in outpatient department o acute symptoms in acute/emergency admissions unit (minimum of 2 years) • Be able to manage the patient with pleuritic chest pain effectively	• Causes of pleuritic chest pain • Understand pathogenesis of causes • Differential diagnosis of causes • How to formulate a plan of investigation, including appropriate use of ultrasound, closed and CT-guided pleural biopsy and Medical Thoracoscopy • Treatments and Management • Pharmacology of drugs • Relevant guidelines	• Interpretation of Chest Radiology including Chest X-Ray, V/Q scans, CT scans, CTPA scans (competence)) • Pleural biopsy (competence) • Ultrasound (optional) • Medical Thoracoscopy (knowledge of; some trainees may gain experience in [optional])	• As outlined in generic curriculum

Patient/Problem Oriented Subjects **5 Abnormal Chest X-Ray**

Objective	Knowledge	Skills	Attitudes
• Be competent to assess and form differential diagnosis in patients with: o localised abnormalities on chest x-ray, for instance mass lesions o diffusely abnormal chest x-ray, for instance interstitial pulmonary fibrosis • Trainee must have experience in dealing with patients presenting with the following throughout training: o abnormal chest x-ray in outpatient department o abnormal chest x-ray in acute/emergency admissions unit • Be able to formulate an appropriate plan for investigation and management	• Causes of abnormal Chest X-Ray • Differential diagnosis of causes • Know and understand pathogenesis of causes • Know how to formulate plan for further investigation and management	• Interpretation of Chest Radiology (competence))	• As outlined in generic curriculum

Patient/Problem Oriented Subjects **6 Respiratory Failure**

Objective	Knowledge	Skills	Attitudes
• 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	• Know and understand the causes of respiratory failure including respiratory, neuromuscular and others • Understand pathogenesis of causes • Know differential diagnosis of respiratory failure • Know appropriate investigations and their use • Know and understand treatment and management strategies • Pharmacology of drugs used • Understand use of hospital and domiciliary oxygen, including LTOT, short burst and ambulatory • Know and understand principles and appropriate use of NIV and of intubation and ventilation • Experience of HDU and ICU (note mandatory requirement)	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Arterial blood gases (competence) • Interpretation of Chest Radiology (competence) • Basic airway skills and CPR (competence) • NIV (competence) • Invasive Ventilation (experience) • Assessment for domiciliary oxygen, short burst and long term (competence) • Use of inhaled and nebulised drug therapy (competence)	• As outlined in generic curriculum

Learning Objectives for Clinical Subject Areas

Subject: Clinical 1 – Asthma

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of adolescent and adult patients with asthma • Trainees must care for inpatients and outpatients with asthma during their clinical placements (minimum 2 years)	• Causes of asthma • Investigation of asthma • Differential diagnosis of asthma, including from other causes of wheeze such as laryngeal, foreign body, tumour, COPD and obliterative bronchiolitis • Treatment and management of patients with asthma • Principles of mechanical ventilation in asthma • Pharmacology of drugs used • Complications • Relevant guidelines • Patient education and self management	• Skin testing (experience/competence) • Performance and interpretation of spirometry and peak flow measurements (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Use of inhaled and nebulised drug therapy (competence)	• As outlined in generic curriculum

- **Subject: Clinical 2 – Chronic Obstructive Pulmonary Disease (COPD)**

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with COPD • Trainee must care for inpatients and outpatients with COPD during their clinical placements (minimum 2 years)	• Causes of COPD • Investigation of COPD • Differential diagnosis of COPD, including asthma and obliterative bronchiolitis • Treatment and management of patients with COPD • Principles of mechanical ventilation in COPD • Principles of oxygen therapy • Pharmacology of drugs used • Complications • Relevant guidelines • Smoking cessation methods	• Skin testing (competence) • Performance and interpretation of spirometry and peak flow measurements (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Performance and interpretation of arterial blood gases (competence) • Use of inhaled and nebulised drug therapy (competence) • Assessment for domiciliary oxygen therapy - LTOT, short burst, ambulatory (competence) • Non-invasive ventilation (competence) • Sleep studies (competence in screening studies; experience of more advanced studies)	• As outlined in generic curriculum

Subject: Clinical 3 - Thoracic Oncology

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with lung cancer, mesothelioma and other thoracic malignancies • Trainee must care for inpatients and outpatients with lung cancer during their clinical placements (minimum 2 years)	• Causes of lung cancer • Investigation of lung cancer, including newer modalities such as CT-PET scanning • Differential diagnosis of lung cancer • Treatment and management of patients with lung cancer including the roles of surgery, radiotherapy, chemotherapy and best supportive care • Skills of physicians, radiologists, surgeons, clinical and medical oncologists and of the multi-disciplinary team in management • Pharmacology of drugs used • Complications • Relevant guidelines • Palliative care	• Interpretation of Chest X-Ray and Chest CT (competence)) • Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Bronchoscopy (competence) • Pleural aspiration and biopsy (competence) • Medical Thoracoscopy (knowledge of; some trainees may gain experience in Staging and performance status (competence)	• As outlined in generic curriculum

Subject: Clinical 4 – Pulmonary Infections

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with pulmonary infections including the common cold, influenza, bronchitis, pneumonia • Trainee must care for inpatients and outpatients with pulmonary infections during their clinical placements (minimum 2 years)	• Causes of pulmonary infections; micro-biology • Investigation of pulmonary infections • Differential diagnosis of pulmonary infections • Treatment and management of patients with pulmonary infections, including principles of non-invasive and mechanical ventilation • Pharmacology of drugs used • Complications • Relevant guidelines • Infection control	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Bronchoscopy (competence) • NIV (competence) • Mechanical ventilation (experience)	• As outlined in generic curriculum

Subject: Clinical 5 – Tuberculosis (TB) and Opportunist Mycobacterial Disease (OMD)

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with tuberculosis/ OMD • Trainee must care for inpatients and outpatients with TB/OMD during their clinical placements (minimum 1 year) • Trainee must have knowledge of multi-drug resistant TB, including use of negative pressure rooms	• Causes of TB/OMD • Investigation of TB/OMD, including imaging and use of various pleural biopsy techniques, skin tests, gamma interferon tests • Differential diagnosis of TB/OMD • Treatment and management of patients with TB/OMD • Pharmacology of drugs used • Complications • Relevant guidelines • Infection control	• Tuberculin skin testing (competence) • Performance and Interpretation of spirometry, including knowledge of infection control (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Bronchoscopy (competence) • Pleural aspiration (and biopsy, optional) (competence)	• As outlined in generic curriculum

Subject: Clinical 6 – Pulmonary Disease in the Immuno-Compromised Host

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of immuno-compromised patients with pulmonary disease e.g. HIV/AIDS patients, transplant patients, patients on immunosuppressive drugs, immunodeficiency patients • Trainee may care for 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	• Causes of immuno-compromise in patients • Causes of lung disease in immuno-compromised patients (ICP) • Investigation of lung disease in ICP • Differential diagnosis of lung disease in ICP • Treatment and management of lung disease in ICP • Pharmacology of drugs used • Complications • Relevant guidelines	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Bronchoscopy (competence) • NIV (competence) • Mechanical ventilation (experience)	• As outlined in generic curriculum

Subject: Clinical 7 – Bronchiectasis

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with bronchiectasis • Trainee must care for inpatients and outpatients with bronchiectasis during clinical placements (minimum 2 years)	• Causes of bronchiectasis • Microbiology • Investigation of bronchiectasis • Differential diagnosis of bronchiectasis • Treatment and management of patients with bronchiectasis • Pharmacology of drugs used • Complications • Relevant guidelines	Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Use of inhaled and nebulised drug therapy (competence) • Bronchoscopy (competence) • NIV (competence)	• As outlined in generic curriculum

Subject: Clinical 8 – Diffuse Parenchymal Lung Disease (DPLD)

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with diffuse parenchymal 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 inpatients and outpatients with DPLD during clinical placements (minimum 1year)	• Knowledge of the common diseases included in this category • Causes of DPLD • Investigation of DPLD • Differential diagnosis of DPLD • Treatment and management of patients with DPLD • Pharmacology of drugs used • Complications • Relevant guidelines	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Bronchoscopy/ TBB/BAL (competence) • CXR/CT/HRCT interpretation (competence)) • Non-Invasive ventilation (competence) • Mechanical ventilation (experience)	• As outlined in generic curriculum

Subject: Clinical 9 – Sleep Breathing Related Disorders

Objective	Knowledge	Skills	Attitudes
• Be competent to undertake specialist assessment and management of patients with sleep breathing disorders • Trainee must care for inpatients and outpatients with sleep breathing disorders during clinical placements	• Causes of sleep breathing disorders • Investigation of sleep breathing disorders • Differential diagnosis of sleep breathing disorders • Treatment and management of patients with sleep breathing disorders, including "sleep hygiene," mandibular advancement devices, surgery, Nasal CPAP and NIV • Complications • Relevant guidelines • Pharmacology of drugs used • Role of the ENT surgeon • Medicolegal aspects	• Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Performance and interpretation of arterial blood gases (competence) • Interpretation of screening sleep studies (competence) and of more advanced sleep studies (experience) • Nasal CPAP (competence) • Non-invasive ventilation (competence)	• As outlined in generic curriculum

Subject: Clinical 10 – Pulmonary Vascular Diseases

Objective	Knowledge	Skills	Attitudes
• 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 primary pulmonary hypertension • Trainee must care for inpatients and outpatients with pulmonary vascular diseases during clinical placements (minimum 2 years for thrombo-embolic disease)	• Causes of pulmonary vascular diseases • Investigation of pulmonary vascular diseases, including D-dimer, V/Q scanning, CTPA • Differential diagnosis of pulmonary vascular diseases • Treatment and management of patients with pulmonary vascular diseases • Pharmacology of drugs used • Complications • Relevant guidelines	• Performance and interpretation of spirometry • Interpretation of other appropriate Lung Function Tests (competence) • Performance and interpretation of arterial blood gases (competence) • Interpretation of CXR/CTPA/ HRCT (competence))	• As outlined in generic curriculum

Subject: Clinical 11 – Allergic Lung Disorders and Anaphylaxis

Objective	Knowledge	Skills	Attitudes
• 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	• Causes of allergic lung disorders and anaphylaxis • Investigation of allergic lung disorders and anaphylaxis • Differential diagnosis of allergic lung disorders and anaphylaxis • Treatment and management of patients with allergic lung disorders and anaphylaxis, including the role of desensitisation • Pharmacology of drugs used • Complications • Relevant guidelines	• Skin testing (experience/ competence) • Performance and interpretation of spirometry (competence) • Interpretation of other appropriate Lung Function Tests (competence) • Use of Inhaled and nebulised drug therapy (competence) • Educating patients in the use of self-administered adrenaline (competence) • Advanced life support (competence)	• As outlined in generic curriculum

Subject: Clinical 12 – Disorders of Pleura and Mediastinum, including Pneumothorax

Objective	Knowledge	Skills	Attitudes
• Be competent to carry out specialist assessment and management of patients with disorders of the pleura and mediastinum • Trainee must care for inpatients and outpatients with disorders of the pleura and mediastinum during clinical placements (minimum 2 years for pneumothorax)	• Causes of disorders of pleura and mediastinum • Investigation of disorders of pleura and mediastinum • Appropriate use of various pleural biopsy techniques • Differential diagnosis of disorders of pleura and mediastinum • Treatment and management of patients with disorders of pleura and mediastinum • Role of Medical Thoracoscopy and VATS • Pharmacology of drugs used • Complications • Relevant guidelines	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • TB skin testing (experience/ competence) • Pleural aspiration (competence) • Chest drain insertion (competence) • Chemical pleurodesis (competence) • Bronchoscopy (competence) • Medical Thoracoscopy (knowledge) •	• As outlined in generic curriculum

Subject: Clinical 13 – Pulmonary Manifestations of Systemic Disease

Objective	Knowledge	Skills	Attitudes
• Be competent to carry out specialist assessment and management of patients with pulmonary manifestations of systemic disease • Trainee must care for inpatients and outpatients with pulmonary manifestations of systemic disease during clinical placements	• Systemic diseases which have significant pulmonary manifestations • Causes of pulmonary manifestations of systemic disease • Investigation of pulmonary manifestations of systemic disease • Differential diagnosis of pulmonary manifestations of systemic disease • Treatment and management of patients with pulmonary manifestations of systemic disease	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Pleural aspiration (competence) • Bronchoscopy (competence)	• As outlined in generic curriculum

Subject: Clinical 14 – Cystic Fibrosis (CF)

Objective	Knowledge	Skills	Attitudes
• Have knowledge/ experience of the specialist assessment and management of adolescent and adult patients with cystic fibrosis • Trainee may care for inpatients and outpatients with CF during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements	• Causes of CF • Investigation of CF • Differential diagnosis of CF • Treatment and management of patients with CF • Pharmacology of drugs used • Complications and their management • Relevant guidelines • Infection control (*Burkolderia cepacia)* • Role of the multidisciplinary team	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Use of inhaled and nebulised drug therapy (competence) • Non-invasive ventilation (competence) • Bronchoscopy (competence) • Chest drain insertion (competence)	• As outlined in generic curriculum

Subject: Clinical 15 – Pulmonary Disease in the HIV Patient

Objective	Knowledge	Skills	Attitudes
• Be competent to carry out specialist assessment and management of pulmonary problems in patients with HIV • Trainee may care for inpatients and outpatients with HIV during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements	• Causes of HIV lung disease • Investigation of HIV lung disease • Differential diagnosis of HIV lung disease • Treatment and management of patients with HIV lung disease • Role of the multidisciplinary team • Pharmacology of drugs used • Complications • Relevant guidelines • Infection control	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Ventilation (competence in NIV; experience of mechanical ventilation) • Bronchoscopy (competence) • Pleural aspiration (competence) • Chest drain insertion (competence)	• As outlined in generic curriculum

Subject: Clinical 16 – Occupational and Environmental Lung Disease (including flying and diving)

Objective	Knowledge	Skills	Attitudes
• 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	• Causes of occupational and environmental lung disease • Investigation of occupational and environmental lung disease, including interpretation of lung function tests and the role of challenge testing where appropriate • Differential diagnosis of occupational and environmental lung disease • Treatment and management of patients with occupational and environmental lung disease • Pharmacology of drugs used • Complications • Relevant guidelines • Preventative measures • Medicolegal aspects	• Skin testing (experience/competence) • Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Bronchoscopy (competence)	• As outlined in generic curriculum

Subject: Clinical 17 – Genetic and Developmental Lung Disease

Objective	Knowledge	Skills	Attitudes
• 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 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	• Causes of genetic and developmental lung disease • Investigation of genetic and developmental lung disease • Differential diagnosis of genetic and developmental lung disease • Treatment and management of patients with genetic and developmental lung disease • Pharmacology of drugs used • Complications • Relevant guidelines • Indications for genetic counselling	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung FunctionTests (experience) • Bronchoscopy (competence)	• As outlined in generic curriculum

Subject: Clinical 18 – Lung Transplantation

Objective	Knowledge	Skills	Attitudes
• 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 • Trainees may care for inpatients and outpatients pre-and post-transplant during their clinical placements but most trainees will have to be seconded to a specialised unit to gain experience as this is not available in all placements	• Indications for lung transplantation • Interpretation of Lung Function Tests • Investigation (work up) for lung transplantation • Contra-indications to lung transplantation • Preparation of patients for lung transplantation • Outline of surgical procedures • Pre- and post-operative care • Pharmacology of drugs used and their complications • Complications • Relevant guidelines • Legal and ethical issues	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Ventilation (competence in NIV; experience of mechanical ventilation)	• As outlined in generic curriculum

Subject: Clinical 19 – Hospital At Home/Early Discharge Schemes

Objective	Knowledge	Skills	Attitudes
• Be competent in selecting patients who will benefit from home care/early discharge schemes • Have knowledge and experience of the equipment and staff necessary to operate a high quality home care service • Trainee may experience good home care schemes during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements	• What can be achieved by providing home care/appropriate early discharge for respiratory patients • Requirements for successful care in the community • Appreciation of appropriate early discharge/home care as a cost saving measure for the NHS • Appreciation of home care as a preferred method of treatment for many patients • Importance of the multi disciplinary team and of high quality team working • Relevant guidelines	• Use of inhaled and nebulised drug therapy (competence) • Assessment for, and management of, oxygen therapy (competence) • Non-invasive ventilation (competence)	• As outlined in generic curriculum • Leadership, organisational and team working skills

Subject: Clinical 20 – Respiratory Anatomy, Physiology, Pathology, Microbiology and Pharmacology

Objective	Knowledge	Skills	Attitudes
• 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	• Anatomy as applied to patients with respiratory diseases • Physiology as applied to patients with respiratory diseases • Pathology as applied to patients with respiratory diseases • Microbiology as applied to patients with respiratory diseases • Pharmacology as applied to patients with respiratory diseases • Value of meetings with radiologists, pathologists and microbiologists	• Performance and interpretation of spirometry (competence) • Interpretation of other Lung Function Tests (competence) • Use of inhaled and nebulised drug therapy (competence) • Pleural aspiration (competence) and biopsy (experience/competence) • Chest drain insertion (competence) • Bronchoscopy (competence) • Thoracoscopy (experience, optional)	• As outlined in generic curriculum

Subject: Clinical 21 – Imaging Techniques

Objective	Knowledge	Skills	Attitudes
• Be competent to request and interpret appropriate imaging investigations for the investigation of the patient with respiratory disease	• Thoracic ultrasound, both radiologist/radiographer performed and chest physician performed • Chest X-rays and CT scans (anatomical/CTPA/ HRCT) relevant to the respiratory patient; indications, techniques and interpretation • Ventilation/perfusion scans; indications, technique and interpretation • Bone scans; indications, technique and interpretation • CT-PET scans; indications and interpretation • Indications for magnetic resonance scans • Value of regular meetings with radiologists • IRMER guidelines; hazards of radiation; other relevant guidelines	• Interpretation of CXRs and CT scans (anatomical/ CTPA/HRCT) (competence) • Detailed observation and interpretation of images produced by other imaging techniques eg CT-PET, bone scans (experience/ competence)	• As outlined in generic curriculum

Subject: Clinical 22 – Smoking Cessation

Objective	Knowledge	Skills	Attitudes
• Be competent to assist patients to stop smoking • During training, trainee must attend some smoking cessation clinics	• Effects of smoking on general and respiratory health • Pharmacological and other treatments available for smoking cessation • Relevant aspects of public health • Relevant guidelines	• Ability to advise patients on smoking cessation and support measures (competence)	• As outlined in generic curriculum; • Non-judgmental approach

Subject: Clinical 23 – Pulmonary Rehabilitation

Objective	Knowledge	Skills	Attitudes
• Knowledge and experience of the organisation and delivery of specialist pulmonary rehabilitation services • Trainee may care for inpatients and outpatients undergoing pulmonary rehabilitation during clinical placements but may have to be seconded to a specialised unit to gain experience as this is not available in all placements	• Patients most likely to benefit from pulmonary rehabilitation • Methods of pulmonary rehabilitation • Role of the multidisciplinary team including GPs, consultants, nurses, dieticians, physiotherapists, occupational therapists, medical social workers • Role of patient education • Basic techniques of chest physiotherapy • Relevant guidelines • Cost/benefit issues	• Be an active member of a pulmonary rehabilitation team	• As outlined in generic curriculum • As above, with special emphasis on smoking cessation, return to work, driving, sex and exercise • Leadership, organisational and team working skills

Subject: Clinical 24 – Intensive Care (ICU) and High Dependency Units (HDU)

Objective	Knowledge	Skills	Attitudes
• Be competent to recognise patients who will benefit from intensive care or high dependency units • 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 clinical placements. Trainee must also spend at least 60 working days in an intensive care unit approved by the Regional Respiratory Medicine STC/PD. Ideally this should occur in one block. If this is not possible, 4 units of 15 consecutive working days is acceptable • Trainees may have to be seconded to a specialised unit to gain experience as this is not available in all placements	• Conditions requiring ICU and HDU, particularly Acute Respiratory Distress Syndrome (ARDS) and septic syndromes • Knowledge of measures used to monitor and support all vital organ systems in an intensive care unit • Requirements for an adequately staffed and equipped unit • Interaction of anaesthetists physicians, surgeons, nurses, microbiologists, physiotherapists, dieticians • Role of the multidisciplinary team in ICU and HDU • Knowledge of the interface between ICU/HDU and the general/specialty wards, including outreach services • Relevant guidelines	• ALS skills (competence) • Basic airway skills (competence) • Ability to advise on and manage respiratory patients on ICU and HDU (competence) • Ability to advise on the respiratory care of general patients on ICU and HDU (competence) • Ventilatory support modalities (competence in C-PAP and NIV; experience of mechanical ventilation and mechanical ventilation strategies) • Chest drain insertion (competence) • Bronchoscopy (competence)	• As outlined in generic curriculum but with special emphasis on legal and ethical issues, team work, breaking bad news, communicating with relatives • Organ donation issues

Subject: Clinical 25 – Palliative Care

Objective	Knowledge	Skills	Attitudes
• 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)	• Indications for palliative care, including both malignant and non-malignant pulmonary diseases • Practice of palliative care • Importance of team work in palliative care • The use of a palliative care team	• Empathy with patients and their relatives	• As outlined in generic curriculum with special emphasis on legal and ethical issues, team work, breaking bad news, communicating with relatives and honesty

Subject: Clinical 26 – Dysfunctional Breathing and Psychological Aspects of Respiratory Symptoms

Objective	Knowledge	Skills	Attitudes
• Be competent to recognise and diagnose dysfunctional breathing • Be competent to carry out specialist assessment and management of patients with dysfunctional breathing • Have knowledge and experience of psychological factors which may cause or exacerbate breathlessness • Have knowledge and experience of managing psychological causes of breathlessness in co-operation with other appropriate health care professionals	• Causes and manifestations of dysfunctional breathing • Understanding of the impact of psychological factors on the respiratory system • Diagnostic strategies for dysfunctional breathing • Management strategies for dealing with psychological factors in breathlessness and other respiratory symptoms • Importance of team work	• Be able to recognise when psychological factors are important • Empathy with patients • Recognise when to refer to other health care professionals	• As outlined in generic curriculum with special emphasis on communication skills • Non judgmental approach

Learning Objectives for Practical Procedural Areas

Subject: Procedures 1 – Advanced Life Support

Objective	Knowledge	Skills	Attitudes
• Be competent to carry out and supervise effective resuscitation	• Causes of cardio-pulmonary arrest • Principles of cardio-pulmonary resuscitation • Organ donation issues • Relevant guidelines	• Be proficient and competent in basic and advanced life support • Be proficient and competent in the use of defibrillators • Be competent in judging when ALS is not appropriate • Trainees must pass the ALS (UK) • Trainees' JRCPTB training portfolio/DOTS must show they have performed successful resuscitation	• As outlined in the generic curriculum with emphasis on ethics, legal issues, breaking bad news and support of relatives • Familiarity with "do not resuscitate" orders

Subject: Procedures 2 – Respiratory Physiology and Lung Function Testing

Objective	Knowledge	Skills	Attitudes
• 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 care for inpatients and outpatients having lung function tests during clinical placements (minimum 2 years)	• Theory of simple spirometry and flow-volume loops • Theory of measurement of static lung volumes and gas transfer • Theory of body plethysmography • Assessment of airway hyper-responsiveness • Hypoxic challenge/fitness to fly tests • Exercise testing (exercise – induced broncho-constriction, six minute walk, shuttle walk tests, cardiopulmonary exercise tests) • Respiratory muscle assessment • Relevant guidelines • How to set up/supervise the running of a lung function laboratory • Relevant infection control, quality control and safety at work issues	• Be able to perform and interpret simple lung function tests, including spirometry and arterial/capillary blood gases (competence) • Have knowledge and experience (but not competence) of the performance of all the other lung function tests listed under knowledge section • Interpretation of all lung function tests (competence)	• As outlined in generic curriculum

Subject: Procedures 3 – Bronchoscopy

Objective	Knowledge	Skills	Attitudes
• Be safe, efficient and competent at fibreoptic bronchoscopy and relevant associated techniques	• Indications for fibreoptic bronchoscopy • Safe sedation for bronchoscopy • Techniques of fibreoptic bronchoscopy • Bronchoalveolar lavage • Transbronchial biopsies • Be aware of more advanced diagnostic and therapeutic bronchoscopic techniques • Patient consent and adequate explanation of risks and benefits • Relevant guidelines • Infection control/safety at work issues	• Be competent in safely performing fibreoptic bronchoscopy. A minimum of 200 should be recorded in the training portfolio/DOTS. Initially the trainee will be an observer and subsequently perform bronchoscopy under supervision, with appropriate increasing independence as training progresses • Trainees should not bronchoscope unsupervised until at least 150 supervised bronchoscopies have been undertaken and their educational supervisor has assessed them as competent	• As outlined in generic curriculum • A log book should be kept • The percentage positive histology rate for visible tumour should be audited.

Subject: Procedures 4 – Closed Pleural Biopsy and Thoracic Ultrasound

Objective	Knowledge	Skills	Attitudes
• Be safe, efficient and competent at pleural biopsy (optional) • Have knowledge of the technique of physician - practised thoracic ultrasound	• Indications for closed pleural biopsy • Various techniques of closed pleural biopsy, both "blind" and image guided • The role of physician - practised thoracic ultrasound • Patient consent and explanation of risks and benefits • Relevant guidelines	• Be competent in safely performing closed "blind" pleural biopsy. A minimum of 10 should be recorded in the training record • Initially trainee should be under the supervision of a senior colleague skilled in the performance of this technique and then perform independently when competent • Some trainees may wish to acquire training in thoracic ultrasound (optional)	• As outlined in generic curriculum

Subject: Procedures 5 – Intercostal Tube Placement and "Medical" Pleurodesis

Objective	Knowledge	Skills	Attitudes
• Be safe, efficient and competent at intercostal tube placement and "medical" pleurodesis	• Indications for intercostal tube placement • Safe techniques for intercostal tube placement, both "surgical" and "Seldinger" • Methods for preventing tube displacement • Indications for suction • Portable drainage systems • Drugs and techniques used for pleurodesis • Patient consent and explanation of risks and benefits • Relevant guidelines	• Be competent in safely performing "Seldinger" intercostal tube placement. A minimum of 20 should be performed and recorded in the training portfolio/DOTS. • Initially the trainee should undertake a sufficient number of procedures fully supervised. Solo practice should not occur until the educational supervisor has confirmed competence • Trainees should have experience of "surgical" intercostal tube placement; some trainees may gain full competence in this • Be competent at "medical" pleurodesis	• As outlined in generic curriculum

Subject: Procedures 6 – Sleep Studies

Objective	Knowledge	Skills	Attitudes
• Have experience of screening studies, multi-channel studies and polysomno-graphy • Be competent in the interpretation of screening studies • Have experience of the interpretation of multi-channel studies and polysomnography • Be competent in the initiation of CPAP and NIV	• Causes of sleep breathing disorders • Methods of screening for sleep breathing disorders • Multi-channel studies • Polysomnography • CPAP, including auto-titration, and NIV • Relevant guidelines	• Perform and interpret screening sleep studies (competence) • Interpret multi-channel sleep studies (experience) • Interpret polysomnography (knowledge) • Initiate CPAP and NIV (competence) • Initially trainee will be under the supervision of a senior colleague skilled in the performance of these techniques and then will perform/interpret independently	• As outlined in generic curriculum

Subject: Procedures 7 – Non-invasive Ventilation and CPAP

Objective	Knowledge	Skills	Attitudes
• Be competent in initiating CPAP and NIV	• Indications for CPAP and NIV • How to set up and train a patient to use the equipment • Importance of input form physiotherapist/other health care professionals • Methods available • Relevant guidelines	• Set up patients on CPAP and NIV. The trainee should be supervised until signed off as competent by the Educational Supervisor • Document sufficient patients in training portfolio/DOTS	• As outlined in generic curriculum

Subject: Procedures 8 – Tuberculin Skin Tests

Objective	Knowledge	Skills	Attitudes
• Be able to perform (competence/ experience) and interpret (competence) tuberculin skin tests	• Types of tuberculin tests • Indications for tuberculin tests • How to read tuberculin tests • Relevant guidelines • Understand relative roles of tuberculin skin tests and gamma - interferon tests	• Perform (competence/ experience) and read/interpret (competence) tuberculin tests • Document sufficient patients in training record	• As outlined in generic curriculum

Subject: Procedures 9 – Skin Tests to Demonstrate "Allergy"

Objective	Knowledge	Skills	Attitudes
• Be able to perform (competence/ experience) and interpret (competence) skin tests for allergy	• Indications for skin tests • How to perform skin tests • Relevant guidelines	• Perform (competence/experience) and read/interpret (competence) skin tests for common allergies • Document sufficient patients who have been skin tested in training portfolio/DTOS (optional)	• As outlined in generic curriculum

Subject: Procedures 10 – Medical Thoracoscopy

Objective	Knowledge	Skills	Attitudes
• Have knowledge of the technique of medical thoracoscopy	• Indications for medical thoracoscopy; place in guidelines for management of pleural effusion • Safe sedation for medical thoracoscopy • Patient consent and adequate explanation of risks and benefits • Essentials of the technique	• Have witnessed medical thoracoscopy (knowledge) (optional) • It is not necessary to have had "hands on" experience of the technique	• As outlined in generic curriculum

APPENDICES

Appendix I: SAC Membership

1. Current Membership:

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

2. Past SAC Members Involved in Curriculum Drafting:

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)
Prof Derek Gallen, Cardiff University (Lead Dean)
Dr JP Hayes, Cavan General Hospital, Ireland (observer)
Dr Jane Gravil ,Royal Alexandra Hospital, Paisley (RCP Glasgow)

Appendix II: Those involved in curriculum consultation process 2006

Respiratory Medicine SAC

British Thoracic Society Executive Committee

British Thoracic Society Education and Training Committee

Joint Specialty Committee , Royal College of Physicians, London

Regional 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, B11, 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, B7, B9, B10, B11, B12, B13, B14, B17, B19, 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 lymphangioleiomyomatosis (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