

# **SPECIALTY TRAINING CURRICULUM**

**FOR**

# **ALLERGY**

**MAY 2007**

**Joint Royal Colleges of Physicians Training Board**

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# 1. RATIONALE

## Duration of Training

### 1.1 Purpose of the curriculum

Allergy is a speciality which has its scientific roots in the discipline of immunology, but is concerned directly with clinical problems arising from IgE-mediated diseases, and the care of affected patients largely in an outpatient setting. It requires expertise and training unique to allergy. It shares with immunology many of the same laboratory techniques, but those who practice clinically in the speciality are unlikely to be called upon to direct service laboratory departments. They may, however, run research laboratories.

This document presents an objective-based approach to the curriculum in allergy. It provides guidance to both trainees and educational supervisor as to the required content of the training programme.

The purpose of the training programme is to enable trainees to acquire the requisite highly specialised scientific knowledge, clinical skills and laboratory skills required to diagnose and manage the complete spectrum of IgE-mediated diseases, and to differentiate these from non-IgE-mediated diseases which may require other specialist management.

Allergic diseases may manifest in a multitude of organs, including the respiratory tract, skin and gut. In addition, they may present in both adult and paediatric patients. For this reason, collaborative training in other medical specialities, particularly paediatrics, dermatology, respiratory medicine and ENT, is an essential aspect of the programme.

On completion of training, trainees will:

- Recognise the role of allergens in all relevant diseases, identify clinically significant allergens and provide advice on avoidance wherever appropriate.
- Demonstrate the performance, and describe the interpretation of skin prick tests and RAST as applied to allergy diagnosis.
- Be aware of the definition, diagnosis, differential diagnosis and management of asthma and seasonal and perennial rhinitis and conjunctivitis. This includes principles of patient education, management of acute and chronic severe disease and management of unwanted effects of therapy, and familiarity with the principles and scopes of rhinoscopy, rhinomanometry, ciliary motility tests and general ENT examination procedures when assessing a patient with chronic rhinitis.
- Be able to define atopic dermatitis and distinguish between this and contact dermatitis and other causes of dermatitis, and be familiar with the principles of therapy of atopic dermatitis, the role of allergen avoidance, the complications of therapy and the need for referral for specialist investigation of contact dermatitis.
- Be able to recognise the clinical sequelae of IgE-mediated food allergy, and to distinguish these from intolerance syndromes, to state the advantages and disadvantages of skin prick testing, exclusion diets, diet diaries and single and double-blind placebo-controlled food challenge in the diagnosis of food allergy and to recognise gastrointestinal disorders which may mimic food allergy and refer patients for appropriate specialist investigation.
- Be able to analyse and manage adverse reactions to drugs, including general and local anaesthetics, antibiotics and other drugs, to describe the principles of drug challenge and desensitisation and provide advice on the use of alternative drugs in allergic patients.
- Be able to describe the clinical features of local and systemic reactions to insect stings, and recognise when these are IgE-mediated; to recount the natural history of these reactions in adults and children and be able to provide patients with insect venom allergy

advice on avoidance and emergency treatment, as well as when immunotherapy is and is not indicated.

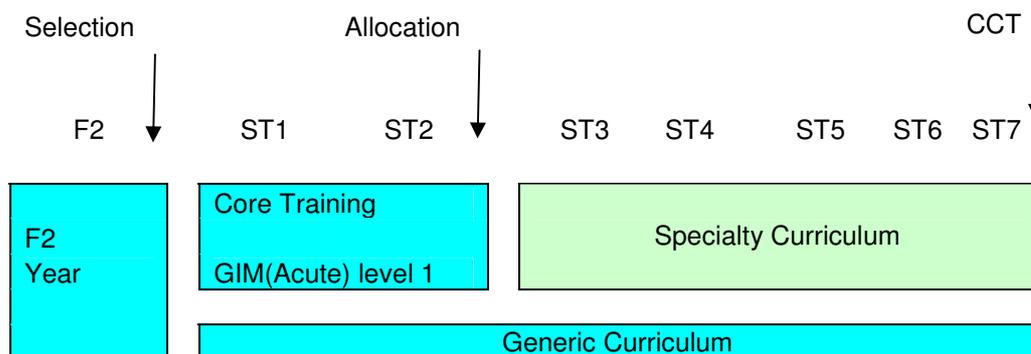
- Be able to describe the mechanisms, common causes, clinical features and differential diagnosis of anaphylactic and anaphylactoid reactions, and to organise a systematic approach to the identification of aetiology, to explain emergency treatment plans, including self-administration of adrenaline in adults and children and to provide management plans to patients prescribed adrenaline auto-injectors, written where necessary, with appropriate liaison between allergist, general practitioner, community paediatrician and school where appropriate.
- Be able to describe the efficacy, limitations, indications and contra-indications for allergen immunotherapy, different desensitisation regimens, the advantages and disadvantages of different allergen preparations for immunotherapy and appropriate monitoring prior to, during and after desensitisation injections, including the management of trivial and severe reactions.
- Be able to manage allergic diseases in children as well as adults, and to recognise the differences in the natural history of allergic diseases and approaches to allergen avoidance and treatment in children, and to diagnose and manage allergic diseases affecting the respiratory tract, skin and gut in children.
- Be able to recognise unproven procedures for allergy diagnosis and treatment, and to exclude allergy as a cause of polysymptomatic illness and psychiatric illness.
- Have a sound knowledge of basic immunological mechanisms with particular reference to IgE-mediated mechanisms and the cellular and molecular pathology of organ-based allergic diseases such as asthma, rhinitis, food and drug allergy and atopic dermatitis.
- Be able to describe laboratory methods used in immunology and in particular allergy diagnosis, with knowledge of the concepts of internal quality control and external quality assessment, precision, accuracy, sensitivity, specificity and predictive values of the tests.
- Be able to liaise with other clinical colleagues for the optimum management of patients under their care.
- Have the ability to work as part of a multi-disciplinary team within the clinical sphere of their activity.
- Be able to explain the details of diagnosis, natural history, outcome and required therapeutic measures to their clinical colleagues, along with patients and their carers.
- Be aware of relevant sources of information including computerised databases and have the skills to use information resources to keep up to date with the latest developments in this rapidly developing field.
- Be aware of patient support organisations and how to liaise effectively with them.
- Have the requisite skills to maintain their Continuing Professional Development.

## **Generic Curriculum**

This specialty curriculum is complementary to the generic curriculum which applies to all 28 physician specialities. The generic curriculum follows the headings of good medical practice and runs through from core training to CCT (see fig 1). Trainees should read and understand both their specialty curriculum and the generic curriculum. Both curricula should be seen as integrated so that generic competencies are acquired at all stages of specialty training. Some generic components are also further expanded and deepened for some specialties (eg palliative medicine). When planning specialty programmes, deaneries and trainers should ensure that both specialty and generic competencies can be acquired and assessed.

Fig 1

Diagrammatic representation of specialty and generic curricula with GIM (acute) level 1 curriculum



## 1.2 Development of the curriculum

The syllabic content of the curriculum was developed by the Allergy Specialist Advisory Committee of the JCHMT (now Royal College of Physicians Training Board - JRCPTB), which includes representatives of allergy trainers and trainees, in consultation with the British Society for Allergy and Clinical Immunology ([www.bsaci.org](http://www.bsaci.org)), the professional society for medical and allied health professional practising allergists in the UK. The BSACI is in close contact with a number of lay organisations for allergy sufferers such as Allergy UK ([www.allergyuk.org](http://www.allergyuk.org)) and the Anaphylaxis Campaign ([www.anaphylaxis.org](http://www.anaphylaxis.org)). The syllabic content of the curriculum is also congruent with that of European training programmes (for example, the member countries of the European Academy of Allergy and Clinical Immunology, ([www.eaaci.org](http://www.eaaci.org))) and with the key Clinical Competencies for physician training in allergy set out in a provisional position statement of the World Allergy Organisation ([www.worldallergy.org](http://www.worldallergy.org)). The teaching and learning methods were chosen through a merging of established procedures (supervised and practise based learning, private study, formal courses, conferences) with newer methods of teaching and assessment as set out by the Education Department of the Royal College of Physicians.

## 1.3 Appropriateness

The curriculum is appropriate for trainees preparing to practise as independent consultant allergists in the UK.

## 1.4 Place of the curriculum in training and education

Trainees commencing allergy specialist training will have achieved acute medicine level 1 competency after progressing into core training rotations in the speciality of medicine. This would normally require a minimum of one but typically two years of training in acute medicine following the F2 foundation year. In some instances, depending on local circumstances, these rotations may be themed to include specialities relevant to allergy such as respiratory medicine or dermatology. Some candidates may attain acute medicine level 1 competency through the Acute Care Core Stem (ACCS) programme. Other candidates may be able to achieve this competence after a variable period in other training programmes in different areas of clinical practice, because of alteration of their career plans or failure to enter the programme at the first attempt.

Patients expect medical specialists to be highly competent, knowledgeable and intelligent, good communicators, professional, compassionate and committed to their speciality. For this reason, adequate evidence of successful completion of core training (which may include evidence of completion of part I of membership of the Royal College of Physicians (MRCP) or the Royal

College of Paediatrics and Child Health (MRCPC) is essential, while evidence of additional acute medical and generic competencies (as shown for example by part II MRCP or MRCPC), while not essential, is highly desirable. It is envisaged that trainees entering the curriculum with part I MRCP/MRCPC will go on to obtain part II membership.

### 1.5 Duration of Training

The SAC recommends that the minimum duration of training in order to receive a CCT in allergy is five years of whole time equivalent study, post core training ie seven years from ST1, organised as outlined below. The curriculum enables a thorough training in all aspects of clinical allergy spread over the five years combined with an understanding of the principles of basic immunology and laboratory diagnostic tests relevant to the practise of allergy, as well as a working knowledge of some clinical aspects of immunology.

The CCT in allergy will be awarded following evidence of satisfactory completion of the allergy curriculum, as evidenced by acquisition of RITA (Record of In-Training Assessment) form G.

### 1.6 Flexible training

This is the term used to describe doctors undertaking training on a less than full-time basis, usually between five and eight sessions weekly, having provided evidence that “training on a full-time basis would not be practicable for well-founded individual reasons”. Flexible trainees must accept two important principles outlined in European law (Directive 93/16/EEC) which requires that:

- Part-time training shall meet the same requirements (in depth and breadth) as full-time training;
- The total duration and quality of part-time training must not be less than those of full-time trainees.

In other words, part-time trainees will have to complete the minimum training time for their specialities *pro rata*.

Currently, trainees must have applications for flexible training approved by their Deanery and the JRCPTB before it commences. Further details of appointment and funding arrangements for flexible trainees are provided in Section 6 of the revised “Guide to Specialist Registrar Training” (February 1998).

### 1.7 Research

Trainees who wish to acquire extensive research competencies, in addition to those specified in the generic element of the curriculum, may undertake a research project as an ideal way of obtaining those competencies, all options can be considered including taking time out of programme to complete a specified project or research degree. Time out of programme needs prospective approval from the SAC and the support of the Postgraduate Dean. Funding will need to be identified for the duration of the research period. A maximum period of 3 years out of programme is allowed.

Allergy is an academic speciality. A period of supervised research of high quality is considered a very desirable feature of training in allergy. Clinical competencies directly relevant to the allergy curriculum performed in the course of research before commencing specialist training may be allocated to Allergy training, subject to approval by the Allergy SAC. Such applications are usually made not earlier than 18 months after commencing the training, during which time the trainee’s educational supervisor will advise on the suitability of the previous period of research to be counted in this fashion. The educational supervisor’s decision must be endorsed

by the relevant Programme Director who currently makes a recommendation to the JRCPTB, usually following consultation with the JRCPTB where necessary for guidance.

Trainees may also wish to spend two or three years in research by stepping aside from clinical training after entering the specialist training programme. Again it is possible for trainees who have undertaken *clinical* work during research to have competencies, relevant to the curriculum, acquired doing this work approved as contributing towards their specialist training. Currently, trainees must have research plans approved by the Allergy SAC and the relevant Deanery as early as possible and certainly before commencement of the research. This is particularly necessary where research is contemplated towards the end of specialist training, where trainees may need to negotiate, in advance, a date for completion of their training during the research period.

## 1.8 Training Programmes

Training will be provided by clinical placements of variable duration in specialities relevant to the delivery of the curriculum (including one placement in an immunology diagnostic laboratory). Immediate supervision will be by trainers who will usually be consultants in the relevant specialities. Training will be overseen by an educational supervisor who will be an accredited consultant allergist. Normally such placements will be provided under the umbrella of a specialist allergy centre, where adult and paediatric allergy services, as well as other specialist services relevant to delivery of the curriculum are available in a geographically contained area. Where this is not possible, the training locations may have to be more widely spaced but will usually all be located within the same Deanery. The quality assurance of training programmes and posts is the legal responsibility of the PMETB. There will be a process of local quality control of training managed by Deans and Colleges together.

## 1.9 Dual Accreditation

Trainees may occasionally wish to train and accredit dually in allergy and another speciality to achieve two CCTs. In such cases they must have applied for and successfully entered a training programme which was designed and advertised openly as a dual training programme. Such a programme would need to achieve the competencies described in both curricula and there must be jointly agreed assessments (proposed by both SACs in allergy and the other speciality, and approved by PMETB). Postgraduate deans wishing to advertise such programmes should ensure that they meet the requirements of both SACs.

## 2. CONTENT OF LEARNING

There are three main areas of subject matter included within the specialist curriculum for allergy:

- Provision of a core body of knowledge in fundamental immunology and its applications, with particular reference to IgE-mediated diseases.
- Familiarity with the full range of laboratory tests relevant to the diagnosis and management of immunological and allergic diseases. All trainees will be expected to become familiar with the concepts of internal quality control and external quality assessment, precision, accuracy, sensitivity, specificity and the predictive value of laboratory tests. They will become familiar with the role of the diagnostic laboratory in supporting hospital and general practice services, including the interpretation of tests, provision of clinical advice regarding test selection, and clinical liaison. It is accepted that, while trainees might benefit from some practical knowledge of performing immunological laboratory tests, they will not be required to be able to perform these tests personally or oversee the performance of these tests in a hospital laboratory setting.
- Diagnosis, investigation and management of patients with a full range of disorders that might be referred to an allergy specialist as detailed below.

In addition the curriculum will continue to deliver knowledge, skills and attitudes appropriate for practising the Medical Specialities as set out in the Generic Curriculum for the Medical Specialities produced by the Federation of Royal Colleges of Physicians. Briefly, these include:

- Good clinical care
  - History taking
  - Examination
  - Principles of diagnosis and clinical reasoning
  - Therapeutics and safe prescribing
  - Information management
- Time management and decision making
- Patient care and safety
  - The patient as a central focus of care
  - Prioritisation of patient safety in clinical practice
  - Team working and patient safety
  - Principles of quality and safety improvement
- Infection control
- Health promotion and public health
- Principles of medical ethics and legal issues
  - Confidentiality
  - Valid consent
  - Legal frameworks for practice
- Ethical research
- Managing long term conditions
- Governance and maintenance of good clinical practice
- Learning and CPD
  - Guidelines
  - Evidence based practice
  - Audit
- Relationships and communication with patients
  - Within consultations
  - Breaking bad news
  - Complaints and medical error
- Relationships and communication with colleagues
- Teaching and training
- Professional behaviour
- Management and NHS structure

A full summary of the knowledge, skills and attitudes required by the curriculum is set out in Tables 1.1 and 1.2 (Core Immunological Knowledge), Table 2 (Laboratory Experience) and Tables 3.1-3.13 (Specialist Knowledge of Allergic Diseases).

The order in which these learning experiences is provided is not critical and will depend on local circumstances, except that it is generally desirable for the trainee to begin to accrue theoretical immunological knowledge and laboratory experience (Tables 1 & 2) from the beginning of the training period. Training in paediatric allergy would normally follow training in adult allergy. In keeping with the principles of a spiral curriculum, the competencies of knowledge, skills and attitudes should be maintained and built upon throughout training in all of the fields shown in the Tables. Opportunity is provided in the training logbook to assess competency at various levels, which should progress to satisfactory in all aspects by the time the training period is completed.

### 3. MODELS OF LEARNING

Trainees will pursue the learning outcomes described in the curriculum through a variety of learning methods, including:

- Approved study leave (approximately 15 days annually) which may be used for a variety of purposes including but not limited to:
  - Attendance at relevant courses run by the Royal College of Physicians and other professional bodies (such as the BSACI, BSI, EAACI, AAAAI, WAO) and other relevant local courses;
  - Attendance at regional, national and international speciality meetings (annual meetings of the BSACI, BSI, AAAAI, EAACI, courses run by the Royal Society of Medicine, local University and NHS run training courses and study days).
- Up to 50 days (over 5 years) for local postgraduate meetings the content of which is currently determined by the Deanery Speciality Training Committee, the Programme Director and College Tutors. These meetings may include care presentations, research and audit projects, lectures and small group teaching, clinical skills demonstrations and teaching and evidence-based medicine sessions.
- Approximately 15 days annually for self-directed study and private learning to be used in a variety of ways depending on the trainee's stage of learning:
  - Preparation for annual assessment and examinations;
  - Appraisal, feedback and reflection;
  - Reading;
  - Maintenance of personal portfolio;
  - Audit and small research projects;
  - Pursuing special interests outside the essential curriculum.
- The remaining time will be spent in work-based experiential learning covering the curriculum. This will take place in appropriate outpatient clinics where the supervisor is a consultant trained in the relevant speciality, although a period of time will be spent in the hospital diagnostic laboratory. Such clinics will include adult general allergy clinics, asthma clinics, ENT clinics, dermatology clinics, food and drug challenge clinics, allergen immunotherapy clinics, paediatric asthma and allergy clinics and immunology clinics (for experience in diagnosis and management of immunodeficiency).

At present the content of individual programmes is monitored by the Deanery STC, which accrues evidence that work-based experience relating to the entire curriculum has been gained by the trainee. It is also partly the responsibility of Programme Directors, Educational Supervisors and the trainees themselves. At all times the trainee will be expected to assume appropriate responsibility for self-assessment, continuing self-directed learning and maintenance of competence.

There will be appropriate degrees of clinical supervision throughout specialist training with increasing clinical independence as learning outcomes are achieved.

### 4. LEARNING EXPERIENCES

Educational strategies to provide learning experiences required by the curriculum are listed below and also referred to in tables 1, 2 and 3.1-3.13.

- Strategies suited to work-based experiential learning:
  - Supervised consultations in outpatient clinics.
  - Formal and informal case presentations.
  - Acquisition of practical skills through direct teaching and supervision.
  - Task specific on the job training.
  - Observation of clinical and laboratory techniques.

- Tailored clinical experience.
  - Mini-CEX (Clinical Evaluation Exercise).
  - Direct Observation of Procedural Skills (DOPS).
  - 360° assessment.
- Strategies appropriate to off-the-job education
    - Searching the literature (manually and using electronic and web based learning resources).
    - Attending postgraduate education courses.
    - Small group teaching such as tutorials, journal clubs.
    - Carrying out clinical and laboratory audit.
    - Giving lectures and presentations.
    - Keeping notes of key and interesting case studies.
    - Notes/treatises on critical, emerging and controversial aspects of allergy management.
    - Teaching others.
    - Collection of literature reviews, care reports, clinical protocols and standard operating procedures.
    - Personal study and self-directed learning.
    - Participation in speciality clinical and business meetings.

These learning experiences will arise in the course of:

*Learning from practise:* Trainees will spend a large proportion of their work-based experiential learning involved in supervised clinical practice in a hospital environment. Learning will involve observation followed by closely supervised clinical practice until competence is achieved. This will take place principally in outpatients and day challenge clinics.

*Distributed and concentrated practice:* Programme Directors and the Deanery Speciality Training Committee, through the Educational Supervisor, will advise upon the details of clinical attachments. While much clinical learning will involve the entire spectrum of allergy knowledge in general clinics, there will be attachments for concentrated practice in other speciality clinics as specified in Section 3 above.

*Learning with peers:* There will be many opportunities for trainees to learn with their peers, thorough attendance at Trust, local Postgraduate, National and International meetings concerned with the generic and speciality curriculum as specified in Section 3 above.

*Learning in formal situations:* There are many opportunities for formal teaching locally, for example in specialist allergy or other clinics, and at meetings.

*Personal and private study:* Time will be allocated for this as described above.

*Specific teacher inputs:* These will be necessary for generic skills (such as CPR, NHS management structure) and occasionally speciality-specific skills if these cannot be provided within a single Allergy Centre.

## 5. SUPERVISION AND FEEDBACK

The Educational Supervisor, who will be a named Consultant Allergist, will be locally responsible for delivery of the curriculum to the trainee. This will require regular communication between both parties. It is the responsibility of both parties to ensure that this happens. Individual consultant supervisors will report to the Educational Supervisor on speciality-specific aspects of allergy training promptly when these have been completed, or sooner if problems with covering the curriculum are encountered or envisaged. Feedback to the trainee will be a prominent and fundamental part of this process.

## 5.1 Assessment strategy

The domains of Good Medical Practice will be assessed using both workplace-based assessments and examination of knowledge and clinical skills, which will sample across the domains of the curriculum i.e. knowledge, skills and attitudes. The assessments will be supported by structured feedback for trainees within the allergy training programme. 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 miniCEX (clinical examination exercise), DOPS (direct observation of procedural skills) and MSF (multi-source feedback). The Federation of the Royal Colleges of Physicians has piloted these methods and has demonstrated their validity and reliability. It is proposed that the examination and assessment of knowledge will utilise elements of the MRCP(UK) examination relevant to training.

An assessment blueprint will be developed which will map the assessment methods on to the curriculum in a systematic way. The blueprint will ensure that there is appropriate sampling across the curriculum. It is expected the blueprinting exercise will have been completed by September 2006.

The SAC will be responsible for the blueprinting exercise.

## 5.2 Appraisal and supervision

Regular formal and informal meetings of trainee and Educational Supervisor are encouraged, but as a minimum these should comprise:

- An initial induction and orienteering meeting which should be in concert with local Trust/University induction programmes and would include topics such as ID badges and smart cards, contracts, Trust guidelines and structure, night working, computer passwords, occupational health assessment, Trust and University based general and speciality-specific teaching programmes and resuscitation training.
- Formal interviews at the mid point of each speciality-specific attachment, or more frequently if necessary.
- Annual pre-RITA/PYA meetings.
- Interviews after secondments and courses, scientific meetings, research presentations etc.

At such meetings the trainee and Educational Supervisor will agree on degrees of competency attained by the trainee in both the speciality-specific and the generic curriculum. A written summary of such meetings will be kept by both trainee and supervisor. For each facet of the curriculum, additional learning goals to achieve competency should be set continuously during training. Not all aspects of the curriculum need be covered at every interview, but the Educational Supervisor must ensure that the trainee is proceeding towards competency in every aspect in a planned and structured manner, and must facilitate this, for example by arranging extra clinical sessions where necessary.

Documents which will be used to inform such meetings will be collected by the trainee and maintained in a learning record or log book, which will also be used to record competency assessments. Such documents will include:

- Assessments of competence by direct observation and critique of management by all consultant trainees.
- Mini-CEX, DOPs and 360° assessments.
- Written case records and presentations.
- Notes and treatises on novel, critical and controversial aspects of allergy management.
- Evidence of teaching others.

- Portfolio of literature reviews, case reports, publications, protocols and standard operating procedures.
- Completed course/degree/diploma certificates.
- Appropriately completed clinical and laboratory audits.
- Patient satisfaction questionnaires, letters of praise or complaint.
- Summaries of progress and achievements in research programmes.

Currently it is the responsibility of the Deanery STC to collate such evidence at annual Records of In-Training Assessment and identify, either from evidence from the Educational Supervisor or *de novo*, possible gaps in training or problems with generic development. This is particularly critical in the Penultimate Year Assessment (PYA) where a trainee should be clearly informed of what outstanding training is to be achieved for the award of CCT in the coming year. It is also currently the responsibility of the Deanery, working within the STC, to recognise and manage logistics arising from unforeseen events such as illness, maternity leave, personal trainee-specific difficulties and out-of-programme research periods. Eventually it may be seen necessary to establish a formal, knowledge-based assessment prior to awarding of the CCT.

## 6. MANAGING CURRICULUM IMPLEMENTATION

*Use of curriculum document:* The curriculum documents the minimum learning requirements for trainees in allergy and defines the responsibilities of all concerned parties such as the Educational Supervisor, the trainee, the Programme Director, the Deanery Speciality Training Committee and the JRCPTB. It should be adhered to carefully by trainers and trainees. It is intended to be used along with a training record book and ancillary documents, such as assessment forms (DOPs, etc) and RITA forms to document a trainee's complete learning pathway. All of these documents are freely (and publicly) available at the JRCPTB website, and will also be available eventually at the PMETB website. Trainees must register with the JRCPTB immediately on appointment to an allergy training programme, and familiarise themselves with the learning outcomes and the use of the training period book and other documents.

*Means of ensuring curriculum coverage:* It is the responsibility of the regional Programme Director and the associated Deanery STC, supported by the Regional Speciality Advisor and College Tutor, to ensure that the training programme followed by the trainee covers the entire range of learning required by the allergy curriculum. It is currently the responsibility of the PMETB/JRCPTB to quality assure these training programmes through regular inspection and feedback from trainers and trainees. Currently the Programme Director must ensure that each part or attachment within the programme is approved by the PMETB/JRCPTB/Deanery. The drive to this process is the adequate provision of trainees with all learning outcomes in their training programme.

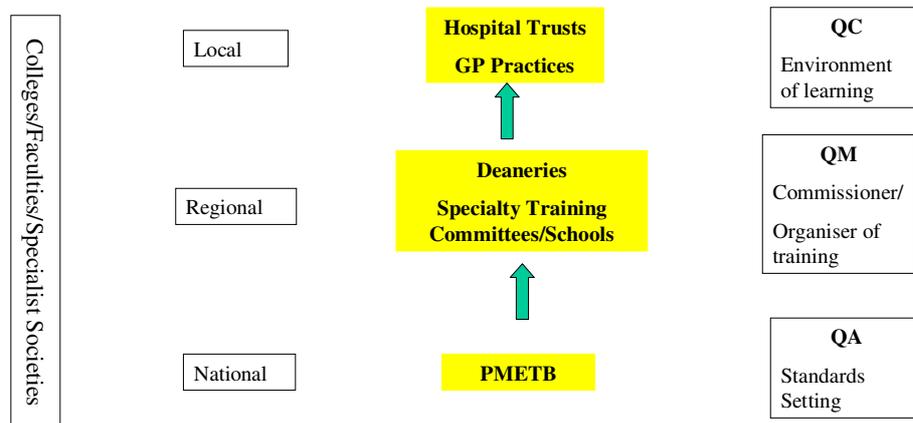
*Suggested roles of local faculty:* Each unit or clinic recognised for training will have a College Tutor, who will be an active member of the Deanery STC which in turn may be chaired by the Programme Director. Each STC will identify a local lead for curriculum implementation. Some centres may prefer to identify teaching and training leads with appropriate recognition in the consultation contract. Others will involve all consultants in this role. Through feedback from trainees and Educational Supervisors, each Deanery STC will identify where particular learning outcomes are best met during training, as well as opportunities for focused or additional training.

*Responsibilities of trainees:* Trainees are ultimately responsible for their own learning and utilisation of learning opportunities throughout their training. They must ensure that they are familiar with the content of the allergy curriculum, how their journey through it is mapped and what is required as acceptable evidence of this.

*Curriculum management:* Deaneries are responsible for quality management, PMETB will quality assure the deaneries and educational providers are responsible for local quality control, 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

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 need 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. Curriculum evaluation will take into account:

- Trainee questionnaires (administered through the PMETB).
- Trainee representation on the Deanery STC and the SAC of the JRCPTB.
- Informal trainee feedback during appraisal, RITAs, etc.
- Consultation with Programme Directors and College Tutors.
- Results of quality assurance inspections of training posts.
- Feedback from RITAs
- Clinical priorities as formulated by consultation with medical and allied health professionals, as well as trainee practising allergists through the BSACI, which will continue to have representatives on the JRCPTB.
- Consultation with lay allergy organisations which have close contacts with the BSACI, such as Allergy UK, the Latex Allergy Support Group, the Anaphylaxis Campaign and Asthma UK.

Evaluation will address:

- The relevance of the learning outcomes to clinical practice.
- The balance of work-based and off-the-job learning.
- Quality of training in individual posts.

- Feasibility and appropriateness of on-the-job assessments in the course of training programmes.
- Availability and quality of research opportunities.

Evaluation will be the responsibility of the JRCPTB and PMETB. These bodies must approve any significant changes to the curriculum. An important monitoring tool will be trainee portfolios, which it is envisaged will be kept electronically to an increasing degree.

## 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 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

**Table 1.1: Allergy: relevant immunological knowledge**

Knowledge	Skills	Attitudes/Behaviour	Learning experiences	Assessment
<p>Describes:</p> <ul style="list-style-type: none"> <li>• The core body of immunological knowledge (Table 1.2)</li> <li>• Type I hypersensitivity reactions</li> <li>• Hypersensitivity reactions other than Type I</li> <li>• T and B lymphocytes</li> <li>• The mechanisms of allergic inflammation: T cells, eosinophils, mast cells and their products, cytokines, lipid mediators</li> <li>• Regulation of IgE synthesis</li> <li>• The cellular and molecular immunology of asthma, rhinitis, urticaria, reactions to drugs</li> <li>• Postulated immunological mechanisms of allergen immunotherapy</li> <li>• Key targets for anti-allergic drugs and their mechanisms of action</li> <li>• The biology, aerobiology and antigenicity of allergens</li> <li>• The concept of major and minor allergenic determinants</li> <li>• The epidemiology of atopy and asthma</li> <li>• New developments in therapy, including immunotherapy and primary prevention of allergic disease</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates knowledge of the immunological basis of allergy</li> <li>• Evaluates review articles</li> <li>• Demonstrates ability to perform literature searches</li> <li>• Critically analyses and evaluates guidelines</li> <li>• Discusses hypotheses regarding immunological mechanisms in allergy</li> </ul>	<ul style="list-style-type: none"> <li>• Exhibits continual willingness to increase knowledge</li> <li>• Recognises the limitations of knowledge regarding the immunopathogenesis of allergic disease</li> <li>• Consults colleagues for further clarification/ understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Supervision by educational supervisor</li> <li>• Identification of gaps in knowledge and making time to fill them</li> <li>• Searching the literature and assessing key papers critically</li> <li>• Preparing evidence-based treatises on controversial, evolving or uncommon management issues</li> <li>• Reading relevant journals and review articles</li> <li>• Attending courses, e.g. MSc Immunology, Basic and Clinical Allergy, etc</li> <li>• Tutorials</li> <li>• Electronic/web based learning resources</li> <li>• Journal clubs</li> <li>• Presentations</li> <li>• BSACI Young Allergists' Club</li> <li>• BSI Traveller's Club</li> </ul>	<ul style="list-style-type: none"> <li>• Written summaries, presentations, treatises (portfolio)</li> <li>• Written case records (portfolio)</li> <li>• Evidence of sight of "key papers" (portfolio)</li> <li>• Formal and informal examinations</li> <li>• Evidence of systematised, evidence-based approach to specialist allergy management above, based on the trainee's practical experience, and collection and appraisal of key papers, guidelines and protocols</li> <li>• Evidence of teaching others</li> <li>• Completed course/degree/diploma records and certificates</li> </ul>

## Table 1.2: Allergy: fundamental immunological knowledge

### Principles of body defence

- Cell injury/death and inflammation
- Non-specific defence mechanisms (barriers/humoral/cellular)
- Specific defence mechanisms (humoral/cellular)

### Complement

- Genetics, structure, function, control in defence and in disease
- Deficiencies

### The acute phase response and inflammation

#### Cells of myelomonocytic lineage, NK cells and non-specific defence

- Ontogeny, structure, phenotype, function and activation
- Chemokines and migration from the blood vasculature
- Complement and Fc receptors, adhesion molecules
- Phagocytosis, intracellular/extracellular killing
- Respiratory burst and secretory products

### The basis of specific immunity

- Antigens: types, structures, processing and presentation
- Immunogenetics: polymorphisms, generation of diversity and rearranging gene families
- Immunoglobulins: structure, function and antigen binding
- Major Histocompatibility Complex: structure, function and regulation
- T cell receptors: structure, function and antigen binding

### T and B Lymphocytes

- Ontogeny, phenotype, subpopulations
- Receptor/ligand interactions and cell activation
- Effector functions

### Organisation of the lymphoid system

- Primary and secondary lymphoid organs
- Population dynamics
- Lymphocyte migration
- Mucosal and other compartments of the lymphoid system

### Cytokines, chemokines and immunomodulators

- Cytokines and Chemokines: origin, structure, effects, site(s) of action (receptor), metabolism regulation and gene activation
- Inflammatory mediators (e.g. leukotrienes, prostaglandins and platelet-activating factor): origin, structure, effect, site(s) of action (receptor), metabolism and regulation

### Hypersensitivity mechanisms

- IgE mediated: acute and late phase reactions
- IgE, IgA-, and IgM-mediated: opsonisation, complement fixation, antibody dependent, cell-mediated cytotoxicity, stimulation and blocking
- Immune complex mediated: physicochemical properties and clearance
- Cell-mediated: participating cells, effector mechanisms and granuloma formation
- Other: natural killer cells; lymphokine-activated killer cells and cutaneous basophil hypersensitivity

### Immunoregulation

- Tolerance: clonal selection, suppression and antigen paralysis
- Cell-cell interactions: help and suppression
- Idiotype networks: inhibition and stimulation

Mechanisms of autoimmunity

### **Transplantation immunology**

Histocompatibility: major and minor antigens and principles of cross matching

Graft rejection: mechanisms

Graft-versus-host reactions and their mechanisms

### **Tumour immunology**

Tumour markers: leukaemias and lymphomas; cancer immunology

Oncogenes: translocation and breakpoints

### **Immunotoxicology**

Mechanisms of adverse reactions to xenobiotics

*In vivo* and *in vitro* evaluation of immunotoxic compounds

Clinical aspects of immune disorders induced by drugs or environmental chemicals

### **Immunotherapy**

Drugs

Antibodies

Recombinant molecules

Others

**Table 2: Allergy: relevant laboratory experience**

Knowledge	Skills	Attitudes/Behaviour	Learning experiences	Assessment
<p>Describes the principles and identifies sources of error and interpretation of the following laboratory tests:</p> <p><b>IMMUNOCHEMISTRY/SEROLOGY</b></p> <ul style="list-style-type: none"> <li>• Immunoglobulins</li> <li>• Immunoglobulin subclasses</li> <li>• Total and specific IgE</li> <li>• Mast cell tryptase</li> <li>• ECP</li> <li>• Autoantibodies</li> <li>• ANCA</li> <li>• Precipitins</li> <li>• Paraprotein assessment</li> <li>• Cryoglobulin assessment</li> <li>• Complement components</li> <li>• CI esterase inhibitor</li> <li>• Specific IgG titres</li> </ul> <p><b>IMMUNOHISTOLOGY</b> <b>CELLULAR STUDIES</b></p> <ul style="list-style-type: none"> <li>• Cell markers/sub-populations (immunodeficiency, reactive, neoplastic states)</li> <li>• Lymphocyte function/activation</li> <li>• Neutrophil function</li> <li>• <i>In vivo/in vitro</i> cytokine production</li> </ul> <p><b>MOLECULAR STUDIES</b></p> <ul style="list-style-type: none"> <li>• Southern/Northern/Western blotting</li> <li>• PCR</li> <li>• Ig/T cell receptor gene rearrangement</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates familiarity with Health and Safety Regulations and COSHH assessments</li> <li>• Discusses the indications for laboratory based tests</li> <li>• Analyses the results of investigations and evaluates their clinical significance</li> <li>• Demonstrates knowledge of Standard Operating Procedures</li> <li>• Evaluates the accuracy, sensitivity and specificity of laboratory investigations</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the indications for laboratory investigations</li> <li>• Exhibits awareness of the limitations of laboratory investigations in terms of clinical significance, sensitivity and specificity</li> <li>• Contributes to the development of laboratory testing procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised “apprenticeship learning”</li> <li>• Task specific on the job training</li> <li>• Observation of laboratory methods</li> <li>• Personal study</li> <li>• Reading relevant journals and review articles</li> <li>• Standard operating procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Collection of standard operating procedures (portfolio)</li> <li>• Evidence of sight of “key papers” (portfolio)</li> <li>• Laboratory audits</li> <li>• Formal and informal examinations</li> <li>• Evidence of teaching others</li> <li>• Completed course/degree/diploma records and certificates</li> </ul>

**Table 3.1: Allergy: asthma**

Knowledge	Skills	Attitudes/Behaviour	Learning experiences	Assessment
<ul style="list-style-type: none"> <li>• Defines asthma</li> <li>• Distinguishes between causes of cough, SOB, wheeze, airways obstruction</li> <li>• Explains how to assess asthma severity</li> <li>• Identifies triggering/exacerbating factors</li> <li>• Explains how to educate patients in self management (self administration of therapy, monitoring of PEF, symptom diary, crises)</li> <li>• Identifies and manages occupational asthma</li> <li>• Describes principles of therapy, including acute and chronic severe disease</li> <li>• Describes unwanted effects of therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs an examination</li> <li>• Performs SPT/RAST</li> <li>• Performs and interprets allergen/occupational challenge</li> <li>• Performs sputum induction</li> <li>• Demonstrates knowledge of aeroallergens and occupational allergens</li> <li>• Discusses relevant allergen avoidance</li> <li>• Performs and evaluates lung function testing</li> <li>• Interprets relevant imaging</li> <li>• Teaches PEF monitoring</li> <li>• Discusses principles of therapy (BTS/GINA guidelines)</li> <li>• Demonstrates drug delivery devices</li> <li>• Evaluates effects and unwanted effects of therapy</li> <li>• Discusses management of acute, severe asthma</li> <li>• Performs aspirin desensitisation</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the importance of environmental, including occupational allergens as triggers for asthma</li> <li>• Recognises the importance of patient-based variables (compliance, understanding, inhaler technique) in asthma control</li> <li>• Consults other experts regarding patient management, such as occupational physicians, speech therapists, where necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised training by:               <ol style="list-style-type: none"> <li>(1) Consultant;</li> <li>(2) asthma and allergy specialist nurses;</li> <li>(3) respiratory function technician;</li> <li>(4) occupational physician</li> </ol> </li> <li>• Supervised management of asthma in outpatients and acutely in inpatients</li> <li>• Case studies and critical incident reports</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> <li>• Audit</li> <li>• Tutorials</li> <li>• Personal Study</li> <li>• Awareness of support groups (NAC, BAF, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of competence by direct observation and critique of management by educational supervisor:               <ol style="list-style-type: none"> <li>(1) management of acute severe and chronic asthma;</li> <li>(2) interpretation of thoracic imaging;</li> <li>(3) interpretation of lung function testing</li> <li>(4) skin prick testing;</li> <li>(5) allergen, occupational and aspirin challenge</li> </ol> </li> <li>• Written case records, presentations (portfolio)</li> <li>• Treasure on asthma management (portfolio)</li> <li>• Record of attendance at relevant meetings (portfolio)</li> <li>• Evidence of teaching others (portfolio)</li> </ul>

**Table 3.2: Allergy: rhinitis**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Defines seasonal and perennial rhinitis and conjunctivitis, and distinguishes between these and other causes of acute and chronic rhinitis and conjunctivitis</li> <li>• Identifies triggering/exacerbating factors</li> <li>• Describes the investigation and management of chronic and recurrent sinusitis (structural nasal blockage, cystic fibrosis, ciliary dyskinesia, congenital and acquired immune deficiency)</li> <li>• States the causes and clinical features of occupational rhinitis</li> <li>• Explains the indications for, and principles of therapy, including immunotherapy</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs an appropriate examination</li> <li>• SPT/RAST</li> <li>• Performs and interprets allergen and occupational challenge</li> <li>• Identifies and manages occupational rhinitis</li> <li>• Performs rhinoscopy and evaluates the nasal airways</li> <li>• Performs and interprets rhinomanometry</li> <li>• Performs and interprets saccharin test</li> <li>• Performs and interprets ciliary motility tests</li> <li>• Discusses nasal potential measurements</li> <li>• Interprets sweat sodium test</li> <li>• Interprets relevant imaging</li> <li>• Discusses principles of therapy (BSACI/ARIA guidelines)</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the importance of concurrent management of the nasal and bronchial airways</li> <li>• Recognises when specialised ENT referral is indicated</li> <li>• Contributes to multi-disciplinary approach</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised training by allergist in outpatients. Management of inpatients and outpatients, in part by attachment to ENT outpatients.</li> <li>• Involvement with assessment of airways patency, ciliary function, etc.</li> <li>• Case studies</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> <li>• Tutorials</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of competence by direct observation and critique of management by allergy or ENT consultant (core knowledge, rhinoscopy, airways patency, allergen challenge, imaging, tests of ciliary function, nasal potentials)</li> <li>• Written case records (portfolio)</li> <li>• Treatise on differential diagnosis and management of rhinitis (portfolio)</li> <li>• Record of attendance at relevant meetings (portfolio)</li> <li>• Evidence of teaching others (portfolio)</li> </ul>

**Table 3.3: Allergy: atopic dermatitis**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Defines atopic dermatitis and distinguish between this and other causes of dermatitis</li> <li>• Describes complications of atopic dermatitis and its treatment</li> <li>• Identifies triggering/exacerbating factors</li> <li>• Describes the principles of therapy</li> <li>• Explains when to refer for specialist management</li> <li>• Distinguishes between atopic dermatitis and contact dermatitis, and recognises the need for referral for specialist investigation of contact dermatitis</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs an appropriate examination</li> <li>• Performs SPT/RAST</li> <li>• Discusses trials of allergen avoidance, including food allergens</li> <li>• Discusses principles of therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the social/psychological problems caused by chronic skin disease</li> <li>• Contributes to multi-disciplinary approach</li> <li>• Recognises when specialist referral is indicated</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised training on outpatient and inpatient management of eczema by educational supervisor and dermatology consultant</li> <li>• Case studies</li> <li>• Tutorials</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by allergist</li> <li>• Written case records (portfolio)</li> <li>• Treatise on eczema management (portfolio)</li> <li>• Record of attendance at relevant meetings (portfolio)</li> </ul>

**Table 3.4: Allergy: food allergy/intolerance**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the clinical sequelae of IgE-mediated food allergy, and distinguishes these from intolerance syndromes</li> <li>• Describes the natural history of food intolerance syndromes</li> <li>• Describes key food allergy syndromes (peanut, milk, etc.)</li> <li>• Explains the value and limitations of skin prick testing and RAST in food allergy diagnosis</li> <li>• Describes the advantages and disadvantages of specialised diets in food allergic/intolerant patients</li> <li>• Explains the management severe food allergy of syndromes in the community</li> <li>• Identifies GI disorders which may mimic food allergy (coeliac disease, lactose intolerance, dumping syndromes, IBD, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs appropriate examination</li> <li>• Performs SPT/RAST, including prick-prick testing</li> <li>• Selects and interprets planned exclusion/reintroduction diets</li> <li>• Interprets diet diaries</li> <li>• Performs single and double blind, placebo controlled food challenge</li> <li>• Demonstrates emergency therapy for severe food-induced reactions</li> </ul>	<ul style="list-style-type: none"> <li>• Chooses appropriate goals in assisting with dietary problems</li> <li>• Recognises cultural and racial differences in attitudes to diet</li> <li>• Recognises when specialist referral is indicated</li> </ul>	<p>Supervised training by:</p> <ol style="list-style-type: none"> <li>(1) educational supervisor;</li> <li>(2) discussions with dietician attached to allergy clinic</li> </ol> <ul style="list-style-type: none"> <li>• Supervised management of outpatients</li> <li>• Case studies, critical incident reports</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Collection of food and food additive challenge protocols (portfolio)</li> <li>• Written evidence of practical experience with these protocols</li> <li>• Written evidence of competence in:               <ol style="list-style-type: none"> <li>(1) SPT and prick-prick testing with foodstuffs;</li> <li>(2) prescription and interpretation of exclusion/reintroduction diets</li> </ol> </li> <li>• Written case records (portfolio)</li> <li>• Evidence of attendance at relevant meetings (portfolio)</li> </ul>

**Table 3.5: Allergy: drug/vaccine allergy**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the mechanisms of different types of reaction to drugs and their natural history</li> <li>• Explains patterns of adverse reactions to different drugs</li> <li>• Describes mechanisms of unwanted effects of drugs</li> <li>• Explains how to manage systematically adverse drug reactions during general and local anaesthesia</li> <li>• Explains the value and limitations of SPT/RAST testing with drugs</li> <li>• Describes the principles of drug challenge and drug desensitisation</li> <li>• Provides advice on the use of alternative drugs</li> <li>• Identifies multiple drug allergy syndromes</li> <li>• Describes the use of vaccines, their unwanted effects and contraindications</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a systematised history of drug exposure</li> <li>• Performs relevant examination</li> <li>• Performs SPT/RAST with drugs and derivatives (e.g. major/minor penicillin determinants)</li> <li>• Demonstrates knowledge of tests of cell-mediated drug reactions</li> <li>• Selects and applies drug challenge and desensitisation protocols</li> <li>• Discuss strategies to prevent allergic drug reactions</li> <li>• Analyses the immune response to vaccines</li> <li>• Investigates possible allergic responses to vaccines.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the urgency of timely investigation of patients awaiting operations or needing particular antibiotics</li> <li>• Chooses appropriate alternative therapies for drug allergic patients</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised training in outpatients by educational supervisor</li> <li>• Practical experience of management of suspected drug reactions</li> <li>• Liaison with DoH and other bodies regarding vaccination programmes, indications and contraindications</li> <li>• Critical review of the literature</li> <li>• Critical incident reports</li> <li>• Attendance at relevant courses/meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Written verification of competence by educational supervisor in the management of:               <ol style="list-style-type: none"> <li>(1) reactions to general anaesthetics;</li> <li>(2) reactions to local anaesthetics;</li> <li>(3) suspected reactions to antibiotics;</li> <li>(4) suspected reactions to aspirin and NSAIDs;</li> <li>(5) other drug reactions;</li> <li>(6) adverse reactions to vaccines</li> </ol> </li> <li>• Collection of drug challenge and desensitisation protocols (portfolio)</li> <li>• Written evidence of experience with these protocols (portfolio)</li> <li>• Written case records (portfolio)</li> <li>• Evidence of teaching (portfolio)</li> <li>• Evidence of attendance at relevant meetings (portfolio)</li> </ul>

**Table 3.6: Allergy: insect venom allergy**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the biology and classification of the hymenoptera</li> <li>• Explains the clinical features of local and systemic reactions to insect stings, and recognition of when these are IgE-mediated</li> <li>• Describes the natural history of venom allergy in adults and children</li> <li>• Interprets skin prick testing with serial concentrations of venom</li> <li>• Outlines principles of insect avoidance</li> <li>• Describes the emergency management of an insect sting in allergic patients</li> <li>• Explains when and when not to prescribe immunotherapy</li> <li>• Explains the likely outcome of insect venom immunotherapy</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs relevant examination</li> <li>• Examination</li> <li>• Performs SPT/RAST, including venom serial concentration SPT</li> <li>• Discusses principles of avoidance</li> <li>• Applies correct management decision</li> <li>• Demonstrates emergency treatment</li> <li>• Performs appropriate follow up</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises and addresses anxiety caused by insect venom allergy</li> <li>• Chooses a management pathway appropriate to the individual patient</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised initial management and follow up of patients with suspected insect venom allergy</li> <li>• Performance of serial dilution SPT and intradermal skin tests</li> <li>• Extensive discussion with educational supervisor about the indications for immunotherapy in individual patients</li> <li>• Case studies, presentations</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> <li>• Audit</li> <li>• Tutorials</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Written evidence of extensive experience with practical venom immunotherapy by:               <ol style="list-style-type: none"> <li>(1) educational supervisor;</li> <li>(2) allergy specialist nurse</li> </ol> </li> <li>• Written strategy for setting up and running an immunotherapy clinic (portfolio)</li> <li>• Collection of product information and protocols for venom immunotherapy (portfolio)</li> <li>• Written case studies (portfolio)</li> <li>• Evidence of attendance at relevant courses/meetings (portfolio)</li> </ul>

**Table 3.7: Allergy: Urticaria/angioedema**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the clinical sequelae and natural history of the urticaria/angioedema syndromes</li> <li>• Recognises physical precipitants and other precipitating/exacerbating factors</li> <li>• Explains how to recognise and manage underlying vasculitis</li> <li>• Explains when and when not to investigate</li> <li>• Explains the principles of management</li> <li>• Justifies referral for more specialised therapy</li> <li>• Describes specialist therapy (immunosuppressive therapy, plasmapheresis PUVA etc.)</li> <li>• Describes the diagnosis, prophylaxis and management of hereditary angioedema</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a history and performs an appropriate examination</li> <li>• Performs SPT</li> <li>• Performs and evaluates physical challenge tests</li> <li>• Analyses and interprets complement proteins</li> <li>• Evaluates thyroid function</li> <li>• Analyses and interprets C1 esterase inhibitor concentration/activity</li> <li>• Performs oral challenge with foods/drugs/food additives</li> <li>• Performs skin biopsy</li> <li>• Interprets autoantibodies</li> <li>• Interprets viral screens</li> <li>• Interprets serum immunoglobulins and paraproteins</li> <li>• Evaluates when CXR is necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises and addresses anxiety and stress caused by chronic urticaria/angioedema</li> <li>• Provides reassurance and encouragement</li> <li>• Recognises when referral for specialist therapy is required.</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised training with:               <ol style="list-style-type: none"> <li>(1) educational supervisor;</li> <li>(2) consultant dermatologist</li> </ol> </li> <li>• Experience of management of hereditary angioedema:               <ol style="list-style-type: none"> <li>(1) chronically;</li> <li>(2) acute exacerbations;</li> <li>(3) prior to surgery and childbirth;</li> <li>(4) in pregnancy</li> </ol> </li> <li>• Case studies</li> <li>• Critical review of the literature</li> <li>• Attendance at relevant courses/meetings</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by educational supervisor and consultant dermatologist in:               <ol style="list-style-type: none"> <li>(1) investigation of urticaria;</li> <li>(2) physical challenge tests;</li> <li>(3) oral challenge tests;</li> <li>(4) skin biopsy;</li> <li>(5) management of urticaria</li> </ol> </li> <li>• Written case studies in management of hereditary angioedema (portfolio)</li> <li>• Treatise on the management of hereditary angioedema (portfolio)</li> <li>• Case studies involving vasculitis (portfolio)</li> <li>• Grey cases (portfolio)</li> </ul>

**Table 3.8: Allergy: anaphylaxis**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the mechanisms, causes, clinical features and differential diagnosis of anaphylactic and anaphylactoid reactions</li> <li>• Explains a systematic approach to identification of aetiology</li> <li>• Explains how to recognise “at risk” patients and provides advice on prevention</li> <li>• Describes desensitisation protocols</li> <li>• Explains emergency treatment plans, including self-administration of adrenaline</li> <li>• Describes how to manage acute anaphylaxis in adults and children</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a comprehensive relevant history (drugs, vaccines, latex, biological fluids, insects, foods exercise)</li> <li>• Performs relevant clinical examination</li> <li>• Performs SPT/RAST</li> <li>• Evaluates serum tryptase</li> <li>• Performs challenge tests (drugs, exercise, food, etc)</li> <li>• Teaches self-administration of adrenaline</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises the urgency of timely investigation and management of anaphylaxis</li> <li>• Provides practical advice and reassurance</li> <li>• Communicates with other key carers</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised investigation of patients with anaphylactic reactions</li> <li>• Anaphylaxis management guidelines (e.g. Resuscitation Council)</li> <li>• Supervised challenge tests</li> <li>• Supervised desensitisation procedures</li> <li>• Critical review of the literature</li> <li>• Case studies</li> <li>• Tutorials</li> <li>• Personal study</li> <li>• Awareness of self support groups (e.g. Anaphylaxis Campaign)</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Written evidence of practical experience in management of acute anaphylaxis</li> <li>• Evidence of familiarity with protocols for management of acute anaphylaxis (portfolio)</li> <li>• Collection and knowledge of relevant challenge and desensitisation protocols (portfolio)</li> <li>• Written evidence of practical experience with these protocols</li> <li>• Written case studies (portfolio)</li> <li>• Critical incident reports (portfolio)</li> </ul>

**Table 3.9: Allergy: latex allergy**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes the natural history, aetiology and spectrum of clinical sequelae of latex reactions</li> <li>• Defines “at risk” groups</li> <li>• Explains routes of exposure to latex</li> <li>• Explains cross-reactivity of latex allergen with other allergens</li> <li>• Describes the practical management of latex allergy</li> <li>• Describes the principles of latex avoidance and the use of latex alternatives at home and at work</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a comprehensive history and performs</li> <li>• Examination</li> <li>• Performs SPT/RAST</li> <li>• Evaluates the need for patch testing</li> <li>• Teaches advice about hospital care, including avoidance of exposure to latex rubber</li> <li>• Discusses occupational strategies for prevention of latex allergy in staff</li> </ul>	<ul style="list-style-type: none"> <li>• Contributes to prophylaxis and management of latex allergy</li> <li>• Recognises the importance of helping patients to avoid latex exposure</li> <li>• Consults with other health care professionals, such as occupational physicians, where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised management of outpatients and inpatients with latex allergy</li> <li>• Systematic familiarity with items at home, work, hospital which may contain latex</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Written case studies (portfolio)</li> <li>• Evidence of attendance at relevant courses (portfolio)</li> <li>• Evidence of relevant teaching (portfolio)</li> <li>• Treatise on management of latex allergy (portfolio)</li> </ul>

**Table 3 10: Allergy: allergen immunotherapy**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes postulated immunological mechanisms of immunotherapy</li> <li>• Describes the efficacy and limitations of immunotherapy</li> <li>• Describes the principles of selection of suitable patients for immunotherapy</li> <li>• States the indications and contraindications for immunotherapy</li> <li>• Describes different desensitisation regimens and their relative advantages and disadvantages</li> <li>• Explains appropriate monitoring prior to, during and after desensitisation injections</li> <li>• Explains the advantages and disadvantages of different allergen preparations for immunotherapy (adsorbed, soluble, allergoids, etc)</li> <li>• Describes experimental immunotherapy regimens (oral, sublingual, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a relevant history and performs a relevant examination</li> <li>• Demonstrates knowledge of monitoring</li> <li>• Discusses preparation and administration of allergen vaccines</li> <li>• Discusses appropriate timing and choice of desensitisation regimens</li> <li>• Manages trivial and severe reactions, including anaphylaxis</li> <li>• Applies dosage adjustments according to previous reactions</li> </ul>	<ul style="list-style-type: none"> <li>• Chooses regimens to suit individual patients</li> <li>• Recognises which patients are likely to do well</li> <li>• Clarifies for the patient what are realistic outcome expectations</li> </ul>	<ul style="list-style-type: none"> <li>• Supervised decision making regarding the suitability of outpatients for immunotherapy</li> <li>• Immunotherapy guidelines (BSACI, EAACI, AAAAI)</li> <li>• Practical experience of the running of an immunotherapy clinic</li> <li>• Practical knowledge of allergen injections</li> <li>• Critical review of the literature</li> <li>• Case studies</li> <li>• Audit</li> <li>• Critical incident reports</li> <li>• Tutorials</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Written evidence of competence to run an immunotherapy clinic</li> <li>• Assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Written evidence of supervised and unsupervised management of these clinics</li> <li>• Written case studies ((portfolio)</li> <li>• Collection and critical review of immunotherapy guidelines (portfolio)</li> <li>• Collection of literature about the nature and efficacy of different allergen vaccine preparations (portfolio)</li> <li>• Collection of trials and meta-analysis of immunotherapy (portfolio)</li> </ul>

**Table 3.11: Allergy: paediatric allergy**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Explains the special considerations for the management of allergic disease (asthma, eczema, rhinitis, food allergy) in children</li> <li>• Describes the dietary requirements of the infant and the child</li> <li>• Explains the distinction between IgE-mediated and non-IgE mediated milk allergy syndromes and differential diagnosis from inflammatory bowel disease, lactose intolerance and other congenital and acquired food allergy/intolerance syndromes</li> <li>• Describes the management of food allergy/intolerance and the use of milk formulae</li> <li>• Recognises congenital immune deficiency syndromes (immunoglobulin deficiency) and other congenital syndromes which may present to an allergist (cystic fibrosis, etc)</li> <li>• Explains how to manage paediatric allergy in the community: liaison with key carers (parents, schools, sports)</li> </ul>	<ul style="list-style-type: none"> <li>• Performs paediatric history and examination, including milestones and centiles</li> <li>• Applies paediatric drug ranges and dosages; particularly for asthma, rhinitis, anaphylaxis</li> <li>• Practises management of paediatric asthma, rhinitis, sinusitis and anaphylaxis management, including inhaler devices</li> <li>• Evaluates manifestations of food allergy, and manages of severe food anaphylaxis in the community</li> <li>• Performs paediatric food challenge</li> <li>• Interprets paediatric bowel investigation, including endoscopy and intestinal biopsy</li> <li>• Interprets tests for lactose intolerance</li> <li>• Performs paediatric ENT examination, and manages of chronic sinusitis and nasal polyps</li> <li>• Manages paediatric asthma</li> <li>• Communicates with community paediatric teams for management of children at school</li> </ul>	<ul style="list-style-type: none"> <li>• Recognises limitations of expertise when dealing with children</li> <li>• Respects the fears and wishes of the parents</li> <li>• Contributes to holistic care in the community</li> </ul>	<ul style="list-style-type: none"> <li>• Training under the supervision of:               <ol style="list-style-type: none"> <li>(1) allergist and/or consultant paediatric allergist/ gastroenterologist/ chest physician</li> <li>(2) asthma and allergy specialist nurse;</li> <li>(3) ENT surgeon;</li> <li>(4) dietician</li> </ol> </li> <li>• Attendance at relevant courses</li> <li>• Critical review of the literature</li> <li>• Tutorials</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Written assessment of competence by direct observation and critique of management by educational supervisor and/or consultant paediatric allergist or gastroenterologist or chest physician in the management of paediatric:               <ol style="list-style-type: none"> <li>(1) asthma;</li> <li>(2) rhinitis;</li> <li>(3) sinusitis;</li> <li>(4) food allergy and intolerance syndromes;</li> <li>(5) special diets/formulae;</li> <li>(6) anaphylaxis;</li> <li>(7) urticaria/angioedema</li> <li>(8) resuscitation</li> </ol> </li> <li>• Evidence of collection of paediatric management protocols (food challenge, asthma, anaphylaxis)</li> <li>• Written case studies (portfolio)</li> <li>• Evidence of attendance at relevant courses (portfolio)</li> </ul>

**Table 3.12: Allergy: Unconventional therapies and diagnostic procedures**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes unproven procedures for allergy diagnosis (Vega testing, leucocytotoxic tests, hair analysis, applied kinesiology, auricular cardiac reflex) and treatment (homoeopathy, enzyme-potentiated desensitisation, hypnosis acupuncture)</li> <li>• Describes the principles of “clinical ecology”: diagnosis (Miller technique), diseases (multiple chemical sensitivity, total allergy syndrome, <i>Candida</i> hypersensitivity syndrome) and treatment (neutralisation vaccines, etc)</li> <li>• Describes aetiological and psychological facets of chronic (“post-viral”) fatigue syndrome (myalgic encephalomyelitis)</li> </ul>	<ul style="list-style-type: none"> <li>• Manages patients who have consulted “alternative allergists” and have been misdiagnosed or given unconventional diagnoses such as <i>Candida</i> hypersensitivity syndrome</li> <li>• Manages patients with ME</li> <li>• Evaluates clinical ecology journals</li> <li>• Evaluates publications from specialist societies for homoeopathy, acupuncture, etc</li> <li>• Discusses position statements regarding alternative allergy from professional societies</li> </ul>	<ul style="list-style-type: none"> <li>• Exhibits a sympathetic and open-minded approach</li> <li>• Recognises the limitations of conventional, as well as unconventional therapy</li> <li>• Contributes to holistic approach to dealing with patient’s symptoms and beliefs</li> </ul>	<ul style="list-style-type: none"> <li>• Critical but unbiased and open-minded review of the literature</li> <li>• First hand experience of alternative allergy treatment and diagnosis, from centres to high street shops</li> <li>• Attendance at relevant conferences and meetings</li> <li>• Personal study</li> <li>• Journal and textbook articles</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of competence by direct observation and critique of management by educational supervisor</li> <li>• Written case studies (portfolio)</li> <li>• Evidence of attendance at relevant courses (portfolio)</li> <li>• Evidence of collection of “alternative allergy” literature and practices (portfolio)</li> </ul>

**Table 3.13: Allergy: immunodeficiency**

Knowledge	Skills	Attitudes/behaviour	Learning experiences	Assessments
<ul style="list-style-type: none"> <li>• Describes congenital and acquired immunodeficiency syndromes, including antibody and cell mediated disorders, complement deficiencies and defects in neutrophil function</li> <li>• Outlines the management of intravenous and subcutaneous immunoglobulin therapy, including available preparations</li> <li>• Has a working knowledge of the long term management of infections, including opportunistic infections</li> <li>• Has a working knowledge of the management of the immunosuppressed patient</li> <li>• Describes the principles of vaccination and immunisation</li> </ul>	<ul style="list-style-type: none"> <li>• Takes a relevant history and examination</li> <li>• Demonstrates knowledge of genetic basis of immunodeficiency</li> <li>• Discusses when to measure immunoglobulins, classes and subclasses</li> <li>• Interprets specific antibody titres and responses to vaccination</li> <li>• Discusses functional analysis of complement components: CH50, AH50</li> <li>• Evaluates cell surface and cytoplasmic markers for assessment of immunodeficiency</li> <li>• Interprets lymphocyte function tests</li> <li>• Analyses functional assessments of neutrophils and macrophages</li> <li>• Interprets tests of cytokine production <i>in vitro</i></li> </ul>	<ul style="list-style-type: none"> <li>• Recognises limitations of expertise</li> <li>• Refers promptly to appropriate specialist where necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Supervision by educational supervisor</li> <li>• Secondment to local or regional centres for immunodeficiency diagnosis and management</li> <li>• Liaison with immunology and microbiology laboratories, infection control teams</li> <li>• Collection of management protocols and key guidelines</li> <li>• Attendance at relevant courses</li> <li>• Tutorials</li> <li>• Personal study</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of competence by direct observation and critique of management by educational supervisor and/or consultant microbiologist, immunologist</li> <li>• Case studies (portfolio)</li> <li>• Evidence of attendance at relevant courses (portfolio)</li> <li>• Evidence of sight of “key” papers (portfolio)</li> </ul>